

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.

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.

Using this Manual

This manual gives you the information you need to maximize the use of your notebook computer. The information in this manual refers to the Windows 98 operating system only. For information about other operation systems, please refer to their respective user's manuals.

Please read this manual carefully to familiarize yourself with the system and its features. For specific information, see:

- Chapter 1, **"Getting Started,"** to acquaint yourself with system hardware.
- Chapter 2, **"Power Sources,"** to realize how to use AC power and battery adequately.
- Chapter 3, **"BIOS Setup and Power Management,"** to customize your notebook computer's parameter and power management settings.
- Chapter 4, **"Using Your Notebook Computer,"** to understand the notebook computer's features and functionality.
- Chapter 5, **"Traveling with Your Notebook Computer,"** to find out valuable tips for getting the most out of your system while on the road.
- Chapter 6, **"Solving Problems,"** to look for solutions to common problems that may arise while operating your notebook computer.
- Chapter 7, **"Important Safety Instructions,"** for guidelines to help maintain a safe working environment.

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1.

Getting Started

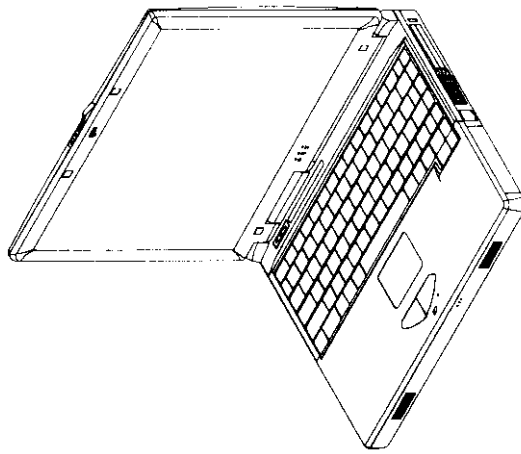
1.A Introducing the Computer

This notebook computer is a compact and lightweight multimedia computer, featuring the latest in portable computing technology. Thanks to its all-in-one design, full functionality is built-in with no need to change external devices. This computer makes an ideal choice for use in the office, the schoolroom, at home, on the road and all other occasions.

The notebook's standard main features include:

- Intel Tillamook or Pentium II microprocessor
- 128 bit graphics accelerator
- high density hard disk drive (up to 6.4 GB)
- 3.5" floppy disk drive
- 24X CD-ROM
- PC card slots

Internal 56Kbps fax/modem module, internal 10/100 Base T LAN module, and port replicator (PortBar) are also available as options. Now let's start the tour around this smart system!



Your Notebook Computer

1.B 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 or NiMH Battery Pack(s)
- ☒ Utility Diskettes/CD
- ☒ Quick Setup Manual

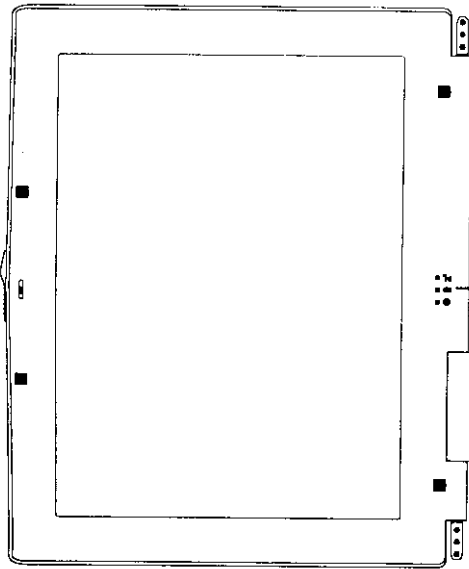
Carefully inspect each component to make sure that nothing is missing and/or damaged. If any of these items are missing or damaged, notify your dealer immediately. Be sure to save the shipping materials and the carton in case you need to ship the computer or if you plan to store the computer away sometime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

1.C The Front View

The notebook computer is compact with features on every side. First, look at the front of the system. The following sections describe front features, beginning with the liquid crystal display (LCD) panel.

LCD Panel

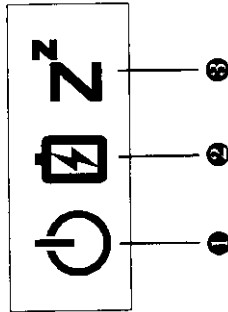
The notebook computer comes with a color LCD that you can adjust for a comfortable viewing position. The LCD can be a 12.1-inch Dual Scan Super-Twisted Nematic (DSTN) or Thin Film Transistor (TFT), Super Video Graphics Array (SVGA) color display, or a 13.3-inch TFT, Extended Graphics Array (XGA). The features of the LCD panel are described after the figure.



1. Power and Suspend to RAM LEDs

LCD Panel

- Power and Suspend to RAM LEDs — (identified by icons) are located just under the front of the LCD panel. These LEDs are duplicated on the back of the LCD panel to allow viewing when the panel is closed.



1. Power LED
2. Battery Charging LED
3. Suspend to RAM LED

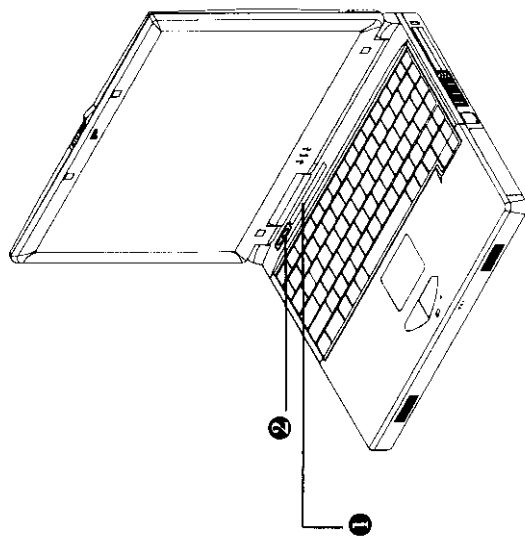
Power and Suspend to RAM LEDs

- **Power LED** — lets you know that power to the system is turned on. This LED is positioned so that you can see the power state whether the LCD panel is opened or closed.
 - Lights green when the system is powered on using the AC adapter, battery, or car adapter.
 - Lights yellow when on and low battery power.
 - Lights amber when in Suspend to RAM (or Suspend to Disk if you already created Save to Disk partition in HDD by using PHDISK utility in the MS-DOS) mode and critically low battery power. We strongly recommend that users create Save to Disk partition as this will prevent your data from loss when power is critically low.
- **Battery Charging LED** — lights to indicate battery charging status.
 - Lights amber to indicate the battery is charging.
 - Lights off to indicate the battery is fully charged.
- **Suspend to RAM LED** — blinks in Suspend to RAM mode and off in full on or power off mode.

Note: When the system will respond to the low battery power or the critically low battery power state depends on the settings of remaining battery level (represented in percentage) that activates power management function.

Control Panel

The notebook computer's control panel provides the features shown in the following figure. The control panel features are described after the figure.



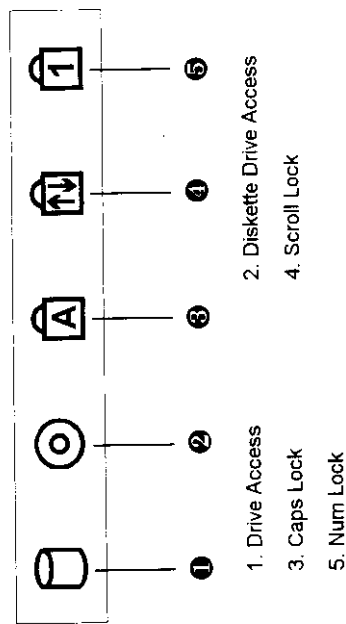
1. Status LEDs 2. Power Button

- **Status LEDs** — keep you informed of your notebook computer's current operating status. Descriptions of the status icons appear in the following section.
- **Power Button** — press the power button either to power on/off the system, or to suspend/resume the system. See "Power On/Off" in Chapter 2, "Power Menu" in Chapter 3, and "Power Override"/"Suspend/Resume" in Chapter 6 for more information.

Note: If you are unable to power off the system, use the power override. Press the Power button and hold it in place until the system powers off. See "Power Override" in Chapter 6 for details.

Status Icons

The notebook computer uses status lights marked with icons to communicate system status. See the following figure and list for each icon's meaning.



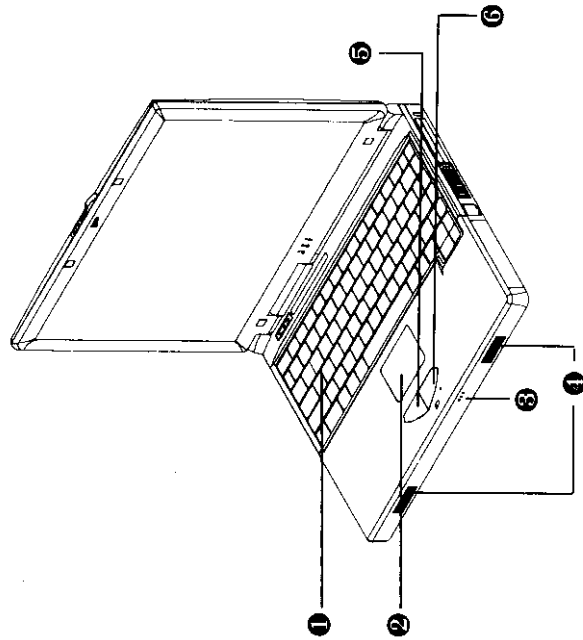
1. Drive Access
2. Diskette Drive Access
3. Caps Lock
4. Scroll Lock
5. Num Lock

Status LED Icons

- **Drive Access** — lights when the notebook accesses the hard disk drive.
- **Diskette Drive Access** — lights when the notebook writes data to or retrieves data from the floppy diskette drive.
- **Caps Lock** — lights when caps lock is in effect.
- **Scroll Lock** — lights when scroll lock is in effect.
- **Num Lock** — lights when Num Lock mode is active.

Keyboard Panel and Base Unit

The notebook computer's keyboard panel and base unit contain the following features.



