NEC Versa® LX Computer

VERSA LX

NEC

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Using This Guide

The *NEC Versa® LX User's Guide* gives you the information you need to maximize the use of your NEC Versa notebook computer. Read this guide to familiarize yourself with the NEC Versa and its features. For specific information see

- Chapter 1, “Introducing the NEC Versa,” to acquaint yourself with system hardware.
- Chapter 2, “Getting Started,” for instructions on how to connect, power on, and care for your system, as well as what to bring when you travel with your NEC Versa notebook computer.
- Chapter 3, “Using the Software,” for a concise summary of the applications and utilities loaded on your system. We included software to let you experience the full spectrum of the system.
- Chapter 4, “Using the Hardware,” for an understanding of NEC Versa features and functionality. You’ll learn how to swap VersaBay devices, install PC cards, and upgrade your system memory.
- Chapter 5, “Using External Devices,” to master procedures for connecting external devices like an external monitor, headphones, a printer, or speakers.
- Chapter 6, “Using Multimedia,” for steps on integrating video and sound clips into impressive presentations.
- Chapter 7, “Solving System Problems,” for simple solutions to common problems that may arise while operating your notebook.
- Chapter 8, “Getting Services and Support,” for information about getting help when you need it from NEC Computers Inc. (NECC).
- Appendix A, “Setting Up a Healthy Work Environment,” for guidelines that help promote a healthy work setting.
- Appendix B, “Specifications,” to review NEC Versa system specifications.

- Appendix C, “Frequently Asked Questions,” (FAQs) for a look at questions that users commonly ask and the answers to those questions.

Text Setup

To make this guide as easy to use as possible, text is set up as follows.

- Warnings, cautions, and notes have the following format:

> **WARNING**
> Warnings alert you to situations that could result in serious personal injury or loss of life.

> **CAUTION**
> Cautions indicate situations that can damage the system hardware or software.

> ***Note:*** Notes give particularly important information about whatever is being described.

- Names of keys are printed as they appear on the keyboard, for example, **Ctrl**, **Alt**, or **Enter**.
- Text that you must type or keys that you must press are presented in bold type. For example, type **dir** and press **Enter**.

Related Documents

See the following documents for additional information on your NEC Versa notebook computer:

- The *NEC Versa LX Quick Setup* sheet helps get your system up and running.
- The *NEC Versa LX Quick Reference* card provides an easy-to-carry reference to LED meanings, controls, function key combinations, and NECC help numbers. (The quick reference card does not ship with some systems purchased outside of the United States and Canada.)
- The *NEC Help Center* is a fully navigational, HTML-based document containing multimedia elements, a full search capability, and all of the information about your NEC Versa that you find in this printed user's guide, and more.

1

Introducing the NEC Versa

- Getting to Know Your NEC Versa
- NEC Versa LX Notebook
- Around the Front of the System
- Around the Back of the System
- Around the Left Side of the System
- Around the Right Side of the System
- Around the Bottom of the System

Getting to Know Your NEC Versa

⚠ WARNING

Prolonged or improper use of a computer workstation may pose a risk of serious injury. To reduce your risk of injury, set up and use your computer in the manner described in Appendix A, "Setting Up a Healthy Work Environment."

After completing the steps in the quick setup sheet that comes with your computer, your NEC Versa LX notebook computer is ready to go! To get started, do the following:

- Read Appendix A, "Setting Up a Healthy Work Environment," for guidelines that help you use your computer productively and safely. Information includes how to set up and use your computer to reduce your risk of developing nerve, muscle, or tendon disorders.
- Take the online System Tour to get acquainted with the NEC Versa. The System Tour is part of the NEC Help Center. Use the Application and Driver CD for the NEC Versa LX that ships with your system to install the NEC Help Center.
- Read through this guide to familiarize yourself with the NEC Versa.

NEC Versa LX Notebook

The NEC Versa LX notebook computer offers you a portable system filled with exciting resources for home, business or travel. Standard features include a powerful Intel Pentium II 300-PE, 333-MHz or 366-MHz microprocessor with AGP (advanced graphics port) that works together with the latest Peripheral Component Interconnect (PCI) architecture.

In addition, your system provides a high-performance hard disk drive, a diskette drive or SuperDisk™ drive, and PC card support. Most models are equipped with a 24X CD-ROM drive, or a DVD-ROM drive. As a multimedia system, your NEC Versa also provides the tools needed to create and present impressive images using video clips and sound.

NEC Versa LX notebook computer

To get comfortable with your notebook, read the following sections and take a tour around your system!

Around the Front of the System

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

LCD Panel

Your NEC Versa LX comes with a 1024x768, 64K color LCD panel that you can adjust for a comfortable viewing position. Depending on the model, your system is equipped with a:

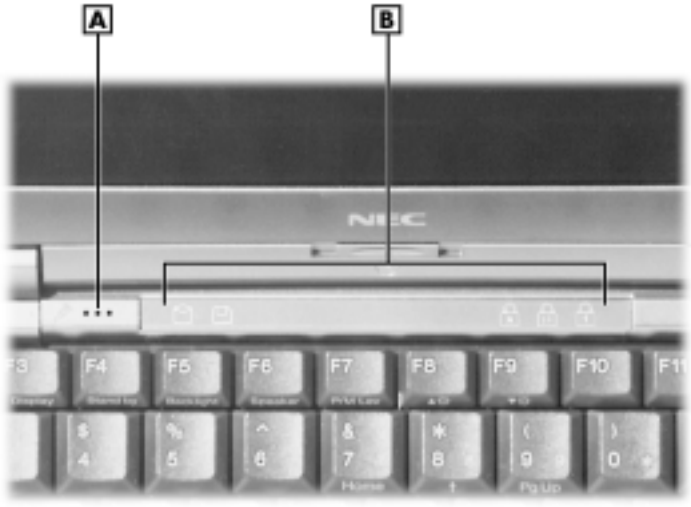
- 13.3-inch color Thin Film Transistor (TFT) Extended Graphics Array (XGA) panel.
- 14.1-inch Thin Film Transistor (TFT) Extended Graphics Array (XGA) panel.

To adjust the LCD panel brightness press the **Fn-F8** and **Fn-F9** functions keys. For more details about using the system's function keys, see Chapter 4, "Using the Hardware."

Status Panel

The NEC Versa status panel provides the features shown in the figure. These features are described after the figure.

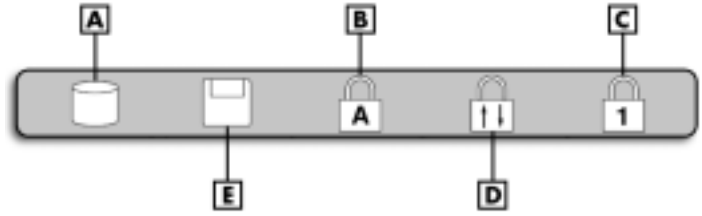
Status panel



A – Microphone **B** – Operating Status LEDs

- Microphone — A strategically positioned built-in microphone allows you to record monophonic sound directly into your notebook computer. See Chapter 6, “Using Multimedia,” for details about recording.
- Operating Status LEDs — keeps you informed of your NEC Versa's current operating status. See the following figure and list for each icon's meaning.

Operating status LEDs



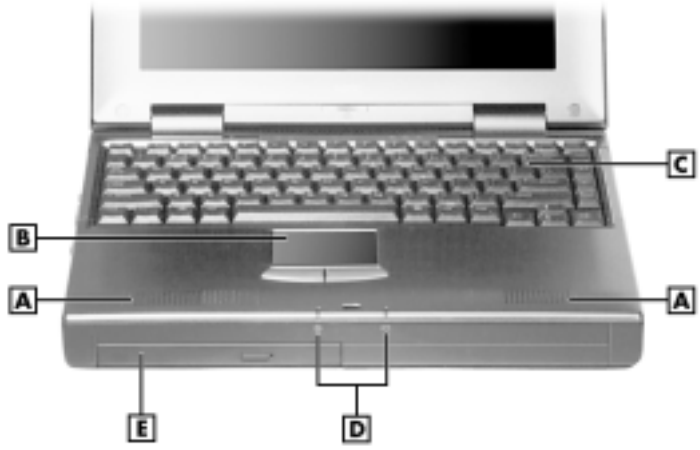
A – IDE/VBIII Devices **B** – Caps Lock **C** – Num Lock **D** – Scroll Lock **E** – Diskette Drive

- IDE/VBIII devices — lights when the NEC Versa writes data to or retrieves data from the internal hard disk drive, a SuperDisk drive in the file bay, or a device in the VersaBay III.
- Caps Lock — lights when Caps Lock is in effect.
- Num Lock — lights when Num Lock mode is active.
- Scroll Lock — lights when Scroll Lock is in effect.
- Diskette Drive — lights when the NEC Versa accesses the floppy diskette drive.

Keyboard Panel and Base Unit

The NEC Versa keyboard panel and base unit contain the following features which are described after the figure.

Keyboard panel and base unit

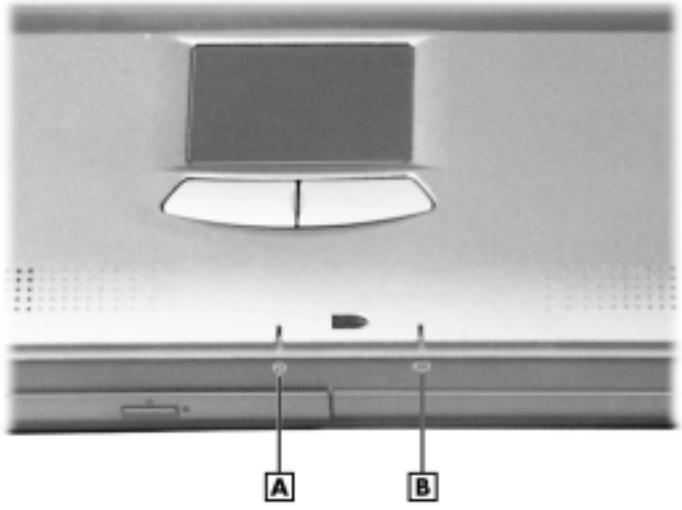


A – Stereo Speaker **B** – VersaGlide **C** – Keyboard
D – System Power Status LEDs **E** – VersaBay III

- Stereo Speakers — provide stereo sound for your multimedia presentations or listening pleasure. The built-in sound system also supports 3D sound, which simulates the latest surround-sound technology.
- NEC VersaGlide — The NEC VersaGlide works like a standard computer mouse. Simply move your fingertip over the VersaGlide to control the position of the cursor. Use the selection buttons below the VersaGlide to select menu items. VersaGlide settings and features are described in detail in Chapter 4.
- Keyboard — 85 keys with the standard QWERTY-key layout. See Chapter 4 for complete details. (Models purchased outside of the U.S. and Canada ship with country-specific keyboard layouts.)

- System Power Status LEDs — keeps you informed of the system's current power status.

System power status LEDs



A – Power Status LED **B** – Battery Charging LED

— Power Status LED — lights green when the system is under AC power. When the system is under battery power, this LED lights to indicate the following:

  - Lights green when the system power is on.
  - Blinks green when the system is in Suspend mode.
  - Lights yellow (blinks when in Suspend mode) to indicate that battery power is at 8% capacity or less.
  - Lights amber (blinks when in Suspend mode) to indicate that battery power is at 3% capacity.

> ***Note***: When both the primary and a secondary battery are installed, the power status LED indicates the total (primary plus secondary) battery status.

— Battery Charging LED — lights to indicate battery charging activity.

  – Lights amber when the primary battery is charging. Blinks amber to indicate an error. The primary battery is installed in the battery bay.

  – Lights green when the secondary battery is charging. Blinks green to indicate an error. The secondary (optional) battery is installed in the VersaBay III.

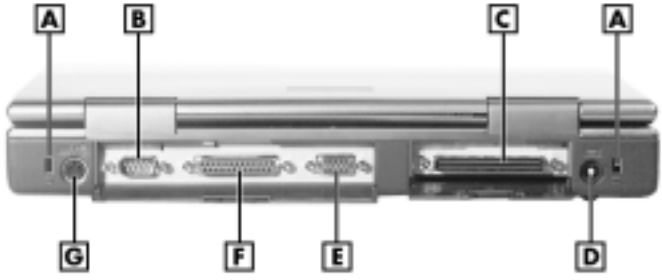
- NEC VersaBay III™ — A 24X CD-ROM drive, a SuperDisk drive, or a DVD-ROM drive comes installed in the NEC VersaBay III on the front of your system.

  The VersaBay III lets you add options, including an optional second Li-Ion battery, or an additional hard disk drive. See “Customizing Your System with the VersaBay III” in Chapter 4.

Around the Back of the System

You'll find system ports for connecting optional devices (like a printer, a docking station, or an external monitor) on the back of your NEC Versa. These ports are described after the figure.

Ports on the back of the system



A – Port Bar Notch **B** – Serial Port **C** – Expansion Port **D** – AC Power Port
E – External Monitor Port **F** – Parallel Port **G** – PS/2 Port

- PortBar Notch — Use these notches to secure the PortBar to the back of the system.
- Serial Port — Use this port to connect an external modem or other serial device.
- Expansion Port — This port (also called the Docking port) provides a connection for NEC Versa LX options including the NEC Versa Dock and the NEC Versa PortBar.

