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Important Safety Instruction

Read all of these instructions, and save these instructions for later use.

- Follow all warnings and instructions marked on the product. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use this product near water. Never spill liquid of any kind on the product.
- Do not place this product on an unstable cart, stand, or table.
- Slots and openings in the cabinet are provided for ventilation, to ensure reliable operation of the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.
- Before connecting this product to a power source, check the required voltage and frequency match the available power source.
- This computer is powered by an internal battery pack or by an external AC power source through an external AC adapter. Use of another battery pack or external AC adapter may present risk of fire or explosion.
- This product is equipped with a 2-wire type plug. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet.
- Do not allow anything to rest on the power cord.
- Do not place this product in a location where someone may trip over the cord.
- If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord ampere rating.
- Never push objects of any kind into this product through the cabinet slots, as they may touch dangerous voltage points or short out parts; that could result in a risk of fire or electric shock.
- Except as explained elsewhere in this manual, do not attempt to service this product yourself.
- Handle battery, floppy and CD-ROM drives with care. If dropped, they may be damaged.
- Do not allow the battery to be exposed to direct sunlight for extended periods of time.

- Do not attempt to disassemble the battery. If the battery is disassembled and the electrodes are exposed to outside, the battery may generate heat and smoke by chemical reaction.
- Do not expose the battery to moisture or chemicals.
- Charge the battery only as described in this document.
- Do not short circuit the battery terminals as the resulting high currents can damage the battery.
- The battery should not be used to power other products.
- Do not dispose of a used battery in a fire or incinerator, as an explosion may result.
- The battery should be recycled.
- Do not subject the battery to temperature less than -20 degrees Centigrade or greater than 50 degrees Centigrade.
- Unplug this product from the wall outlet and refer problems to the service representative under the following conditions:
 - When the power cord or plug is damaged or frayed.
 - If liquid has been spilled into product.
 - If the product has been exposed to rain or water.
 - If the product does not operate normally when the operating instructions are followed, adjust only those controls that are covered by the operating Instructions. Improper adjustment of other controls may result in damage.

Battery Disposal

Warning : Do not put rechargeable batteries or products powered by non-removable rechargeable batteries in the garbage.

Contact your customer service representative for information on how to dispose of batteries that you cannot use or recharge any longer.
Follow all local regulations when old batteries.

Federal Communications Commission (FCC)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two 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.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generate uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions may cause harmful interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet helpful: "Something About Interference." This is available at FCC local regional offices. Our company is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by our company. The correction will be the responsibility of the user. Use only shielded data cables with this system.

Canadian Radio Interference Regulations

This apparatus does not exceed the class B limits for radio noise emissions set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil n'émet pas de bruits radioélectriques dépassant les limites applicable aux appareils de la classe B prescrites par le règlement de brouillage radioélectrique dicté par le Ministère des Communications du Canada.

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Using Your Documentation

Congratulations on your purchase of a portable computer! Whether you are new to using a portable computer or are an experienced user, your documentation can help you get the most from your computer. Your computer comes with the following documentation:

- The *User's Manual*
- Third-party software user documentation

The following sections tell you where to look for the information you need.

This User's Manual

This user's manual can help you to

- Learn how to use your computer.
- Learn safety and maintenance tips.
- Learn how to configure your computer.
- Get answers to troubleshooting questions.

Special Features of the User's Manual

Three types of messages with icons appear in the manual:



A note informs you of special circumstances.



A caution warns you of possible damage to equipment.



A warning indicates the possibility of personal injury.

Keys that you need to press to perform certain functions are shown in the manual enclosed in angle brackets. For example,

<Ctrl>

indicates the control key (Ctrl on the computer's keyboard).

If you need to press two keys at the same time, the key names are shown joined by a plus sign. For example,

<Fn+F11>

means that you should press the Fn key and hold it and then press the F11 key.

If you are new to using computers, see the Glossary. The Glossary explains general computing terms that are used in this manual and tells you about some of the differences between portable computers and desktop computers.

Using the Software Documentation

Your computer shipped from the factory with several software programs installed. The software may include its own online or printed documentation. Refer to the documentation or the Help options in the software for more information.

Introducing Your Computer

Your computer is an ultra-thin lightweight portable computer that includes features to meet your computing needs at home or on the road. A port replicator is supplied with each computer, see Figure 12 on page 21 for more information.

Figure 1 through 3 shows you the features of your computer.

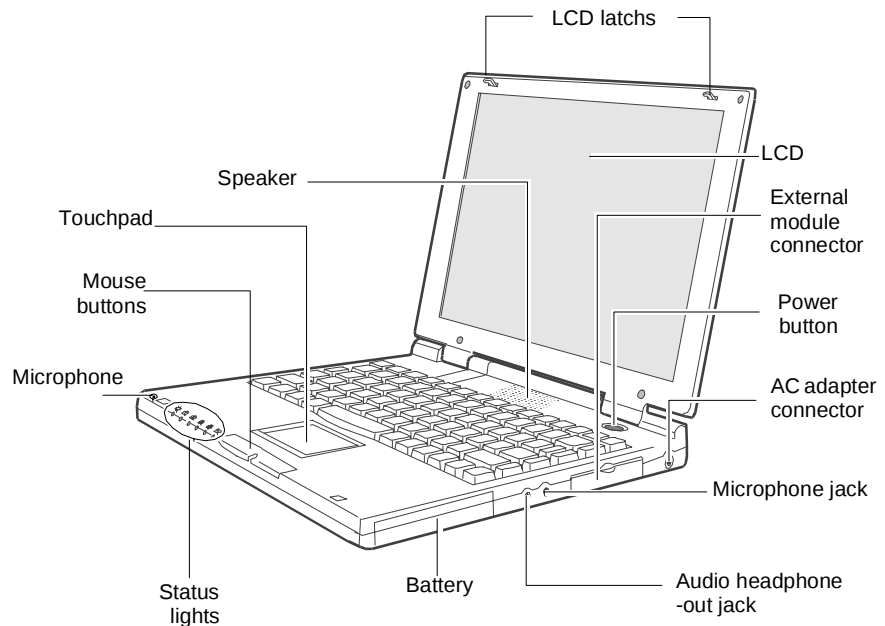


Figure 1. Front View of Computer

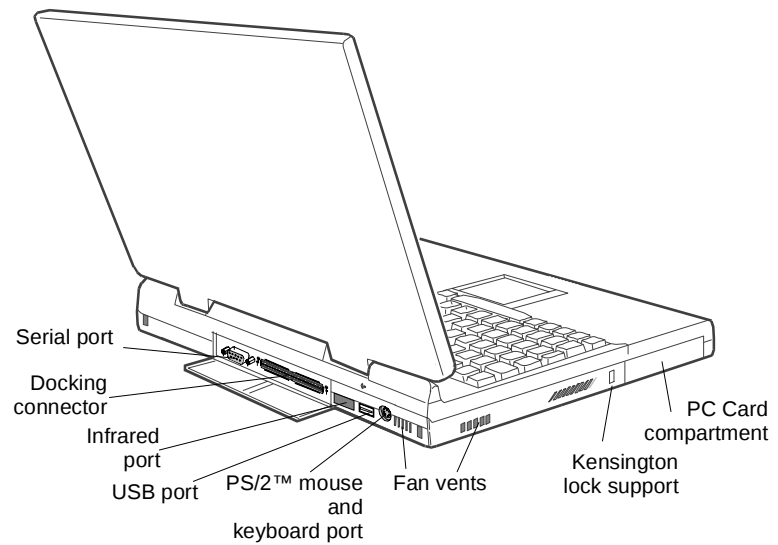


Figure 2. Back View of Computer

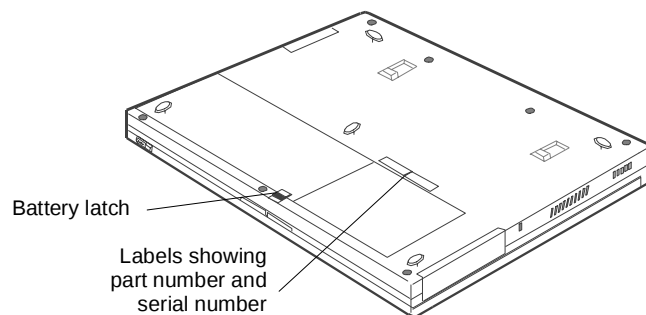


Figure 3. Bottom View of Computer

Using Your Computer for the First Time

This section gives you detailed information on using your computer for the first time.

Attaching the AC Adapter

Your computer runs on power from the battery that came installed in the computer or from an electrical outlet. The first time that you use your computer, fully charge the battery by attaching the AC adapter to the computer and to an electrical outlet. Your AC adapter can accept an input voltage of 100 to 120 V AC or 200 to 240 V AC.



All batteries lose their charge if they sit unused for an extended time period. When not used, the provided battery can discharge fully in 2 to 3 months. The battery may have discharged in the time it took for the computer to go from the factory to you.

To attach the AC adapter:

1. Plug the AC adapter into the power connector on the right side of the computer (Figure 4).
2. Connect the power cord to the AC adapter and then to an electrical outlet.

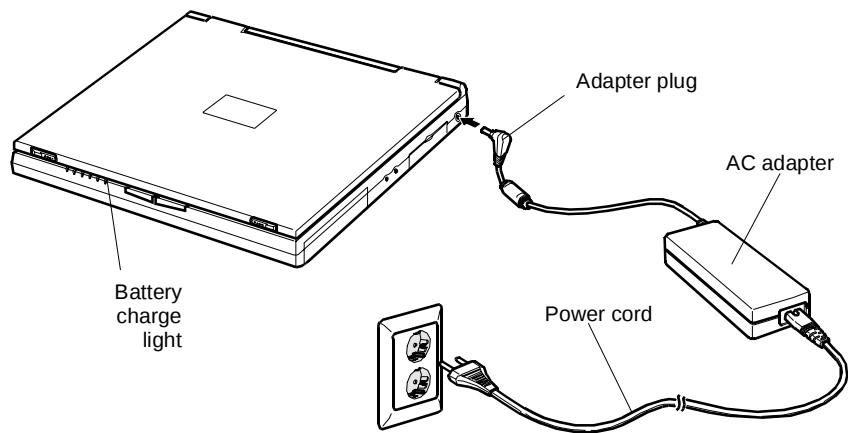


Figure 4. Connecting the AC Adapter

The battery starts charging as soon as you plug the AC adapter into an electrical outlet. The battery charges faster if the computer is turned off during charging.

If the battery is fully depleted and the computer is turned off, the battery charges in about 2.5 hours. If the computer is turned on, the battery charges in about 4 hours. When the battery is charging, the battery charge light is amber. When the battery is fully charged, the light turns green.

See "Using the Battery" on page 34 for more information on using your computer's battery.

Turning On the Computer

To turn on the computer's power for the first time:

1. Slide the LCD cover latches apart and hold them (Figure 5).
2. Lift up the LCD cover.

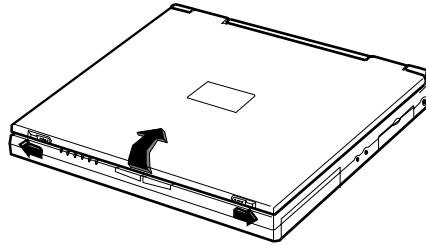


Figure 5. Opening the Computer

3. Press and then release the power button (Figure 6).

The power light is on when the computer's power is on.

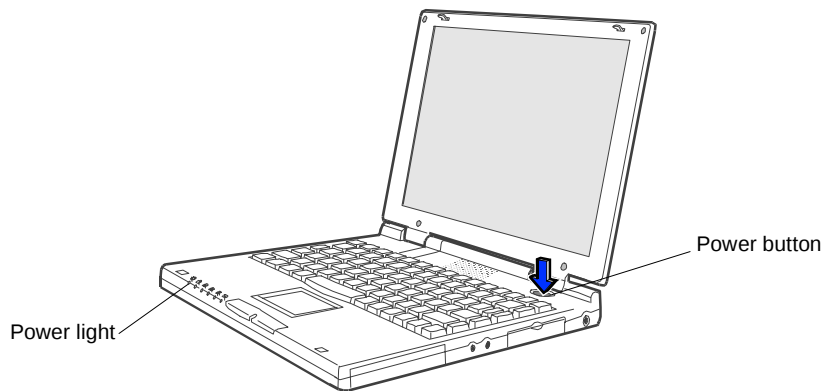


Figure 6. Turning On the Computer's Power

Understanding POST

When you turn on your computer, a routine called POST automatically runs to test the computer components. The Manufacturer's logo appears on the screen during POST, if you press the *ESC* key while the logo is displayed you will see several messages on the screen (see "Boot Menu" on page 51 for information on disabling the logo screen).

Screen messages are built into the computer to report both normal and abnormal system conditions. If an error message appears, take any action suggested in the message. If the message identifies the error condition but does not suggest any corrective action, write down the message and contact the manufacturer or an authorized manufacturer's service center for assistance.

Adjusting the LCD Display

You may wish to adjust the LCD display when you begin using your computer. A TFT LCD does not require adjustment for contrast because the contrast is set to remain at maximum.

To adjust the brightness of the LCD:

- Press <Fn+Right Arrow> to increase the display brightness.
- Press <Fn+Left Arrow> to decrease the display brightness.

Turning Off Your Computer



If your computer has a Windows operating system, turn off your computer by performing the shutdown procedure described in this section. Otherwise, you may lose data.

To turn off the computer:

1. Click Start on the taskbar.
2. Click *Shut Down*.
3. Select the shut down option.
4. Click OK or Yes.
 - If the operating system is Windows 98, the computer turns off.
 - If the operating system is Windows NT, you receive a shutdown message and must press the power button to turn off the computer.

Restarting Your Computer

You may need to restart (reboot) your computer when installing hardware or software or if the computer does not respond to your input. A warm (or soft) boot prompts you to save your files, turns off the computer, and then restarts the computer. A cold boot turns off the computer without saving your files.



Do not perform a cold boot unless your keyboard and touchpad have no effect and you cannot perform a warm boot.

When you perform a cold boot, you lose data unless it was saved to a storage medium.

To perform a warm (or soft) boot:

1. Click the Start button on the taskbar.
2. Click *Shut Down*.
3. Select *Restart the Computer*.
4. Click the Yes button.
5. Save your files if prompted. Your computer reboots.

You can also perform a soft boot by saving your files and pressing <Ctrl+Alt+Del> and then clicking on *Shut Down*.

You can perform a cold (or hard) boot by pressing the power button to turn the computer off, waiting five seconds, and then pressing the power button to turn the computer on.

Tips for Using Your Computer

The following information helps you avoid potential problems as you use your computer:



Do not try to disassemble your computer. Opening the system chassis voids your warranty. Only an authorized manufacturer's service center can replace or add any parts inside the chassis.

- Follow all the instructions and cautions in your computer user documentation.

- The LCD has a polarized surface and can be damaged easily. To prevent damage, avoid touching the screen.
- Use only manufacturer approved AC adapters, automobile adapters and memory modules.
- Because a portable computer is small and has restricted air flow around components, it is more likely to overheat than a desktop computer. A fan inside your computer helps to eliminate some heat. Make sure the fan vent on the side of your computer is not blocked when you use the computer. (See Figure 2 on page 4 for the location of the vent.) Occasionally check the vent and remove any accumulated dust on the outside.
- Avoid using or storing the computer in extremely hot or cold areas, such as a car on a hot day. Keep the computer away from heaters and out of direct sunlight. Exposure to excessive heat may damage computer components.
- If you have left your computer in a hot place, let it cool down slowly to room temperature (with the LCD panel open) before using it.
- Set up your computer work area to avoid physical strain. Sit with your back straight and supported by your chair. Adjust your chair or work table so that your arms and wrists can remain in a relaxed position, parallel with the floor. Avoid bending or twisting your wrists as you work. Your hands should “float” slightly above the keyboard. Refer to a book on office ergonomics for more information on setting up your work area.
- Take frequent breaks from working at the computer to rest your eyes and stretch your muscles.
- Remember to save your data files frequently and to make backup copies of your files.