- 1. Keyboard
- 2. Glide Pad
- 3. Microphone
- 4. Built-in Speakers
- 5. Left Selection Button
- 6. Right Selection Button

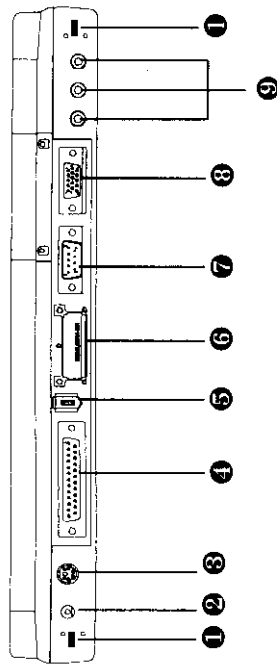
Keyboard Panel and Base Unit

- Keyboard — standard QWERTY-key layout. See “Keyboard” in Chapter 4 for details about control keys, function keys, and keyboard features.
- Glide Pad — works like a standard computer mouse. Simply move your fingertip over the Glide Pad to control the position of the cursor. Use the selection buttons below the Glide Pad to select menu items. See “Glide Pad” in Chapter 4 for detailed information on using Glide Pad.
- Microphone — allows you to record monophonic sound directly into your notebook computer.

- Built-in Stereo Speakers — provides stereo sound for your multimedia presentations or listening pleasure.

1.D The Rear View

You'll find system ports for connecting optional devices (like a printer or external monitor) to the back of your notebook computer. The ports are described after the figure.



- 1. PortBar Notches
- 2. AC Power Port
- 3. PS/2 Port
- 4. Parallel Port
- 5. USB Port
- 6. Expansion Port
- 7. Serial Port
- 8. Monitor (Video) Port
- 9. Audio Ports (From left to right): Microphone, Line In & Headphones

System Rear View

- PortBar Notches — Use these notches to secure the PortBar to the back of the system. Note that there are two PortBar notches located at the both ends of the rear side of the system.
- AC Power Port — Lets you attach the notebook computer to the AC power source using the AC adapter that comes with your system. Keep the system connected to AC power whenever possible to keep the battery pack and internal CMOS battery charged.
- PS/2 Port — Use the standard PS/2 port to connect an external PS/2-style mouse, PS/2-style keyboard, or PS/2 style Numeric Keypad to the system. With an optional Y adapter, you can connect up to two of these devices at the same time.

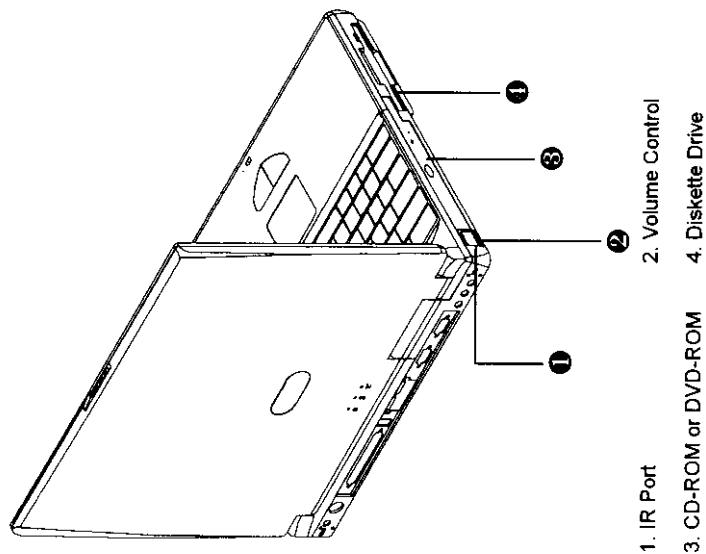
- Parallel Port — Use this port to connect a parallel printer or other parallel device. The parallel port supports Enhanced Capabilities Port (ECP) standard. The standard provides you with a greater processing speed than the conventional parallel port. The port also supports bi-directional and uni-directional protocols.

Note: The default setting for the parallel port on your notebook computer is set to Enhanced Capabilities Port (ECP). Some older parallel devices may not function with the ECP default setting. You may need to adjust the setting to accommodate your parallel device by changing the BIOS setting.

- USB Port — The Universal Serial Bus (USB) port allows you to connect up to 127 USB-equipped peripheral devices (for example, printers, monitors, scanners and so on) to your notebook computer.
- Expansion Port — Use this port to connect the PortBar.
- Serial Port — Use this port to connect a serial printer or other serial device.
- Monitor (Video) Port — Use this 15-pin port to attach an external monitor to your notebook computer. You can run the LCD display and the external monitor simultaneously or run either alone.
- Audio Ports:
 - Microphone — Allows you to connect an external microphone for monophonic recording or amplification through the unit. Plugging in an external microphone disables the built-in microphone.
 - Line In — Lets you use another audio system, like a home stereo, as an input source. Use a cable to connect to the Line-Out port on the other audio system to record or play.
 - Headphones — Lets you plug in stereo headphones or powered speakers.

1.E The Left View

The left side of your notebook computer provides the features shown in the following figure.



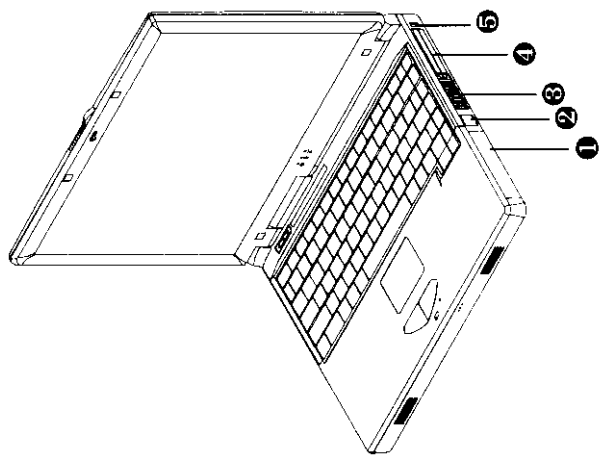
Left Side Features

- **IR Port** — Use this port to transfer files between your notebook computer and an IR-equipped desktop or another notebook computer. You can also print to an IR-equipped printer without using cables. Use the IRMON utility in Windows 98 with your IR-equipped printer.
- **Volume Control** — Allows you to control the speaker volume through the thumb wheel.
- **CD-ROM** — Allows you to load and start programs from a compact disc (CD) and play audio CDs. See Chapter 4 for details about using the CD-ROM.

- **DVD-ROM** — Allows you to load and start programs from a digital video disc (DVD) or play conventional audio CDs. This device will be available in the short future.
- **Diskette Drive** — A 3.5-inch floppy diskette drive comes installed in the notebook computer. The drive accepts 1.44 MB/1.2MB floppy diskettes.

1.F The Right View

The right side of the notebook computer offers the features shown in the following figure.



- 1. Battery Bay
- 2. Modem / LAN Port
- 3. Fan
- 4. PC Card Slots
- 5. Kensington Lock

Right Side Features

- **Battery Bay** — Depending upon the model, the battery bay contains a rechargeable Nickel-Metal-Hydrate (NiMH) or Lithium-Ion (Li-Ion) battery pack.
- **Modem / LAN Port** (modem & LAN module are available as options) — If you purchase an internal fax modem, a 56K internal voice/fax/data modem is installed. It keeps you connected to the outside world through networks. If you purchase an internal 10/100 Base T LAN module, it connects your computer to other computers/networks through a local area network (LAN).

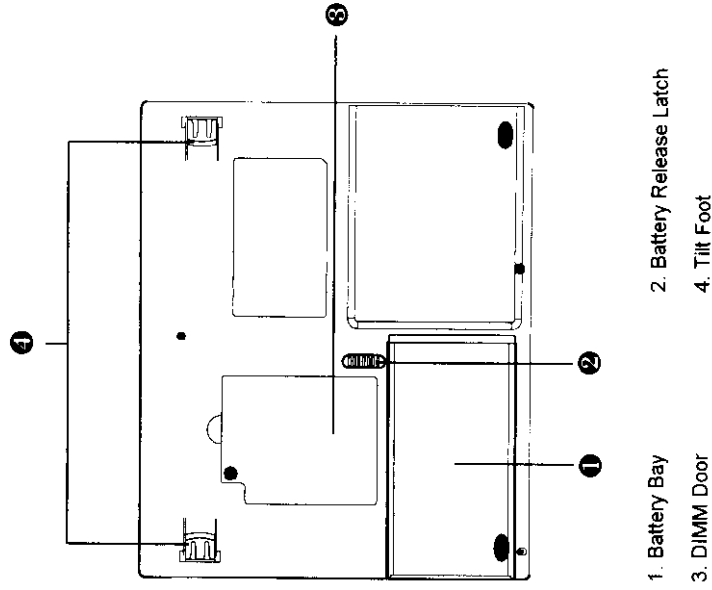
- **Fan** — Allows your system to cool properly and maintain a safe operating environment.

Note: Do not block the fan while the notebook is in use.

- **PC Card Slots** — Two PC card slots allow you to insert two Type II PC cards or one Type III PC card in the bottom slot. Note that Zoom Video (ZV) port is supported in the top slot only.
- **Kensington Lock** — Lets you provide added security by installing an optional Kensington Lock.

1.G The Bottom View

The bottom of the notebook computer offers the following features.



Bottom of the System

- Battery Bay — Equipped with a rechargeable Nickel-Metal-Hydride (NiMH) or Lithium-Ion (Li-Ion) battery.
- Battery Release Latch — Slide the latch to the other end and hold it. While holding the latch, slide the battery bay outwards to remove the battery.
- DIMM Door — Remove the screw to find two DIMM slots. One is inserted with SDRAM memory board configured by the factory. The other is empty for upgrade use.
- Tilt Foot — Provides flexible keyboard angle.

2.A About Power Sources

The notebook can be powered using different sources, making it a truly portable system. You can operate it just about anywhere using one of the following power sources:

- The AC adapter connected to an electrical wall outlet (using AC power).
- The battery pack.
- Car adapter.

Read the following sections for specific steps on powering on the system.

2.B Using the AC Power

The notebook computer is equipped with an AC (alternating current) adapter so that you can use external electric supply to offer DC (direct current) for your system.