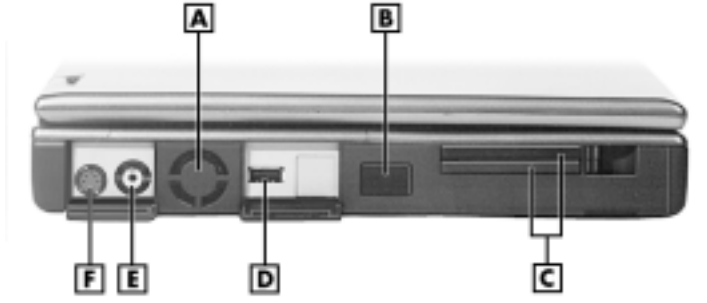
⚠ CAUTION
Only dock the NEC Versa LX system on the NEC Versa Dock. The cover of the NEC Versa Dock is specially designed to allow for proper system cooling.

- AC Power Port — Use the power jack to attach the NEC Versa to a DC power source, such as the AC adapter or the optional DC auto adapter.
- External Monitor (Video) Port — Use this 15-pin port to attach an external monitor to your NEC Versa. You can run the LCD display and the external monitor simultaneously or run either alone.
- Parallel Port — Use this port to connect a parallel printer or other parallel device. The port is an Enhanced Capabilities Port (ECP). The ECP standard provides you with a greater processing speed than the conventional parallel port. It also supports Enhanced Parallel Port (EPP), bi-directional and uni-directional protocols.
- PS/2 Port —— Use the standard PS/2 port to connect an external PS/2-style mouse or a PS/2-style keyboard to the system. With an optional Y-cable adapter, you can connect both a mouse and a keyboard at the same time.

Around the Left Side of the System

The left side of your NEC Versa offers the following features, which are described after the figure.

Left side features



A – Fan **B** – IR Port **C** – PC card slots **D** – USB Port **E** – TV Out (RCA) Port **F** – TV Out (S-video) Port

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

> **⚠ CAUTION**
> Always keep the fan vents unobstructed to allow proper system cooling.

- IR Port — Use this infrared (IR) port to transfer files between your NEC Versa and an IR-equipped desktop or notebook computer or to print to an IR-capable printer.

> ***Note***: Your NEC Versa LX ships with the IR port disabled. For detailed instructions on how to enable the IR port, see Chapter 4, "Using the Hardware."

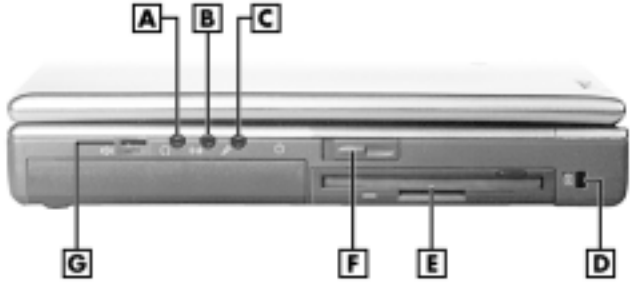
- PC card slots — Provide two slots for inserting two Type II PC cards or one Type III PC card.
- USB Port — The Universal Serial Bus (USB) port allows you to connect up to 127 USB-equipped peripheral devices (printers, monitors, scanners, etc.) to your NEC Versa.
- TV Out (RCA) Port — Lets you use a television set equipped with a standard RCA jack as an external monitor. This port supports both NTSC and PAL signals.
- TV Out (S-video)Port — Lets you use a television set equipped with an S-video input jack as an external monitor. This port supports both NTSC and PAL signals.

> ***Note:*** The TV Out ports do not support the SECAM signal used in some countries.

Around the Right Side of the System

The right side of the NEC Versa offers the features shown in the following figure. Features are described after the figure.

Right side features



A – Headphones **B** – Line In **C** – External Microphone **D** – Kensington Lock
E – File Bay **F** – Power/Sleep Button **G** – Audio Volume

- Audio ports

  - Headphones — Lets you connect external headphones or speakers to your NEC Versa. Plugging in headphones disables the built-in system speakers.

  - Line-In — Lets you use another audio system, like a home stereo, as an input source. Use a cable to connect to the Line-Out port on the other audio system to record or play in stereo.

  - External Microphone (MIC) — Allows you to connect an external microphone for monophonic recording or amplification through the unit. Plugging in an external microphone disables the built-in microphone.

- Kensington Lock — Lets you provide added security by installing an optional Kensington Lock.

- File Bay — Your NEC Versa ships with a 3.5-inch, 1.44-MB diskette drive or the SuperDisk drive installed in the file bay.
- Power/Sleep Button — Slide the Power/Sleep button toward the front of the system to power on, power off, and to put the computer into Suspend mode.

  — Slide the Power/Sleep button toward the front of the system to power on.

  — Hold the Power/Sleep button in place for 4 or fewer seconds to put the system into Suspend mode. *(Before using the Power/Sleep button to put the system into Suspend mode, set the System Switch BIOS parameter to Sleep button.)*

  — Hold the Power/Sleep button in place for 4 or more seconds to initiate power override (powers off the system).

  The Power/Sleep button is a "smart" switch, meaning that it recognizes when the system is in Suspend mode. If in Suspend mode, you cannot power off until you slide forward the Power/Sleep button again to bring it out of Suspend mode.

  In addition, the Smart Power switch invokes an orderly shutdown in the Windows 98 and Windows 95 environments. If you use the Power/Sleep button to turn off your system while applications are running, the Smart Power switch alerts the operating system. The operating system prompts you to save all data and invokes an orderly shutdown procedure.

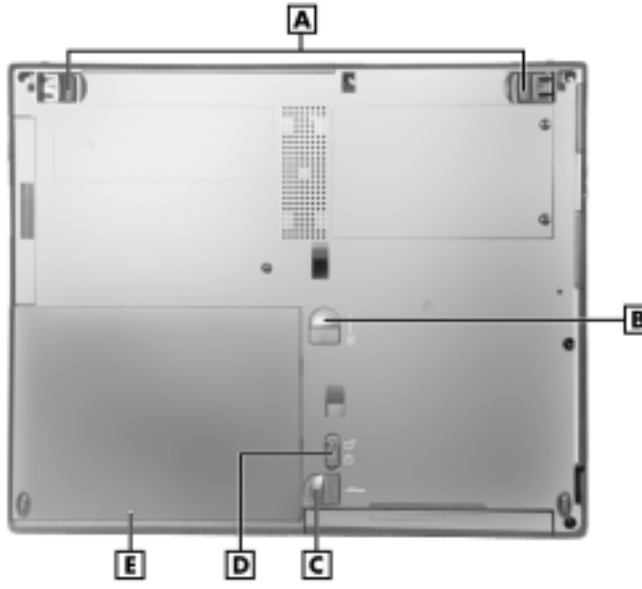
  Put the unit in Suspend mode when you need to be away from your system for a short period of time and want to return to where you left off. Suspend mode shuts down all devices in the system while retaining data and system status. Use the **Fn-Power/Sleep** key combination to initiate a manual save-to-file. Slide the Smart Power switch (Power/Sleep button) toward the front of the system to resume from a save-to-file. You can find more detailed information on using Suspend mode in Chapter 3, "Using the Software."

- Volume Control — Allows you to control the speaker and headphone volume.

Around the Bottom of the System

The bottom of the NEC Versa offers the features shown next. Features are described after the figure.

Bottom features



A – Height Adjustment Feet **B** – Battery Bay Release Latch
C – VersaBay Release Latch **D** – VersaBay Release Lock
E – Battery Bay

- Height Adjustment Feet — Allow you to modify the angle of the NEC Versa for easier viewing and typing.
- Battery Bay Release Latch — Allows you to release and remove the system's main battery.
- NEC VersaBay III Release Lock and Latch — Lets you unlock and remove the device currently installed in the bay.
- Battery Bay — Contains the system's main battery. It is a twelve-cell Lithium-Ion (Li-Ion) battery.

2

Getting Started

- Power Sources for Your NEC Versa
- System Care
- Introducing the Software
- Traveling with your NEC Versa

Power Sources for Your NEC Versa

The NEC Versa can be powered using three different sources, making it a truly portable system. Operate your NEC Versa just about anywhere using one of the following power sources:

- the AC adapter connected to an electrical wall outlet (using AC power).
- the battery pack or an optional second battery pack.
- the optional DC Auto adapter.

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

Using the AC Adapter

Use the AC adapter and power cable that came with your NEC Versa to run your computer on alternating current (AC) power, or to recharge the battery pack. Use the AC adapter whenever a wall outlet is nearby.

Keep the adapter connected whenever possible. The AC adapter charges the battery when it is connected, whether the NEC Versa is powered on or off.

⚠ WARNING

Do not attempt to disassemble the AC adapter. The AC adapter has no user-replaceable or serviceable parts inside. Dangerous voltage in the AC adapter can cause serious personal injury or death. The AC adapter is intended for use with a computer and must meet EN609050 standards.

AC Adapter

A – AC Adapter **B** – AC Power Cable

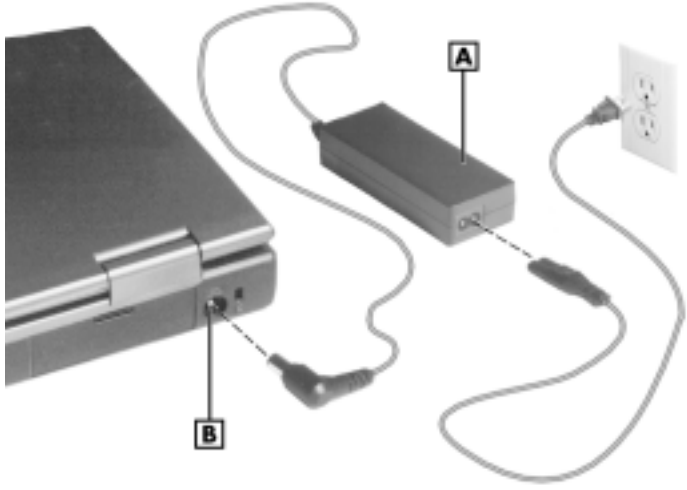
> ***Note:*** Check that the AC outlet voltage falls in the range of 100-240 volts AC. Verify that the cord and plug are appropriate for your AC source.

Connect the AC adapter as follows:

1. Connect the AC adapter cable to the power port on the back of your NEC Versa.
2. Plug one end of the AC power cable into the AC adapter and the other end into a properly grounded 120- or 240-volt wall outlet.

> ***Note:*** The AC power cable type that your system uses depends on the country where you are using it. Contact the local dealer to purchase the correct power cable.

Connecting the AC Adapter



A – AC Adapter **B** – Power Port

⚠ CAUTION

Do not cover or place objects on the AC adapter. Keeping the adapter clear of objects lets the adapter cool properly during use.

Only use the AC adapter that comes with your Versa LX. Although other adapters look similar, using them can damage your system.

Powering On

Power on the system as follows:

1. Locate the latch on the front of the LCD panel, slide it to the right, and raise the panel.
2. Locate the Power/Sleep button and slide it toward the front of the system to turn on system power. For additional information about Power control buttons and power LEDs, refer to Chapter 1, "Introducing the NEC Versa."

Using the Main Battery Pack

The NEC Versa comes with a rechargeable Lithium-Ion (Li-Ion) battery pack. It's easy to install and remove.

Your NEC Versa system provides tools to help you keep track of the main (or an optional) battery's power level. These include the power status LED described in Chapter 1, and SystemSoft's PowerProfiler (for Window NT systems, only) described later in this chapter. Both provide important battery status information.

When battery power is very low, the power LED flashes amber.

When battery power gets low, do one of the following:

- Slide the Power/Sleep button toward the front of the system and hold it in place for 4 or fewer seconds to put your system in Suspend mode. *(Before using the Power/Sleep button to put the system into Suspend mode, set the System Switch BIOS parameter to Sleep button.)* Remove the battery pack and replace it with a fully charged battery.
- Leave the battery pack in the system and connect your NEC Versa to the AC adapter and a wall outlet. If you connect the system to AC power and keep the system within standard operating temperatures, the battery recharges in approximately 2–3 hours whether or not you use your system.

⚠ WARNING

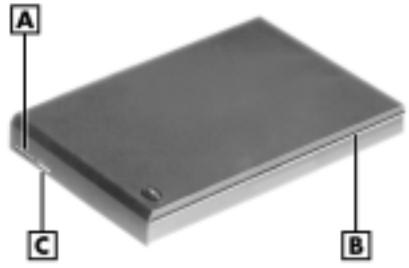
To prevent accidental battery ignition or explosion, adhere to the following:

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

Determining Battery Status

You can determine battery status via the battery gauge LEDs on the front of the Lithium-Ion battery that ships with your NEC Versa LX computer.

Lithium-Ion battery



A – Battery Gauge LED **B** – Alignment Groove **C** – LED Status Button

To check battery status, press the LED status button to illuminate the LEDs. The battery gauge LEDs indicate the following:

Battery gauge LEDs

Battery Power Status	LED Indicator
100% to 75%	■ ■ ■ ■
75% to 50%	■ ■ ■
50% to 25%	■ ■
25% to 10%	■
10% to 1%	✳ (blinks)

Note: If the battery gauge LEDs display a combination other than those depicted in the illustration, recharge the battery overnight. If the problem still persists, contact NECC Technical Support.

In Windows 98 and 95 environments, you can also use the power meter to determine battery status. Just move the cursor over the power icon on the taskbar to display the remaining battery power.