Traveling with Your Computer

If you are traveling by airplane, follow these tips:

- Take the computer with you as carry-on luggage. Do not check the computer with your baggage.
- Allow the computer and disks to go through the X-ray security devices. Do not hand-carry disks through the walk-through metal detectors, which can cause loss of data.
- Make sure that the battery is charged or the AC adapter is easily accessible. You may be required to turn on the computer for airport security personnel.
- Be prepared to turn off the computer during take off and landing.

Handling Spills

Do not spill anything on your computer. The best way to avoid spills is to avoid eating and drinking around your computer. If you do spill something on your computer, turn off your computer, unplug it immediately, and do the following:

- If you spill liquid on the internal keyboard or any external devices (such as the floppy drive), drain as much of the liquid as possible. Be careful not to let the liquid drip onto the LCD panel. Allow the system to dry for several days before trying to use it.
- If you spill liquid on an external keyboard or keypad, unplug it and drain as much of the liquid as possible. Allow the keyboard to sit at room temperature for a full day before trying to use it.



Sweet liquids leave a sticky residue that may cause damage despite your efforts to dry.

- If you spill liquid on the LCD panel, clean it immediately with a soft cloth and denatured alcohol. Do not use water, window cleaner, acetone, aromatic solvent, or dry, rough towels to clean it.



Some liquids damage the polarized LCD screen. If your screen is damaged, contact your authorized manufacturer's service center for a replacement.

Storing the Computer for Long Periods

If possible, leave the AC adapter connected to the computer when the computer is not in use. This helps extend the life of the battery and keeps the battery fully charged.

If you will not be using the computer for an extended period of time (a month or more), you should charge the battery until it is completely full. After you have done so, remove the battery from the unit.

Using the Keyboard

Your computer has an 87/88-key keyboard (Figure 7). By pressing designated key combinations, you can have access to all the key functions of a full-sized keyboard.

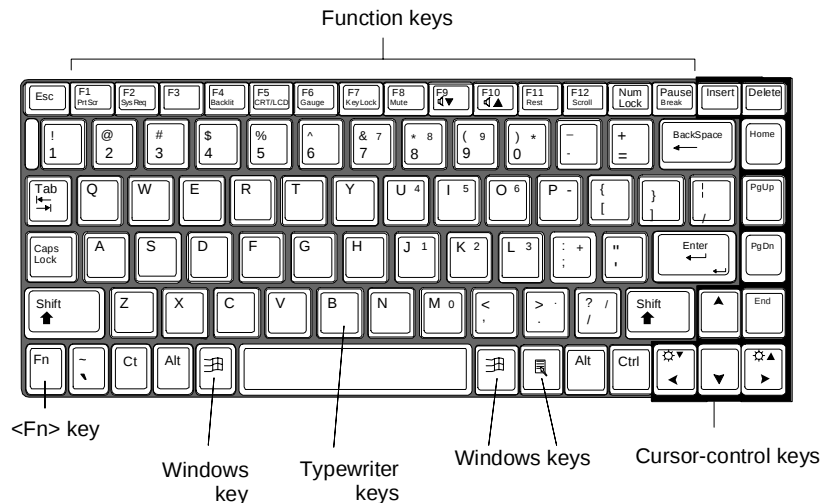


Figure 7. Keyboard



Although the layout of the keys on your computer's keyboard is different from that on a desktop computer's keyboard, the keyboard feels like a full-sized keyboard when you use it. The distance between the keys (the pitch) is the same as on a full-size keyboard (19 mm). The travel, or space the key goes down when pressed, is (2.5 mm).

The keys on the keyboard can be grouped into the following categories:

- Full-sized typewriter keys are arranged like a standard typewriter keyboard and are used for text entry.
- Function keys, when pressed together with the <Fn> key, enable special functions.

- Cursor control keys move the cursor. They may perform other functions, depending on your software.
- Windows keys open Windows menus and perform other special functions.

To clean the computer keyboard, use slightly damp cotton swabs. Scrub the keys and the surface around the keys. Do not allow liquid to drip into the keyboard or you may damage the keyboard.

Using the Numeric Keypad

Your keyboard includes a numeric keypad, which is a group of keys that you can set to type numbers and mathematical symbols, such as the plus sign (Figure 8). A number or symbol on the right corner of each keypad key shows its numeric function.

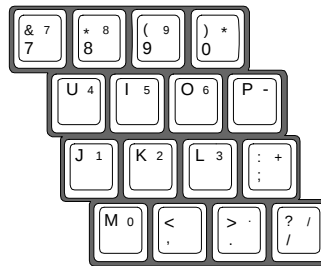


Figure 8. Numeric Keypad

Press <Num Lock> to turn on the embedded numeric keypad. The numeric functions of the keypad are enabled and the Num Lock light turns on.

While the numeric functions are enabled, you can temporarily return a key to its normal function by pressing <Fn> and the key. For example to type the letter *m*, press <Fn+m>.

To turn the numeric keypad off, press <Num Lock> again. The Num Lock light turns off.

Using Special Function Keys

The <Fn> key activates special functions when it is pressed in combination with another key. Table 1 shows the special key combinations.

Table 1. Description of Special Function Keys

<Fn> Key Combination	Function
<Fn+F1>	<i>Print screen</i> : In Windows 98 or Windows NT, takes a picture of the open screen and puts it on the clipboard.
<Fn+F2>	<i>System request</i> : Reserved for use in software programs.
<Fn+F4>	<i>Backlight</i> : Turns the LCD display off. Press any key (except the <Fn> key) to turn the LCD display back on.
<Fn+F5>	<i>CRT/LCD</i> : Switches the display between the LCD, the external monitor, and simultaneous display on both the LCD and the external monitor.
<Fn+F6>	<i>Gauge</i> : Displays the battery gauge in the upper-right corner of your screen. The gauge closes in a few seconds or by pressing <Esc> key. (See "Monitoring the Battery Charge" on page 37 for more information on the battery gauge.)
<Fn+F7>	<i>KeyLock</i> : Locks the keyboard and activates password protection. Type the user or supervisor password and press <Enter> to unlock the keyboard. If the supervisor password was entered on boot only the supervisor password will unlock the system. The <Fn+F7> key combination has no effect unless a password is enabled in System Setup. The Num Lock, Caps Lock, and Scroll Lock lights blink in sequence when the keyboard is locked.
<Fn+F8>	<i>Mute</i> : Turns the audio output on and off.
<Fn+F9>	<i>Volume down</i> : Decreases the audio volume.
<Fn+F10>	<i>Volume up</i> : Increases the audio volume.
<Fn+F11>	<i>Rest</i> : Puts the computer into rest or suspend mode. To resume normal operation from rest, press the power button. (See "Power Menu" on page 49 for more information about the rest mode.)
<Fn+F12>	<i>Scroll</i> : In some applications, sets the cursor-control keys to scroll the page up or down while the cursor position does not change. Pressing <Fn+F12> again turns off the scrolling function.

<Fn+Right Arrow> *Brightness up:* Increases the LCD brightness.

<Fn+Left Arrow> *Brightness down:* Decreases the LCD brightness.

Using the Touchpad

Your computer is equipped with the SmartPoint™ touchpad, which is an integrated-pointing device that is used to perform standard mouse functions (Figure 9). The touchpad is an advanced and reliable pointing device that works with a touch of your finger.

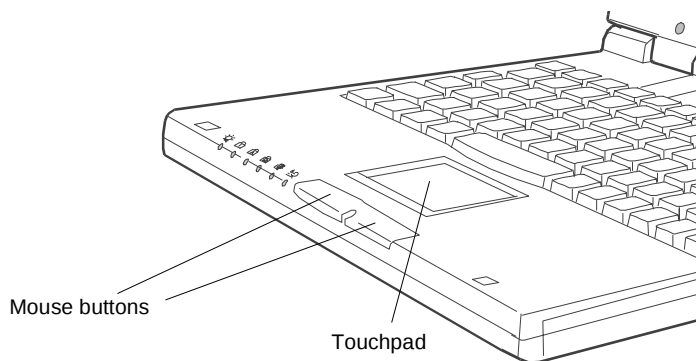


Figure 9. Touchpad

To use the touchpad:

- Place your finger on the pad and move your finger in the direction you want the cursor to move. The faster you move your finger, the faster the cursor moves across the screen.
- Roll your finger from side to side to move the cursor short distances.
- Quickly tap your finger on the touchpad to click an item.
- Tap your finger twice to double-click an item.
- Tap and drag your finger on the touchpad to click and drag an item.
- Press on the touchpad gently. The touchpad responds to light pressure.

You can also use the buttons at the bottom of the touchpad in the same way you use standard mouse buttons.

For information on attaching and using another pointing device or keyboard with your computer, “Connecting Peripheral Devices” on page 20

Reading the System Status Lights

System Status lights show the status of computer functions. The lights appear on the left edge of the computer (Figure 10).

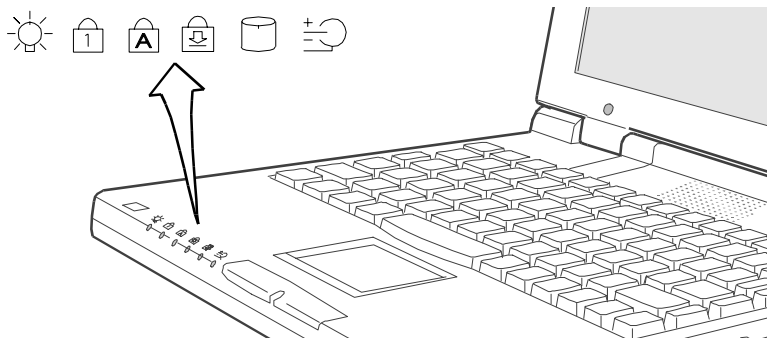


Figure 10. System Status Lights

Table 2 describes the meaning of the lights.

Table 2. System Status Lights

Icon	Function of Light
	<i>Power light:</i> Light is on when the computer's power is on. The light blinks between green and amber when the battery is low. The light changes to amber when the system is power-on-suspend mode. The power light is off if the system is turned off or is in rest mode.
	<i>Num Lock light:</i> Light is on when the embedded numeric keypad is activated. See "Using the Numeric Keypad" on page 13 for a description of the keypad.
	<i>Caps Lock light:</i> Light is on when the caps lock function is activated. When the function is activated, all alphabetic characters you type will be in upper case.



Scroll Lock light: Light is on when the scroll lock function is activated. The scroll lock function affects cursor movement and text scrolling in some applications. This is a software specific key. Refer to the appropriate software manuals for a description of the <Scroll> key.



Drive light: Light is green when the hard drive is being accessed. Do not turn your computer off when this light is on. For a floppy or CD-ROM drive, check the light on the drive itself to see if the drive is being accessed.



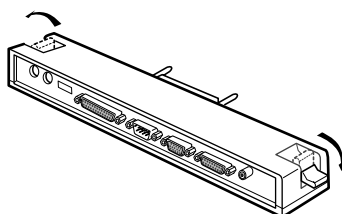
Battery charge light: Light gives information about the battery charge when the AC adapter is connected. When the battery is charging, the light is amber. When the battery is fully charged, the light turns green.

Connecting the Port Replicator

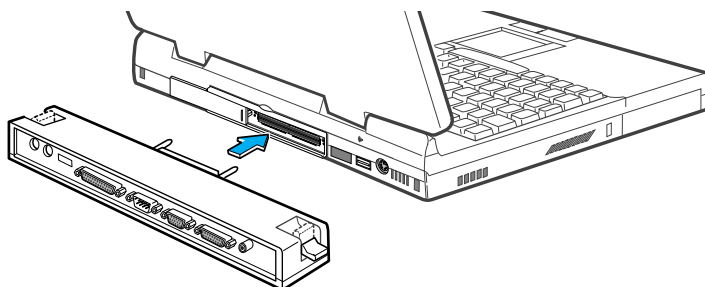


Turn off your computer before you connect or disconnect the port replicator, failing to do this may seriously damage your computer.

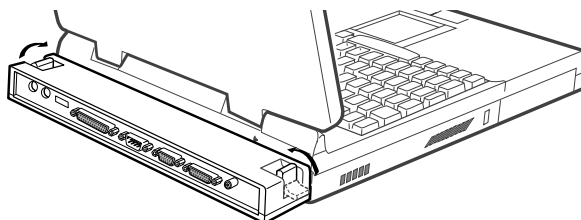
1. Close rear port door and slide the inner door open.
2. Move the 2 latches on the Port Replicator into the down position.



3. Insert the Port Replicator.



4. Move the latches on the Port Replicator into the up position.



Connecting Peripheral Devices

The connectors on your computer enable you to attach peripheral devices to the computer (Figure 11), additional connectors are available if you also use the factory supplied port replicator (Figure 12).



Turn off your computer before you connect a peripheral device. Connecting a peripheral device with your computer turned on may seriously damage the device or your computer.

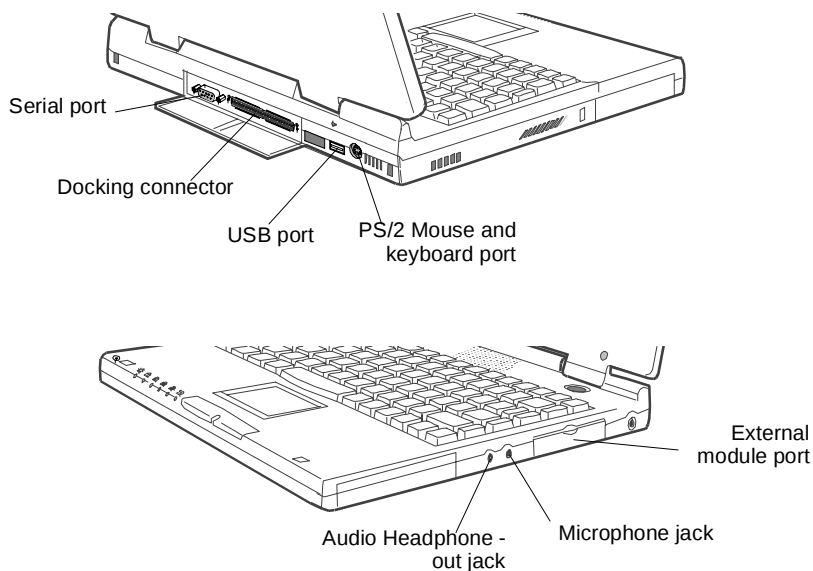


Figure 11. System Peripheral Connectors

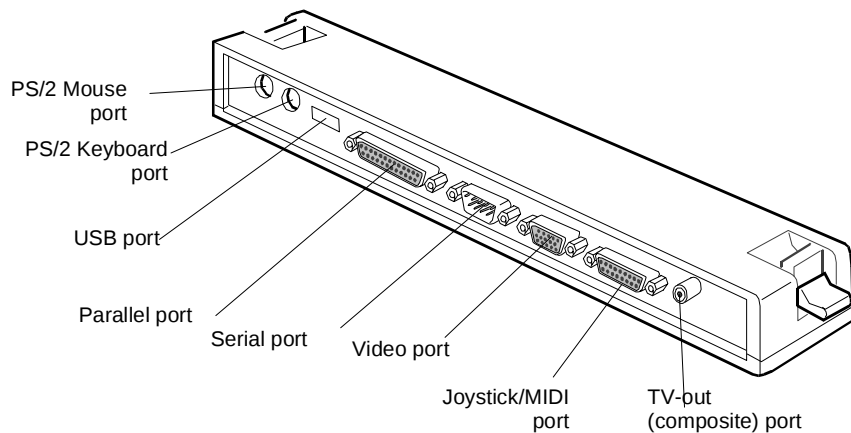


Figure 12. Port Replicator Peripheral Connectors

Table 3 shows the icons located near each connector and tells you the devices that you can attach to the connectors.