Using the AC Adapter

Use the AC adapter and power cable that came with your notebook computer, so that you can run your notebook computer on AC power or to recharge the battery pack. Use the AC adapter whenever a wall outlet is nearby.

Note: Do not attempt to disassemble the AC adapter. The AC adapter has no user-replaceable or serviceable parts inside. Dangerous voltage in the AC adapter can cause serious personal injury or death. The AC adapter is intended for use with a computer.

When connected, the AC adapter charges the battery whether or not the notebook computer is powered on.

Note: Check that the AC outlet voltage falls in the range of 100–240 Volts AC. Verify that the cord and plug are appropriate for your AC source.

Connect the AC adapter as follows:

Note: Use only the AC adapter that comes with your notebook computer. Other AC adapters may damage the system.

1. Connect the AC adapter cable to the power port on the rear side of your notebook computer.
2. Plug one end of the AC power cable into the AC adapter and the other end into a 100–240 Volt wall outlet.

Note: Do not cover or place objects on the AC adapter. Doing so can cause the adapter to overheat.

Power On/Off

To power on, locate the power button on the left-hand side of the control panel above the keyboard and press it. To power off the system, press the power button. In Windows, the computer automatically shuts down when "Shut Down" is selected from the Start menu. That is, you do not need to press the Power button to switch off the computer.

See "Power Menu" in Chapter 3 and "Power Override" in Chapter 6 for more information.

2.C Using the Battery

The rechargeable battery pack allows you to operate the computer without an external power source and with power management features activated, you will be able to use it for an extended period of time. 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.

Using the Battery Pack

The notebook computer comes with a rechargeable Nickel Metal-Hydrate (NiMH) or Lithium-Ion (Li-Ion) battery pack. You can run your system on battery power for approximately 2 hours with power management features enabled. Battery packs are easy to install and remove.

Note: Although the battery is fully charged at the factory, transit and shelf time may reduce the initial battery charge. We recommend that the first time you use your notebook computer, connect it to AC power using the AC adapter. This also recharges your battery.

When battery power reaches the level where the Battery Warning is activated, the power LED lights yellow.

When battery power is very low, the power LED lights amber and the system beeps a warning and the system goes into Suspend/Save to File mode.

Replacing the Battery Pack

Install the battery pack in your system as follows:

Note: Be sure to save your data before replacing the battery pack. Failure to do so can result in data loss.

1. If your system is on, save your data, and press the Power button to turn off the system power. Another way is to place the system in Suspend mode by pressing the Power button (if enabled in BIOS). See Chapter 3, "BIOS Setup and Power Management," for more details.
2. Close the LCD and turn the system over.
3. Release the battery bay latch, slide the battery away from the system, and lift it off.
4. Align the terminals on the new battery with the terminal connector in the bay. Insert the battery into the bay, until the battery bay latch locks the battery in place.
5. Press down on the battery to secure the terminal connection.
6. Turn the system over and press the Power button to power on the system.

When Battery Power is Low

When battery power gets low, connect your system to the AC adapter. If AC adapter is not available, change the battery pack. See previous section, "Replacing the Battery Pack" for details.

Note: To prevent accidental battery ignition or explosion, adhere to the following:

- Keep the battery away from extreme heat.
- Keep metal objects away from the battery terminals to prevent a short circuit.
- Make sure the battery is properly installed in the battery bay.
- Read the precautions printed on the battery.

Battery Handling

Review the following before handling the system battery.

Note: Use the NiMH or Li-Ion batteries only in the notebook computer for which they are designed. Mixing other notebook computer's batteries or other manufacturer's batteries can deteriorate battery and equipment performance.

- Turn off power to the system after use. Keeping system power on can degrade battery performance and shorten battery life.
- Clean the battery terminals with a dry cloth if they get dirty.
- When not in use, store the battery in a cool dry area.

The following symptoms indicate that battery life is nearing an end. Discard batteries that display these symptoms:

- shorter work times
- discoloration, warping
- hot to the touch
- strange odor

Battery Life

The notebook computer's NiMH or Li-Ion battery has an approximate life of 2 hours under the following conditions:

- When it is new and fully charged.
- When no peripherals are connected to your notebook computer.
- When you have no options installed.

Enabling power management features increases battery life.

Extending Battery Life

While on the road, it is important to be aware of the simple things you can do to extend the life of the system's main battery. Turning down the screen brightness and contrast extends battery life. Press **Fn + F7** to toggle through different power management modes and extend battery life. See "Power Menu" in Chapter 3 and "Keyboard" in Chapter 4 for more information.

Battery Charging

Charge time depends on whether or not you are using the system. There are two ways to charge your battery while it is installed in the notebook computer:

- When the system is off or in Suspend mode and the AC adapter is connected, charge time is approximately 3 hours.
- When the system is powered on and the AC adapter is connected, charge time is approximately 4 hours.

For maximum battery performance, fully discharge the battery before recharging it. To do so, unplug the AC adapter, turn off power management features (through Setup and Windows), and turn on the system. Once the battery is fully discharged, plug in the AC adapter and recharge the battery.

If you do not discharge the battery completely, it not only fails to accept a full recharge, but also sends incorrect information to the Battery Gauge utility. The utility may indicate that you have plenty of battery power when you actually have very little. This can result in data loss when the battery suddenly dies.

Note: The warning beep that sounds when battery power becomes critically low is always a true indicator that battery power is low. Be sure to save your data when you hear the beep and take proper steps to provide power to your system.

Battery Precautions

To prevent accidental battery ignition, rupture, or explosion, adhere to the following precautions.

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

- Keep the battery away from heat sources including direct sunlight, open fires, microwave ovens, and high-voltage containers. Temperatures over 60°C (140°F) may cause damage.
- Do not drop or impact the battery.
- Do not disassemble the battery.
- Do not solder the battery.
- Do not puncture the battery.
- Do not use a battery that appears damaged or deformed, has any rust on its casing, is discolored, overheats, or emits a foul odor.
- Keep the battery dry and away from water.
- Keep metal objects away from battery terminals. Metal objects in contact with the terminals can cause a short circuit and damage.
- If the battery leaks onto skin or clothing, wash the area immediately. Battery fluid can cause a skin rash and damage fabric.
- If battery fluid gets in eyes, DO NOT rub; rinse with clear water immediately and see a doctor.

Battery Disposal

Before disposing of the battery, put adhesive tape on the terminals. Depending upon the notebook computer model, the main battery is made of Nickel Metal-Hydride (NiMH) or Lithium-Ion (Li-Ion). You can contact your local waste management officials for information regarding environmentally sound collection, recycling, and disposal of batteries.

Internal Batteries

The Nickel Metal-Hydride or Lithium-Ion battery is the main power source in your notebook computer. In addition to the main battery, the CMOS battery provides power to maintain system configuration settings.

CMOS Battery

This battery provides battery backup and prevents data loss in the system's complementary metal-oxide semiconductor (CMOS) RAM. This memory area contains information on the system's configuration, for example, date, time, drives, and memory. The CMOS battery lasts approximately two years. An authorized service technician can replace the CMOS battery for you.

System Care

The notebook computer is a durable, dependable system built for extensive use and travel. Follow these guidelines to maintain the condition and performance of your computer.

Note: Immediately turn off and unplug the notebook computer under the following conditions:

- The power cord is damaged or frayed.
- Liquid spills on or into the notebook computer.
- The notebook computer is dropped or its casing is damaged.

Precautions

Follow these precautions when using your notebook computer and AC adapter.

- When the system is off or in Suspend mode and the AC adapter is connected, charge time is approximately 3 hours.
- Avoid dropping or bumping the computer or the AC adapter.
- Do not stack heavy objects on the computer, the AC adapter, or the battery packs.
- Avoid moving the notebook computer during system operation, especially while the hard disk, diskette drive, or CD-ROM reader is being accessed.
- When using the AC adapter, make sure the power source falls within the system's compatible range of 100–240 volts AC. Never use the AC adapter if the voltage falls outside of this range. (Watch for this when traveling to other countries.)
- Turn computer power off before attaching or removing non-plug and play devices.
- Do not push any foreign objects into the notebook computer's bays, connectors, and slots.
- Avoid using the computer or AC adapter for extended periods in direct sunlight.
- Do not use the system in humid or dusty environments.
- Keep liquids and food away from the system.
- Turn computer power off before cleaning it.
- Avoid exposing the notebook computer or AC adapter to extreme changes in temperature or humidity. If it is unavoidable, allow your system to adjust to room temperature before use.
- When cleaning the system, use a soft, clean, dry cloth. Avoid wiping the display surface with abrasive material, including rough fabric. Do not use a cleaning solution as this may damage the notebook's plastic.
- If the AC adapter becomes extremely hot, unplug the adapter and let it cool.

- Do not use the IR port directly under fluorescent lighting, or near flashing incandescent light.

Note: This equipment uses an ungrounded power cable. Replace the cord if it becomes damaged. Make sure to obtain replacement cords at an authorized service center. The replacement must be of the same type and voltage rating as the original cord.

Storage Requirements

Store the computer and AC adapter in an environment that meets the following conditions:

- Maintain storage temperatures between -4°F to 104°F (-20°C to 40°C).

Note: If the temperature of the notebook computer suddenly rises or falls, (for example, when you move the system from a warm place to a cold place) vapor condenses inside the system. Turning on the system under this condition can damage the internal system components.

Before turning on the system, wait until the system's internal temperature equalizes with the new environment and any internal moisture can evaporate.

- Keep the storage area free from vibration and magnetic fields.
- Keep the system and its components away from organic solvents or corrosive gases.
- Avoid leaving the system and its components in direct sunlight or near heat sources.

Routine Cleaning

Clean or dust your system as follows.

Note: Never use harsh solutions, household cleaners, or spray cleaners that contain caustic materials on the notebook computer.

These cleaners are usually high in alkalinity measured in pH. Using these cleaners can cause the plastic surface to crack or discolor.

- Keep the storage area free from vibration and magnetic fields.
- LCD screen — Carefully wipe the LCD screen with a soft cloth or a screen wipe designed for that purpose. Special screen wipes are available through your local computer dealer.
- System case — Carefully wipe the case with a slightly damp, almost dry cloth.