In Windows NT environments, in addition to the battery gauge LEDs, use SystemSoft's PowerProfiler™ to determine battery status. Click on the battery icon located on the taskbar. The PowerProfiler battery page displays the remaining battery power.

To return the battery to its normal state, try the following:

- remove and then reinstall the battery
- reinstall the battery in your NEC Versa and fully recharge the battery (to 100%).

When to Change the Battery

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

- Shorter work times.
- Discoloration, warping.
- Hot to the touch.
- Strange odor.

Battery Handling

Keep the following in mind when removing or replacing a battery.

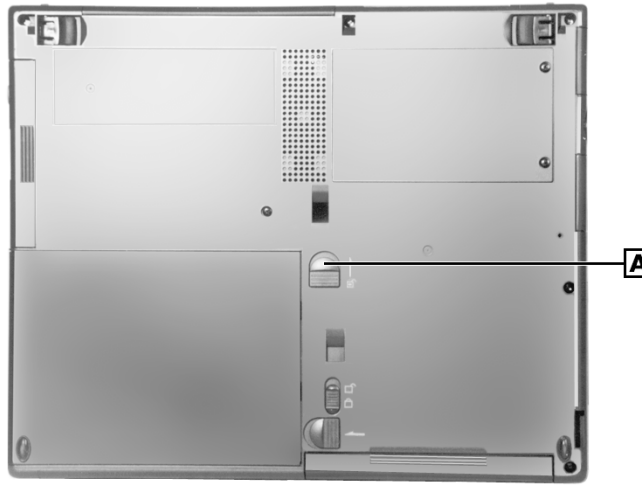
- Use only the battery designed for your system in the NEC Versa. Mixing other manufacturers' batteries, or using a combination of very old and new batteries can deteriorate battery and equipment performance.
- Turn off power to the system after use. Keeping system power on can degrade battery performance and shorten battery life.
- Clean the battery connectors with a dry cloth when they get dirty.
- Keep the battery out of the reach of children.

Replacing the Battery

Replace the battery pack installed in your NEC Versa system as follows.

> ***Note:*** Use the batteries in the NEC Versa computer for which they are designed. Also, installing another manufacturer's battery, or using a combination of very old and new batteries can deteriorate battery and equipment performance.

1. Save your files, exit Windows, and put your system into Suspend mode or turn off system power.
2. Close the LCD and turn the system over.
3. Slide the battery release latch toward the back of the system and hold firmly.



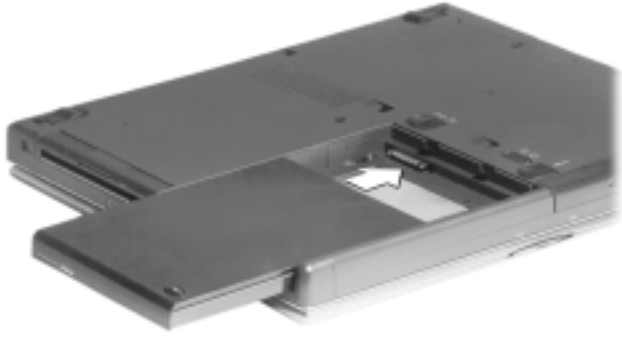
A – Battery Bay Release Latch

4. Continue to hold the battery release latch as you slide the battery out of the system.

Removing the battery

5. Insert the new battery as follows:
   - Locate the alignment groove on the edge of the battery.
   - Locate the alignment groove inside the battery bay.
   - Align the grooves on the battery with the grooves in the bay.
   - Slide the battery into the bay until securely locked into place.

Inserting the battery pack



6. Turn the system over.

Battery Precautions

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

⚠ WARNING

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

To avoid personal injury and property damage, read these battery precautions on handling, charging, and disposing Li-Ion batteries.

- Keep the battery away from heat sources including direct sunlight, open fires, microwave ovens, and high-voltage containers. Temperatures over 140º F (60ºC) may cause damage.
- Do not drop or impact the battery.
- Do not disassemble the battery.
- Do not solder the battery.
- Do not puncture the battery.
- Do not use a battery that appears damaged or deformed, has any rust on its casing, is discolored, overheats, or emits a foul odor.
- Keep the battery dry and away from water.
- Keep metal objects away from battery connectors. Metal objects in contact with the connectors can cause a short circuit and damage.

If the battery leaks:

- If the battery leaks onto skin or clothing, wash the area immediately with clean water. Battery fluid can cause a skin rash and damage fabric.
- If battery fluid gets into eyes, DO NOT rub; rinse with clear water immediately and consult a doctor.
- Take extra precautions to keep a leaking battery away from fire. There is a danger of ignition or explosion.

Recharging Battery Precautions

Adhere to the following precautions when recharging the primary or secondary battery.

- Use only the NEC battery charger designed for your NEC Versa battery type. Different NEC Versa models require different batteries and battery chargers.
- Charge the battery for the specified charge time only.
- During charging, keep the environmental temperature between 32°F and 104°F (0°C to 40°C).
- Read the instructions that came with the battery charger before charging the battery.

Extending Battery Life

While on the road, it is important to be aware of the simple things you can do to extend the life of the system's main battery. One way is to keep the brightness setting low. Use the **Fn+F8** and **Fn+F9** function keys to control the brightness.

NEC VersaBay III

The NEC VersaBay III Battery Pack provides a optional, second Lithium-Ion (Li-Ion) battery to use in your NEC Versa LX computer. Inserting a second fully charged battery increases battery life to approximately 4 to 5 hours.

Internal Batteries

The twelve-cell Lithium-Ion (Li-Ion) battery provides the main power source in your NEC Versa LX computer. See Appendix B for a list of battery specifications. In addition to this battery, the CMOS battery and bridge battery also provide system power.

CMOS Battery

This lithium battery provides battery backup and prevents data loss in the system's complementary metal oxide semiconductor (CMOS) RAM. This memory area contains information on the system's configuration, for example date, time, drives, and memory. The CMOS battery charges when your NEC Versa is connected to AC power. The CMOS battery may discharge completely if the NEC Versa notebook remains unused for approximately two months.

Bridge Battery

The bridge battery saves your system status in Suspend mode for up to five minutes. This gives you time to install a fully charged battery or plug in AC power when your battery charge becomes low.

The bridge battery should be replaced only by an authorized NECC technician.

⚠ CAUTION

Connect your NEC Versa system to AC power for a full 24 hours before using it on battery power for the first time. Doing so insures that the bridge battery is fully charged and that no data is lost during a battery change.

System Care

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

⚠ CAUTION

Immediately turn off and unplug the NEC Versa under the following conditions:

- The power cord is damaged or frayed.
- Liquid spills on or into the NEC Versa.
- Someone drops the system or damages the casing.

Precautions

Follow these precautions when using your NEC Versa LX computer, AC adapter, and VersaBay III.

- Avoid dropping or bumping the computer or the AC adapter.
- Do not stack heavy objects on the computer, the AC adapter, or the battery packs.
- Avoid moving the NEC Versa during system operation, especially while the hard disk, diskette drive, or VersaBay III device is being accessed.
- When using the AC adapter, make sure the power source falls within the system's compatible range of 100-240 volts AC. Never use the AC adapter if the voltage falls outside of this range. (Watch for this when traveling to other countries.)
- Turn computer power off before attaching or removing non-plug and play devices.
- Do not push any foreign objects into the NEC Versa bays, connectors, and slots.

- Do not set the computer on top of a magnetized area. Doing so can destroy the data on your hard disk drive. (Some airline tray tables are magnetic.)
- Avoid using the computer or AC adapter for extended periods in direct sunlight.
- Do not use the system in humid or dusty environments.
- Turn computer power off before cleaning it.
- Avoid exposing the NEC Versa or AC adapter to extreme changes in temperature or humidity. If it is unavoidable, allow your NEC Versa to adjust to room temperature before use.
- When cleaning the system, use a soft, clean, dry cloth. Avoid wiping the display surface with abrasive material, including rough fabric. Do not use a cleaning solution; this may damage the notebook's plastic.
- If the AC adapter becomes extremely hot, unplug the adapter and let it cool.
- Keep the AC adapter away from the IR ports.

Storage Requirements

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

⚠ CAUTION

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

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

- Maintain storage temperatures between -4°F and 104°F (-20°C and 40°C).
- Keep the storage area free from vibration and magnetic fields.
- Keep the system and its components away from organic solvents or corrosive gases.
- Avoid leaving the system and its components in direct sunlight or near heat sources.

Routine Cleaning

Clean or dust your system as follows:

⚠ CAUTION

Never use harsh solutions, household cleaners, or spray cleaners that contain caustic materials on the NEC Versa computer.

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

- LCD screen — Carefully wipe the LCD screen with a soft cloth or a screen wipe designed for that purpose. Special screen wipes are available through your local computer dealer.
- System case — NECC recommends that you carefully wipe the case with a slightly damp, almost dry cloth.

Introducing the Software

Your NEC Versa LX system ships with either the Windows 98, Windows 95, or Windows NT operating system.

Follow the quick setup instructions to initialize your operating system and related drivers. Use the Application and Driver CD for the NEC Versa LX that ships with your system to install additional software and online documentation.

Refer to Chapter 3, "Using the Software," for details about using the operating system, software applications and online documentation.

Traveling with your NEC Versa

The NEC Versa LX computer makes a natural traveling companion. Using a battery, you can use the computer anywhere you go. Here is some information you might find helpful when taking the NEC Versa on the road.

- Carry an extra charged battery pack for additional battery power.
- Check that you have everything you need before you leave on a trip. Be sure you have all the necessary cables and accessories. (See the checklist later in this chapter.)
- If you run your system with battery power, maximize battery life by using power-saving features whenever possible.
- Take the AC adapter in case you have an electrical outlet handy. This saves battery power for when you really need it.
- Take along any application or data files on diskette that you might need.

Power Connections

With the right accessories, you can run your NEC Versa almost anywhere! Your system self-adjusts to various power sources. The United States, Canada, and most of Central and South America use 120-volt alternating current (AC). Most other countries of the world use 240-volt AC. The NEC Versa adapts to voltages ranging from 100 to 240 volts.

There are a few countries with areas that use direct current (DC) as their main power source. You need a DC-to-AC converter in particular areas of Argentina, Brazil, India, Madeira, and South Africa.

To use your system overseas, you need an adapter plug. There are five different plugs available worldwide. You can buy these at an electronics supply store.

Checklists

The following checklists can help you prepare for your trip with your NEC Versa. Look them over and use what fits your situation.

What to Take

The following are what you should take with you when you travel with your NEC Versa.

- Extra fully charged batteries
- Single-outlet surge protector
- Appropriate AC plug adapter
- Copy of proof of purchase for your computer and other equipment for customs check
- Customer support phone numbers for your software
- *NEC Versa LX Quick Reference* card
- AC extension cord.

> **Note:** When using an optional modem outside of the U.S. and Canada, you might need a modem adapter approved for the local telephone system. Contact the local NECC dealer or representative for information.

Preparing your NEC Versa for Travel

Here is what you should do before you leave home:

> **Note:** Speed the trip through airport security by carrying a charged system. Inspectors want to see the screen display a message. The boot message is usually sufficient.
>
> If your system is fully charged, the inspection only takes a minute or so. Otherwise, be prepared to attach the AC adapter and power cable. And if you don't have these, the inspection might include a disassembly of the system.

- Back up your NEC Versa's hard disk.
- Insert a fully charged battery to make sure your system is ready to quickly boot up at the airport security check.
- Fully charge all your batteries.
- Tape your business card to your NEC Versa, AC adapter, and batteries.

3

Using the Software

- BIOS Setup
- Windows Introduction
- NEC Utilities
- NEC Help Center
- Software Applications and Drivers

BIOS Setup

Your NEC Versa LX computer comes with a hardware program called BIOS Setup that allows you to view and set system parameters. BIOS Setup also allows you to set password features that protect your system from unauthorized use.

Use BIOS Setup to:

- set the current time and date
- customize your operating system to reflect your computer hardware
- secure your system with a password
- balance your performance needs with power conservation.

How to Enter the BIOS Setup

Access the BIOS utility at power-on. Just press **F2** when the following prompt appears.

```
Press <F2> to enter Setup.
```

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

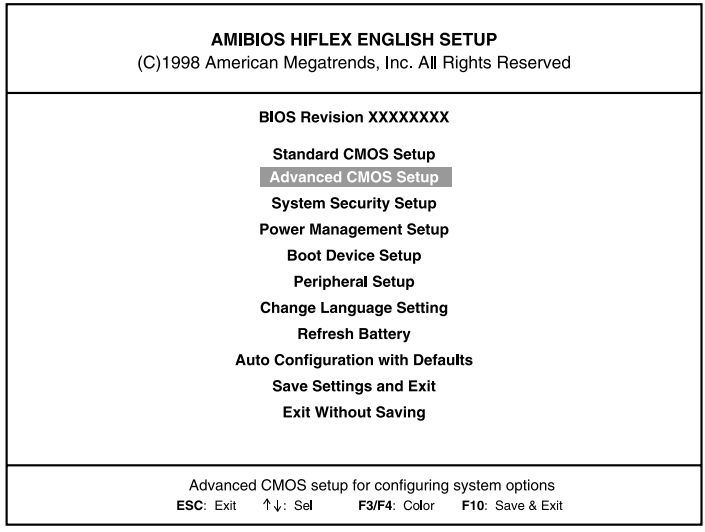
If the system detects an error during POST, it prompts you with a double beep and a message: "Press <F1> to resume." If you press **F1**, the system enters BIOS Setup automatically. If you want to fix the error, carefully read the error message that appears above the prompt (taking notes if you want), and press **F2**. You will see this message if your CMOS battery becomes fully discharged.