Table 3. Connecting Peripheral Devices

Icon	Connector
	<i>Serial port:</i> Plug a serial device, such as a serial printer, into this 9-pin port. If the device has a 25-pin connector, you need a 25-to-9-pin serial adapter.
	<i>Docking connector:</i> Connect a docking option to this connector. See "Docking Options" on page 80 for more information.
	<i>USB port:</i> Connect USB devices to this port. USB input/output devices include keyboards, pointing devices, and monitors.



PS/2 mouse and keyboard port: Connect a PS/2-compatible mouse or external keyboard or keypad to this port. Make sure your computer is turned off when you attach peripherals to the port.

You can use the computer's touchpad and a PS/2 keyboard at the same time. If you attach a PS/2 mouse to the port, the computer's touchpad may be disabled.



Audio headphone-out jack: Connect stereo headphones or speakers to this jack. Speakers connected to this jack override the onboard speakers.



Microphone jack: Connect an external microphone to this jack.

External module port: Connect one end of the external module cable to this connector and the other end to the external module. See "Connecting External Modules" on page 25 for more information.



Mouse port: Connect a PS/2-compatible mouse to this port. Make sure your computer is turned off when you attach peripherals to the port.

If you attach a PS/2 mouse to the port, the computer's touchpad may be disabled.



Keyboard port: Connect an external keyboard or keypad to this port. Make sure your computer is turned off when you attach peripherals to the port.



Parallel port: Plug a parallel device, such as a parallel printer or network adapter, into this 25-pin port.



Video port: Plug the interface cable of an external monitor into this 15-pin connector and then plug the monitor power cord into a grounded outlet.



Joystick/MIDI port: Connect a joystick or other game pointing device to this port. You can also connect a MIDI device to this port.



TV-out (composite) port: Plug an RCA or Phono plug connector from this port into an external monitor to get video only. No audio is transmitted via this port. You cannot enable TV Out display unless the current screen resolution is lower than 1024x768.

Using the TV-out (composite) Port

This feature is only available with Windows 98. Using the TV-out (composite) port on the port replicator, a compatible TV or other compatible display device can be connected and an image displayed. To check if and how your TV displays the TV-out (composite) signal see the documentation included with your TV.



You cannot enable TV Out display unless the current screen resolution is lower than 1024x768, See "Resolution and Color Depth" for information on changing your screen resolution.

To enable TV-out:

1. Enter System Setup and under the Advanced menu, set *TV Standard* to the appropriate standard for your TV. (See "Using System Setup" on page 40 for information on setting options.)
2. Reboot your computer.
3. Connect the TV to the TV-Out (composite) port using an appropriate cable, Figure 13 on page 24
4. Click the *Start* button on the Windows 98 taskbar.
5. Select *Settings*.
6. Click *Control Panel*. The Control Panel window appears.
7. Double-click the *Display* icon. The Display Properties window appears.
8. Click the *Settings* tab. The Settings screen appears.
9. Click the *Advanced Properties* button. The Advanced Properties screen appears.

10. Click the *Displays* tab. The system will now try to detect a TV connected to the TV-out (composite) port.
11. Put a tick in the box under the TV symbol



If the TV symbol is grayed out then the system has not detected a TV, check that the TV standard in the BIOS is set correctly and that the TV is connected properly.

12. Click *OK* and follow the prompts that appear on the screen.

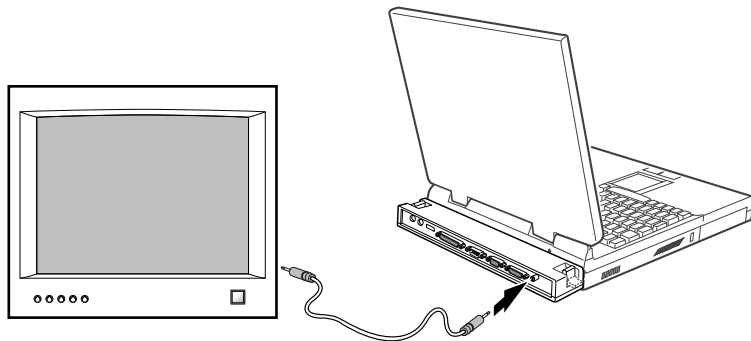


Figure 13. Attaching a TV to the TV-out (composite) port

Connecting External Modules

This computer ship from the factory with an external floppy drive module. For information about the optional CD-ROM and DVD-ROM drives, see “Using Options” on page 77. These devices are connected to the computer’s external module port using the external module cable.



If your operating system is Windows 98 you can use the SmartBay utility to hot-swap the external modules. If you do not use Windows 98, make sure that the computer’s power is off before you remove or install any external modules.

Only one external module can be used at any one time. Attach one end of the external module cable to the module and the other to the external module port on the computer (Figure 14).

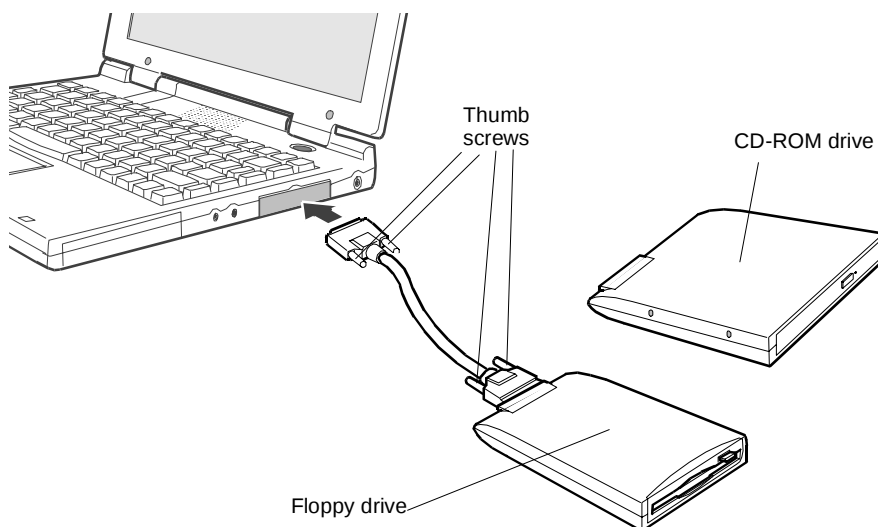


Figure 14. Attaching the External Modules to the Computer

The external module cable must be inserted as shown in Figure 14. To insert the cable correctly, make sure that

- The cable connector labeled *System* is connected to the Computer.

- The cable connector labeled *Unit* is connected to the external module.
- Secure the cable by tightening the thumbscrews.

Your computer's operating system automatically recognises the device in the SmartBay and configures your computer accordingly.



If the cable does not fit easily, do not force it. Make sure you have the correct end of the cable going to the computer and to the external module.

To remove the cable:

1. Loosen the thumbscrews
2. Pull the cable connectors away from the external module and the computer.

Using the SmartBay Utility

If your computer shipped with Windows 98, you can use the SmartBay utility to hot-swap your external modules.

To open the SmartBay utility

1. Double click *SmartBay Hotswap Utility* on the Windows.

To remove an external module:

1. Open the *SmartBay Hotswap Utility*.
2. Select *Remove Device* and click *Ok*.
3. Click *Yes* on the confirmation screen
4. Remove the external module by either disconnecting the cable from the computer or from the external module.
5. Click *Ok*.

To insert an external module:

1. Open the *SmartBay Hotswap Utility*.
2. Select *Insert Device* and click *Ok*.
3. Connect the external module to the computer using the external module cable. Make sure all connectors are correctly attached.
4. Click *Ok* to allow your computer to detect the external module.

If you have difficulty in getting an external module detected, go through the remove procedure and then the insert procedure again.

Using the Floppy Drive

The computer comes with an external 1.44-MB, 3.5-inch, high-density floppy drive, which can read, write to, and format the following disks:

- A high-density, 3.5-inch disk, which stores 1.44 MB of data.
- A double-density, 3.5-inch disk, which stores 720 KB of data.



The floppy drive in your portable computer is smaller but more power-efficient than a floppy drive in a desktop computer. To get the best performance from your floppy drive, handle the drive carefully when installing or removing it and use high-quality floppy disks.

The floppy drive connects externally to your computer by cable to a connector on the outside of the computer. For information on installing the floppy drive, see “Connecting External Modules” on page 25 and “Using the SmartBay Utility” on page 26

To use a floppy disk, insert it into the floppy drive (Figure 15).

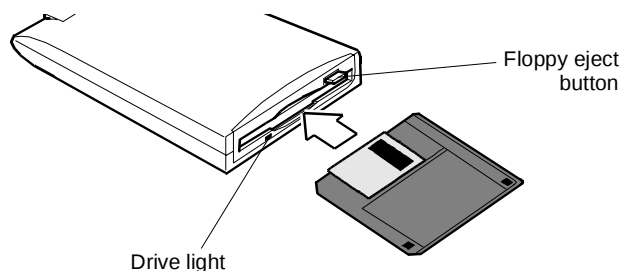


Figure 15. Inserting a Floppy Disk

To remove a floppy disk, press the eject button on the floppy drive.

The drive light on the floppy drive is green when the computer writes to or reads from a floppy disk. Do not remove a disk when this light is on.

To protect the data on your floppy disks, follow these guidelines:

- Keep disks away from excessive heat, direct sunlight, and liquids.

- Keep magnets and any device that contains a magnet (like the telephone) away from your disks.



Magnetic fields can destroy the information on a disk.

- Do not write directly on a label on your disk; instead, write on a disk label first and attach the label to the disk.
- Make copies of all your important disks.

Using the CD-ROM Drive

The external CD-ROM drive module must be purchased separately, see “Using Options” on page 77. The CD-ROM drive connects externally to your computer by cable to a connector on the outside of the computer. For information on installing the CD-ROM drive, see “Connecting External Modules” on page 25 and “Using the SmartBay Utility” on page 26

Compact discs are designed so that you can easily insert one into the computer when you need it, and then remove it:

1. Press the button on the CD-ROM drive, and the tray slides out. (Do not lean on the tray; it does not support much weight.)
2. Insert a CD, label side up (or remove a disc, if you have finished using it).
3. Push the tray in gently to close the drive tray (Figure 16).

A light on the drive tray is on when the computer is reading from a CD. Do not remove a disc when this light is on.

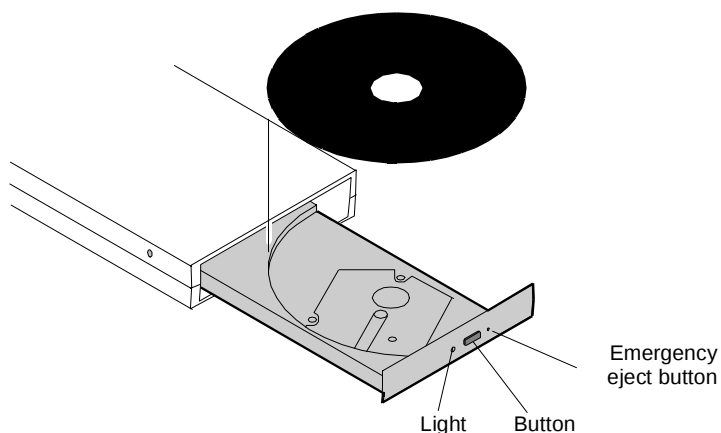


Figure 16. Using the CD-ROM Drive

Install and start a CD-based program as you would a program on a floppy disk. See your operating system documentation for more information on running programs.

The name of the CD-ROM drive is the letter following the letter assigned to your last hard drive. For instance, if you have one hard drive with only one hard drive partition, the hard drive is drive C and the CD-ROM drive is drive D.

If necessary, you can use the emergency eject button to open the CD-ROM drive. To use the emergency eject button, turn the computer's power off and insert a small object, like a bent paperclip, into the hole to press the button.



Do not place reflective objects in the disc slot because of possible hazardous laser emissions.

The laser beam used in this CD-ROM drive is harmful to the eyes. Do not attempt to disassemble the CD-ROM drive. Refer servicing to your authorized manufacturer's service center.

The on-board audio hardware and software of your computer enable the computer to play audio compact discs. If you wish to do so, you can attach external speakers to the audio-line-out jack.

To play an audio compact disc:

1. Insert a compact disc into your CD-ROM drive:
 - a. Press the button on the CD-ROM drive, and its tray slides out.
 - b. Insert a CD, label side up.
 - c. Push the tray in to close the drive tray. The CD Player button appears on the taskbar.

The disc begins to play.

A light on the drive tray is on when the computer plays a CD. Do not remove a disc when this light is on.

2. To adjust the sound, press the following key combinations:
 - <Fn+F8> mutes the volume.
 - <Fn+F9> decreases volume.
 - <Fn+F10> increases volume.

To remove the CD:

1. Click the CD Player button on the Windows taskbar to open the CD Player window (Figure 17).

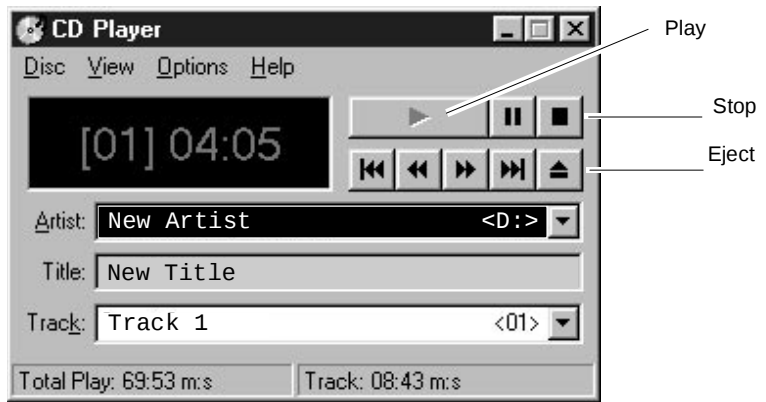


Figure 17. CD Player Window

2. Click the Stop button in the CD Player Window.
3. Click the Eject button on the CD Player window or press the button on your CD-ROM drive. The drive tray opens and you can remove the disc from the CD-ROM drive.

For more information on playing compact discs, see the Help menu in the CD Player window.

Using the Hard Drive

Your computer includes an IDE hard drive. The IDE hard drive can store the data and programs your computer uses.

Although the storage capacity of hard drives varies according to model, any hard drive holds much more than a floppy disk does. Also, the computer reads and works with a hard drive more rapidly than with a floppy disk.

Once information is saved on a hard drive, it remains there until it is overwritten. The hard drive heads park automatically when you turn off your computer.



The hard drive that comes with your computer has already been formatted. Do not format the hard drive. Doing so destroys all data contained on the drive. If you need to format or erase all data on your hard drive, refer to the manual for your operating system.

The drive in your computer is divided into partitions. Each partition is 2 GB or less so that the partitions can use a 16-bit file allocation table (FAT-16). The file allocation table enables the partitions to locate files and directories. Your computer recognizes each partition as a separate drive, for example, if a hard drive has two partitions, they could be recognized as drive C and drive D.

Although Windows 98 can work with FAT-16 or FAT-32 (a 32-bit file allocation table), your computer has been supplied with FAT-16 as there are software compatibility issues with FAT-32. Older software that you may have (16-bit software) may require FAT-16 to run. Similarly Windows NT 4.0 can use FAT-16 or NTFS (the Windows NT file system). There are utilities included with Windows 98 and Windows NT 4.0 to convert from FAT-16 to FAT-32 or NTFS, see the documentation included with your operating system for more information.



It is not possible to convert from FAT-32 or NTFS to FAT-16 without reformatting your hard drive.

Using the Battery

Your computer uses a smart rechargeable lithium-ion battery pack for power when the AC adapter is not attached to an electrical outlet. The smart battery gives a accurate measurement of the current battery capacity which helps extend operating time by enabling effective power management in operating systems that take advantage of the accurate information supplied by the battery.