Battery Discharging/Battery Refresh

The NiMH battery pack has "memory effect". That is, the Power Meter indicator in the Windows 98/95 won't be able to show correct remaining battery power after the NiMH battery pack has been used for some time (e.g. one month long). To ensure the NiMH battery pack can be fully discharged and charged, the "Battery Refresh" function is designed in the BIOS Setup Utility.

"Battery Refresh" makes the NiMH battery fully discharged only. It has no automatic charge function. "Battery Refresh" also renders correct reading for both battery gauge and Windows Power Meter. "Battery Refresh" usually requires one hour to complete its job.

Note: The "Battery Refresh" does not work if you insert a Li-Ion battery pack.

The steps to use "Battery Refresh" are described below:

1. Make sure that the NiMH battery pack is installed in the battery bay.
2. Connect the AC adapter to your notebook computer.
3. Power on your notebook computer.
4. Press F2 to enter Setup.
5. In Exit Menu, select "Battery Refresh".
6. A series of guidelines will guide you through the battery refresh process. Later, you will be required to unplug the AC adapter so that the battery refresh can start.
7. Wait for about one hour to completely discharge the battery pack. The system will then automatically shut down.
8. Plug-in the AC adapter to start charging the battery pack.

3

BIOS Setup and Power Management

3.A BIOS Setup Utility

Your notebook comes with a hardware configuration program called BIOS Setup Utility that allows you to view and set system parameters. The utility also allows you to set password features that protect your system from unauthorized use.

Use BIOS Setup to

- set the current time and date (you can also set the date and time through Windows)
- customize your operating system to reflect your computer hardware
- secure your system with a password
- balance your performance needs with power conservation.

How to Enter Setup

Access Setup at power-on. Just press **F2** right after the initial logo screen is shown (you may need to press **F2** for several times).

When you press **F2** to enter Setup, the system interrupts the Power-On-Self-Test (POST) and displays the current CMOS RAM settings.

If the system detects an error during POST, it prompts you with a double beep and a message: "Press <F1> to resume." If you press **F1**, the system may enter setup to allow you to correct the error. If you want to fix the error, carefully read the error message that appears above the prompt (taking notes if you want). If the system does not enter setup, the standard bootstrap procedure resumes.

When you enter setup, the system displays the Setup Main screen similar to the following.

PhoenixBIOS Setup Utility					
Main	Advanced	Security	Power	Boot	Exit
System Time: [11:37:52] System Date: [09/10/1998] Language: [English (US)] Diskette A: [1.44/1.25 MB, 3 1/2"] Internal HDD [6495MB] Internal CD-ROM Installed Boot Display Device [Both] System Memory 640 KB Extended Memory 64512 KB CPU Type Pentium II CPU Speed 300 MHz BIOS Version 0.3E-0116-20					Item Specific Help
Help Exit	Select Item Select Menu	Change Values Select ▶ Sub-Menu		Setup Defaults Save and Exit	

How to Use Setup

The following sections describe how to use Setup, including these topics:

- Looking at screens
- Using keys
- Checking and setting system parameters.

Looking at Screens

Setup screens have three areas as shown above.

- Menus — The top part of the screen. This area lists six menus in which related parameters are shown.
- Parameters — The left part of the screen. This area lists parameters and their current settings.

- Item Specific Help — The right part of the screen. This area lists tips and explanations to help you.
- Key Legend — The bottom corner of the screen. These lines display the keys that move the cursor and select parameters.

Using Keys

The following table lists Setup keys and their functions.

Setup Key Functions

KEY	WHAT IT DOES
F1	Shows on-line help on key functions.
↑ ↓	Moves the cursor between the displayed parameters.
-/+	Modifies the current parameter settings.
F9	Load default configuration.
Tab, Shift-Tab	For some parameter settings, moves the cursor between the sub-fields. Also moves the cursor to the next line or selection.
or Enter	For example, for System Time, Tab moves the cursor from hour to minute to second.
Esc	Exits the current screen and returns to the main menu or exit menu.
← →	Changes between displayed menus.
F10	Save changes and exit.

Checking/Setting System Parameters

See the following table for a list of parameters, their factory default settings, and alternate settings. A description of each setting follows the table.

To reset all parameters to the default settings, select F9 or Load Setup Defaults from the Exit Menu and then press Y.

Setup Parameters

PARAMETER	DEFAULT SETTING	ALTERNATE SETTING(S)
Main Menu		
Language	English (US)	Japanese
System Time	hh:mm:ss	
System Date	mm/dd/yy	
Diskette Drive A	1.44/1.25 MB, 3 1/2"	1.44/1.25, disabled
Internal HDD		
Internal CDROM	Auto	User Defined
Boot Display Device	Both	Both, CRT, LCD
System Memory	640 KB	(Auto Detect)
Extended Memory		
CPU type		
CPU Speed		
BIOS Version		
Advanced Menu		
PS/2 Mouse	Enabled	Enabled, Disabled
Installed O/S	Win98/WinNT5.0	Win95, Win98/WinNT5.0, Other
Silent Boot	Enabled	
Local Bus IDE adapter	Both	Both, disabled, Primary, Secondary
I/O Device Configuration		
Serial port A	Auto	Enabled, Disabled, Auto
Mode: IrDA	Auto	IrDA, disabled, FIR
Serial port B	Auto	Enabled, Disabled, Auto
Parallel port	ECP	Enabled, Disabled, Auto
Mode	Enabled	Output only, Bi-directional, ECP
Floppy disk controller		Enabled, Disabled
Security Menu		
Set Supervisor Password	None	User Defined
Set User Password	None	User Defined
Password on boot	Disabled	Enabled, Disabled
Password on Resume	Disabled	Enabled, Disabled
Fixed disk boot sector	Normal	Normal, Write Protect
Diskette access	Supervisor	User, Supervisor

PARAMETER

DEFAULT SETTING

ALTERNATE SETTING(S)

Power Menu

Power Switch	On/Off	On/Off, Suspend/Resume
Power Management Function	Battery only	Always on, Battery only
Power Savings	Maximum Power Saving	Customize, Max Perform, disable, Max Power Saving
Standby Timeout	1 min	Off, 1/2/4/6/8/12 min*
Suspend Timeout	5 min	Off, 5/10/15/20/30/40/60 min*
Suspend Mode	Suspend, Save To Disk	Suspend, Save To Disk
Audio Save To Disk	Off	Off, After 1 Hour
Hard Disk Timeout	1 min	Disabled, 1/2/4/6/8/10/15 min*
Video Timeout	2 min	Disabled, 1/2/4/6/8/10/15 min*
Resume On Modem Ring	On	On, Off
Resume On Time	Off	On, Off
Resume Time	[00:00:00]	User Defined

Boot Menu

Bootup Sequence is described in numerical order.	Diskette Drive	Diskette Drive, Hard Drive, ATAPI CD-ROM Drive
--	----------------	--

Exit Menu

Exit Saving Changes	User Selectable when exiting
Exit Discarding Changes	same as above
Load Setup Defaults	same as above
Discard Changes	same as above
Save Changes	same as above
Battery Refresh	same as above

Footnote: * Customize

3.B Setup Menus

Read the following descriptions for explanations of items that appear in the Setup menus, as listed in the preceding table. See the item-specific help that appears on the Setup screen for more details.

Main Menu

- **System Time** — To set the time, enter the current hour, minute, and second on hr/min/sec, 24 hour format.
- **System Date** — This field lets you set your calendar month, day, and year. The calendar clock is year 2000-compliant. These settings remain in memory even after you turn off the system. To set the date, use the **Tab/Shift-Tab/Enter** key to move from field to field. Use the +/- keys to change numbers within each field.
- **Language** — This field lets you set the type of language for the BIOS display.
- **Diskette Drive A** — This field allows you to enable or disable the built-in 1.44/1.25MB 3 1/2" Diskette.
- **Internal HDD** — 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 can be edited.
- **Internal CD-ROM** — This field is for information only as the BIOS automatically detects the CD-ROM.
- **Boot Display Device** — allows you to select the display device.
- **System Memory, Extended Memory, CPU Type, CPU Speed and BIOS Version** — These fields are for information only as the BIOS automatically detects related values.

Advanced Menu

- 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.
- Installed O/S — specifies the installed operating system which you use most commonly.
- Local Bus IDE Adapter — allows you to enable/disable IDE hardware such as HDD and CD-ROM.
- I/O Device Configuration — lets you configure input/output device such as Serial Port, Parallel Port, IrDA and Floppy disk controller.

Note: If you disable a device in Setup, you cannot enable or assign it using the Windows 98 device manager. The device is not listed in the Windows 98 device list. To control the device using the Windows 98 device manager, select any setting other than "Disable" in Setup.

Security Menu

- Set User Password — specifies if the system prompts you to enter a password when accessing the system. The Set User Password function will be enabled once a Supervisor password is set.
- Set Supervisor Password — specifies if the system prompts you to enter a password when entering Setup.
- Password on boot — Enables password check when booting.
- Password on Resume — enables password check when resuming from suspend.
- Fixed disk boot sector — [Write Protect] enables write protect boot sector on hard disk to prevent against viruses. [Normal] disables this write protect function.
- Diskette access — controls access to diskette drive.

Power Menu

The Power Saving management setup menu lets you balance high performance and energy conservation by using parameters including the following.

Note: Some operating systems, like Windows 98, have their own power management software (e.g. APM or ACPI) which overrides BIOS settings. BIOS, in this case, controls only two timers "Resume On Modem Ring" and "Resume On Time". Other timers under the Power Menu are controlled by Windows 98.

- Power Switch — The power switch operates as both a On/Off and Suspend/Resume switch.
 - 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.
- Power Management Function — Battery only enables the power saving management function when the system operates in battery power only. Always enables the power saving management function when the system operations either in AC power or battery.
- Power Savings — lets you choose one of four levels of power management.
 - Maximum Power Savings — conserves the greatest amount of system power.
 - Maximum Performance — conserves power but allows the greatest system performance.
 - Disabled — turns off the power management function.
 - Customized — allows you to change related settings so that you can define your own power management configuration.