To pause the screen during POST to view the BIOS revision number and other POST messages, press and hold the Insert key while using the power button to power on the system.

BIOS Setup Utility Main Menu

After you press **F2**, the system displays the BIOS Setup Main Menu screen, similar to the following.

BIOS Setup Main Menu



Use the up and down arrow keys (located on the lower right corner of the keyboard) to toggle through the BIOS Setup menu items.

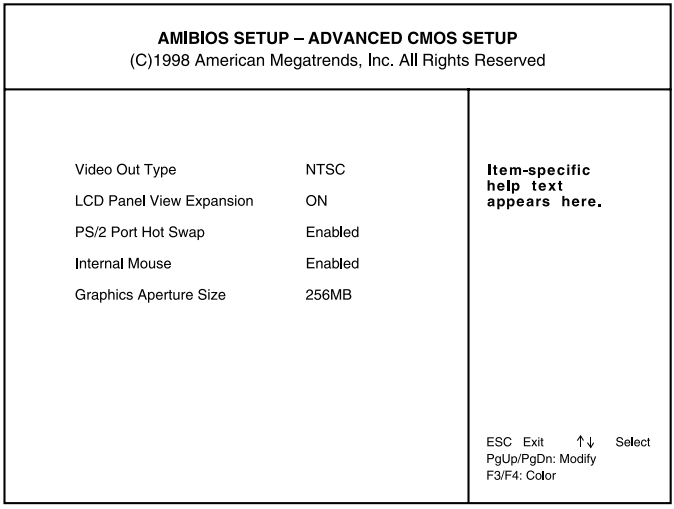
How to Use BIOS Setup

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

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

BIOS setup screens have three areas as shown next.

Advanced CMOS Setup Menu



- Parameters — The left side of the screen. This area lists parameters and their current settings.
- Available Options and Help — The right side of the screen. This area lists alternate settings and Help text for each parameter.
- Key Legend — The bottom right corner of the screen. These lines display the keys that move the cursor and select parameters.

Options that are grayed out are not available for the current selection.

Using Keys

The following table lists the BIOS Setup keys and their functions.

BIOS Setup Key Functions

Key	Function
↑ ↓	Moves the cursor between the displayed parameters.
PgUp/Pg Dn	Toggles through the current parameter settings.
Tab	For some parameter settings, moves the cursor between the subfields. Also moves the cursor to the next line or selection. For example, for System Time, Tab moves the cursor from hour to minute to second.
ESC	Exits the current screen and returns to the Main Menu screen. From the Main Menu screen, displays the prompt, "Quit without saving."
F3/F4	Changes the screen color.
F10	Saves and exits the BIOS setup utility.

Checking/Setting System Parameters

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

To reset all parameters to the default settings, select Auto Configuration with Defaults from the BIOS Setup Main Menu, either press **Y** and press **Enter** or use the arrow keys to select **Yes** and press **Enter**.

BIOS Setup Parameters

Parameter	Default Setting	Alternate Setting(s)
Standard CMOS Setup		
Date	mm/dd/yyyy	
System Memory		(automatically detected)
Time	hh/mm/ss	
Diskette Drive A	1.44 MB, 3.5	Not installed, 1.44 MB
Diskette Drive B[1]	Not installed	1.2 MB, 5.25; 1.44 MB, 3.5
Internal	Auto	User Defined, CDROM SuperDsk, Not installed
32-Bit Mode	On	Off
VersaBay	Auto CDROM	User Defined, CDROM SuperDsk, Not installed
32-Bit Mode	On	Off
Boot Sector Virus Protection	Disabled	Enabled
DS VersaBay[1]	Auto	User defined, CDROM SuperDsk, Not installed
Docking Station IDE[1]	Auto	User defined, CDROM SuperDsk, Not installed
Advanced CMOS Setup		
Video Out Type	NTSC	PAL
LCD Panel View Expansion	On	Off
PS/2 Port Warm Swap	Enabled	Disabled
Internal Mouse	Enabled	Disabled
Graphics Aperture Size	256 MB	4, 8, 16, 32, 64, 128 MB
System Security Setup		
Change Supervisor Password	Press Enter	
Change User Password[2]	Press Enter	
Boot Password Required[3]	No	Yes
Resume Password Required[3]	No	Yes

BIOS Setup Parameters

Parameter	Default Setting	Alternate Setting(s)
Power Management Setup		
System Switch	Power Button	Sleep Button
Power Management under AC	Off	On
Power Savings Level	Longest Life	High Perform/Custom/Off
CPU Speed Control	100%	12.5, 25, 50%
Hard Disk Timeout[4]	2 minutes	5/30/45 sec; 1/4/6/8/10/15 min. Off
Video Timeout[4]	2 minutes	30/45 sec.; 1/4/6/8/10/15 min. Off
Peripheral Timeout[4]	On	Off
Audio Device Timeout[4]	On	Off
Standby Timeout[4]	4 min.	Off/1/2/6/8/10/15 min.
Auto Suspend Timeout[4]	10 minutes	Off/5/15/20/25/30 min.
LCD Suspend	Disabled	Enabled
Suspend Option	Suspend	STF
Auto Save to File	Enabled	Disabled
Panel Brightness	Auto	User Defined
Suspend Warning Tone	Enabled	Disabled
Remote Power On	Enabled	Disabled
Resume Signal	PME#	RI
Wake Up Alarm	Disabled	Enabled
Resume Alarm Time[5]	Off	Set time in 5 min. increments when Wake Up Alarm is set.
Boot Device Setup		
Quick Boot	Enabled	Disabled
Silent Boot	Enabled	Disabled, Black
Boot Display Device	Simul. Mode	CRT only, LCD only
Docking Station Video[1]	Dock Stn.	Portable
BootUp NumLock	Auto	On, Off
1st Boot Device[6]	SuperDsk	Disabled/1st Fnd IDE/Floppy CDROM/SCSI/Network

BIOS Setup Parameters

Parameter	Default Setting	Alternate Setting(s)
2nd Boot Device[6]	CDROM	Disabled/1st Fnd IDE/Floppy SuperDsk
3rd Boot Device[6]	Floppy	Disabled/1st Fnd IDE/SuperDsk CDROM
4th Boot Device[6]	1st Fnd IDE	Disabled/Floppy/SuperDsk CD-ROM
Try Other Boot Devices	Yes	No
1st IDE Hard Drive	Internal	VersaBay/DS Internal DS VersaBay
2nd IDE Hard Drive	VersaBay	Internal/DS Internal DS VersaBay
3rd IDE Hard Drive	DS Internal	Internal/VersaBay DS VersaBay
4th IDE Hard Drive	DS VersaBay	Internal/VersaBay/DS Internal
Peripheral Setup		
Internal Hard Drive	Enabled	Disabled
USB Controller	Disabled	Enabled
Serial Port	Auto	Disabled/(PnP OS Setup[7]) COM1,IRQ4/COM2,IRQ3 COM3,IRQ4/COM4,IRQ3
Parallel Port	Auto	Disabled/LPT1/LPT2 (PnP OS Setup[7])
Parallel Mode	ECP	Uni-Directional/Bi-Directional EPP
IR Serial Port	Disabled	Auto/(PnP OS Setup[7]) COM2,IRQ3/COM3,IRQ4 COM4,IRQ3

[1] These setup items are only visible when system is docked.
[2] Greyed out until supervisor password is set up.
[3] Only active after a password is set up.
[4] Available when power savings is set to Custom.
[5] Resume alarm time is selectable when wake up from suspend alarm is set.
[6] Bootable device when set to IDE hard drive. Only one IDE device is bootable.
[7] Appears only when configured by the Windows 98 or Windows 95 device manager.

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

Standard CMOS Setup

When you select the Standard CMOS Setup screen you see System Time and System Date parameters as well as drive parameters.

- Date — Sets your NEC Versa's calendar month, day and year. The calendar clock is year 2000-compliant. These settings remain in memory even after you turn off system power.

  To set the date use the **Tab** or arrow keys to move from field to field. Use the **PgUp** or **PgDn** key to change the numbers within each field.

- System Memory — Displays the amount of system memory currently installed in your system.

- Time — Sets the time, enter the current hour, minute, and second in *hr/min/sec*, 24-hour format.

  To set the time use the **Tab** or arrow keys to move from field to field. Use the **PgUp** or **PgDn** key to change the numbers within each field.

- Diskette Drives — Designates the drive type for your diskette drives.

- Internal Drives — Assigns devices to the internal drives, file bay and VersaBay, in your system.

- Boot Sector Virus Protection — Write protects the boot sector of the hard disk drive to avoid infection by some virus types.

- Docking Station Drives — Enables or disables the drives installed in a docking station. (These options are only available when the NEC Versa is docked.)

Advanced CMOS Setup

Advanced CMOS settings let you define the following functions.

- Video Out Type — Specifies the signal type used by the video device connected to the TV Out Port.
- LCD Panel View Expansion — Specifies whether the panel view is reduced/off or expanded/on.
- PS/2 Port Warm Swap — Specifies whether or not you can swap a PS/2 device during system operation.
- Internal Mouse — Specifies whether or not you can use both the internal and the external mouse.
- Graphics Aperture Size — Selects the graphics aperture size used by the AGP video device.

System Security Setup

- Change Supervisor Password — Establishes password protection for entering the BIOS setup utility, booting the system, and resuming from suspend.
- Change User Password — Establishes a user password once a Supervisor password is set.
- Boot Password Required — Indicates whether or not a password is required during system boot.
- Resume Password required — Indicates whether or not a password is required during system resume. Boot Password must be defined to activate this parameter.

Power Management Setup

In the Windows 98 environment, your NEC Versa uses the Advanced Power Management (APM) which enables the operating system to manage the power given to each attached device and to turn off a device when not in use.

The Power Management Setup menu lets you balance high performance and energy conservation using parameters including the following.

- System Switch — Sets the Power/Sleep button as a power switch or a sleep button.
- Power Management Under AC — Specifies whether to enable power management features when AC power is in use. When AC power is connected to your NEC Versa system, power management is usually disabled. If you enable this parameter, the system automatically activates the power management profile you set, even when AC power is used.
- Power Savings Level — Specifies one of four levels of power management.

  — High Performance provides the greatest system performance with only minimal power conservation.

  — Longest Life provides the maximum amount of power savings.

  — Off disables power management and all device timeouts.

  — Custom lets you define your own power management configuration by selecting values for specific device timeouts. Custom lets you set the following timeouts.

    – CPU Speed Control — Sets CPU performance at one of four levels.

    – Hard Disk Timeout — Sets the time delay before your hard disk powers down.

    – Video Timeout — Sets the time delay before your video powers off.

    – Peripheral Timeout — Sets the time delay before your peripherals are controlled by power management.

    – Audio Device Timeout — Sets the time delay before your audio device powers off.

    – Standby Timeout — Selects the system standby timeout period.

- Auto Suspend Timeout — Defines how much time elapses from the time the system enters Standby mode to the time the system automatically enters Suspend Mode.

- LCD Suspend — Allows you to suspend/resume when the LCD panel is closed.
- Suspend Option — Specifies either Suspend or Save to File (STF) as the default power management mode. In Suspend, after a specified amount of inactivity, your NEC Versa shuts down all devices as you specified in Power Management Setup or applies default timeouts. All your data is automatically recovered from where you left off when you Resume.
- Automatic STF — After 30 minutes in Suspend mode the current file is automatically saved to a special file on the hard disk and the system shuts down. To resume, you must press the power button. The system reads the saved file and sets up your system accordingly.

  If Auto Save to File is set to Off and the save-to-file area is present on your hard drive, pressing the **Fn-Power/Sleep** key combination puts the system into Save to File mode. *(Before using the Power/Sleep button to put the system into Suspend mode, set the System Switch BIOS parameter to Sleep button.)* For details about creating the save-to-file area, see the section, "HDPREPEZ Utility," later in this chapter.
- Panel Brightness — Selects the LCD screen brightness.
- Suspend Warning Tone — Specifies whether the system warning tone sounds when Suspend mode starts. It is best to keep this option enabled.
- Remote Power On — Allows the serial port modem or LAN board to wake the system on a ring signal.
- Resume Signal — Selects the signal which triggers a modem ring resume.
- Wake Up from Suspend Alarm/Resume Alarm Time — Allows the alarm to resume the system from suspend. Designates the time parameter in five minutes increments.

Boot Device Setup

Boot Device Setup allows you to define the following functions.

- Quick Boot — Specifies whether or not the system performs all tests during system boot.
- Silent Boot — Specifies whether or not to display the NEC logo during the system boot.
- Boot Display Device — Specifies the display device(s) for system boot messages.
- Docking Station Video — Selects whether or not a video card installed in the Docking Station is enabled at system boot.
- BootUp NumLock — Specifies whether NumLock is On or Off at system startup.
- Boot Devices — Specifies the sequence of boot devices and whether or not the system attempts to boot from a device other than those specified.
- Other Boot Devices — Allows you to specify IDE devices as bootable devices.

Peripheral Setup

The Peripheral Setup menu displays the connection locations between the system and the Input/Output (I/O) ports. This menu also lets you specify different port assignments as needed.