Charging the Battery

Your computer's battery starts charging automatically when you connect the AC adapter to the computer. If the computer is off, the battery charges faster than if the computer's power is on.

Approximate charging times for your battery are:

- 2.5 hours with the computer off
- 4 hours with the computer on

While the battery is charging, the battery charge light on the computer is amber (see Figure 10 on page 17 for the location of the battery charge light). When the battery is fully charged, the light changes to green.

When you use a new battery pack for the first time or use a battery after a long period of storage, the initial battery life is shorter than normal. Normal battery life resumes after a few discharge-recharge cycles, see Battery Calibration in “Exit Menu” on page 51 for more information on discharging the battery.



All batteries eventually wear out and lose the ability to hold a charge. You may need to replace your battery pack after a year of average usage.

Follow these rules for charging your battery:

- A battery normally discharges power when not used for long periods of time. Be sure to recharge the battery every two months when it is not in use.
- Make it a practice to discharge your battery fully before recharging the battery. This can help extend the life of the battery.
- Do not attempt to charge the battery in temperatures of under 41° F (5° C) or over 95° F (35° C.)

Safely Using the AC Adapter and Batteries

Follow these guidelines to safely use the AC adapter and batteries:

- Turn your equipment off and unplug the AC adapter if you accidentally:
 - Expose the equipment to liquid.
 - Drop, jar, or damage the computer.
- Use only manufacturer-approved batteries, AC adapters and auto adapters.
- Do not disassemble the battery, heat it above 122° F (50° C), or burn it. The battery used in this computer may cause a fire or chemical burn if mistreated.
- Your computer's smart rechargeable battery may be considered hazardous waste. If you replace your battery with a new one:
 - Keep the old battery out of the reach of children.
 - Dispose of the old battery promptly.
 - Make sure that you follow all state and local requirements when you dispose of the old battery.

Removing and Inserting the Battery

Your computer comes with the battery pack inserted. To remove the battery pack:

1. Turn the computer's power off.
2. Close the LCD panel and turn the computer over so that the bottom of the unit faces up.



Before turning the computer upside-down disconnect all cables and adapters to reduce risk of accidental damage to the connectors on the computer.

3. Slide the battery release latch toward the front of the computer (Figure 18).

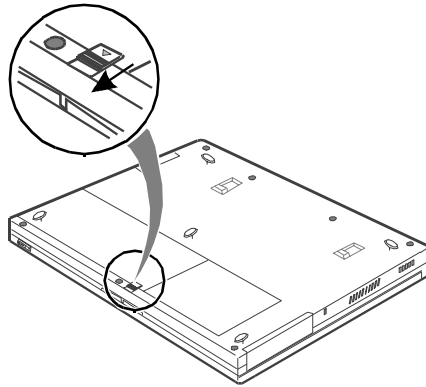


Figure 18. Sliding the Battery Release Latch

4. Grasp the edge of the battery and pull the battery out of the compartment.

To reinsert the battery pack:

1. Turn the computer's power off.
2. Close the LCD panel and turn the computer over so the bottom of the unit faces up.
3. Slide the battery pack into the compartment until it snaps into place, see Figure 19.

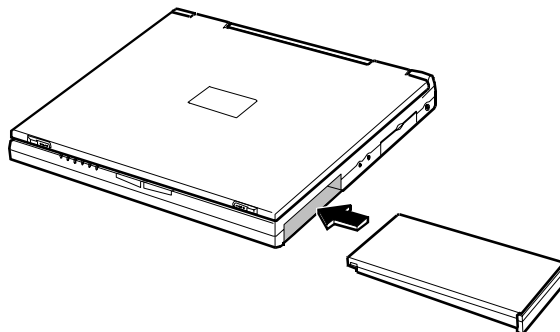


Figure 19. Inserting the Battery

Monitoring the Battery Charge

Battery life is affected by factors such as the power-management settings in System Setup, the applications you use, and the brightness of the LCD. Under normal usage, the battery charge lasts approximately 2.5 hours.



Battery life estimates are subject to variation. The actual life of your battery may be less than the estimates given in the documentation.

You can monitor the charge of the battery pack installed in your computer through the battery gauge.

Using the Battery Gauge

You can display the battery gauge while you are in any program. Press <Fn+F6> to display the battery gauge on the LCD (Figure 20).



Figure 20. Battery Gauge

The gauge has two sections:

- The top section of the gauge shows a picture of a battery to indicate that the computer is operating from the battery.
- The bottom section of the gauge shows you the amount of battery charge remaining.

While the battery gauge is displayed, all keys are disabled except <Esc> key. The battery gauge closes in a few seconds or by pressing <Esc> key.

Using PowerProfiler to Monitor the Battery

PowerProfiler enables you to set power-management options for computers shipped with Windows NT installed. To use PowerProfiler to monitor the battery charge, place the cursor on the battery icon in the right corner of the taskbar. PowerProfiler shows you the amount of battery charge remaining.

The color of the battery icon also indicates approximate battery charge:

- Green: Charge is adequate to power computer.
- Yellow: Charge is low.
- Red: Charge is very low.

You can determine at what battery charge level PowerProfiler shows the low and very low colors. The default setting for the very low level is 20 percent battery charge remaining.

To set battery monitoring options in PowerProfiler:

1. Double-click the PowerProfiler battery icon to open the software.
2. Click the Battery tab.
3. Set options under *Battery Status and Alarm Settings*.

For more information on PowerProfiler, see the Help option in the PowerProfiler software.

Battery Warnings

Your computer gives you the following low-battery warnings (Table 4).

Table 4. Battery Warnings

Warnings	Condition	Action to Take
The computer beeps 5 times (low-pitched beeps). In Windows 98, a battery-low warning appears on screen.	Battery low: The battery charge is about 10 percent. Approximately 5–10 minutes of battery charge is left.	Save your work and turn off your computer, insert a fully charged battery to continue. Use the AC adapter to power the computer.
The computer beeps 5 times (high-pitched beeps), with a short time between beeps. After a short time, the computer automatically goes into rest mode.	Battery very low: The battery charge is about 3 percent.	Use the AC adapter to power the computer and charge the battery.

If you cannot run your computer from the battery and the battery will not charge when you attach the AC adapter, the problem may be that

- The battery temperature is over 95° F (35° C) or below 41° F (5° C). If you think the battery temperature is too hot or too cold, turn off the computer, remove the battery, and let the battery reach room temperature. Then try charging the battery again.
- The battery is defective. Replace the battery with a new battery.

Using System Setup

The System Setup program enables you to configure your computer hardware and set security and power-savings options. The settings you choose are stored in battery-maintained memory (CMOS memory) that saves the information even when the computer's power is turned off. When your computer is turned back on, your computer is configured with the values found in this memory.

Run System Setup if you get a message prompting you to run the program. You may also want to run System Setup, particularly the first time you use your computer, to set the time and date, use security or power-management features, or alter the settings of other features.



Your computer's version of System Setup may not include all the fields listed here or may include additional fields. Field names and order of appearance can vary according to the version of the BIOS on your computer.

You can use the configuration listing at the back of this manual to record information specific to your computer. (See "Recording the Computer Hardware Configuration" on page 91.) Fill it out as you complete your System Setup configuration. This list helps you describe your computer if you must contact your authorized reseller for service or product information.

Starting System Setup

To start System Setup, turn on your computer and then press <F2> when prompted. The System Setup screen appears.

The top of the System Setup screen has a menu bar with the selections listed in Table 5.

Table 5. System Setup Menus

Menu	Function
Main	Changes the basic system configuration.
Advanced	Configures advanced features on your computer.

Security	Enables security features, including passwords and backup and virus-check reminders.
Power	Configures power-management features.
Boot	Specifies the order of boot devices.
Exit	Specifies how to exit System Setup.

To open a menu, use the left or right arrow keys to select the menu name.

Table 6 lists the keys you can use to navigate through System Setup.

Table 6. System Setup Navigation Keys

Navigation Key	Alternate Key	Function
<F1>	<Alt+H>	Displays the General Help window.
<Esc>	<Alt+X>	Exits the current menu.
<Left Arrow> and <Right Arrow> keys	Keypad arrow keys	Select a different menu.
<Up Arrow> and <Down Arrow> keys	Keypad arrow keys	Move the cursor up and down between fields in the current menu.
<Tab>		Moves the cursor forward through the cells for a highlighted field. If the field has only one cell, the <Tab> key moves the cursor down to the next field.
<Tab+Shift>		Moves the cursor backward through the cells for a highlighted field. If the field has only one cell, the <Tab+Shift> key combination moves the cursor up to the previous field.
<Home>	<PgUp>	Moves the cursor to the field at the top of the window.
<End>	<PgDn>	Moves the cursor to the field at the bottom of the window.
<F5>	<->	Scrolls backwards through the options for the highlighted field.
<F6>	<+> or <Space>	Scrolls forward through the options for the highlighted field.

<F9>	Sets all the parameters in System Setup to their default values.
<F10>	Exits System Setup and saves the changes.
<Enter>	Executes commands or opens a submenu.

An arrow symbol appearing to the left of a field indicates that you can open a submenu from this field. A submenu contains additional options for a field. To open a submenu, highlight the field and press <Enter>. Use the same keys to enter values and move from field to field within submenus as you use within menus.

When you highlight a field, information about the field appears on the right side of the screen. System Setup also provides a General Help screen that can be opened from any menu by pressing <F1> or <Alt+H>. The General Help screen lists the navigation keys with their corresponding alternates and functions.

When a scroll bar appears to the right of a help window, more information is available than can be displayed in the window. Use the <PgUp> and <PgDn> keys or the <Up Arrow> and <Down Arrow> keys to scroll through the entire help document. Press <Home> to display the first page, or press <End> to go to the last page. To exit the help window, press <Enter> or <Esc>.

If your computer will not boot after you have changed settings in System Setup and exited the program, reboot and press <F2> to reenter System Setup. Once in System Setup, you can try to change the values that caused your computer boot to fail. If the problem persists, press <F9> to load the default values.

Main Menu

When you open System Setup, the Main menu appears. You can make changes to your computer's basic system configuration from this menu. The fields displayed in this menu are described below.

System Time: Sets your computer to the time that you specify, usually the current time. Enter the hour, minute, and second in the format *hh:mm:ss*. Use a 24-hour clock. Use the tab key to move between the hour, minute, and second cells. Use the hyphen key <-> or <Space> bar to decrease or increase the numbers.

System Date: Sets your computer to the date that you specify, usually the current date. Enter the month, day, and year in the format *mm:dd:yyyy*. Use the tab key to

move between the month, day, and year cells. Use the hyphen key <-> or <Space> bar to decrease or increase the numbers. This field supports year dates of 2000 and beyond.

Legacy Diskette A: Specifies a drive type for floppy drive A. Drive A is the floppy drive that is attached using the external module cable to your computer, see “Using the Floppy Drive” on page 28. *Diskette A* options are *Disabled* and *1.44 MB 3½* (default).

IDE Adapter1 and IDE Adapter2: The Main menu contains two IDE adapter fields to configure these drives. *IDE Adapter1* defines the hard drive installed in the computer. *IDE Adapter2* defines the CD-ROM drive.

To configure your hard drive, move the cursor to select the *IDE Adapter1* field in the System Setup Main menu, and then press the <Enter> key. The IDE Adapter submenu appears.

Normally, you can use the *Auto* field in the submenu to automatically set the values for the other fields in the submenu. Manually set the other fields in this submenu only if the drive you have installed in your computer is not recognized by System Setup.

After you make your selections from this submenu, press the <Esc> key to exit back to the Main menu.

You do not need to configure the drive that came with your computer.



Before attempting to configure a hard drive, make sure you have the configuration information supplied by the manufacturer of the hard drive. Incorrect drive settings can cause your computer to malfunction.

Each IDE adapter field calls up a submenu. The following fields are found in the submenu:

Type: Configures the drive type. Options are *Auto*, *None*, *DVD/CD-ROM* and *User*. All remaining fields in this submenu are then filled with the correct values for the disk type. If you do not have the documentation that came with your hard drive, try to use the *Auto* option as described above.

To configure a drive that is not one of the 39 standard drive types, specify *User*. Manually enter the number of cylinders, heads, and sectors for your drive. Refer to your drive’s user documentation or look on the drive to obtain this information.

If no drive is installed or if you are removing a drive and not replacing it, select *None*.

Cylinders: Configures the number of cylinders for the hard drive. Refer to your drive's user documentation or look on the drive to obtain this information. Before you can make changes to this field, the *Type* field must be set to *User*.

Heads: Configures the number of read/write heads for the hard drive. Refer to your drive's user documentation or look on the drive to determine the correct value to enter for this field. Before you can make changes to this field, the *Type* field must be set to *User*.

Sectors: Configures the number of sectors per track for the hard drive. Refer to your drive's user documentation or look on the drive to determine the correct value to enter for this field. Before you can make changes to this field, the *Type* field must be set to *User*.

Maximum Capacity: Displays the maximum capacity of your hard drive. This field is for reference only.

Multi-Sector Transfers: Sets the number of sectors per block to the highest number supported by the drive. Configuration options are *Disabled*, *2 Sectors*, *4 Sectors*, *8 Sectors*, and *16 Sectors*. The default setting for this field depends on the type of hard drive installed in your computer. Before you can make changes to this field, the *Type* field must be set to *User* or *DVD/CD-ROM*.

LBA Mode Control: Enables or disables 28-bit addressing of the hard drive, without regard for cylinders, heads, and sectors. Note that enabling this field may decrease the access speed of the hard drive. The default setting for this field depends on the type of hard drive installed in your computer. Before you can make changes to this field, the *Type* field must be set to *User* or *DVD/CD-ROM*.

32 Bit I/O: Enables or disables 32-Bit I/O. When *Enabled*, your hard drive can work with applications with 32-bit input and output between CPU and IDE Controller.

Transfer Mode: Selects the method for transferring data between the hard drive and system memory. Refer to your drive's user documentation to specify the correct option for this field. Options are *Standard*; *Fast PIO 1*, *Fast PIO 2*, *Fast PIO 3*, *Fast PIO 4*, *FPIO 3 / DMA 1* and *FPIO 4 / DMA 2*. Before you can make changes to this field, the *Type* field must be set to *User* or *DVD/CD-ROM*.

SMART Monitoring: SMART (self-monitoring analysis and reporting technology) software monitors the performance of your computer's IDE hard drive. When the SMART Device Monitoring field is enabled, you receive a warning message if the SMART software detects an impending drive failure. This field is for reference only.

Ultra DMA Mode: Enables the hard drive to use ultra DMA transfer mode to transfer data between the drive and system memory. Options are *Disabled*, *Mode 0*, *Mode 1* and *Mode 2*. Set the *Type* field to *Auto* to select the optimum transfer mode

Memory Cache: Opens a submenu that enables or disables external cache memory. Cache memory improves system performance by keeping frequently used computer instructions in memory with a faster access time than DRAM.

The submenu fields are:

Memory Cache: *Enables* (default) or *disables* your computer's (level 2) cache memory. Normally, do not disable the cache memory unless a program's documentation specifies that the computer cache memory must be disabled.

Cache Extended Memory Area: Controls the caching of system memory over 1 MB. Options are *Write Back* (default), *uncached*, *Write Through* and *Write Protect*. Normally, Write Back is the optimal setting but if you are experiencing problems try changing the settings.

Cache D400 - D7FF: *Disabled*(default), *Write Through*, *Write protect* or *Write Back* caching of shadowed option ROMs in the D400-D7FF region.

Cache D800 - DBFF: *Disabled*(default), *Write Through*, *Write protect* or *Write Back* caching of shadowed option ROMs in the D800-DBFF region.

System Memory: Displays the amount of conventional memory detected by your computer during startup. This field is for reference only.

Extended Memory: Displays the amount of extended memory detected by your computer during startup. This field is for reference only.

Advanced Menu

Selecting *Advanced* from the menu bar displays the Advanced menu.