- Standby Timeout — allows you to select the system standby timeout period. The Standby Timeout sets the time the system needs to be idle before entering the Standby mode. Standby mode powers down various devices in the system until you start using the system again.
- Suspend Timeout — amount of time the system needs to be idle or in Standby mode before entering the Suspend mode.
- Suspend mode — If you choose Suspend, the system saves its state but remains in a low power mode. If you choose Save To Disk, the system saves its state to disk and powers off.
- Auto Save To Disk — When Auto Save To Disk is turned on and, the system saves its state to disk and then powers off after being in Suspend mode for a period of time.
- Hard Disk Timeout — allows you to select the amount of time the hard disk needs to be inactive before it shuts down.
- Video Timeout — allows you to select the amount of time the user input devices needs to be inactive before it shuts down.
- Resume On Modem Ring — “On” wakes the system up when an incoming call is detected on your modem. If Suspend Mode is set to “Save To Disk”, the Resume On Modem Ring does not work.
- Resume On Time — “On” will wake the system up at a specific time. This function works when the system is off or in the “Save to Disk” mode.
- Resume Time — specifies the time when system is to wake up.

Boot Menu

The Boot menu lets you decide the boot order of booting devices including:

- Diskette Drive
- Hard Drive
- ATAPI CD-ROM Drive

The booting order is listed in the numerical sequence.

Exit Menu

- Exit Saving Changes — exits System Setup and saves your changes to CMOS.
- Exit Discard Changes — exits Setup utility without saving any modified Setup data to CMOS.
- Load Setup Defaults — loads default settings for all items in Setup.
- Discard Changes — reverts to previously selected settings and exits Setup.
- 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.

4.

Using Your Notebook Computer

The more you use your notebook computer, the more proficient you become at everything — from using function keys to setting up presentations. So, this chapter gives concise information on these and other important tasks. In addition, this chapter focuses on expanding memory capacity and installing options.

4.A LCD Panel

The LCD panel on your system is fully adjustable to provide comfortable viewing. To adjust the viewing angle, gently tilt the LCD panel into position.

Using Brightness and Contrast Control

You can use the following function key combinations to adjust brightness and contrast.

Fn-F8 — Increases the LCD's brightness.

Fn-F9 — Reduces the LCD's brightness.

Fn-F10 — Increases the LCD's contrast (for DSTN display only).

Fn-F11 — Reduces the LCD's contrast (for DSTN display only).

Note: The brighter the screen setting, the more power is used during battery operation. Similarly, the higher the contrast setting, the more power is used during battery operation.

VGA Driver Installation

The following is the VGA driver installation procedure:

Note: The driver disk/CD contains a readme.txt file that details the driver list for your reference.

1. Insert driver disk/CD to your notebook computer.
2. In the Windows **Start** menu, select **Setting \ Control Panel \ Display** to open the Properties Window.
3. Select **Settings \ Advanced Properties \ Adapter \ Change**.
4. Select **Have Disk** and specify the VGA driver directory (usually named "VGA") in the driver disk/CD.
5. A wizard will guide you through the process to install **NeoMagic MagicGraph 128XD** driver.

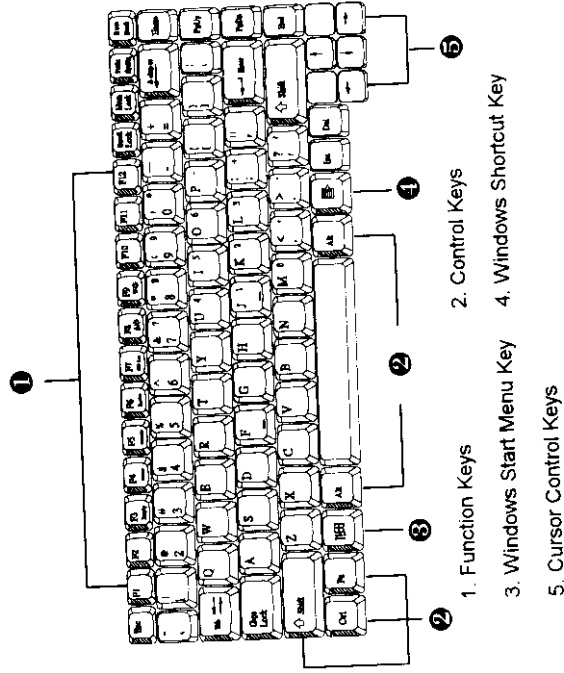
6. After files are copied, click **Finish** and then **Close**.
7. Click **Close** again in the **Display Properties** window.
8. Restart your computer.
9. The installation is completed.

4.B Keyboard

The keyboard is equipped with many features. These include:

- Function keys
- Windows 95/98 keys
- Cursor control keys
- Typewriter keys
- Numeric keypad
- Control keys.

Key features and operations are described after the figure.



Keyboard

- **Function Keys** — Function keys like **F1** through **F12** can be found on the keyboard. These keys work together with the **Fn** key to activate special functions. Some keys (printed in blue) are preprogrammed with dual functions.

Function keys are application-driven. For information on how each function key works within each application, see the specific application's user guide.

The following function key combinations are pre-programmed for the notebook computer.

- **Fn-F3** — Display toggles between three video modes: LCD, CRT, or simultaneous display on both.
- **Fn-F4** —
 - In Windows 95, it is "Standby" that sets standby power management mode to on. Press any key to turn off Standby mode.
 - In Windows 98, it is "Suspend" that sets suspend power management mode to on. Press the power button to turn off Suspend mode.
- **Fn-F5** — Viewing area of LCD display can be expanded or non-expanded. Press **Fn-F5** to toggle between these two functions. Note that **Fn-F5** works only in a 640x480 resolution mode.
- **Fn-F6** — System Speaker Volume sets the volume of the built-in speakers to on or off mode.
- **Fn-F7** — Power Management Level (PMU) sets the power saving mode. Four modes are available. You can toggle between these four modes according to different beep sounds:
 - One beep — disables PMU.
 - Two beeps — sets PMU to Customized mode.
 - Three beeps — sets PMU to Maximum Performance mode.
 - Four beeps — sets PMU to Maximum Power Saving mode.

- **Fn-F8** — Increases the LCD's brightness.
- **Fn-F9** — Reduces the LCD's brightness.
- **Fn-F10** — Increases the LCD's contrast (for DSTN display only).
- **Fn-F11** — Reduces the LCD's contrast (for DSTN display only).

The following key combinations are available with some applications.

- **Fn-SysReq** — System request is used in terminal emulation applications.
- **Fn-Break** — Break sends a break command.
- **Windows 95/98 keys** — Use the following two keys to facilitate your work:
 - Shortcut/Application key — provides quick access to shortcut menus. This key acts like a right mouse button.
 - Start Menu key — displays the Start menu.
- **Cursor Control keys** — Cursor control keys let you position the cursor on the screen where you want. On the screen, the cursor is a blinking underline, block, or vertical bar depending on the application. The cursor indicates where the next text typed is inserted.
- **Typewriter keys** — Typewriter keys (also called *alphanumeric* keys) are used to enter text and characters. Keys with blue print on them behave differently when combined with control keys.

- **Numeric Keypad** — Pressing **Num Lock** on the keyboard activates the numeric keypad numbers and functions printed in blue on top of the keys.

- The keypad lets you type numbers and mathematical operands (+, -) as you would on a calculator. The keypad is ideal for entering long lists of numbers.
- When you press **Num Lock** again, the keys revert to their normal functions as typewriter keys.

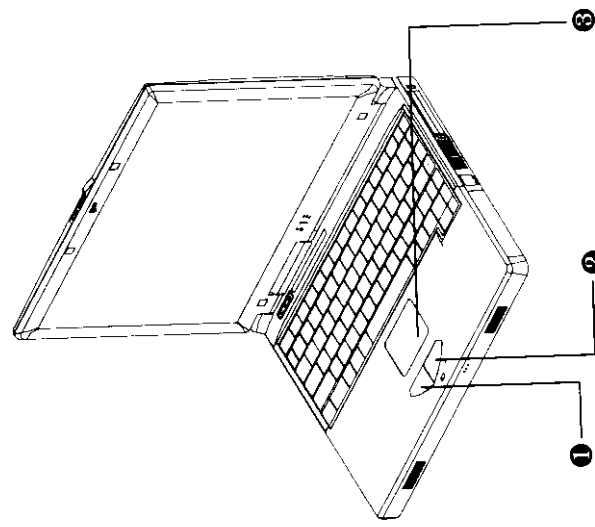
- **Control keys** — **Ctrl**, **Alt**, **Fn**, and **Shift** are controls used in conjunction with other keys to change their functions. To use control keys, press and hold the control key while pressing another key. For example, "Press **Ctrl c**" means to hold down the **Ctrl** key and type the letter **c**. Key combinations work specific to the application you are running.

4.C Glide Pad

The Glide Pad is an easy way to control the cursor with your finger. It works like a mouse.

Using Glide Pad

Lightly move your finger across the Glide Pad surface and the cursor follows. Once the cursor is in the proper place, tap once on the surface of the Glide Pad or use the left/right selection buttons to click just the same as you would for a mouse. Tap twice to double-click.



1. Left Selection Button
2. Right Selection Button
3. Glide Pad

Glide Pad Features

Adjusting Glide Pad

The Glide Pad offers a number of options that let you customize how it functions. To access these options, locate the Control Panel and double click on the mouse icon.

The options let you control the size and color of the cursor, cursor speed, the accepted double-click speed, and selection button orientation.

Glide Pad Tips

Follow these basic ergonomic tips while working:

- Use a light touch on the Glide Pad surface.
- Set up the notebook computer with your keyboard and the Glide Pad at a comfortable height. Keep your forearms parallel to the floor. Your wrists should be relaxed and straight.
- While using the keyboard and the Glide Pad, keep your shoulders and arms as relaxed as possible.
- Take regular breaks from the computer to rest your eyes.
- Perform stretching exercises to relax your fingers, hands, wrists, forearms, and shoulders.