> ***Note:*** If you disable a device in Peripheral Setup, you cannot enable or assign it using the Windows 98 or Windows 95 device manager. The device will not be listed in the Windows device list. To control the device using the Windows device manager, select any setting other than Disabled in Peripheral Setup.

- Internal Hard Drive — Enables or disables the internal hard drive.
- USB Controller — Enables or disables the USB controller.

- Serial Port — Disables the port or changes its address assignment.
- Parallel Port/Parallel Mode — Disables or reassigns the parallel port and select a parallel port mode.
- IR Serial Port — Enables, disables or reassigns the IR serial port.

Other BIOS Setup Options

BIOS Setup offers other options, including the following:

- Change Language Setting — Controls the BIOS setup language display. English and Japanese are the available options.
- Refresh Battery — Launches the Refresh Battery utility. Once launched, the utility fully discharges your battery to eliminate any residual memory effect. Once refreshed, your battery is conditioned to recharge to its full capacity. To recharge the battery, connect your NEC Versa to AC power. This process may take up to four hours to complete.
- Auto Configuration with Defaults — Loads default settings.
- Save Settings and Exit — Accepts changes made to current settings, saves to CMOS, and exits BIOS Setup.
- Exit Without Saving — Reverts to previously selected settings and exits Setup.

Password Protection

Your NEC Versa supports a password for system security on several levels. Once you set a supervisor password, you must enter it before you can enter BIOS Setup, access the system at startup, or resume from Suspend, depending on your configuration selection.

Your system is not protected until you set a user password and you are not prompted to enter a user password until you set a supervisor password.

Note: You must set the supervisor password before the BIOS Setup utility allows you to set a user password.

Using BIOS Setup to Set Power Management

Power Management Setup allows you to use the factory-defined power savings level (Longest Life), or choose between High Performance, Custom, or Off. Each provides a special value to your current work effort. These power management levels were designed with you in mind. For example, you can use them under the following circumstances:

- Longest Life — Provides best battery life and good performance. Use while traveling long distances.
- High Performance — Provides best performance and good battery life. Use while on the road or traveling short distances.
- Custom — Lets you decide! Set power management levels according to your own needs and present environment.
- Off — Works well in an office environment while powering your NEC Versa with AC power.

Using the Save to File (STF) Feature

STF protects the integrity of your working files. For example, if you are called away from your NEC Versa and Suspend mode is selected with auto Save to File active, your system automatically goes into Suspend mode. After 30 minutes, if you don't return, your working environment is saved to a special file on your hard disk.

Using STF can benefit you in the following ways.

- When in STF, there is minimum battery drain.
- Increases the life of your NEC Versa.
- Saves you time. When you return from that urgent call or meeting, you don't have to reboot, just press the Power/Sleep button to resume system operation.

To configure your NEC Versa's STF feature:

1. Access the BIOS setup utility.
2. Select Power Management from the Setup Main Menu.
3. Move the cursor down and highlight Suspend Option.
4. Press the **PgUp** key and select STF.
5. Save the settings and exit BIOS Setup.

There are three ways to invoke the NEC Versa's STF feature, one automatic and two manual.

- After 30 minutes of inactivity, your NEC Versa automatically invokes STF, provided you have configured STF in the BIOS Setup utility.
- You can manually invoke STF by:

  — Pressing **Fn Power/Sleep** simultaneously, before you leave your NEC Versa. *(Before using the Power/Sleep button to put the system into Suspend mode, set the System Switch BIOS parameter to Sleep button.)*

  — Selecting Start, Suspend.

> ***Note:*** When the status bar indicates that there is only 3% power remaining in the system, the NEC Versa automatically performs a Save to File.

Updating the BIOS

Use the BIOS Update Diskette to update your NEC Versa system BIOS. Specifically, the BIOS is the code transmitted onto your system's microprocessor, or central processing unit (CPU). Use the BIOS Setup utility to configure your system's hardware features. For details about the BIOS Setup utility, see the section earlier in this chapter, "BIOS Setup."

> **Note:** You only need to update the BIOS if NECC makes significant improvements or fixes to the current system BIOS. Your authorized NECC dealer or NECC Support Services representative can help you determine this.

If you are informed that the default BIOS needs an update contact the NECC Support Services at (800) 632-4525, Fax (801) 981-3133, or access the web site, www.nec-computers.com to obtain a copy of the BIOS update.

> **Note:** If you purchased and are using this computer outside the U.S. or Canada, please contact a local NECC or dealer in your country.

Only use the BIOS upgrade diskette for your specific model and be sure to prepare the diskette before updating the BIOS.

Preparing the BIOS Update Diskette

Before using the BIOS update diskette you must make the diskette BIOS flash ready. Refer to the **readme.txt** file on the diskette before using the diskette.

Follow these instructions to prepare the BIOS Update Diskette.

1. Scan your hard drive for any computer viruses.
2. Enable the diskette for write access.

3. Insert the diskette into the file bay drive.

4. Type **a:install** or **b: install** (depending upon your hardware configuration) at the DOS prompt and follow the on-screen instructions.

   Install.bat copies the DOS system files from your hard drive onto the BIOS Update Diskette to make it BIOS flash ready.

   The system prompts you when the process is complete.

5. Scan the BIOS Update Diskette for computer viruses.

   The diskette is ready for use.

6. Follow the instructions in "Performing the BIOS Update."

Changing the Switch Settings

Before performing the BIOS update, be sure to change the switch settings to enable BIOS flash. Set switch 5 to "ON" before performing the BIOS update. For details about setting the switches, see the section, "Switch Settings," in Chapter 4.

Performing the BIOS Update

Use the following procedure to perform the actual BIOS update.

1. Make sure that the computer is operating under AC power, is undocked, and that the power is off. Insert the BIOS Update diskette into the file bay drive.

2. Power on the computer with the diskette in the file bay drive. The computer boots and automatically loads the utility. A message similar to the following appears:

   > The NEC BIOS Update Utility should not be used to modify the BIOS in a Versa system which is docked. If your Versa is docked, please exit the BIOS Update Utility, power down, and undock your Versa before running the utility. Plug in your AC cable before restarting the flash utility.

3. Press **Enter** to continue.

The utility checks the currently installed BIOS version and the diskette's BIOS version. The Main menu appears.

4. Use the arrow keys to highlight the "Display BIOS Version" option on the Main Menu. Use this option to check the currently installed BIOS version and the version of the new replacement BIOS.

   Press any key to return to the Main menu.

5. Highlight the "Install New BIOS" option and press **Enter**.

6. Press **Y** and then press **Enter**. After a brief pause, a message appears telling you to remove the diskette from the file bay drive.

7. Remove the diskette and press any key to continue. The utility updates the BIOS.

   Power off your computer. The next time you power on your computer, you will have the latest NEC Versa LX computer BIOS revision level.

8. Enter Setup to restore the default parameter settings.

9. Be sure to modify any custom settings that you may have configured.

10. Be sure to change switch 5 back to "OFF" after completing the BIOS update. For details about setting the switches, see the section, "Switch Settings," in Chapter 4.

Windows Introduction

Your NEC Versa comes pre-installed with either the Windows 98, Windows 95 or Windows NT operating system. These Microsoft® operating systems provide a means of running applications, navigating through your file structure, and using your notebook computer. Each operating system offers its own look and tools through an easy-to-use graphical interface.

Windows 98

Windows 98 gives you the newest features offered by Microsoft, including a Desktop with room to maneuver, a taskbar for quick access to a variety of system functions, state-of-the-art plug and play support, powerful system utilities, enhanced entertainment features, and a fully integrated Internet experience.

Desktop Icons

With Windows 98, the following icons are installed on your desktop:

- My Computer — Provides access to drives, printers, the control panel, network features, and scheduled tasks.
- Recycle Bin — Gives you a trash container in which to put and discard unwanted files or allows you to restore those same files back to their original location.
- Set Up the Microsoft Network — Provides a setup program that allows you to sign-up for the Microsoft Network. If you already have an account, use this interface to sign-on to the Microsoft Network.
- Network Neighborhood — Appears when your computer is connected to a network. Use the network neighborhood to browse through the computers in your workgroup and the computers in the entire network.
- My Briefcase — Provides a mechanism for file synchronization between the NEC Versa and another system.
- My Documents — Provides you with a convenient place to store documents, graphics, and other files for quick access.
- Connect to the Internet — Runs the Internet Connection wizard that helps you to set up your computer to access the Internet.

> **Note:** Before connecting to the Internet, you must either connect an optional modem and a working phone line to your system or install a LAN card for network access.

- Online Services — Includes setup icons for a variety of online services.

  Your NEC Versa comes with all the software you need to get started on the most popular services available today. For a fee, online services give you access to the Internet, email, the world wide web, travel information, news reports, and more.

> ***Note:*** Before choosing and registering for an online service, you must either connect an optional modem and a working phone line to your system or install a LAN card for network access.
>
> If you are using this product outside of the United States or Canada, some online services may require a long-distance or international call.

- NEC Customize — Gives you the option to launch the Application and Driver CD, access the IR setup utility, or install the NEC VersaBay Swapping utility.

Taskbar Icons

With Windows 98, a number of icons appear on the taskbar. Use the cursor to hover over the icon and display its function, right click the icon to display its menu options, or double click the icon to launch it.

The following icons normally appear on the left side of the Windows 98 taskbar.

- Internet Explorer — Allows you to browse the internet or view local HTML files. Also access Internet Explorer under Start, Programs, Internet Explorer.
- Outlook Express — Provides your default email program with secure and personalized features for email and newsgroup communication. Also access Outlook Express under Start, Programs, Internet Explorer.
- Show Desktop — Minimizes all active screens to display your desktop.

- Channels — Delivers content from your favorite web sites directly to your computer.

The following icons normally appear on the right side of the Windows 98 taskbar.

- Task Scheduler — Enables you to schedule tasks, such as Disk Defragmenter, to run regularly. Also access Task Scheduler under Start, Programs, Accessories, System Tools, Scheduled Tasks.
- Power Management Properties — Displays your current power source and total remaining battery power. Access Power Management Properties under Start, Settings, Control Panel, Power Management.
- NEC VersaGlide — Allows you to adjust your VersaGlide (mouse) properties. Also access NEC VersaGlide under Start, Settings, Control Panel, Mouse.
- Volume Control — Adjusts the volume and speaker balance when you play audio files. Also access Volume Control under Start, Programs, Accessories, Entertainment, Volume Control.
- ATI — Allows you to modify display and icon settings, as well as, desktop schemes. Lets you launch any installed ATI programs.
- Time Clock — Allows you to adjust the time and date, rearrange active windows on your desktop, create a new toolbar or customize your existing toolbar.

For more information about the desktop and taskbar icons, refer to the Windows 98 online help.

Windows 95

Windows 95 gives you the newest features offered by Microsoft, including a Desktop with room to maneuver, a taskbar for quick navigation between open windows, plug and play features, online networking functions, and more.

When you install Windows 95, the following icons are loaded on your desktop:

- My Computer — Provides access to drives, printers, the control panel, and network features.
- Inbox — Lets you access the Microsoft fax and mail software as well as Microsoft network services.
- Recycle Bin — Gives you a trash container in which to put unwanted files.
- Network Neighborhood — Shows you the network, integrated LANs, and WANs (if your system is connected to a network).
- My Briefcase — Allows easy transfer of files between the NEC Versa and another system.
- Online Services — Includes setup icons for a variety of online services.

  Your NEC Versa comes with all the software you need to get started on the most popular services available today. For a fee, online services give you access to the Internet, email, the world wide web, travel information, news reports, and more.

> ***Note***: Before choosing and registering for an online service, you must connect an optional modem to your system and to a working phone line. The phone line must be analog. If you are unsure what type of line you have, call your local phone company.
>
> If you are using this product outside of the United States, some online services may require a long-distance or international call.

- NEC Customize — Gives you the option to launch the Application and Driver CD, install NEC custom wallpaper, access the IR setup utility, or install the NEC VersaBay Swapping Utility.
- Internet Explorer — Allows you to browse the internet or view local HTML files. Also access Internet Explorer under Start, Programs, Internet Explorer.

- Outlook Express — Provides your default email program with secure and personalized features for email and newsgroup communication. Also access Outlook Express under Start, Programs, Internet Explorer.

See the Windows 95 online help for detailed instructions on using Windows 95.

Windows NT

Windows NT allows you to run applications created specially for Windows NT and Windows 95. You can also run applications created for other versions of Windows, MS-DOS®.

Windows NT gives you a variety of features offered by Microsoft, including a desktop to maneuver, a taskbar for quick navigation between open windows, and more. The following icons appear on the desktop.

- My Computer — Provides access to drives, printers, the Control Panel, and network features.
- Network Neighborhood — Shows you the network, integrated LANs, and WANs.
- Inbox — Lets you access the Microsoft mail software and services.
- Internet Explorer — Allows you to browse the internet or view local HTML files. Also access Internet Explorer under Start, Programs, Internet Explorer.
- NEC Customize — Gives you the option to launch the Application and Driver CD, or install the NEC-supplied mouse driver.
- My Briefcase — Allows easy transfer of files between the NEC Versa and another system.
- Recycle Bin — Gives you a container in which to put unwanted files.

Service Pack 4 is a large update to the Windows NT 4.0 operating system. The components included within Service Pack 4 are the latest available from Microsoft. Many software packages include calls to Windows NT to install drivers that are Windows NT specific. As a result, when installing new hardware or software, like a network PC card or a remote access service, parts of Service Pack 4 may be overwritten by the original Windows NT files. Therefore, it is very important to reinstall Service Pack 4 after introducing new hardware or software.