PS/2 Mouse Configuration: Opens the *PS/2 Mouse Configuration* submenu if you press <Enter> when this field is highlighted

The submenu contains these fields:

Mouse Configuration: Enables or disables the touchpad mouse or PS/2 mouse port. The options for this field are *Enabled* (default) and *Disabled*. If you set this field to *Enabled*, the PS/2 mouse port is enabled regardless if a mouse is present or not. If you select *Disabled*, you disable any installed PS/2 mouse

including the touchpad mouse from working but you free up an IRQ for use by another device.

Mouse Operation Mode: Enables or disables the touchpad mouse when an external PS/2 mouse is used. The options for this field are *Single Mouse* (default) and *Dual Mouse*. If you set this field to *Single Mouse*, the touchpad mouse is disabled when an external PS/2 mouse is attached. Select *Dual Mouse* to have both the touchpad mouse and the PS/2 mouse enabled at the same time.

I/O Device Configuration: Opens the *I/O Device Configuration* submenu if you press <Enter> when this field is highlighted. If you attempt to set two ports to the same settings, the fields will be marked with asterisks.

The submenu contains these fields:

Serial port A: Configures serial port A. The options for this field are *Enabled* (default) and *Disabled*. If you set this field to *Enabled*, you can set the *Base I/O Address* field to *3F8 IRQ4* (default), *2F8 IRQ3*, *3E8 IRQ4*, or *2E8 IRQ3*. When the field is set to *Enabled*, the computer's operating system uses the default configuration or the configuration you choose. If you select *Disabled*, you free up an IRQ for use by another device.

Serial port B: Configures the infrared port. The options for this field are *Auto*, *Enabled* (default) and *Disabled*. If you set this field to *Enabled*, you can set the *Base I/O Address* field, the *Mode* field and the *DMA channel* field. Settings for the *Base I/O Address* are *3F8 IRQ4*, *2F8 IRQ3* (default), *3E8 IRQ4*, or *2E8 IRQ3*. Settings for the mode field are *FIR* (default), *Normal*, *IrDA* and *ASK-IR*. Setting the mode field to *FIR* (fast infrared) enables you to set the *DMA channel* to 3 (default) or 1. Select *Normal* to enable a second physical serial port.

When the *Serial port B* field is set to *Enabled*, the computer's operating system uses the default configuration or the configuration you choose. If you select *Disabled*, you free up an IRQ for use by another device.

Parallel port: Configures the parallel port. The options for this field are *Auto*, *Enabled* (default) and *Disabled*. If you set this field to *Enabled*, you can set the *Mode* field and the *Base I/O Address* field. Settings for the *Base I/O Address* field are *378 IRQ7* (default), *378 IRQ5*, *278 IRQ7* and *278 IRQ5*. Settings for the *Mode* are *Output only*, *Bi-directional*, *EPP* (enhanced parallel port), and *ECP* (default, extended capabilities port). Selecting the *ECP* setting enables you to set the *DMA Channel* to 1, 2, or 3.

When the *Parallel port* field is set to *Enabled*, the computer's operating system uses the default configuration or the configuration you choose. If you

select *Disabled*, you free up an IRQ for use by another device. If *Auto* is selected the BIOS or the computer's operating system chooses the configuration

Floppy disk controller: Configures the floppy disk controller. The options for this field are *Enabled* (default), *Auto*, and *Disabled*. When the *Floppy disk controller* field is set to *Enabled*, the computer's operating system uses the default configuration for the controller. Selecting *Auto* enables the operating system or the BIOS to configure the port.

Installed O/S: Select the operating system installed on your computer. Options are *Win95/Win98 APM*, *Win98 ACPI/WinNT5.0* and *Other*. Set this field to *Other* if your computer uses an operating system that is not plug and play compliant, such as Windows NT 4.0. With an operating system that is not plug and play compliant, you manually change the settings for the COM1, COM2, and LPT ports. The BIOS will recognize the new settings. Choosing an incorrect setting may cause some operating systems to behave unexpectedly.

Boot-time Logo Screen: Enables the manufacturer's logo screen during POST. The options are *Enabled* (default) and *Disabled*. To view the POST screen during boot choose *Disabled*.

QuickBoot Mode: Enables certain diagnostics to be skipped during POST which decreases the time needed to boot the system. The options are *Enabled* (default) and *Disabled*.

CPU BIOS Update: Enables CPU Micro Code updates during POST. The options are *Enabled* (default) and *Disabled*.

USB device: Configures the USB controller. The options for this field are *Enabled* and *Disabled* (default). When the *USB device* field is set to *Enabled*, the computer's operating system uses the default configuration for the controller. If you select *Disabled*, you free up an IRQ for use by another device.

Screen Expansion: Enables the expansion of the screen during boot. When your computer starts, the screens are in 640x480 resolution during boot and then automatically change to the resolution you have specified in the Windows settings. When this field is enabled, the opening screens are expanded beyond 640x480. The default is *Enabled*.

TV Standard: Selects the TV Standard to be used when using the TV out (composite) port. Options are *NTSC*, *PAL* (default), *PAL-M*, *PAL-60*, *NTSC-J* and *SCART-PAL*.

Local Bus IDE adapter: Enables the integrated IDE local bus adapters. Options are *Both* (default), *Disabled*, *Primary* and *Secondary*. The *Both* option enables

both the primary IDE adapter (for the hard drive) and the secondary IDE adapter (for the CD-ROM drive) on the computer.

Large Disk Access Mode: Enables your computer's operating system to work with drives larger than 540 MB. Choose *DOS* (default) for Microsoft operating systems. Choose *Other* for any other operating systems.

Security Menu

Selecting *Security* from the menu bar displays the Security menu. Your computer's advanced security system allows you to set two different passwords to prevent unauthorized access to system resources, data, and System Setup. From the Security menu, you can enable a boot password, disk access, a system backup reminder, and a virus check reminder.

Security fields marked with an asterisk can only be changed if you start System Setup with a system supervisor password or if no passwords are in effect. You cannot access these fields with a user password.

Set User Password: Enables you to set a user password to control access to the system at boot. See "Creating a Password" on page 53 for instructions on setting a password. The user password allows restricted access to the System Setup Security menu; the user has access only to changing his own password and to enabling or disabling *Password on boot*. A supervisor password must be set before a user password can be set

Set Supervisor Password:* Enables you to set the supervisor password to control access to the System Setup utility. See "Creating a Password" on page 53 for instructions on setting a password.

Password on boot: Determines whether the computer prompts for a password when starting up. The options are *Enabled* and *Disabled*. A supervisor password must be set before you can enable this option.

Fixed disk boot sector:* Enables you to write-protect the hard drive boot sector to protect against viruses and alterations. Only a user with the supervisor password can access this field. The options for this field are *Normal* (default) and *Write Protect*.

Diskette access:* Enables you to restrict the use of floppy drives. When set to *Supervisor* (default), the use of floppy drives is restricted to a user with the supervisor password. A supervisor password must be enabled before the *Supervisor* option can take effect. When set to *User*, users with either type of

password have access to floppy drives. If the field is set to *Supervisor* and a user password is enabled, the user must enter the supervisor password in order to boot from the floppy drive.

Virus check reminder:* Enables the computer to prompt you to scan the computer for viruses. The prompt appears each time you start your computer or reboot until you respond with Y (yes). The options for this field are:

- *Daily*: Every day when you start your computer for the first time, the prompt appears.
- *Weekly*: When you start your computer for the first time each week (after Sunday), the prompt appears.
- *Monthly*: When you start your computer for the first time each month, the prompt appears.
- *Disabled*: The prompt never appears. This is the default setting.

For a *Daily*, *Weekly*, or *Monthly* prompt to be accurate, *System Date* in the Main menu must be set to the current date.

System backup reminder:* Enables the computer to prompt you to backup your files. The prompt appears each time you start your computer or reboot until you respond with Y (yes). The options for this field are

- *Daily*: Every day when you start your computer for the first time, the prompt appears.
- *Weekly*: When you start your computer for the first time each week (after Sunday), the prompt appears.
- *Monthly*: When you start your computer for the first time each month, the system backup prompt appears.
- *Disabled*: The prompt never appears. This is the default setting.

For a *Daily*, *Weekly*, or *Monthly* prompt to be accurate, *System Date* in the Main menu must be set to the current date.

Power Menu

The Power menu of System Setup allows you to enable and adjust your computer's sophisticated power-saving features. Enabling these features extends the life of the battery.

If your computer shipped with Windows 98 installed, Windows 98 Power Management works with the settings in the Power Management option on the Control Panel.

If the AC adapter is plugged in all power management is disabled.

Power Saving Mode: Sets the power management mode. Choosing modes changes the system power management settings. The options are *Maximum Power Savings* (default) and *Maximum Performance*. *Maximum Power Savings* conserves power by slowing down the microprocessor while *Maximum Performance* does not slow the microprocessor.

Standby Timeout: Sets the period of computer inactivity (no user input or device activity) that must pass before your computer automatically goes into standby mode. In standby mode some devices are turned off (including the LCD screen) and the microprocessor clock is stopped. You can disable this option by selecting *Off*, or you can specify a *Standby Timeout* delay time of from 1 to 16 minutes. The default is *1 Minute*.

Rest Mode: Specifies the type of rest mode your computer enters:

- **Save To Disk** (default): Provides the greatest power-saving capabilities by essentially turning off your computer. In the save to disk mode, all system logic (except for your computer wakeup circuitry and battery charger) is turned off. During save to disk mode, the DRAM and video memory are saved to the hard drive and are restored when your computer resumes from rest.
- **Power On Suspend:** Saves power by turning off the microprocessor and DMA clocks, video, and all controllable peripheral devices. Some power is still used when your system is in this mode. This rest mode is also known as suspend to RAM.

When the computer enters save to disk mode, it will not resume normal operation at a specified time no matter how the *Resume On Time* field is set.

Rest Timeout: Sets the amount of time that the computer needs to be in Standby before entering Rest Mode. You can disable this option by selecting *Off*. The default setting is *10 min*.

Resume On Time: Enables the computer to resume operation from rest mode at a scheduled time. The computer will resume only if the *Rest Mode* field is set to *Power On Suspend*, not *Save To Disk*. If you set this field to *On*, you must set the *Resume Time* field as well. The default setting is *Off*.

Resume Time: Specifies the time for your computer to automatically resume from rest mode. Enter two-digit numbers to indicate the hour, minutes, and seconds in

the format *hh:mm:ss*. Use a 24-hour clock. Use the tab key to move between the hour, minute, and second cells. Use the hyphen key <-> or <Space> bar to decrease or increase the numbers. You must set this option if you enable *Resume On Time*.

Boot Menu

The Boot menu enables you to select a boot device and set boot options.

Floppy check: Enables a check of the floppy drive during the tests performed by the computer at startup. When this field is enabled, a complete POST is performed at startup. The options are *Enabled* and *Disabled* (default).

Summary screen: Displays the system configuration when the computer starts. The options are *Enabled* and *Disabled* (default).

Boot Device Priority: Enables you to select the order in which the computer attempts to boot from different devices. The field has three options: *ATAPI CD-ROM Drive*, *Diskette Drive* and *Hard Drive*.

To choose a device as the first, second, or third boot device:

1. Press <Enter> at the *Boot Device Priority* field
2. Highlight the option with the <Up Arrow> or <Down Arrow> key.
3. Press the <Space> bar or <-> (hyphen key) until the option moves up or down in the list of options and the number 1, 2, or 3 appears beside the option.
4. Press <Esc> to return to the Boot menu.

The default setting is 1. *Diskette Drive*, 2. *Hard Drive* and 3. *ATAPI CD-ROM Drive*. With these default settings, your computer first attempts to boot the floppy drive. If there is no floppy disk in the floppy drive, the computer will attempt to boot from the hard drive and then a bootable CD-ROM in the CD-ROM drive.

Exit Menu

Select *Exit* from the menu bar to display the Exit menu.



Pressing <Esc> does not exit this menu. You must select one of the options from this menu or a menu bar item to exit this menu.

Exit Discarding Changes: Enables you to exit System Setup without saving your changes. When you select this item and press <Enter> a message appears asking you if you want to save changes before exiting. Choose *No* and press <Enter> to exit without saving changes. Choose *Yes* and press <Enter> to save changes and exit.

Exit Saving Changes: Enables you to exit System Setup and saves your changes. When you select this item and press <Enter>, a message appears asking you if you want to save your changes and exit System Setup. Choose *Yes* and press <Enter> to save your changes and exit. Choose *No* and press <Enter> to remain in System Setup.

Load Setup Defaults: Loads the default values for all System Setup parameters. When you select this option and press <Enter>, a message appears asking if you want to load the default configuration. Choose *Yes* and press <Enter> to load default settings and remain in System Setup. Choose *No* and press <Enter> to retain your changes and remain in System Setup.

Discard Changes: Enables you to discard the selections you have made and restore the values you previously saved. When you select this option and press <Enter>, a message appears asking if you want to load the previous configuration. Choose *Yes* and press <Enter> to load the previous settings and remain in System Setup. Choose *No* and press <Enter> to retain your changes and remain in System Setup.

Save Changes: Saves your selections without exiting System Setup. When you select this option and press <Enter>, a message appears asking if you want to save configuration changes. Choose *Yes* and press <Enter> to save changes and remain in System Setup. Choose *No* and press <Enter> to discard changes and remain in System Setup.

Battery Calibration: Enables you to discharge the system battery completely for a more accurate battery level detection. This option only works with the smart battery if the AC Adapter is not plugged in.

Using System Security

This section describes the security options provided with your computer.

System Passwords

The computer provides two levels of password security: administrative-level (supervisor) and user-level (user). Either password prevents unauthorized access to the computer. The supervisor password enables full access to all System Setup fields. The user password enables full access to only the *Set User Password* and *Password on boot* security fields and read access to all other System Setup fields. (See "Security Menu" on page 48 for a complete list of System Setup security fields.)

If multiple users have access to the computer (such as in a network environment), a supervisor password can prevent unauthorized access to certain security options.

Choose the type of password security that is appropriate for your work. If you want to set a user password, you must set a supervisor password first.

Creating a Password

To create a password:

1. At startup, press <F2> to open System Setup.
2. Use the <Right Arrow> key to select the Security menu.
3. Use the <Down Arrow> key to select *Set Supervisor Password* or *Set User Password*.
4. Press <Enter>. The Set Password dialog box appears.
5. Type a password of up to seven characters. You can enter letters or numbers, but you cannot use the function keys, such as <Shift>. Your computer does not distinguish between capitalized and lowercase letters in your password. As you type the password, the cursor moves but your password does not appear on the screen.

6. Press <Enter> after you have typed your password. The computer prompts you to reenter your password for verification.
7. Type your password again and press <Enter>. A message appears telling you that the changes have been saved. Press <Enter> again to return to the Security menu.
8. Press <Esc> to go to the Exit menu.
9. Select *Exit Saving Changes*, press <Enter>, and press <Enter> again to restart the computer.

Deleting a Password

To delete the password:

1. At startup, press <F2> to open System Setup.
2. Type your password when prompted and press <Enter>.
3. Use the <Right Arrow> key to select the Security menu.
4. Use the <Down Arrow> key to select *Set Supervisor Password* or *Set User Password*.
5. Press <Enter>. The computer prompts you to enter the current password.
6. Press <Enter>. The computer prompts you to enter a password. Do not type anything.
7. Press <Enter>. The computer prompts you to re-enter the password. Do not type anything.
8. Press <Enter>. A message appears telling you that the changes have been saved. Press <Enter> again to return to the Security menu.
9. Press <Esc> to go to the Exit menu.
10. Select *Exit Saving Changes*, press <Enter>, and press <Enter> again to restart the computer.

Requiring a Boot Password

After you create a supervisor or user password, you can enable the computer to prompt for a password each time it starts.