4.D INTEGRATED Drives

The notebook computer comes with three integrated drives — two on the left side of the system, and one inside of the system. The drives are as follows:

- **CD-ROM** — Your system ships with either a 24X CD-ROM reader already installed on the left side of the system.
- **Diskette Drive** — Your system ships with a standard 3.5-inch 1.44-MB diskette drive already installed in the left side of the system.
- **Hard Disk Drive** — Depending upon the model, your system ships with a hard disk drive (up to 6.4 GB) already installed under the base unit cover.

4.E 24X CD-ROM Reader

Use the CD-ROM reader to load and start programs from a compact disc (CD). You can also use the CD-ROM reader to play your audio CDs. The 24X CD-ROM reader is compatible with industry data and audio CDs.

The CD-ROM reader operates at different speeds depending on whether the CD you are using contains data or music. This allows you to get your data faster and to see smoother animation and video. The CD-ROM reader features include the following:

 **Note:** The CD-ROM reader is a Class 1 Laser Product. Das CD-ROM Laufwerk ist ein Produkt der Laserklasse 1.

- Release Button — ejects the CD tray. Press this button when power is on to insert a CD into or remove a CD from the reader.
- Emergency Eject Hole — allows you to manually remove a CD from the reader if the eject function is disabled by software or a power failure occurs.
 - To remove a CD, insert the end of a paper clip into the eject hole, and push in until the CD tray releases. Now you can manually open the drawer.
- Status LED — lights during data read operations. Do not eject the CD or turn off the notebook computer when the indicator is lit.

CD Loading

To insert a CD into the CD-ROM reader, follow these steps.

1. Press the Release button and pull the CD tray out from the reader door.
2. Put your CD, printed side up, into the circular impression in the tray.

3. Push the CD tray in until it clicks shut.

 **Note:** Some CDs vibrate when playing. This does not affect CD-ROM reader functioning.

CD Care

When handling CDs, consider the following guidelines:

- Always pick up the CD by its edges.
- Avoid scratching or soiling the side of the CD that has no printing or writing on it.
- Do not write on or apply labels to either side of the CD.
- Keep the CD away from direct sunlight or high temperatures.
- Clean fingerprints or dust from the CD by wiping it with a soft cloth.

Changing the Auto Play Setting

Your system ships so that a CD inserted into the reader automatically starts playing. The system periodically checks the reader to see if a CD was inserted. Although this feature makes using your CDs very convenient, it interferes with the system's automatic Save to File feature.

To disable the Auto Play feature or re-enable it, follow these instructions:

1. From the Windows 98 Start menu, select Settings and Control Panel.
2. In the Control Panel, highlight and double click on the System icon to show system properties.
3. Go to the Device Manager tab.
4. Locate and open the CD-ROM folder.
5. Highlight the line marked "TEACxxxx" for the CD-ROM model name (Where XXXX refers to the specific model name).

6. Press the Properties button at the bottom of the window and select the Settings tab.
7. Proceed as follows:
 - To disable Auto Play, click to remove the check mark next to the line "Auto insert notification."
 - To enable Auto Play, click to add a check mark next to the line "Auto insert notification."
8. Select OK twice to accept the settings in the Settings tab and exit the Properties window.
9. To activate the new setting, reboot the system when prompted.

4.F 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 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.

Volume Control

Computer sound volume can be switched on and off using the speaker hot keys **Fn-F6**. You can adjust the volume to your desired level by using the thumb wheel control located under the IR port on the left side of your notebook computer.

Audio Driver Installation

Follow the steps below to install audio driver:

 **Note:** The driver disk/CD contains a readme.txt file that details the driver list for your reference.

1. Insert driver disk/CD to your notebook computer.
2. Double click **System** icon under **control panel**.
3. Choose **Device Manager** → **other device** → **PCI Multimedia Audio Device** → **update driver** → **Search for a better driver than the one your device is using now** → **Specify a location** (where the audio driver directory is located in the driver disk/CD)
4. Follow windows guidelines to complete installation
5. The installation is completed.

4.G 56K Internal Modem (optional)

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

Note: 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.

Connecting the Internal Modem

The built-in voice/fax/data modem provides one standard phone connector.

Use the following steps to connect the analog phone cable to your modem.

1. Locate the analog phone cable in the accessories box in the notebook computer's shipping carton. Each end of the cable has a RJ-11 connector that plugs into a standard wall outlet.

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

2. Connect one end of the cable into a standard telephone wall outlet.
3. Connect the other end of the cable into the computer's modem port.

4.H LAN Module (optional)

The notebook computer is equipped with an internal 10/100 Base T LAN module that connects your computer to other computers/networks through a local area network (LAN). The LAN module is available as an option.

4.1 PC Cards

PC cards are all approximately the same size and vary only in thickness. All have a standard 68-pin connector. There are three types of cards, which vary in thickness.

You can install up to two Type II cards or one Type III card in the bottom slot of your system.

Type II Cards

Type II cards have a thickness of 5.0 millimeters (mm). Type II cards are often storage or communications devices such as battery backed Static Random Access Memory (SRAM), Read Only Memory (ROM), Flash Memory, LAN, and Small Computer System Interface (SCSI). Typical Type II cards include input/output (I/O) features such as modems and LANs.

Type II Extended Cards

Many PC cards are Type II extended cards. The extended card has an additional physical component that protrudes beyond the traditional card size. The extension can be as large as 40 mm deep by 9.65 mm high. This extension provides room for additional electronics as well as a location for external connectors.

Type III Cards

Type III cards are thicker (10.5 mm) than Type II cards and allow no extensions. Type III card uses include advanced function I/O cards with added features such as multimode cards (cards with more than one function such as a combined modem and LAN card) and small hard drive cards.

Communication Cards

You can use both network PC cards and fax/modem cards with your notebook computer. Here are some suggestions to help you get the best system performance.

- **Network Cards** — You can use a network card with your system to gain access to a local area network (LAN).
- **Fax/Modem Cards** — You can use a PC card modem with your system to communicate with others via fax, email, or connect to an online service or bulletin board.

You can insert a fax/modem in either slot. Always insert the fax/modem card before using your fax/modem software application. If you start the application before inserting the fax/modem card, the application typically does not find the card.

Storage Cards

When you insert a storage card or small hard drive card in the notebook computer, it appears as a unique drive depending on the type of card and the slot you are using.

The following table provides sample drive designations.

Sample Drive Designations

DRIVE LETTER	LOCATION/DEVICE
C:	Internal hard disk
D:	Internal hard disk, 2nd partition
E:	CD-ROM reader
F:	Slot 1, IDE/ATA hard drive
G:	Slot 0, high-speed memory card
H:	Slot 1, high-speed memory card

Other Cards

Many other kinds of PC cards are available to notebook computer users. They include the following cards.

- Global Positioning System (GPS) – to enable the tracking of remote units (for example, delivery trucks)
- Paging – for receiving remote paging messages
- Serial – for adding an extra serial communications port
- Multimedia – for combining animation and sound
- Video – for recording, displaying, and capturing full-motion video
- Audio – to enable the use of sound.

Card Bus/PC Card Slots

Your notebook computer offers two PC card slots for inserting two Type II PC cards or one Type III PC card.

Note: The 32-bit card bus also has zoomed video support in the top slot only. Also, this 32-bit structure is backward compatible, but also accepts new cards.

Using the system's PC card slots, you can add optional PC cards and connect external devices to your notebook computer. These devices include peripheral devices, such as modems, LAN cards, and storage cards.

Inserting a PC Card

Follow these steps to insert a PC card in your system.

Note: Some PC cards require additional system resources. Before inserting a PC card you may have to disable either the IR port, USB port, or the 56K internal modem. Check the Windows 98 device manager to ensure that one of these devices is disabled before inserting a PC card.

For information about enabling and disabling devices on your notebook computer, see "Enabling and Disabling Devices," later in this chapter.

1. Align the card so that the 68-pin connector points towards the slot and the arrow on the PC card faces up.
2. Slide the card into either slot. A low tone followed by a high tone lets you know that the card is fully inserted and recognized. (If you turn off the sound, no sound is emitted.)

You can use the PC card software preinstalled on your system to check PC card slot availability. For example, look for the PC Card icon in the Windows 98 Control Panel. It shows which slot contains a PC card and which is empty.

Removing a Card

Remove a PC card as follows.

- From the screen, select "My Computer," then "Control Panel." (You can also double click on the PC card icon in the lower right side of the toolbar on your desktop.)
- Select the PC card icon.
- Select the PC card to remove and select "Stop." Windows 98 alerts you if any applications are still using the card. If all applications using that card are closed, services for that card are shut down, and you get a message telling you it is safe to remove the card.
- Press the button beside the PC card slot.
- When the card pops out slightly, pull it out of the slot.

Note: PC cards draw power even when not in use. To save energy, press the button to disconnect the card when it is not in use. You can leave the card in the slot while it is disconnected for easy storage.

4.J IR Port

The IR port on the left side of your system lets your notebook computer communicate with other devices that also use infrared technology. The IR port is Infrared Data Association (IrDA) compatible. You can easily transfer files between your notebook computer and an IR-equipped desktop, or print to an IR-equipped printer without using cables.

There are three transfer rates for the IR port on your notebook computer. The transfer rates are FIR (Fast Infrared - 4.0 Mbit/sec), MIR (Medium Infrared - 1.152 Mbit/sec), and SIR (Serial Infrared Standard - 2.4 Kbit/sec).

The notebook computer transfers data at the speed compatible with the receiving device. If the receiving device is also FIR equipped, your notebook computer recognizes this capability and transfers data at the FIR rate.

Note: 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.

For information about enabling and disabling devices on your notebook computer, see "Enabling and Disabling Devices," later in this chapter.

Follow these steps to enable the IR port using the setup utility.

1. Enter the setup utility as indicated in Chapter 3, "BIOS Setup and Power Management."
2. Select Advanced Menu.
3. Select I/O Device Configuration.
4. Set the Infrared Port to AUTO.
5. Exit I/O Configuration and Advanced menu.
6. Save settings and exit.

For the infrared technology to work, follow these guidelines:

- position the notebook computer no more than three feet away from the IR peripheral device you are using.
- keep the IR ports between the computer and the device parallel.