To reinstall Service Pack 4, double click the **sp4i386.exe** file located in the C:\SP4 directory on your hard disk drive and follow the on-screen instructions.

⚠ CAUTION

When running **sp4i386.exe** , DO NOT replace the file, **pcmcia.sys** and DO NOT overwrite newer files installed by some applications.

When running **sp4i386.exe**, be sure to select the Details button for additional installation instructions.

During the Service Pack 4 installation, you may be prompted to reinstall additional service pack files. Service Pack 4 and other service pack files for Windows NT 4.0 are available from the Microsoft web site at http://www.microsoft.com.

When you add hardware to your NEC Versa LX with Windows NT, a Windows NT Setup screen may appear to inform you that Setup needs to copy some Windows NT files. Setup looks for the files in the location specified in the dialog box. By default, this location is the c:\I386\ directory. If you want Setup to look in another location, for example, on the Product Recovery CD (2 of 2) in the CD-ROM drive, type in F:\I386 (where F refers to the letter assigned to your CD-ROM drive), then click on Continue and follow the on-screen instructions. (For details on using the Product Recovery CD, see the "Using the Product Recovery CD," in Chapter 7.

NEC Utilities

NECC provides several programs and routines designed to make your NEC Versa run more efficiently.

The NEC utilities include:

- NEC Customize Utility
- HDPREPEZ Utility

NEC Customize Utility

In Windows 98 systems, Windows 95 systems, and Windows NT systems, the NEC Customize utility gives you the option to install or launch:

- NEC custom wallpaper (Windows 95, only)— Use this option to install wallpaper displaying the NEC logo.
- Application and Driver CD — You must use this option to install software applications, drivers, etc.
- NEC VersaBay Swapping Utility (Windows 98 and 95, only) — You must use this option to take advantage of warm swapping your VersaBay devices.
- IR setup utility to enable the IR port (Windows 98 and 95 only) — You must use this option to enable the IR port.

> ***Note***: For details about how to access and use the IR setup utility, see Chapter 4, "Using the Hardware."

- NEC-supplied mouse driver (Windows NT only) — Use this option to take advantage of the VersaGlide features described in Chapter 4, "Using the Hardware."

The NEC Customize utility screen consists of the following.

- A window at the top half of the screen lists the available options.
- The window below the options list displays a description of each option when the option is highlighted.
- The Launch button initiates a selected option when clicked.
- The More Info button provides an overview of the NEC Customize utility.
- The Exit button closes the NEC Customize utility.

Using the NEC Customize Utility

Follow these steps to use the NEC Customize utility.

1. Double click the NEC Customize icon.
2. From the display window, select the desired option.
3. Click Launch to initiate the selected option.
4. Follow the on-screen instructions to process the selected option.

   For some of the selected options you are prompted to reboot your system.
5. If necessary, click Exit to close the NEC Customize dialog box.

HDPREPEZ Utility

Using the HDPREPEZ utility automatically configures your NEC Versa's system's save-to-file (STF) area on the hard disk drive.

> ***Note:*** For more details about the HDPREPEZ utility, see the HDPREPEZ.TXT file in the NECUTILS/HDPREP directory.

Using HDPREPEZ in Windows 98 or 95

In Windows 98 or 95, run the HDPREPEZ utility if you increase the memory capacity in your NEC Versa beyond the factory installed base memory.

Follow these steps to run the HDPREPEZ utility.

1. Power off and restart your NEC Versa.
2. At the statement "Starting Windows 98 (or 95)," press **F8**.
3. From the Startup menu, select the "Safe Mode Command Prompt Only" option.
4. Enter MS-DOS. At the c: prompt, type **cd \necutils\hdprep** and press **Enter** to change to the \necutils\hdprep directory.
5. Type **HDPREPEZ** and press **Enter**. The utility automatically prepares your NEC Versa for the newly installed memory.
6. Power off your system and then power on. A file, large enough to accommodate your system's memory is created on the hard disk drive.

NEC Help Center

The NEC Help Center is a fully navigational, HTML-based online document. The Help Center includes multimedia elements, a full search capability, index, and a glossary function.

The NEC Help Center includes the following sections.

- The *System Tour* provides a multimedia version of system features and functions as described in Chapter 1 of the printed user's guide.
- *System Information* provides an online version of Chapters 2-7 and Appendices A and B of the printed user's guide and describes:
  - Getting Started
  - Using the Software
  - Using the Hardware
  - Using External Devices
  - Using Multimedia
  - Solving System Problems
  - Setting Up a Healthy Work Environment
  - System Specifications
- *Service and Support* includes Chapter 8, "Getting Services and Support," from the printed user's guide.
- *FAQs* (Frequently Asked Questions) provides answers to the questions that NEC Versa users most frequently ask.

Software Applications and Drivers

A variety of software* applications and drivers are provided on the Application and Driver CD for the NEC Versa LX that ships with your system. Some of the drivers are already installed as part of your operating system environment. These applications and drivers let you take full advantage of your system resources. Once you have installed an application from the Application and Driver CD access the program through its desktop icon or through the Start, Programs menu.

The software* applications available on the Application and Driver CD vary according to your operating system environment and may include:

- PowerQuest® PartitionMagic®
- Intel LANDesk® Client Manager
- SystemSoft® PowerProfiler (Windows NT only)
- SystemSoft® CardWizard (Windows NT only)
- Intellisync™ for Notebooks
- McAfee VirusScan™
- Microsoft ®Internet Explorer
- Netscape Navigator™
- Adobe® Acrobat® Reader

* The software listed here is current at the time of printing and subject to change without notice.

Using the Application and Driver CD

Use the Application and Driver CD to install applications, drivers, utilities, Internet browsers, and the online NEC Help Center.

Launching the Application and Driver CD

Follow these procedures to launch the Application and Driver CD using NEC Customize.

Windows 98 and Windows 95 Environments

1. Insert the Application and Driver CD into the CD-ROM drive.
2. Double click the NEC Customize icon, if necessary.
3. Highlight Launch Application and Driver CD.
4. Click launch.

   The Application and Driver CD dialog box appears.

1. Insert the Application and Driver CD into the CD-ROM drive.
2. Double click the NEC Customize icon.
3. Select Launch Application and Driver CD.
4. Click Install to launch the CD.

   The Application and Driver CD dialog box appears.

Installing the Software

The Application and Driver CD dialog box consists of the following components.

- Selection Tabs — Located just below the title bar, each tab represents a software category. The selection tabs include applications, drivers, utilities, Internet browsers, and the NEC Online Documentation.
- Description — Located in the bottom portion of the dialog box, the text describes the selected or highlighted software category or application, driver, etc.
- Install — Clicking the Install button installs the selected software.
- Exit — Clicking the Exit button closes the Application and Driver CD dialog box.

Once the Application and Driver CD dialog box appears, follow these steps to install the desired software.

1. Click the selection tab of your choice.
2. Click the desired application, driver, or utility.
3. Click the Install button to install your selection.

   Follow the on-screen instructions to install your selection.
4. Click Exit to close the Application and Driver CD dialog box.
5. Remove the CD from the CD-ROM drive when the installation is complete.

Uninstalling the NEC Help Center

Follow this procedure to uninstall the NEC Help Center.

1. Go to Start, Settings, Control Panel, and double click Add/Remove Programs.
2. Use the scroll bar, if necessary, to display the NEC Help Center item.
3. Highlight NEC Help Center and click the Add/Remove button.
4. Select Automatic as the uninstall method and click Next.
5. Click Finish to perform the uninstall.
6. When the uninstall is complete, click OK and close the Control Panel window.

Partition Magic

Dividing a hard disk drive into several partitions lets you efficiently organize operating systems, programs, and data. PowerQuest's Partition Magic allows you to optimize hard disk drive space with an easy click of the mouse. Visually create, format, shrink, expand, and move hard disk partitions in minutes.

Using Partition Magic

Your NEC Versa Windows 98 or 95 notebook computer ships with an internal hard disk drive consisting of a single FAT 32 partition, drive C:. Use Partition Magic if you want to create multiple partitions and convert any of all of these to FAT 16 on the hard disk drive.

⚠ CAUTION

Before using Partition Magic refer to the associated cautionary notes on the Application and Driver CD. The cautionary notes contain important information about designating the partitions on the hard disk drive as primary and/or extended.

The partitions must be properly designated before using the Product Recovery CD to reinstall your operating system. *If the partitions on the hard disk drive are not properly designated, it appears as though data loss has occurred after using the Partition Restore Choice on the Product Recovery CD.*

After using Partition Magic to create multiple partitions on your hard disk drive, you must perform a partition restore using the Product Recovery CD for Windows 98 or 95. The partition restore process reinstalls the operating system and related drivers to drive C:. For details on using the Product Recovery CD, see Chapter 7, "Solving System Problems."

Intel LANDesk Client Manager

Intel LANDesk Client Manager provides the capability for managing a variety of components within a PC system. These components include network interface cards, memory modules, printers, and software applications. LANDesk Client Manager uses the Desktop Management Interface (DMI) standard established by the Desktop Management Task Force (DMTF).

Note: Intel LANDesk Client Manager continuously monitors your system for optimal system performance. This monitoring function interrupts the auto suspend feature that invokes after 30 minutes of inactivity.

If you install Intel's LANDesk Client Manager the NEC Versa auto suspend feature may become disabled.

Set up the LANDesk Client Manager software on your NEC Versa using the easy-to-follow setup program. Follow these installation suggestions when installing LANDesk Client Manager.

- To install on a user's system, run Client setup, only.
- To install on a system administrator's system, run Client setup first, then run Administration setup. Installing both components enables the administrator to monitor his/her own system, as well as, all network systems. To monitor network systems only, run Administration setup, only.

If you use the NEC Versa system with the NEC Versa Dock and want to install LANDesk Client/Admin Manager, you must load the applicable software *before* docking the system.

To find out more about Intel LANDesk Client Manager capabilities and uses, refer to the online help that is available when you open Client Manager.

> ***Note:*** During the setup and installation of LANDesk Client Manager, you may be prompted to install Microsoft's Internet Explorer. Be sure to install Internet Explorer before installing LANDesk Client Manager.
>
> After Internet Explorer is installed you must run the LANDesk Client Manager setup program again.

SystemSoft PowerProfiler

SystemSoft PowerProfiler for Windows NT lets you manage power resources, balancing performance with battery conservation. You can group power management settings into "profiles" for best performance and best conservation. You can also create custom profiles. PowerProfiler provides status information, alarms, and timers that let you easily monitor and control power consumption.

Access PowerProfiler through the Start, Programs menu or from the taskbar.

SystemSoft CardWizard

SystemSoft CardWizard for Windows NT provides limited plug and play capability by automatically diagnosing and resolving many PC card problems.

When you insert a new PC card into a PC card slot, the Wizard displays a representation of the slot with information about the new card. If there are problems, in most cases, the Wizard automatically fixes them. Typical problems that are resolved include incorrect or missing drivers, system resource conflicts, unconfigured network and ATA cards, and memory conflicts.

Access CardWizard through the Start, Programs menu or from the taskbar.

Intellisync for Notebooks

Intellisync for Notebooks is a powerful PC-to-PC synchronization solution that enhances your productivity by letting you synchronize all your key data. With Intellisync for Windows you can:

- Synchronize files, drives, and directories on two computers, or in different partitions on a single computer.
- Synchronize data between two Personal Information Managers (PIMs).
- Copy and move files on a remote system using an infrared device or a parallel or serial cable.
- Control access each remote system has to your data.

Before using Intellisync for infrared transfer, enable the IR port on your NEC Versa. For details about how to enable the IR port, see Chapter 4, “Using the Hardware.”

Before using Intellisync for parallel or serial communication, connect the appropriate cable to the appropriate port on the back of your NEC Versa. For details about how to connect parallel and serial cables, see Chapter 5, “Using External Devices.”

For more information about Intellisync refer to the online manual.

McAfee VirusScan

The McAfee VirusScan software detects, identifies, and disinfects known computer viruses. It checks memory as well as both system and data areas of your disks for virus infections. In most cases, it will eliminate and fully repair infected programs or system areas to their original condition.

Access McAfee VirusScan through the Start, Programs menu.

Microsoft Internet Explorer

Microsoft's Internet Explorer makes finding information on the Internet easy. Built-in webcasting features give you the content you want, when you want it. An integrated set of tools provides services ranging from basic email to exciting conferencing, broadcasting, and web-authoring capabilities.

Netscape Navigator

Netscape Navigator is one of the most popular software packages for browsing information on intranets or the Internet. Information tools simplify access to favorite sites and provide one-click access to Internet searches.

Navigator's features include technology that allows you to manipulate and move images and Java applets to create visually exciting, fully interactive pages. In addition, Navigator lets you customize for individual preferences and bookmark favorite web sites to facilitate repeated access.

Adobe Acrobat Reader

Adobe Acrobat Reader allows you to view, navigate, and print PDF files from your local hard drive, your local network, or the Internet. For Windows NT only, Adobe Acrobat Reader is installed with the installation of Intel LANDesk Client Manager.

4

Using the Hardware

- LCD Panel
- Keyboard
- NEC VersaGlide
- NEC Versa File Bay
- SuperDisk Drive
- NEC VersaBay III
- 24X CD-ROM Drive
- DVD-ROM Drive
- PC Cards
- IR Port
- Increasing System Storage and Memory
- Switch Settings

LCD Panel

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

To adjust the panel's brightness, use the **Fn-F8** and **Fn-F9** function keys.