To enable the prompt, select the option *Enabled* in the *Password on boot* field in System Setup. For more information about the *Password on boot* field, see “Security Menu” on page 48.

Locking the Hard Drive Boot Sector

If you have an supervisor password, you can lock the hard drive boot sector to protect against viruses or alterations.

To lock the hard drive boot sector, select the option *Write protect* in the *Fixed disk boot sector* field in System Setup. For more information about the *Fixed disk boot sector* field, see “Security Menu” on page 48.

Locking the Floppy Drive

If you have an supervisor password, you can lock the floppy drive so that a user with only a user password cannot load personal software, which may introduce a virus into the computer.

To enable the floppy lock, select the option *Supervisor* in the *Diskette access* field in System Setup. For more information about the *Diskette access* field, see “Security Menu” on page 48.

Locking the Keyboard

The keyboard lock enables you to protect your system when you walk away from it for a time. To use the keyboard lock, you must first enable a password through System Setup. (See “Creating a Password” on page 53 for instructions. To lock your keyboard, press <Fn+F7>. To unlock your keyboard, type your password and press <Enter>

Using Power Management Options

Your computer includes power-management options that can help the battery charge last longer and extend the life of the battery, LCD panel, and other components. Power-management options slow down or shut off system components when the components are not being used.

Power management slows down system performance. Your computer runs fastest with the AC adapter attached, when no power management is in effect. If you disconnect the AC adapter the LCD brightness is reduced to save power. See page 15 for information on increasing the LCD brightness.

If your computer shipped with Windows 98 installed, Windows 98 Power Management works with the settings in the Power Management option on the Control Panel. If your computer uses DOS or Windows 95, Power Management works with the settings in System Setup.

If your computer shipped from the factory with Windows NT installed, PowerProfiler power management software was included.

Maximum Power Saving Mode

In maximum power saving mode, the microprocessor runs at slow speed to conserve power. To enable this mode, set the *Power Saving Mode* field in System Setup to *maximum power saving mode*.

Standby Mode

The *Standby Timeout* field in System Setup enables you to specify the time period that the computer can remain idle (no user input or disk activity) before the computer enters standby mode. You can disable this option by selecting *Off*, or you can specify a *Standby Timeout* delay time of from 1 to 16 minutes.

In standby mode, the system and video memory and the video controller slow down. The LCD backlight, hard drive, floppy drive, PC Card controller, and some other devices turn off to save energy. DPMS (a form of monitor power management) to an external monitor is invoked.

To resume from standby, touch the touchpad. Do not press any keys on your keyboard.



If you press a key to resume from standby, your computer will recognize the function of the key you pressed and perform that function. For example, if you press <N> and a document is open, an “n” is typed into your document.

If you enable both standby and rest modes, your computer enters standby when the delay time you chose for standby has elapsed, and then enters rest mode when the delay time you chose for rest mode has elapsed since the computer entered standby.

Rest Mode

The *Rest Timeout* field in System Setup enables you to specify the time period after the entering standby before the computer enters rest mode. You can disable this option by selecting *Off*, or you can specify a *Rest Timeout* delay time of 5 to 60 minutes.

The *Rest Mode* field in System Setup defines what type of rest mode your computer enters, see "Rest Mode" in "Power Menu" on page 49 for more information.

You can press <Fn+F11> to manually place your computer into rest mode.



When you use the <Fn+F11> key combination, your computer may postpone entering rest mode during a critical operation, such as reading from or writing to the hard drive.

To resume to full-power mode, press the power button.

Once all devices return to full-power mode, all active software applications and system states are restored to exactly how they were before your computer entered rest mode.

When your computer enters or resumes from save to disk mode, screens appear indicating system status. These status screens do not appear when the computer enters or resumes from power on suspend.

Rest Mode Precautions

Observe the following precautions when using rest mode:

- Save all open files before you press <Fn+F11> to manually place your computer into rest mode.
- Do not try to resume to full-power mode using battery power if the battery charge is low. If the battery charge is too low, the system may not be able to resume fully. Plug in the AC adapter if your computer cannot resume normal operation because of a low battery charge.



When your computer is in power on suspend or save to disk mode, do not connect or remove any devices (including PC Cards or external modules) because you may damage the computer or resume to full power may fail. If a floppy disk is in the floppy drive, do not remove it or switch it with another disk.

However, you can plug in the AC adapter if the resume to full power fails because of a low battery charge.

When the computer is in save to disk mode, you can remove and replace the battery.

Using PowerProfiler

PowerProfiler enables you to set power-management options for computers shipped with Windows NT installed. To open the PowerProfiler window, double-click the battery icon on the right corner of the Windows taskbar. If you click the icon with the right mouse button, a menu appears with an option to put the computer in rest (rest mode).

Click the Standard tab in PowerProfiler to set timeouts for the LCD and the hard drive. You can also set power management to be enabled *Always*, *Battery Only*, or *Never*. The Advanced screen in PowerProfiler enables resume from rest options, and the Battery screen enables options to conserve battery life.

Keep the following in mind when using PowerProfiler:

- If you disable power management in PowerProfiler, the setting overrides any power-management settings in System Setup.

- If you enable LCD and hard drive timeouts in PowerProfiler and the standby timeout in System Setup, the LCD and hard drive turn off when the shortest timeout period in either program passes.
- If you disable the *Resume on Time* field in System Setup, the same field in PowerProfiler is also automatically disabled. An easy way to work with these two fields is to set the resume time to 0 in System Setup and set the actual resume time that you desire in PowerProfiler.



PowerProfiler maintains the accuracy of the system clock when the computer resumes from rest mode. If PowerProfiler is closed or removed from your hard drive, your system clock may not be accurate when your computer resumes from rest mode.

For more information on PowerProfiler, see the Help option in the PowerProfiler software.

Creating a Save to Disk Partition

The hard drive shipped in your computer has a save to disk partition in which data from system and video memory is stored during save to disk mode. The partition is the maximum size needed for your computer and supports system memory of 160 MB.

If you need to repartition your hard disk, you can create a save to disk partition using the Phoenix PHDISK utility, provided with your computer.



If you do not intend to use save to disk mode, you do not need to create a save to disk partition.

To create the save to disk partition:



To create a save to disk partition, you need a DOS bootable disk that contains PHDISK, FDISK and the Format command.

1. Create a Phoenix PHDISK utility disk from the Utility CD-ROM.
2. Shut down your computer.
3. Connect the floppy drive to the computer. (See "Connecting External Modules" on page 25 and see "Using the Floppy Drive" on page 28 for instructions.). Switch on your computer.
4. Enter System Setup and under the Boot menu, set *Diskette Drive* as the first boot device. (See "Using System Setup" on page 40 for information on setting options.)
5. Insert the bootable disk into the floppy drive and start your computer.
6. After your system boots, remove the startup disk from the floppy drive and insert the PHDISK disk.
7. At the A: prompt, type:

```
phdisk /c 167936 /p
```

and then press <Enter>.

PHDISK automatically creates a save to disk partition of the maximum size for your computer.

When the save to disk partition has been created, the following message appears:

Save to disk partition created successfully



If you do not intend to use the save to disk mode, you can delete the save to disk partition on a hard drive using PHDISK /delete. Then you can repartition and reformat the save to disk partition for some other application. Back up your hard drive before deleting the partition if you feel unsure of how to do this.

Changing the Video Configuration

Your computer includes an TFT LCD or active-matrix display. The capabilities of the screen plus the video drivers installed on the computer determine the quality of the image your LCD can display.

The following sections describe the display capabilities of your computer.

Resolution and Color Depth

The resolution of the LCD is the sharpness of the image it can display. Resolution is measured by the number of pixels (individual dots) displayed on the entire screen. In general, the more pixels the LCD can display, the better the image.

Your LCD screen is either SVGA or XGA:

- The maximum display for the SVGA LCD screen is 800x600, about 480,000 pixels.
- The maximum display for the XGA LCD screen is 1024x768, about 800,000 pixels.

The number of colors the LCD can display is measured by how many bits the LCD uses to represent each pixel:

- 8-bit color can support 256 different colors.
- 16-bit color can support 64 K (65,536) colors.
- 24-bit color can support 16 M (16.8 million) colors.
- 32-bit color can support 16 M (16.8 million) colors.

24-bit color uses the RGB color model.

32-bit color uses the CMYK color model which gives better printed color matching.

Table 7 lists the basic video mode capabilities and maximum colors supported by your computer.

Table 7. Video Driver Capabilities

Software Drivers	Resolution Supported	Number of Colors
Windows 98	320x200, 320x240, 512x384, 640x350, 640x400, 640x480, 720x480, 720x576, 800x600, 864x480, 1024x600, 1024x768, 1152x864, 1280x1024, 1600x1200	256
	320x200, 320x240, 512x384, 640x350, 640x400, 640x480, 720x480, 720x576, 800x600, 864x480, 1024x600, 1024x768, 1152x864, 1280x1024, 1600x1200	65,536
	320x200, 320x240, 512x384, 640x350, 640x400, 640x480, 720x480, 720x576, 800x600, 864x480, 1024x600, 1024x768, 1152x864, 1280x1024	16.8 million
	320x200, 320x240, 512x384, 640x350, 640x400, 640x480, 720x480, 720x576, 800x600, 864x480, 1024x600, 1024x768, 1152x864	16.8 million
Windows NT® 4.0	640x480, 800x600, 1024x768, 1152x864, 1280x1024, 1600x1200	256
	640x480, 800x600, 1024x768, 1152x864, 1280x1024, 1600x1200	65,536
	640x480, 800x600, 1024x768, 1152x864, 1280x1024	16.8 million
	640x480, 800x600, 1024x768, 1152x864	16.8 million

All these video modes can be displayed on an external monitor. However, if you disconnect an external monitor that was attached to your computer and then start the computer, the LCD may revert to a different resolution than the one you chose for the external monitor.

Configuring Display Features

The following sections describe how to configure the display settings on your computer.

Selecting a Monitor Type

When you attach an external monitor to your computer, Windows 98 automatically selects display settings for it (this feature is not available in Windows NT). If you wish, you can adjust the display settings by selecting a monitor type:

1. Click the *Start* button on the Windows 98 taskbar.
2. Select *Settings*.
3. Click *Control Panel*. The Control Panel window appears.
4. Double-click the *Display* icon. The Display Properties window appears.
5. Click the *Settings* tab. The Settings screen appears.
6. Click the *Advanced Properties* button. The Advanced Properties screen appears.
7. Click the *Monitor* tab.
8. Click the *Change* button. The *Update Device Driver Wizard* screen appears.
9. Click the *Next* button.
10. Select the *Display a list of all the drivers in a specific location* radio button and click the *Next* button.
11. Select the *Show all hardware* radio button.
12. Select a manufacturer and model setting that matches your external monitor. Your computer has an intelligent video chip set that automatically matches your LCD panel resolution and frequency when an external monitor is not present.
13. Click the *Next* button.
14. The *Update Device Driver Wizard* screen appears showing the driver location of the device you have selected. Click the *Next* button.
15. Follow any prompts that appear on the screen.

Changing Color Depth and Resolution

To change the color depth and resolution of your LCD or external monitor:

1. Click the *Start* button on the Windows taskbar.
2. Select *Settings*.

3. Click *Control Panel*. The Control Panel window appears.
4. Double-click the *Display* icon. The Display Properties window appears.
5. Click the *Settings* tab. The Settings screen appears.
6. To change the color depth, click the arrow next to *Color palette* and select the color depth you want.
7. To change the resolution, click and drag the knob under the *Screen area* until you select the resolution you want.
8. Click the OK button.
9. Follow the prompts that appear on the screen.

Changing the Video Driver

It is possible that you may want to update your video driver or that your installed video driver has become corrupt so that the display is unusable.

In Windows 98:

1. Click on the *Start Button*. The Start Menu appears.
2. Select *Settings* and click on *Control Panel*, double click on *Display*. The Display Properties window appears.
3. Click the *Advanced* button. The properties screen for your currently installed video driver appears.
4. Select the *Adapter* menu.
5. Click the *Change* button. The Update Device Driver Wizard window appears.
6. Click the *Next* button.
7. Select *Display a list of all the drivers in a specific location, so you can select the driver you want*. Click the *Next* button.
8. Click the *Have disk* button. If the driver is on a floppy disk insert it into the floppy drive or if you want to use the original factory driver insert the Utility CD-ROM into the CD-ROM drive. Click the *Browse* button and locate driver you want to install. Click the OK button.
9. Select the new driver in the *Select Device* screen and click the *Ok* button.

10. Click the *Next* button to install the new driver and follow any directions on the screen to finish setting the display properties.

In Windows NT 4.0:

1. As the computer starts, select *Windows NT Workstation Version 4.00 [VGA mode]* as the operating system and press <Enter>.
2. Log on to the computer as supervisor. The Invalid Display Settings window appears.
3. Click the *OK* button. The Display Properties window appears.



If the Change Display window appears, go to step 6.

4. Select the *Settings* menu.
5. Click the *Display Type* button. The Display Type window appears.
6. Click the *Change* button. The Change Display window appears.
7. Click the *Have disk* button. If the driver is on a floppy disk insert it into the floppy drive or if you want to use the original factory driver insert the Utility CD-ROM into the CD-ROM drive. Click the *Browse* button and locate driver you want to install. Click the *OK* button.
8. A line similar to the following line appears under the *Display* option: *ATI Technologies Inc. 3D Rage LT Pro*.
9. Click *OK*. The Third-Party Driver window appears.
10. Click *Yes*. The driver is copied. A window appears telling you the driver has been successfully copied.
11. Click *OK*. Remove the disk from the floppy drive. Close the open windows on the screen.
12. Click *Yes* when prompted to restart the computer. As the computer restarts, select *Windows NT Workstation Version 4.00* as the operating system and press <Enter>.
13. Log on as supervisor. The Invalid Display Settings window appears.
14. Click the *OK* button. Click the *Test* button at the Display Properties window and follow any directions on the screen to finish setting the display properties.

Working with PC Cards

By installing PC Cards, you can add functions to your portable computer similar to those found on add-in boards for desktop computers. Available PC Cards include:

- Input/output, such as modem, network, pager, video capture, and SCSI cards.
- Storage, such as hard drive cards.
- Combo cards, such as a combination modem and network card.

Your computer includes the following PC Card support:

- Two PC-Card slots: You can install Type I, II, or III cards in the slots. Type III cards are thicker than Types I and II. If you install a Type III card in the bottom slot, you cannot install a card in the top slot.
- CardBus hardware and software: CardBus enables the computer to use 32-bit PC Cards. Windows 98 supports 32-bit and 16-bit PC Cards. The SystemSoft® CardWizard™ for Windows NT program, provided with systems that ship from the factory with Windows NT installed, also supports both 32-bit and 16-bit cards.
- Zoomed video: Both PC Card slots and the video chip on your computer support zoomed video. When you install a zoom video PC Card in either slot, data can be transferred directly from the PC Card to video and audio systems without going through the microprocessor. Video conferencing and real-time multimedia devices, such as video cameras, are supported by zoom video.



To use the CardBus and zoomed video technology, install the CardBus and Zoomed Video drivers provided with your PC Card. If no drivers were supplied with your card, contact the PC Card manufacturer. ATA and modem PC Cards do not require extra drivers.

The following sections tell you how to work with PC Cards.

Maintaining PC Cards

To maintain your PC Cards, follow these guidelines:

- Keep cards away from excessive heat, direct sunlight, and liquids.

- Do not drop, bend, flex, or crush cards when handling.
- Keep dust, magnets, and static electricity away from PC Cards.
- When a card is not in use, carry it in its protective carrying case.
- Some PC Cards include cables that extend from the back of the cards. Be careful not to bend or put excessive strain on these cables.

Using PC Cards

You can install PC Cards while the computer is on.

To insert a PC Card into a slot:

1. Open the slot door.
2. Align the card with a slot and insert the card into the slot until it locks in place (Figure 21).