4.K USB Port

The USB Port on the rear side of your system allows you to connect up to 127 USB equipped peripheral devices to your notebook computer. These peripherals may include digital cameras, scanners, printers, CD-ROM drives, modems, keyboards, telephones, and games devices.

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. Up to 127 USB devices can be connected together in this way.

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

For information about enabling and disabling devices on your notebook computer, see "Enabling and Disabling Devices," later in this chapter.

4.L Enabling and disabling devices

Depending on your operational requirements you may need to enable and disable devices on your notebook computer to optimize system resources.

Follow these steps to enable or disable a device on your notebook computer:

1. Press Start, slide the cursor to Settings, and locate the Control Panel.
2. Double click the System icon and select Device Manager.
3. Double click the appropriate device (for example, the Infrared Port), then double click the device name.
4. Enable or disable a device as follows.
 - To enable a device, click to remove the check mark beside "Disable in this hardware profile" in the device usage portion of the screen.
 - To disable a device, click to add the check mark beside "Disable in this hardware profile" in the device usage portion of the screen.

Note: When a device is disabled, a red X appears beside the device name in the device manager device list.

5. Click OK and follow the on-screen instructions, as appropriate.

Note: Reboot your system after enabling or disabling a device to implement the modification to the system configuration.

4.M Increasing System Storage and Memory

As your needs grow and change, you may need to replace the standard hard disk drive or add additional memory. Read the following sections to learn how to install a hard disk drive or a memory module.

Hard Disk Drive

You can increase the system's storage capacity by replacing the standard hard disk drive with a drive of greater storage capacity.

Note: If you wish to replace your hard disk, contact your local dealer for more information about this dealer-installable device.

Memory Module

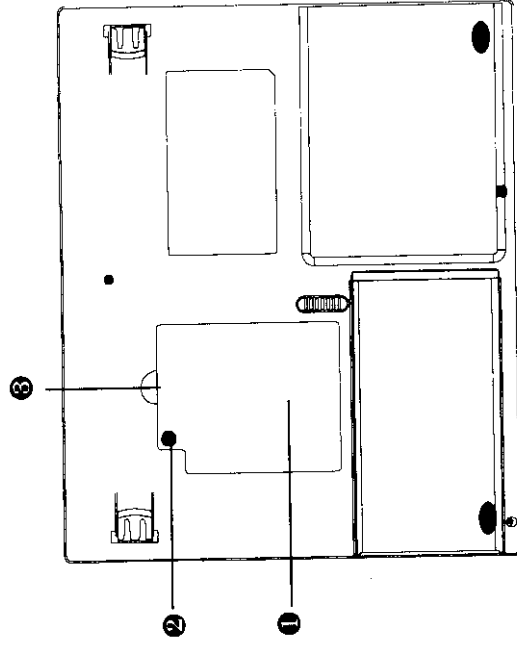
Depending on configurations, your notebook computer comes standard with 32 or 64 megabytes (MB) of synchronous DRAM (SDRAM) memory. This new technology gives your system higher performance. You can increase system memory to a maximum of 128 MB by installing one small outline double inline memory modules (SO-DIMMs) in the system.

The following module capacities are available:

- 32-MB memory module.
- 64-MB memory module
- 128-MB memory module.

Install DIMMs as follows.

1. Make sure the system is powered off and that no peripheral devices are attached.
2. Turn the system over and locate the screw on the DIMM door as indicated in the figure shown next.



1. DIMM door
2. Screw
3. Upper side of DIMM door

DIMM Door on the Bottom of the System

3. Remove the screw.
4. Open the DIMM door by lifting its upper side.
5. Locate the alignment notch on the module.
6. Locate the memory module sockets. Your system comes with one module already installed in the socket. When installing additional memory, use the other empty socket.

Note: Avoid touching the exposed components inside the system. Doing so may damage the system.

7. Align the notch with the notch in the socket connector and insert the module as follows.
 - Hold the SO-DIMM at a 60-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 to secure the module.

Note: To remove a SO-DIMM, press the locking tabs away from the sides of the module until the module pops up. Then, remove the SO-DIMM.

8. Reassemble the notebook computer's components as follows.
 - Replace the DIMM door.
 - Replace the screw.
 - Turn the system over.

4.N Connecting Options

Your notebook computer provides industry-standard connectors so that you can integrate the following:

- External Monitor
- Printers (parallel and serial)
- External keyboard
- External mouse
- External audio options.

In addition, an optional PortBar was developed to work specifically with your notebook computer.

See the following sections for steps on using the options.



- | | |
|-----------------------|----------------------------|
| 1. PS/2 port | 2. Parallel port |
| 3. USB port | 4. Expansion port |
| 5. Serial port | 6. VGA port (monitor port) |
| 7. Microphone in jack | 8. Line-in jack |
| 9. Headphone jack | |

Back System Features

External Monitor

You can add a standard external monitor to your notebook computer. 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.

Follow these steps to connect an external monitor to your notebook computer:

1. Check that the notebook computer is powered off and the monitor Power switch is turned off.

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

2. Attach the 15-pin cable connector to the monitor port on the system. Secure the cable connection with the screws provided.
3. Connect the monitor power cable and plug it into a properly grounded wall outlet.
4. Follow any setup instructions in the monitor user's guide.
5. Turn on power to the monitor.
6. Power on the notebook computer.

Press the **Fn-F3** function key combination to toggle between the LCD, CRT, or simultaneous display on both.

Printer

You can attach a printer with either a parallel or a serial connector. A parallel printer connector has 25 pins; a serial connector has 9 pins. Some printers come with both types of connectors.

Parallel Devices

To install a parallel device, such as a printer, you need a cable with a male 25-pin connector for the system.

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

Connect a parallel device to your notebook computer as follows:

1. Check that both the notebook computer and parallel device power are off.

2. Align and connect the 25-pin parallel cable connector to the parallel port on the system. Secure the cable with the screws provided.
3. Align and connect the other end of the cable to the parallel port on the device. Lock the connector clips.
4. Connect the power cable to the device and a properly grounded wall outlet.
5. Turn on power to the system and the device.

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

Serial Devices

To install a serial device such as a printer or an external mouse, you need a cable with a female 9-pin connector.

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

Follow these steps to connect a serial device to your notebook computer:

1. Check that both the notebook computer and the device power are off.
2. Align and connect the 9-pin connector with the serial port on the system. Secure the connection with the screws provided.
3. Align and connect the other end of the cable to the appropriate port on the device. Secure the connections with the screws provided.
4. Connect the power cable to the device and a properly grounded wall outlet.
5. Turn on power to the system and the device.

External Keyboard/Mouse/Keypad

You can add a full-size PS/2-style keyboard or PS/2-style mouse to your notebook computer.

When you connect an external keyboard, you can use both the built-in keyboard and external keyboard simultaneously. (The embedded numeric keypad on the notebook computer does not work in this case. Use the keypad on the external keyboard.)

To attach two external PS/2-style devices at the same time, use the optional Y-adaptor. Contact an authorized dealer in your area for more information.

Follow these steps to connect an external keyboard, mouse, or keypad to your system.

Note: If you are connecting an external mouse, you must power off the system. You can connect an external keyboard or keypad while the system is in Suspend mode.

1. Connect the keyboard, mouse, or keypad cable connector to the PS/2 port on the system.
2. If power is turned off, power on the notebook computer to resume operation.
3. The system immediately recognizes the device.

External Audio Options

The notebook computer comes equipped with built-in audio ports that let you record and play sound.

Connect audio jacks, like a microphone or external speakers, to the audio ports as follows.

Note: 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.

1. Locate the audio port (Microphone, Line-in or Headphones) that you want to use.
2. Plug the jack into the port on the rear side of the system.

Note: If you use external speakers and experience sound distortion or feedback, lower the volume. Some feedback is caused by having the microphone and speakers too close to each other, so moving the external audio option away from the unit may also help.

PortBar

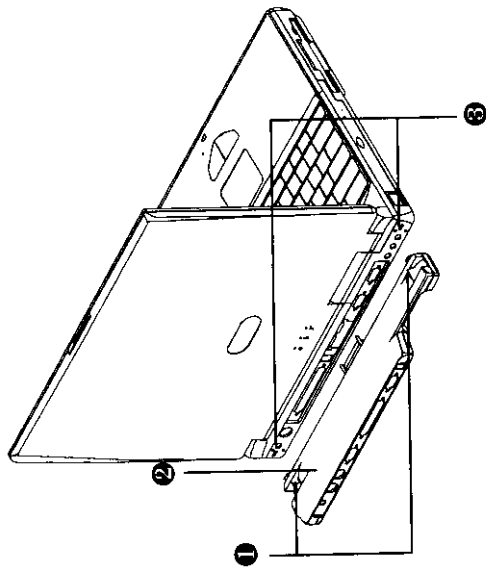
The PortBar is an accessory that duplicates the ports found on the back of your notebook computer. Keep the PortBar in your office connected to peripherals while you take your notebook computer on the road.

Using the PortBar

Follow these steps to install the optional PortBar:

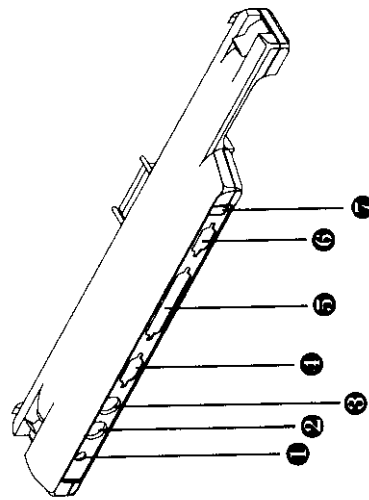
1. Rotate the release bars to the outside.
2. Plug the PortBar into the expansion connector on the back of the notebook computer. Make sure that the PortBar snaps into the PortBar latches on each side of the notebook computer.
3. Rotate the release bars to the center to lock.

PortBar is depicted on the next page.



1. Release bars
2. PortBar
3. PortBar latches

Using PortBar



1. AC Power Port
2. Mini-DIN PS/2 Mouse Port
3. Mini-DIN PS/2 Keyboard Port
4. Serial Port
5. Parallel Port
6. Monitor Port
7. USB Port

PortBar

The ports on the PortBar are described below:

- 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.