If the LCD panel backlight turns off when you attempt to close the panel, toggle the **Fn-F3** function key or close and open the panel to turn on the backlight.

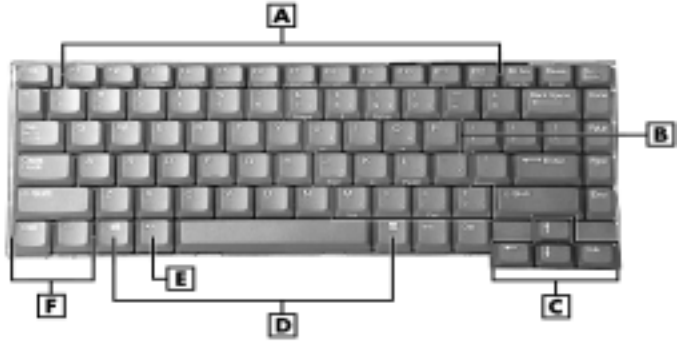
Keyboard

The NEC Versa keyboard is equipped with many features. These include:

- Function keys
- Numeric keypad
- Cursor control keys
- Windows keys
- Control keys
- Typewriter keys

Feature keys are located as shown in the following figure. Key operations are described after the figure.

Keyboard



A – Function Keys **B** – Numeric Keys **C** – Cursor Control Keys
D – Windows Keys **E** – Control Key **F** – Control Keys

- Function keys — Twelve function keys, **F1** through **F12**, are available on the NEC Versa keyboard. These keys work together with the **Fn** key to activate special functions. Nine keys are preprogrammed with dual functions, seven of which are printed in blue on the key.

  Function keys are application-driven. See the specific application's user guide for information about how each function key works within the application you are using.

  The following function key combinations are preprogrammed for the NEC Versa LX computer.

  Fn-F3 — toggles between four video modes; LCD, CRT, both (LCD and CRT) or TV out.

  Fn-F4 — sets standby power management mode on. Press any key to resume from standby mode. In Windows 98, slide the Power button toward the front of the system to resume from standby mode.

  Fn-F6 — sets the beeper speaker volume to low, medium, high, or mute.

Fn-F7 — toggles between various power management levels. Beeps indicate the level chosen as follows:

1 beep	Off
2 beeps	Custom
3 beeps	Highest Performance
4 beeps	Longest Life

Fn-F8 — increases the LCD panel brightness.

Fn-F9 — decreases the LCD panel brightness.

Fn-F10 — toggles zoom in and zoom out.

Fn-F12 — toggles the scroll lock off and on.

Fn-Power/Sleep button — initiates a save-to-file on demand. Saves your working environment to a reserved area on the hard drive, if configured in the BIOS setup.

An additional preprogrammed function key, **Fn-Left Cntl**, simulates pressing the right control key for support of IBM 327x connections.

- Numeric keypad — Pressing NumLock on the keyboard activates the numeric keypad numbers and functions printed in blue on the keys.

  The keypad lets you type numbers and mathematical operands (+, -) as you would on a calculator. The keypad is ideal for entering long lists of numbers.

  When you press NumLock again, the keys revert to their normal functions as typewriter keys.

- Cursor Control keys — Cursor control keys let you position the cursor on the screen where you want. On the screen, the cursor is a blinking underline, block, or vertical line depending on the application. The cursor indicates where the next text typed is inserted.
- Windows keys — If you have Windows 98 or 95, you can use the following two keys to facilitate your work.

Quick access to shortcut menus

Display the Start menu

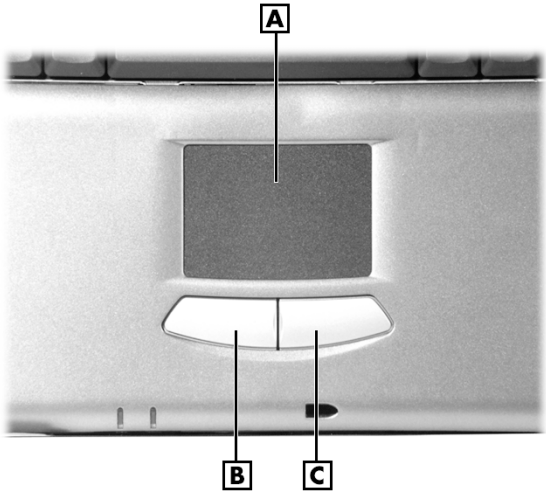
- Control keys — **Ctrl, Alt, Fn**, and **Shift** are controls used in conjunction with other keys to change their functions. To use control keys, press and hold the control key while pressing another key. For example, "press **Ctrl c"** means to hold down the **Ctrl** key and type the letter c. How the key combination works depends on the application you are running.
- Typewriter keys — The typewriter keys (also called alphanumeric keys) are used to enter text and characters. Keys with blue printing on them behave differently when combined with control keys or the **Fn** key.

NEC VersaGlide

The NEC VersaGlide is an easy way to control the cursor with your finger. Lightly glide your finger across the NEC VersaGlide and the cursor follows. The NEC VersaGlide provides standard mouse functionality, plus more. VersaGlide features include the:

- **Single tap to the touchpad**, equivalent to a single click of the primary mouse button.
- **Double tap to the touchpad**, equivalent to a double click of the primary mouse button.
- **Click and hold,** then **drag** your finger across the VersaGlide touchpad, equivalent to a click and drag of the primary mouse button.

VersaGlide features



A – Touchpad **B** – Left (Primary) Button **C** – Right Button

Try all of the features and decide which you prefer. If you find the double tap or any of the other features difficult to use, go to the next section for general directions about adjusting the touchpad properties.

> ***Note:*** In Windows NT environments only, you must use the NEC Customize Utility to install the NEC-supplied mouse driver. The NEC-supplied mouse driver provides the VersaGlide functionality described in this section.

Making VersaGlide Adjustments

The NEC VersaGlide offers a number of options that let you customize how it functions. The options let you control the cursor speed, select button orientation, enable or disable tapping, define auto jumps, enable easy-scrolling, and configure gestures to initiate selected functions by tapping in a designated area of the touchpad.

To access these options, locate the Control Panel and double click on the mouse icon. Use the context-sensitive help to learn more about each option.

VersaGlide Tips

Follow these basic ergonomic tips while working:

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

See Appendix A, “Setting Up a Healthy Work Environment,” for more information.

NEC Versa File Bay

The NEC Versa File Bay is the bay located at the rear of the system’s right side. Your NEC Versa ships with a standard 3.5-inch, 1.44-MB diskette drive or a SuperDisk™ drive installed in the bay.

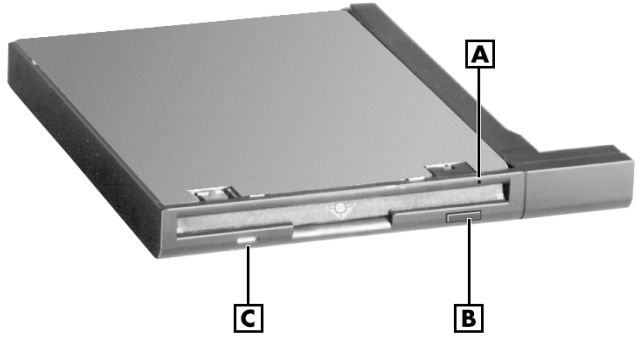
Locating the file bay

A - NEC Versa File Bay

SuperDisk Drive

The SuperDisk drive offers many improvements on the standard diskette drive technology, including faster data access, greater reliability, and higher recording capacities. The drive uses the latest laser-servo (LS) technology, which writes to and reads from specially designed 120-MB diskettes as well as standard 720-KB and 1.44-MB diskettes.

SuperDisk drive



A – Emergency Eject Hole **B** – Release Button **C** – Status LED

Formatting Diskettes in the SuperDisk Drive

When formatting a diskette in the SuperDisk drive while in DOS mode, you may encounter the following error messages:

- For 720-KB and 1.44-MB diskettes the error message states "Invalid media or Track 0 bad – disk unusable," "Extended Error 1g - format terminated."
- For a 120-MB SuperDisk the error message states "Parameters not supported by drive."

These error messages indicate that the diskette you are attempting to format is write-protected. Simply write-enable the diskette before formatting.

NEC VersaBay III

The NEC VersaBay III is the drive bay located below the VersaGlide at the front left side of the system. Your NEC Versa ships with a 24X CD-ROM drive, SuperDisk drive, or DVD-ROM drive installed in the bay. The NEC VersaBay III supports warm swapping which allows you to remove and replace a device while your NEC Versa is in a suspend state. For details about using the warm-swap utility, refer to the section, "NEC VersaBay Swapping Utility," later in this chapter.

Locating the VersaBay III

A – VersaBay III

In addition to the CD-ROM drive, SuperDisk drive, or DVD-ROM drive, the VersaBay III accepts the following options:

- a second battery pack
- a second hard disk drive.

Contact your NECC dealer to purchase options and accessories for your NEC Versa notebook computer.

NEC VersaBay Swapping Utility

The VersaBay III supports warm swapping of some bay devices. Warm swapping extends the power of Plug-and-Play technology to your NEC VersaBay III devices by allowing you to swap a CD-ROM drive, SuperDisk drive, or DVD-ROM drive in the VersaBay III while your system is in a suspended state. Use the NEC VersaBay Swapping utility to put your system into a suspended state before swapping a device in the Windows 98 or Windows 95 environments. This dynamic solution further increases the flexibility of your already versatile notebook computer. Warm swapping devices is not supported on Windows NT systems.

Installing the NEC VersaBay Swapping Utility

Use the NEC Customize utility to install the NEC VersaBay Swapping utility. For details about using the NEC Customize utility, refer to the section, "NEC Customize Utility," earlier in this chapter.

Once the swapping utility is installed on your system, a small icon appears in the lower right hand corner of the Windows taskbar. Moving your cursor over the icon displays information about the VersaBay III. The balloon message that appears indicates if the bay is empty or if a device is installed. Because warm swapping is only supported for the CD-ROM drive, SuperDisk drive, DVD-ROM drive, and the VersaBay III Battery Pack the balloon message may not be accurate if you install a hard disk drive. Your system must be powered off before installing a hard disk drive in the VersaBay III.

Using the NEC VersaBay Swapping Utility

With the NEC VersaBay Swapping utility running on your notebook computer, you can warm swap a CD-ROM drive, SuperDisk drive, DVD-ROM drive, or VersaBay III Battery Pack in the VersaBay III. Please note the following when using the swapping utility:

- Windows 98 or 95 Power Management *must be enabled* to use the swapping utility. By default, Windows 98 or 95 Power Management is enabled when your system ships. For details, see your Windows documentation.

- The swapping utility *only* supports the swapping of a CD-ROM drive, SuperDisk drive, DVD-ROM drive, or VersaBay III Battery Pack. Other devices installed in the VersaBay will work properly. However, warm swapping other devices is not supported.

⚠ CAUTION
Warm swapping other devices can damage the device, the system, or both.

Swap devices in the VersaBay III as follows:

1. If you have files open on the device you are planning to remove, close them.
2. Right click on the swapping utility taskbar icon to display the menu.
3. Highlight and click on the Swap Device option.
4. A dialog box appears and lets you know that your system must be in a suspended state to swap the device and asks you if you want to continue. Press **Yes** to put your system into a suspended state.
5. Once your system is in a suspended state, remove the device from your computer. Insert the new device while your system is still in a suspended state.
6. To resume your system after removing and/or installing a device, slide the Power/Sleep button toward the front of the system.

References to the drive letter listed under My Computer and the Windows Explorer change automatically when the device is swapped or removed. The balloon message that appears when you move your cursor over the taskbar icon also changes to reflect the new VersaBay status.

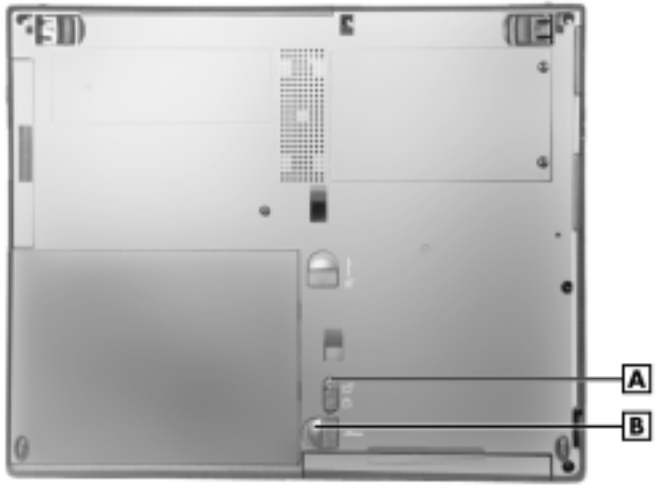
Removing a Device from the VersaBay III

Use the following steps to remove a device from the VersaBay III.

Your system *must* be in a suspended state to use the utility, or powered off, before removing or inserting devices in the VersaBay III.

1. Use the NEC VersaBay Swapping Utility to put your system into a suspended state or power off the system.
2. Close the LCD panel and turn the system upside down.
3. Locate the VersaBay III release lock and release latch on the bottom of the unit.