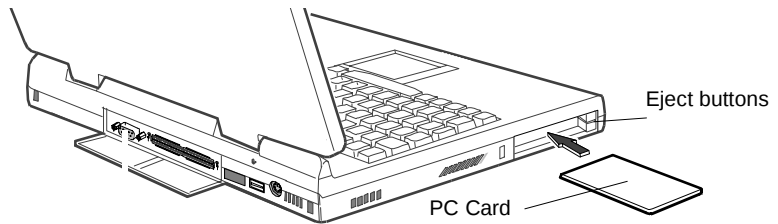


Figure 21. Inserting a PC Card

To remove a PC Card from a slot:

1. Open the slot door.
2. Press the eject button once and it springs out.
3. Press the eject button again to eject the card, see Figure 22 on page 69

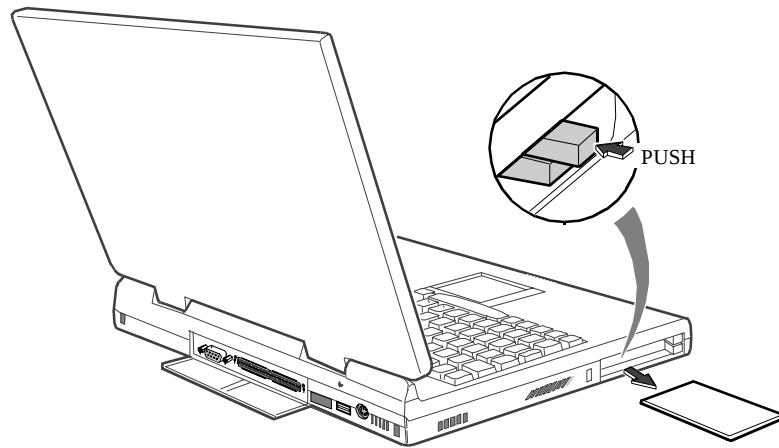


Figure 22. Removing a PC Card

Windows 98

Windows 98 automatically assigns computer resources (such as communication ports and memory addresses) to a PC Card installed in your computer. For further information on configuring a PC Card in Windows 98, see the index entry *PC cards* in the Windows Help. Windows 98 also handles power management for PC Cards.

To remove a PC Card from your computer:



Use the following procedures to remove PC Cards, or you may lose data that is being stored to a card.

1. Click the PC Card icon on the taskbar.
2. Click *Stop* for the card you want to remove. A message appears telling you it is OK to remove the card.
3. Push the card eject button on the side of the PC Card slot.
4. Pull the card out of the PC Card slot.

Windows NT 4.0

Systemsoft Card Wizard is shipped with notebook computers that use Windows NT as the operating system. When you install a PC Card, CardWizard attempts to configure it automatically. If Card Wizard successfully assigns system resources to your card, the computer beeps twice.

If CardWizard cannot automatically configure your PC Card, the computer beeps once and a message appears telling you that the card has not been configured. Click the Wizard button on the CardWizard window. CardWizard then analyzes why the card was not configured and fixes the problem or gives you information to help fix the problem.

CardWizard works with the PowerProfiler program to manage PC Cards when the computer enters or resumes from rest mode. CardWizard gives you instructions to prevent loss of data before the computer enters rest mode or may stop the computer from entering rest mode. ATA and modem cards can enter rest mode.

Follow these guidelines when using PC Cards with CardWizard:

- LAN (local-area network) cards can be inserted while the computer is on but should be removed only when the system is turned off.
- SCSI cards should be inserted at startup to enable Windows NT to find the device attached to the SCSI card. SCSI cards can be removed when the computer is turned off. If you restart your computer without the SCSI card installed, a message may appear telling you that a service did not start. You can ignore this message.
- Modem and ATA cards can be inserted and removed while the computer is on.



Before you remove a modem or ATA card from your computer, stop the card through the CardWizard program or you may lose data.

To stop and remove a PC Card from your computer:

1. In the SystemSoft CardWizard screen, click with the right mouse button on the name of the card you want to remove.
2. Click Stop in the Actions menu. A red stop sign appears on the main screen when the card is stopped.
3. Click OK.
4. Push the card eject button on the side of the PC Card slot.

5. Pull the card out of the slot compartment.

For more information on using the CardWizard program, see the CardWizard Help.

About Drivers and System Resources

This section gives you basic information about drivers and system IRQs.

Drivers

A driver is a program that enables the operating system to work with a hardware device. Your computer includes drivers for the audio, video, touchpad, keyboard, CD-ROM drive, hard drive, floppy drive, and PC Card controller. When you add a device to your computer, such as a printer, you must install a driver for that device.

Different drivers are used by different operating systems. If you need drivers for an operating system other than Windows 98 or Windows NT, check the Drivers directory in your Utility CD-ROM, drivers for some other operating systems are included there.

IRQs

Most of the devices in your computer or connected to your computer need their own IRQ. The IRQ is a hardware line that a device can use to send signals to the microprocessor. When the device needs the microprocessor's service, the device sends an interrupt request signal to the microprocessor.

The number of IRQs available for any computer is limited by industry standards. Because it ships with numerous features, the computer uses most of the available IRQs. If you add another device to your computer, you may need to disable an existing device to free up an IRQ for the new device. IRQ resources are of particular concern when the computer is attached to a docking device.

The IRQs that are used by default on your computer are listed in Table 8.

Table 8. IRQs

IRQ	Component (Windows 98)	Component (Windows NT)
0	System timer	System timer
1	Keyboard	Keyboard

IRQ	Component (Windows 98)	Component (Windows NT)
2	Internal Controller	Internal Controller
3	Infrared Port (COM 2)	(available)
4	Serial Port (COM 1)	Serial Port (COM 1)
5	Sound, USB	Sound, USB
6	Floppy controller	Floppy controller
7	ECP Printer Port (LPT1)	ECP Printer Port (LPT1)
8	System CMOS/ Real Time Clock	System CMOS/ Real Time Clock
9	(available)	(available)
10	(available)	(available)
11	CardBus PC Card Controller	CardBus PC Card Controller
12	Touchpad, PS/2 mouse	Touchpad, PS/2 mouse
13	Numeric data processor	Numeric data processor
14	Primary IDE Controller (hard drive)	Primary IDE Controller (hard drive)
15	Secondary IDE Controller (CD-ROM drive)	Secondary IDE Controller (CD-ROM drive)

In Windows 98, you can configure a device so that the device is disabled when you connect your computer to a docking station but enabled when the computer is not connected to the docking station. With this configuration, an IRQ is available for a peripheral device that you can connect the docking station.

Enabling the Infrared Port

If your computer's operating system is Windows 98, you can enable and use the infrared port. If your computer's operating system is Windows NT 4.0 you will need to purchase additional software to use the Infrared port.

If you are unable to transfer files with the infrared port, check the following:

- Make sure the *Serial port B* field in System Setup is set to *2F8, IRQ 3*. The field is in the *Advanced Menu* under *I/O Device Configuration*.
- The receiving device must be positioned properly. There must be no more than three feet (or one meter) of distance between the computer's infrared port and the receiving infrared device.

- The sending and receiving devices need to be on the same level vertically. Place them on the same table if possible.
- Make sure the infrared ports on the sending and receiving devices face each other, with no more than a 30 degree angle between the two infrared ports.
- Make sure that nothing is obstructing the file transfer path between the computer's infrared port and the receiving infrared device.

If you still cannot transfer a file, see the documentation for the infrared software.

Service Pack 3 for Windows NT 4.0

Microsoft® Service Pack 3 (SP3) is included with computers shipped from the factory with Windows NT installed. Any time you change or add components to your Windows NT system, you need to reinstall SP3.

The version of SP3 on your computer's hard drive includes the correct video driver for your system. If possible, always install this version on your computer.

To install SP3:

1. Run the executable file. On your computer's hard drive this file is located at C:\SP3\I386\update.
2. Follow the instructions on the screen with these exceptions:
 - a. When you are prompted to overwrite the uninstall directory, click the Yes button.
 - a. When a prompt identifies your pcmcia.sys file as an OEM-installed file and asks you to overwrite the version of the file on your system with the service pack version, click the No button.



If you install any future service packs on your computer, make sure that, when you are prompted, you do not overwrite the pcmcia.sys file, or you may be unable to use your computer.

If you install SP3 from any source other than your computer's hard drive, the video driver that was installed on your computer at the factory is overwritten. After you install the service pack, you must reinstall the video driver the first time you restart your computer, see "Changing the Video Driver" on page 65 for more information.

Troubleshooting

If you ever have difficulty running your computer, follow these steps:

1. Consult the following sections for advice on how to handle system problems.
2. If steps 1 does not help you to resolve the problem, contact your reseller for assistance.

Operating Problems

This section tells you what to do if you have problems running your computer. If any problem persists after you take corrective action, contact your reseller for assistance.

The computer does nothing when you turn it on.

Has the battery run down? Connect the AC adapter or auto adapter to get power and recharge the battery. Try turning on the computer again.

The computer is not behaving as expected.

Operating your computer at high speed with the cache enabled may cause system instability and incompatibility with some operating systems. If your computer is not behaving as expected and no error messages appear, disable the *Memory Cache* setting in the *Memory Cache* field of System Setup.

Nothing appears on the LCD panel when you turn on the computer.

Adjust the brightness on the LCD. Are you using an external monitor? If so, press <Fn+F5> to return to the LCD panel.

Nothing appears on the external monitor when you switch the display to it.

Is the monitor properly connected to the computer? Is the monitor's power cord connected to an AC wall outlet? Check the brightness and contrast controls on the monitor. Does the program appear on the LCD panel instead of the external monitor? If so, press <Fn+F5> to switch to the monitor. Try turning the monitor off and on again.

The external monitor displays flashes or waves.

Check the cables between the monitor and the computer. Are they properly installed?

Some of the letter keys type numbers instead of the indicated letters.

Is the Num Lock light on? If so, the numeric keypad on the keyboard is active. To return the keypad keys to typing letters, press <Num Lock>.

Battery power seems to run out faster than expected.

If you are running the computer from the battery rather than the AC adapter, make sure that you set the *Battery Power Saving Mode* field in System Setup to *Maximum Power Saving Mode*. This setting enables the microprocessor and the hard drive to slow down when the computer is idle.

You can also enable other power-saving options through System Setup. Set the timeout times in the *Standby Timeout* and *Rest Timeout* fields to the shortest times to ensure maximum power savings.

Certain software programs “hang” during operations when there is no interaction with the keyboard or peripheral devices.

Your computer may be in standby or rest mode. Tap the touchpad to resume from standby or press the power button to resume from rest.

A serial or parallel device attached to a serial or parallel port on the rear panel of the system unit does not work properly.

Check the attached device. Is it turned on? Is the cable properly installed between the device and the port? If you are using an operating system that is not plug and play compliant, make sure the *Installed O/S* field in System Setup is set to *other*. Check to make sure that the port is enabled in System Setup.

A PC Card does not work correctly.

Make sure that the PC Card is inserted right side up in the PC Card slot. Check that the card is inserted fully into the slot. If you are using a PC Card modem, check the modem cable connections. If you are using an operating system that is not plug and play compliant, make sure the *Installed O/S* field in System Setup is set to *Other*.

The System Setup settings are not retained when you turn off the computer.

The CMOS battery inside the computer may need to be replaced. The CMOS battery provides power to save the system BIOS information when the computer is turned off. Normally, the CMOS battery lasts for several years. Do not attempt to open the chassis and replace this battery yourself or your warranty is void. Have an authorized manufacturer's service center replace the CMOS battery.

Using Options

You can order the following options for your computer from your authorised reseller:

- An extra AC adapter.
- An auto adapter that enables you to charge the computer's battery and operate the computer while in an automobile or an airplane.
- An extra battery pack.
- 32, 64 and 128 MB memory modules that enable you to upgrade your computer's memory.
- An external numeric keypad.
- An external CD-ROM drive module.
- An external DVD-ROM drive module.
- Docking options that enable you to use your computer like a desktop computer.

The options that are available may change periodically. Contact your reseller for updated information on current and new options.

AC Adapter

The optional AC adapter operates in the same way as the adapter that came with your computer does. See "Attaching the AC Adapter" on page 5 for information about the AC adapter.

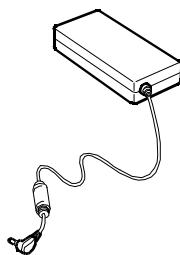


Figure 23. AC Adapter

Auto Adapter

The auto adapter enables you to power your computer and charge the computer battery

- In an automobile, through the +12 volt cigarette lighter socket.

To use the adapter:

1. Plug the adapter cable into the AC adapter connector on the computer.
2. Connect the adapter to the cigarette lighter socket.

The light on the adapter is green when the adapter is working properly. The light may be red for a few seconds when you first plug in the adapter or while you use the adapter. This is normal. If the light remains red, check to make sure the adapter is connected correctly.

If the adapter is plugged in and the adapter light does not turn on:

- Check the adapter connections.
- If you are in an automobile, turn on the automobile's ignition to supply power to the adapter. In some vehicles, power to the cigarette lighter socket is always on and you do not need to turn on the ignition.
- If the previous procedures do not activate the adapter, you may need to change the fuse in the adapter. To remove the fuse from the adapter, unscrew the adapter cap with a pair of pliers and remove the cap. Replace the fuse with an 8 amp fuse. In an automobile, you may need to replace the fuse in the cigarette lighter socket.

When you connect the adapter to the cigarette lighter, the battery starts charging immediately.



To prevent loss of data and possible damage to the computer, unplug the auto adapter when starting and stopping the automobile engine.

Battery Pack

You can order another smart lithium-ion battery pack for your computer. See "Using the Battery" on page 34 for information on the battery.

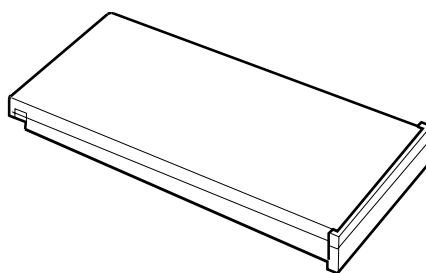


Figure 24. Smart Lithium-ion Battery

Memory Modules

You can increase system memory by installing an optional memory module. Your computer comes with a non-removable 32 MB SDRAM SODIMM module and can be upgraded by installing 32, 64 or 128 MB SDRAM SODIMM modules. The maximum system memory is 160 MB.



Additional memory modules must only be installed by an Authorised Reseller. To avoid possible system problems, use only manufacturer-approved memory modules in your computer.

Resellers, please refer to your Service Manual for memory installation instructions.

External Numeric Keypad

The external numeric keypad has the same features as the integrated keypad. The external keypad plugs into the PS/2 mouse and keyboard port. See "Connecting Peripheral Devices" on page 20

External CD-ROM Drive Module

The CD-ROM drive module can be connected to your computer using the external module cable. See "Connecting External Modules" on page 25 and see "Using the

CD-ROM Drive” on page 30 or directions on installing and using the CD-ROM drive.

External DVD-ROM Drive Module

The external DVD-ROM drive module can be connected to your computer using the external module cable. See “Connecting External Modules” on page 25 and see “Using the CD-ROM Drive” on page 30 or directions on installing and using the DVD-ROM drive. There is MPEG2 software included with the drive that will enable you to play DVD movies from the DVD-ROM drive.

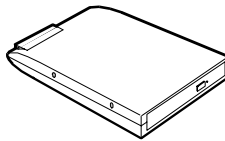


Figure 25. External DVD-ROM Drive Module

Docking Options

You can order an additional Port Replicator.

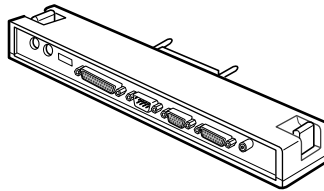


Figure 26. Port Replicator

Contact your reseller for a list of other docking options available for your computer. User’s manuals are included with the docking options.

Specifications

Table 9 gives the specifications for your computer.