Your notebook computer makes a natural traveling companion. Using a battery, you can use the computer anywhere you go. Here is some information you might find helpful.

5.A Disconnecting from Desktop Accessories

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

Follow these steps to disconnect your notebook computer from external accessories:

1. Save your work in progress.
2. Shut down the operating system.
3. Turn off the notebook computer.
4. Disconnect the cord from the AC adapter.
5. Disconnect all external devices such as keyboard, mouse, printer, monitor, and so on.
6. Disconnect the Kensington lock if you are using it to secure the notebook computer.

5.B Moving Around

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

Preparing the Notebook Computer

Before moving the notebook computer, close and latch the cover. Then the computer will automatically enter suspend mode. You can now safely take the notebook computer anywhere you go within the building.

To bring the computer out of the suspend mode, press the power button.

What to Bring to a Short Meeting

A fully charged battery runs the notebook computer for approximately 2 hours under most circumstances. If your meeting is shorter than that, you probably do not need to bring anything with you other than the notebook 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 notebook computer into the Suspend mode whenever you are not actively using the computer.

5.C Taking the Notebook Computer Home

If you are taking the notebook computer to the same place every night, you can save your time and effort by using the tips below:

Preparing the Notebook Computer

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

- Remove all media (e.g. floppy disk, CD-ROM) from the drives. Failure to remove the media can damage the drive head.
- Pack the notebook computer in a protective case that can prevent the computer from sliding around and will cushion the computer if it should fall or drop.

Note: Avoid packing items next to the top cover of the notebook computer. Pressure against the top cover may 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 user's manual

Special Considerations

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

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

the trunk of your car to avoid exposing the computer to excessive heat.

- Changes in temperature and humidity can cause condensation. Allow the notebook 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 before you turn on the computer.

Setting up a Home Office

If you frequently work on your notebook 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 notebook computer at home for significant periods of time, you might also want to add external devices such as keyboard, monitor, mouse and so on.

5.D Traveling with the Notebook 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.

Preparing the Notebook 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 (e.g. floppy disk, CD-ROM)
- Spare, fully-charged battery packs
- Additional printer driver files if you plan to use another printer
- The user's manual

Special Considerations

In addition to the guidelines for taking the notebook 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.

5.E Traveling Internationally with the Notebook Computer

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

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 accessories (e.g. floppy disk, CD-ROM)
- 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 user's manual

Special Considerations

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

6

Solving Problems

Once in a while you may encounter a problem with your notebook computer. If the screen is blank, the instructions don't help, or no error message appears, use the information here to determine and fix the problem. You still may be able to solve the problem yourself!

6.A Problem Checklist

First check the items in the following list. If these items don't help, see the table that follows the list.

- Power is on to the computer.
- The electrical outlet to which your AC adapter is connected is working. Test the outlet by plugging in a lamp or other electrical device.
- All cables are tightly connected.
- The display setting is configured correctly.
- The display's brightness control is adjusted properly.
- If using battery power, check that the battery pack is properly inserted and fully charged.

Troubleshooting

PROBLEM

WHAT TO DO

The system does not power on.

If you are operating the system with battery power, check that the battery pack is correctly inserted. Attach the AC adapter to recharge the battery.

If you have the AC adapter attached, check that the electrical outlet you are using works.

LCD screen is dark and blank.

Power-saving mode has shut off the backlight. So try to recover by pressing any keyboard key. The built-in LCD may not be selected. Press **Fn-F3** once or twice.

Screen brightness needs adjustment. Adjust the control.

The system entered Suspend mode due to low battery power. Plug in the AC adapter before resuming operation.

Troubleshooting

PROBLEM

Battery power does not last long.

WHAT TO DO

Use power-saving modes.

Fully charge and fully discharge the battery several times to precondition it. You may need to use Battery Refresh function under Setup Menu.

Replace the battery.

Adjust the brightness and contrast using the brightness and contrast controls.

Information on the LCD screen is difficult to see.

The Suspend/Resume function does not work.

If the system does not suspend, a disk drive might be busy. Wait until the disk drive stops and try again.

If system does not resume, it may have auto suspended on a low battery. Attach the AC adapter and try again.

If the system still does not Suspend, check that Auto Play is disabled for the CD-ROM drive.

An optional component does not work.

Make sure the component is securely installed or connected. Verify that the system parameter for the I/O port configuration is set correctly in Setup.

6.B Start-up Problems

The system displays an invalid configuration error message at power on when there are the following conditions:

- the current configuration information doesn't match configuration information stored in Setup, such as when an internal option is added.
- the system loses configuration information.

If either condition is true, the system displays an invalid configuration information message.

To continue start-up procedures, press **F2** and run the BIOS Setup utility to set current system parameters.

If an error message appears before the operating system starts, look up the error message in the following table. Follow the instructions. If you see other error messages, the hardware might need repair.

If the system frequently loses the setup configuration data, the internal CMOS battery may need to be replaced at an authorized repair center.

POST Error Messages

The notebook computer has a built-in checking program that automatically tests its components when you turn the system power on. This diagnostic test is called the Power-On Self-Test (POST). If the system finds a problem during POST, the system displays an error message. If this happens, follow the instructions in the POST error message table below.

POST ERROR MESSAGES

ERROR MESSAGE	EXPLANATION
Diskette drive A error	Drive A: is present but fails the BIOS POST diskette tests. Check to see that the drive is defined with the proper diskette type in Setup and that the diskette drive is attached correctly.
Extended RAM Failed at offset: nnnn	Extended memory not working or not configured properly at offset nnnn.
Failing Bits: nnnn	The hex number nnnn is a map of the bits at the RAM address (in System, Extended, or Shadow memory) which failed the memory test. Each 1 (one) in the map indicates a failed bit.
Fixed Disk 0/1/Disk Controller Failure	Fixed disk is not working or not configured properly. Check to see if fixed disk is attached properly. Run Setup to make sure the fixed-disk type is correctly identified.
Incorrect Drive A type - run SETUP	Type of floppy drive A: not correctly identified in Setup.
Keyboard Controller error	The keyboard controller failed test. You may have to replace keyboard or controller.
Keyboard Error Keyboard not working	Keyboard error nn BIOS discovered a stuck key and displays the scan code nn for the stuck key.

POST ERROR MESSAGES

ERROR MESSAGE	EXPLANATION
Operating system not found	Operating system cannot be located on either drive A: or drive C:. Enter Setup and see if fixed disk and drive A: are properly identified.
Parity Check 1 Parity error found in the system bus	BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ????
Parity Check 2 Parity error found in the I/O bus	BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ????
Previous POST did not complete successfully.	POST loads default values and offers to run Setup. If the failure was caused by incorrect values and they are not corrected, the next boot will likely fail. On systems with control of wait states, improper Setup settings can also terminate POST and cause this error on the next boot. Run Setup and verify that the wait-state configuration is correct. This error is cleared the next time the system is booted.
Real time clock error	Real-time clock fails BIOS test. It may require board repair.
Resource allocation conflict on motherboard	Run Configuration Utility Run ISA or EISA Configuration Utility to resolve resource conflict.
Shadow Ram Failed at offset: nnnn	Shadow RAM failed at offset nnnn of the 64k block at which the error was detected.
System battery is dead - Replace and run SETUP	The CMOS clock battery indicator shows the battery is dead. Replace the battery and run Setup to reconfigure the system.
System cache error - Cache disabled	RAM cache failed the BIOS test. BIOS disabled the cache.

POST ERROR MESSAGES

ERROR MESSAGE

System CMOS checksum bad -
run SETUP System

EXPLANATION

CMOS has been corrupted or
modified incorrectly, perhaps by an
application program that changes
data stored in CMOS. Run Setup and
reconfigure the system either by
getting the Default Values and/or
making your own selections.

System RAM Failed at offset:
nnnn

System RAM failed at offset nnnn of
in the 64k block at which the error
was detected.

System timer error

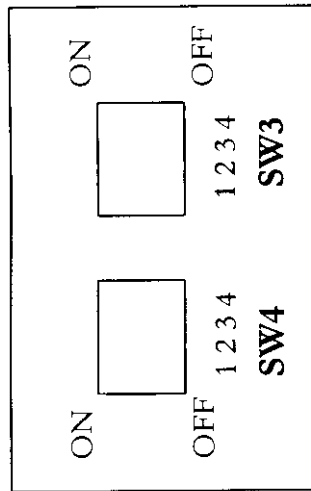
The timer test failed. Requires repair
of system board.

6.C CPU Jumper Setting

If you want to upgrade the CPU, please have your dealer to install a new one.

After a new CPU is installed, you can check if the CPU jumper setting is correct. The CPU jumper, located on the bottom side of the notebook computer, can be accessed from the DIMM door.

Under the DIMM door, you will find two sets of jumpers located beside the SDRAM slots. Jumpers are depicted below:



Jumper Sets

Correct jumper settings are listed in the following tables:

SW4	1	2	3	4
Tillamook CPU	ON	ON	OFF	OFF
PII CPU	OFF	OFF	ON	ON

6.D Password Override

Sometimes, you may forget the password you set before. To solve the problem, you can simply override the password you set by performing the following steps:

1. Unplug AC adapter and pull out battery.
2. Open the DIMM door.
3. Find the SW3 jumper set (depicted in the previous section).
4. Adjust #4 jumper to ON then back to OFF.
5. Close the DIMM door and then power on the notebook computer.
6. You may find BIOS error message. Usually you need to reset the system date and time. Then the system will become normal.
7. The old password is now cleared.

SW3	ON	OFF
#4	CLEAR CMOS (RTC) DATA	RTC BATTERY NORMAL

6.E Power Override

When you have problems in switching off the notebook computer (e.g. sometimes you may find that the system is down), you can solve the problem using the following methods:

- If your power switch is set to "On/Off" in the BIOS setup, press the power button. The system will be switched off immediately.
- If your power switch is set to "Suspend/Resume" in the BIOS setup, press the power button **for four seconds**. Then the system will be switched off immediately.