Table 9. System Specifications

Dimension	
System with 12.1 TFT LCD	
Width	11.7 in (297 mm)
Height	1.1 in (28 mm)
Depth	8.9 in (225 mm)
Weight (with battery installed)	4.2 lbs (1.9 kg)
LCD viewing area (12.1 TFT)	9.7 x 7.2 in (246 x 184.5 mm)
Environment	
Ambient temperature, operating	41 ^o –95 ^o F (5 ^o –35 ^o C)
Ambient temperature, storage	14 ^o –112 ^o F (-10 ^o –44 ^o C)
Relative humidity (noncondensing), operating	20–80%
Relative humidity (noncondensing), storage	15–95%
Altitude, operating	0 to 8,000 ft (0 to 2,348 m)
Altitude, storage	0 to 40,000 ft (0 to 12,192 m)
Shock, operating	10 G for 11 ms half sine
Shock, nonoperating	60 G for 11 ms half sine

Smart Lithium-Ion Battery	
Weight	380g
Nominal open circuit voltage	10.8 Vcc
Capacity, typical	3200mAh
Charging time, approximate, with computer turned off	2.5 hours
Charging time, approximate, with computer turned on	4 hours
Average battery life, with power management enabled	2.5 hours
AC Adapter	
Width	2.05 in (5.2 cm)
Height	1 in (2.6 cm)
Length	4.33 in (11 cm)
Weight	(0.21 kg)
Operating voltage	100-120 VAC/ 200-240 VAC
Line frequency	50/60 Hz
Input current	1.3 A 100 V - 0.7 A 240 V
Output current	2.63A
Output voltage	19V

Abbreviations

Your documentation uses the following abbreviations:

A	Amperes
AC	Alternating current
APM	Advanced Power Management
ASK-IR	Amplitude shift keyed infrared
ATA	AT attachment (refers to the hard-drive interface in an AT-compatible computer)
BIOS	Basic input/output system
C	Centigrade
CD	Compact disc
CD-ROM . .	Compact disc read-only memory
cm	Centimeters
COM	Communication (as in communication port)
CMOS	Complementary metal-oxide semiconductor
CMYK	Cyan-Magenta-Yellow-black
DC	Direct current
dBA	Decibels acoustic
DIN	Deutsche Industrie Normenuasschuss (German electrical standards association)
DMA	Direct memory access
DPMS	Display power-management signaling
DRAM	Dynamic random access memory
ECP	Extended capabilities port
EPP	Enhanced parallel port
F	Fahrenheit
FIR	Fast infrared
ft	Feet
g	gram
G	Gravity
GB	Gigabytes

hr hour
Hz Hertz
IDE Integrated drive electronics
in Inches
I/O Input/Output
IrDA Infrared Data Association
IRQ Interrupt request line
Kb/sec Kilobits per second
KB Kilobytes
kg Kilograms
LAN Local-area network
lbs Pounds
LBA Logical block addressing
LCD Liquid-crystal display
m Meters
mA Milliampere
mAh Milliampere hour
MB Megabyte
Mb/sec Megabits per second
MHz Megahertz
MIDI Musical instrument digital interface
mm millimeter
MPU Microprocessor unit
ms Millisecond
PDF Portable document format
PC Personal computer
PCI Peripheral component interconnect
PCMCIA Personal Computer Memory Card International Association
POST Power-on self-test
PS/2 Personal System/2
RAM Random-access memory
RGB Red-Green-Blue
ROM Read-only memory

SDRAM . . . Synchronous dynamic random-access memory
SMART . . . Self-Monitoring, Analysis and Reporting Technology
SRAM Static random-access memory
SVGA Super video graphics array
TFT Thin-film transistor
USB Universal serial bus
V Volt
VAC Voltage alternating current
VCC Voltage collector current
VDC Voltage direct current
VGA Video graphics array
whr Watt hour
XGA Extended graphics array

Glossary

AC adapter

The AC (or alternating current) adapter regulates current coming into your computer from the wall outlet. The current at the wall outlet is alternating current and needs to be changed by the adapter to DC (direct current) before your computer can use it for power.

BIOS

BIOS stands for basic input/output system. The BIOS is software (often called firmware) that is independent of any operating system. It enables the computer to communicate with the screen, keyboard, and other peripheral devices without using programs on the hard disk.

The BIOS on your computer is flash BIOS, which means that it has been recorded on a flash memory chip that can be updated if needed.

Boot

To start your computer. A cold boot resets the entire computer and runs through all computer self-tests. A warm boot clears out computer memory only.

Boot disk

A disk containing operating system programs required to start your computer. A boot disk can be a floppy disk, hard drive, or compact disc.

Byte

The basic unit of measure for computer memory. A character—such as a letter of the alphabet—uses one byte of memory. Computer memory is often measured in kilobytes (1,024 bytes) or megabytes (1,048,576 bytes).

Each byte is made up of eight bits. For more information on bytes and bits, see an introductory book on computers.

Cache memory

Cache is very fast, zero-wait-state memory located between the microprocessor and main memory. Cache reduces the average time required for the microprocessor to get the data it needs from the main memory by storing recently accessed data in the cache.

CardBus

CardBus technology enables the computer to use 32-bit PC Cards. Hardware in the computer and the Windows 98 operating system provide support for the 32-bit cards. The voltage of 32-bit cards (3.3 volts) is lower than that of 16-bit cards (5 volts). The 32-bit cards can transmit more data at a time than the 16-bit cards, thus increasing their speed.

CMOS memory

CMOS (complementary metal oxide semiconductor) memory is powered by the CMOS battery. The System Setup settings and other parameters are maintained in CMOS memory. Even when you turn your computer off, the information in CMOS memory is saved.

COM port

COM stands for communication. COM ports are the serial ports in your computer.

Conventional memory

The first 640 KB of system memory. Operating systems and application programs can directly access this memory without using memory-management software.

CMYK

A color model in which all colors are described as a mixture of four process colors - Cyan, Magenta, Yellow and Black. CMYK is the standard color model used in offset printing for full-color documents. Printed colors look the same as what appears on the screen.

Disc

A compact disc (CD).

Disk

The device used by the computer to store and retrieve information. *Disk* can refer to a floppy disk, hard disk, or RAM disk.

Disk cache

A software device that accumulates copies of recently used disk sectors in RAM. The application program can then read these copies without accessing the disk. This, in turn, speeds up the performance of the application.

A cache is a buffer for transferring disk sectors in and out of RAM. Data stored in a disk cache is a copy of data already stored on the physical disk.

DMA (direct memory access)

A method of transferring data from a device to memory without having the data pass through the microprocessor. Using DMA can speed up system performance.

Floppy disk

A removable disk, also called *floppy* or *diskette*.

Hard drive

Also called *fixed* disk. A hard drive is connected to the computer and can be installed or removed. Data written to a hard drive remains until it is overwritten or corrupted.

The 2.5-inch hard drive in your computer was designed for use in a portable computer. Because hard drives in portable computers are smaller than those in desktop computers, their maximum storage capacity may be less than that of desktop hard drives. However, because of their smaller size, the drives handle shock and vibration better than larger drives, which is important for a portable computer.

I/O

Input/output. Refers to peripheral devices, such as printers, that are addressed through an I/O address.

I/O address

I/O stands for input/output. Peripheral devices, such as printers, are addressed through the I/O port address.

IRQ (interrupt request line)

The IRQ is a hardware line that a device uses to signal the microprocessor when the device needs the microprocessor's services. The number of IRQs is limited by industry standards.

LCD (liquid-crystal display)

The LCD screen on your computer differs from the display screen of a desktop monitor. Most desktop monitors use CRT (cathode-ray tube) displays, which work by moving an electron beam across phosphor dots on the back of the screen. The phosphor dots light up to show the image. LCDs use a liquid-crystal solution between two sheets of polarizing material. Electric current passing through the liquid aligns the crystals so that light can or cannot pass through them, creating an image.

MB

1,024 kilobytes.

Megabit

1,048,576 bits or about 128 kilobytes.

Operating system

A program that supervises the computer's operation, including handling I/O. Application programs and users can request operating-system services. A user might request operation-system services to copy files or format a disk. An application program might use the operating system to obtain keyboard input, write data to a file, or write data to a screen.

PC Card

PC Card stands for personal computer card. The Personal Computer Memory Card International Association (PCMCIA) defines the standards used to develop all PC Cards. PC Card types include: modems, Ethernet adapters, SCSI adapters, ATA cards, and memory cards.

PC slot

The PC slot is the hardware slot in the computer where the PC Card is placed.

Pixel

A pixel is an individual dot in a graphic displayed on your computer. The pixels are so close together that they look as though they are connected. An LCD screen displays thousands or millions of pixels.

Plug and Play

A plug and play operating system automatically configures computer components to work with your system. With this type of operating system, you normally do not need to set jumpers on devices or set memory addresses or IRQs.

POST

POST stands for power-on self-test. POST is a test performed by the computer whenever you turn on the power. POST checks system integrity.

RAM (random access memory)

The computer's system memory, including conventional and extended memory. You can write to and read from RAM. Information stored in RAM is temporary, and is erased when the system is turned off.

Refresh rate

The refresh rate is the rate at which the image on the LCD screen is rewritten to the screen. A fast refresh rate helps keep the image from flickering.

Resolution

The resolution is the sharpness or clarity of the image on your LCD screen. Resolution is measured by the number of pixels the computer's screen can display. For example, a resolution of 800x600 means that the screen can display 800 pixels in row and can display 600 rows. The more pixels displayed, the higher the resolution and the better the image.

ROM (read-only memory)

Permanent computer memory dedicated to a particular function. For example, the instructions for starting the computer when you first turn on power are contained in ROM. You cannot write to ROM. (ROM is not the same as RAM).

Sector

Also known as *disk sector*. The portion of a track that is numbered and can hold a specified number of characters (usually 512 KB).

Shadow RAM

A write-protected area of RAM that contains a copy of the BIOS. As the computer boots, the BIOS is copied from its permanent location in ROM to RAM. The BIOS can be executed much faster in RAM than in ROM. The BIOS remains in shadow RAM until you turn off the computer.

RGB

A color model generally used by display devices. Colors are described as a mixture of Red, Green and Blue.

TFT (thin film transistor) LCD

A TFT LCD uses a separate transistor circuit to control each pixel. This technology provides the best resolution for an LCD screen. A TFT LCD is also sometimes called an active matrix LCD.

Zoomed video

Zoomed video technology enables zoom video PC Card to transfer data directly from the card to video and audio systems without going through the microprocessor. This process improves video performance. Video conferencing and real-time multimedia devices, such as video cameras, are supported by zoom video.

Recording the Computer Hardware Configuration

In the spaces provided, write the System Setup program settings. If your computer ever loses configuration information, you can enter the information from this section into System Setup to restore it.

MAIN MENU

Legacy Diskette A: ☐ Disabled ☐ 1.44 MB 3½

IDE ADAPTER1 SUBMENU

IDE Adapter1:

Type: _____ Cylinders: _____

Heads: _____ Sectors: _____

Multi-Sector Transfers: _____

LBA Mode Control: ☐ Enabled ☐ Disabled

32 Bit I/O: ☐ Enabled ☐ Disabled

Transfer Mode: ☐ Standard

☐ Fast PIO 1 ☐ Fast PIO 2

☐ Fast PIO 3 ☐ Fast PIO 4

☐ FPIO 3 / DMA 1 ☐ FPIO 4 / DMA 2

Ultra DMA: ☐ Mode 0 ☐ Mode 1

☐ Mode 2 ☐ Disabled

IDE ADAPTER2 SUBMENU

IDE Adapter2:

Type: _____ Cylinders: _____

Heads: _____ Sectors: _____

Multi-Sector Transfers: _____

LBA Mode Control: ☐ Enabled ☐ Disabled

32 Bit I/O: ☐ Enabled ☐ Disabled

Transfer Mode: ☐ Standard
 ☐ Fast PIO 1 ☐ Fast PIO 2
 ☐ Fast PIO 3 ☐ Fast PIO 4
 ☐ FPIO 3 / DMA 1 ☐ FPIO 4 / DMA 2
Ultra DMA: ☐ Mode 0 ☐ Mode 1
 ☐ Mode 2 ☐ Disabled

MEMORY CACHE SUBMENU

Memory Cache: ☐ Enabled ☐ Disabled
Cache Extended Memory Area: ☐ Write Back ☐ Uncached
 ☐ Write Through ☐ Write Protect
Cache D400 -D7FF ☐ Disabled ☐ Write Through
 ☐ Write Protect ☐ Write Back
Cache D800 -DBFF ☐ Disabled ☐ Write Through
 ☐ Write Protect ☐ Write Back

ADVANCED MENU

PS/2 MOUSE CONFIGURATION SUBMENU

Mouse Configuration: ☐ Enabled ☐ Disabled
Mouse Operation Mode: ☐ Single Mouse ☐ Dual Mouse

I/O DEVICE CONFIGURATION SUBMENU

Serial port A: ☐ Enabled ☐ Disabled ☐ Auto
 Base I/O address: ☐ 3F8, IRQ 4 ☐ 2F8, IRQ 3
 ☐ 3E8, IRQ 4 ☐ 2E8, IRQ 3
Serial port B: ☐ Enabled ☐ Disabled
 Base I/O address: ☐ 3F8, IRQ 4 ☐ 2F8, IRQ 3
 ☐ 3E8, IRQ 4 ☐ 2E8, IRQ 3
Mode: ☐ FIR ☐ Normal ☐ IrDA ☐ ASK-IR

DMA Channel: ☐ DMA 1 ☐ DMA 3
Parallel port: ☐ Enabled ☐ Disabled ☐ Auto
Mode: ☐ Bi-directional ☐ Output only
 ☐ EPP ☐ ECP
Base I/O address: ☐ 378, IRQ 7 ☐ 378, IRQ 5
 ☐ 278, IRQ 7 ☐ 278, IRQ 5
 ☐ 3BC, IRQ 7 ☐ 3BC, IRQ 5
DMA Channel: ☐ DMA 1 ☐ DMA 2 ☐ DMA 3
Floppy Disk Controller: ☐ Enabled ☐ Disabled ☐ Auto

Installed O/S: ☐ Win95/Win98 APM ☐ Other
 ☐ Win98 ACPI/WinNT5.0

Boot-time Logo Screen: ☐ Enabled ☐ Disabled
QuickBoot Mode: ☐ Enabled ☐ Disabled
CPU BIOS Update: ☐ Enabled ☐ Disabled
USB Device: ☐ Enabled ☐ Disabled
Screen Expansion: ☐ Enabled ☐ Disabled
TV Standard: ☐ NTSC ☐ PAL ☐ PAL-M
 ☐ PAL-60 ☐ NTSC-J ☐ SCART-PAL
Local Bus IDE adapter: ☐ Both ☐ Disabled
 ☐ Primary ☐ Secondary
Large Disk Access Mode: ☐ DOS ☐ Other

SECURITY MENU

Password on boot: ☐ Enabled ☐ Disabled
Fixed disk boot sector: ☐ Normal ☐ Write Protect
Diskette access: ☐ User ☐ Supervisor

Virus check reminder: ☐ Daily ☐ Weekly ☐ Monthly
☐ Disabled
System backup reminder: ☐ Daily ☐ Weekly ☐ Monthly
☐ Disabled

POWER MENU

Power Savings Mode: ☐ Max. Power Savings ☐ Max. Performance

Standby Timeout: ☐ Off Time_____

Rest Mode: ☐ Power On Suspend ☐ Save To Disk

Rest Timeout: ☐ Off Time_____

Resume On Time: ☐ On ☐ Off

Resume Time:_____

BOOT MENU

Floppy Check: ☐ Enabled ☐ Disabled

Summary Screen: ☐ Enabled ☐ Disabled

BOOT DEVICE PRIORITY SUBMENU

Boot option 1:_____

Boot option 2:_____

Boot option 3:_____