VersaBay III release latches



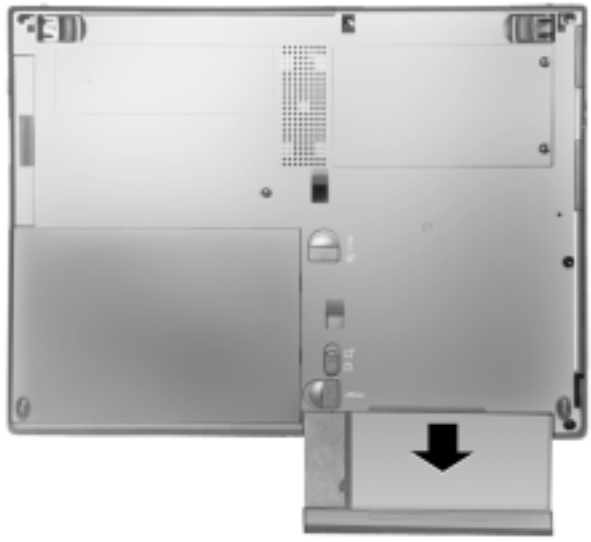
A – VersaBay Release Lock **B** – VersaBay Release Latch

4. Slide the lock to the unlocked position before releasing the latch.
5. Slide the latch toward the battery bay and hold it.

6. Pull the device out of the system.

> **Note:** If you release the latch before completely removing the device, the device casing catches on the inside of the latch.

Releasing the device



Installing a Device in the VersaBay III

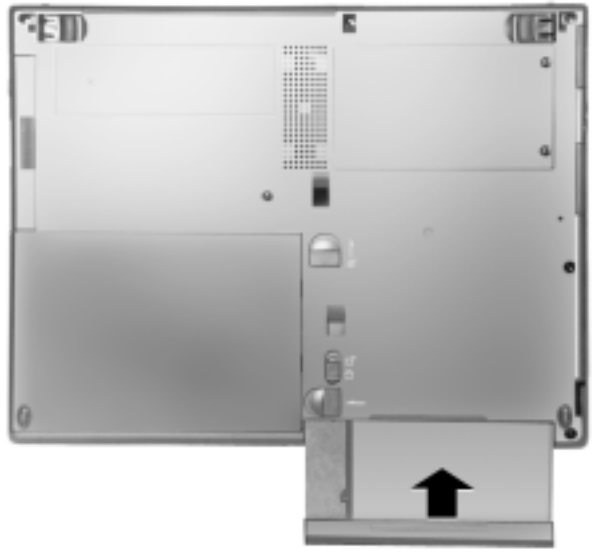
Use the following steps to install a device in the VersaBay III.

Your system *must* be in a suspended state to use the utility, or powered off, before removing or inserting devices in the VersaBay III.

1. Use the NEC VersaBay Swapping Utility to put your system into a suspended state, or power off the system.
2. Close the LCD panel and turn the system upside down.

3. Locate the VersaBay III release lock and release latch on the bottom of the unit.
4. Slide the lock to the unlocked position, if necessary.
5. Slide the latch toward the battery bay and hold it.
6. Align the device in the VersaBay III and push it in until it locks into place.
7. Slide the lock back to the locked position.

Inserting the CD-ROM drive



8. Turn the system over and open the LCD panel.
9. Press the Power/Sleep button to resume operation.

Customizing Your System with the VersaBay III

Customizing your NEC Versa is easy using the VersaBay III. If you find you require additional hard disk space simply remove the standard device and plug in an optional hard disk drive.

Your system *must* be powered off before removing or inserting a hard disk drive in the VersaBay III.

Add another hard disk drive as follows.

1. Power off your system.
2. Remove the installed device from the VersaBay III as described in steps 2-6 in "Removing a Device from the VersaBay III."
3. Install the new hard drive in the VersaBay III as described in steps 2-8 in "Installing a Device in the VersaBay III."
4. Once you power on, the system automatically recognizes the newly installed hard drive.

24X CD-ROM Drive

Your NEC Versa may ship with a 24X CD-ROM drive that features the latest in CD-ROM technology. The CD-ROM drive is assigned an available drive letter.

Use the CD-ROM drive to load and start programs from a compact disc (CD). You can also use the CD-ROM drive to play your audio CDs. The 24X CD-ROM drive is fully compatible with Kodak Multisession Photo CDs™ and standard audio CDs.

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

CD-ROM drive features are shown in the following figure. Descriptions of these features follow.

24X CD-ROM drive

A – Emergency Eject Hole **B** – Release Button **C** – Status LED

- Emergency Eject Hole — allows you to manually remove a disc from the CD-ROM drive if the eject function is disabled by software or a power failure occurs.

  To remove a disc, insert the end of a paper clip into the eject hole, and push in until you hear a click. Manually open the drawer.

- Release Button — ejects the CD tray. Press this button when power is on to insert a CD into or remove a CD from the drive.

- Status LED — lights during data read operations. Do not eject the CD or turn off the NEC Versa when the indicator is lit.

CD Loading

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

1. Press the Release button. The CD tray emerges a short way out of the drive door.
2. Gently pull the tray out until you can easily position a disc in the tray.
3. Put your CD, printed side up, into the circular impression in the tray.
4. Push the CD tray in until it clicks shut.

Note: Some CDs vibrate when playing. This does not affect the CD-ROM drive.

CD Care

When handling CDs, keep the following guidelines in mind.

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

⚠ CAUTION

Avoid using benzene, paint thinner, record cleaner, static repellent, or any other chemical on the disc. Chemicals and cleaners can damage the disc.

Changing the Auto Play Setting

Your system may not be configured to allow a CD to automatically play upon insertion. Although this feature makes using your CDs very convenient, it may interfere with the system's power management function.

Follow these instructions to enable or disable the Auto play feature.

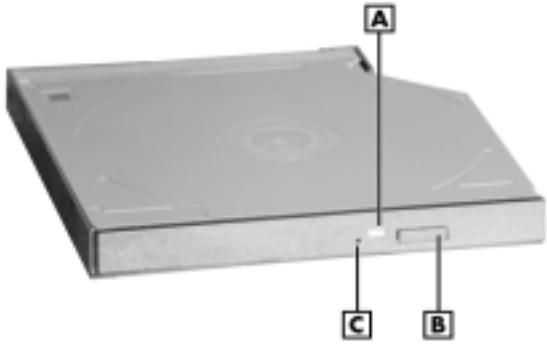
1. From the Windows 98 or 95 Start menu, select Settings and Control Panel.
2. In the Control Panel, highlight and double-click on the System icon.
3. Select the Device Manager tab.
4. Locate and open the CD-ROM folder.

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

DVD-ROM Drive

The DVD-ROM drive offers many improvements over the standard CD-ROM technology including superior video and audio playback, faster data access, and greater storage capacities. The drive uses the latest DVD technology which reads from specially designed DVD discs as well as standard audio and video CDs.

DVD-ROM drive



A – Status LED **B** – Release Button **C** – Emergency Eject Hole

PC Cards

PC cards are all approximately the same size and vary only in thickness. All have a standard 68-pin connector. Your NEC Versa supports the installation of the PC cards described next.

Type II Cards

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

Type II Extended Cards

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

Type III Cards

Type III cards are thicker (10.5 mm) than Type II cards and allow no connections. Type III card uses include advanced function I/O cards with additional features such as wireless modems, multimode cards (cards with more than one function such as a combined modem and NIC card), and small hard drive storage.

Communication Cards

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

> ***Note:*** If you are using this unit outside of the United States or Canada, contact a local NECC dealer for availability information.

- Network Cards — You can use a network card with your system to gain access to a local area network (LAN).

  You can insert a network card in either slot.

- Fax/Modem Cards — You can use a PC card modem with your system to communicate with others via fax, email, or connect to an online service or bulletin board.

  You can insert a fax/modem card in either slot.

> ***Note:*** Outside the U.S. and Canada, you might need a modem and telephone adapter approved for the local telephone system. Check with your local dealer for details about purchasing this equipment.

Always insert the fax/modem card before using your fax/modem software application. If you start the application before inserting the fax/modem card, the application typically does not find the card.

PC Card Modems

You can use a PC card modem with your NEC Versa to communicate with others via fax, email, or connect to an online service or bulletin board.

Follow these steps to connect your system to a phone line.

1. Connect the telephone cable to the modem port.
2. Connect the other end of the telephone cable to the wall outlet (you might have to unplug the telephone if it is plugged into the outlet).

> ***Note:*** When using a modem outside the U.S. and Canada, you might need an international telephone adapter. You can buy this at an electronics supply store.

Storage Cards

When you insert a memory or storage card in an NEC notebook computer, it appears as a unique drive as long as the system has an available interrupt for the card.

Interface Cards

You can connect most Standard Small Computer System Interface (SCSI) devices using the optional NEC PC card-SCSI card. This PC card is also known as the Adaptec SlimSCSI.

Other Cards

Many other kinds of PC cards are available for notebook computers. They include the following cards:

- Global Positioning System (GPS) — enables the tracking of remote units (for example, delivery trucks)
- Serial — adds an extra serial communications port
- Multimedia — combines animation and sound
- Audio — enables the use of sound (for example, in voice mail)

PC Card Slots

Your NEC Versa LX notebook integrates two CardBus slots for inserting two Type II PC cards or one Type III PC card. The 32-bit CardBus also has zoomed video support.

> ***Note:*** The 32-bit CardBus structure is backward compatible, but also accepts new CardBus cards.

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

Inserting a PC Card

To insert a PC card, follow these steps.

1. Align the card so that the 68-pin connector points towards the slot and the arrow shows on the top face of the card.
2. Slide the card into either slot. (Install Type III cards in the bottom slot, only.) A low tone followed by a high tone lets you know that the card is fully inserted and recognized. (If you turn off the sound through the function keys or volume control, no sound is emitted.)

   Other tone sequences such as high, then low tones, indicate that the card is inserted, but the card type is unknown.

Inserting a card

3. Use the software preinstalled on your system to check PC card slot availability. In Windows 98 or 95, look for the PC Card icon in the control panel or on the right side of the taskbar. It shows which slot contains a PC card and which is empty. In Windows NT, look for the CardWizard™ SystemSoft icon on the desktop. Use the Application and Driver CD to install CardWizard.

Removing a Card

Follow these steps to remove a PC card in Windows 98, Windows 95, or Windows NT.

1. From the screen, select My Computer and Control Panel. (Or, you can also select the taskbar PC card icon.)
2. Select the PC card icon.
3. Select the PC card to remove, and select Stop.

   The Windows operating system alerts you if any applications are still using the card. If all applications using the card are closed, services for that card are shut down. You receive a message saying that it is safe to remove the card.
4. Press the button on the side of the PC card in the slot.

IR Port

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

IR transfer speed ranges from 2.4 Kbit/sec to 4.0 Mbit/sec. You can limit the IR transfer speed through the Infrared icon in the Windows control panel. Double click the icon and select the options to access the speed parameter.

Your NEC Versa transfers data at the speed compatible with the receiving device.

⚠ CAUTION

Your NEC Versa ships with the IR port disabled. Before using the IR port for the first time, you must enable the device. See detailed instructions in the section that follows.

Note: The Windows 98 operating system is equipped with infrared drivers for infrared communication on your NEC Versa. It is not necessary to install the IR drivers from the Application and Driver CD when using the Windows 98. The IR drivers on the Application and Driver CD are for Windows 95 use, only.

Using the IR Port

For optimal performance when using the IR (infrared) port for file transfer, printing, and other infrared communication, install the required drivers and applications. Check that the IR port is enabled via the BIOS Setup utility (Windows NT) or the Customize icon (Windows 95). Use the NEC Versa LX Application and Driver CD that ships with your NEC Versa LX system to install the following IR drivers and applications.

- The NEC Versa Fast Infrared Support driver (Windows 95)
- The Intellisync for Notebooks application (Be sure to read the Intellisync installation instructions before installing.)

For details about using the Application and Driver CD to install additional software, see Chapter 3 “Using the Software.”

Enabling the IR Port

Procedures for enabling the IR port for Windows 98, Windows 95 and Windows NT systems differ. See the instructions appropriate for your system.

Windows 98 or 95 Systems

In Windows 98 or 95, enable the IR port using the IR Setup utility accessible through the NEC Customize icon. Follow these steps to enable the IR port.

1. Double click the NEC Customize icon on the Windows desktop.
2. From the display window, select Install IR Setup utility.
3. Click Launch to initiate the IR Setup utility.

   The IR Setup utility windows displays.
4. Select Enable and click OK.

   A message displays indicating that you must reboot your system TWICE to fully enable the IR port.
5. Click OK to reboot your system. *Be sure to reboot your system a second time before attempting to use the IR port for infrared communication.*
6. Click Exit to close the NEC Customize utility window.

Windows NT Systems

In Windows NT, enable the IR port using the hardware BIOS setup utility. Follow these steps to enable the IR port.

1. Access the BIOS Setup utility at power-on. Just press **F2** when the prompt, "Press <F2> to enter Setup," appears.

   The BIOS Setup main menu appears.
2. Use the down arrow key to select the Peripheral Setup menu.
3. Use the down arrow key to select the IR Serial Port.

4. Use the **PgUp/PgDn** keys to change the default value to COM4, IRQ3. (Be sure to check your available resources before making a selection.)
5. Press **ESC** to return to the BIOS main menu.
6. Save your settings and exit the BIOS Setup utility.

For the infrared technology to work, you need to follow these guidelines:

- Position the NEC Versa no more than three feet way from the IR peripheral device you are using.
- Make sure there is no greater than a 30° angle between the computer and the device.

Increasing System Storage and Memory

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

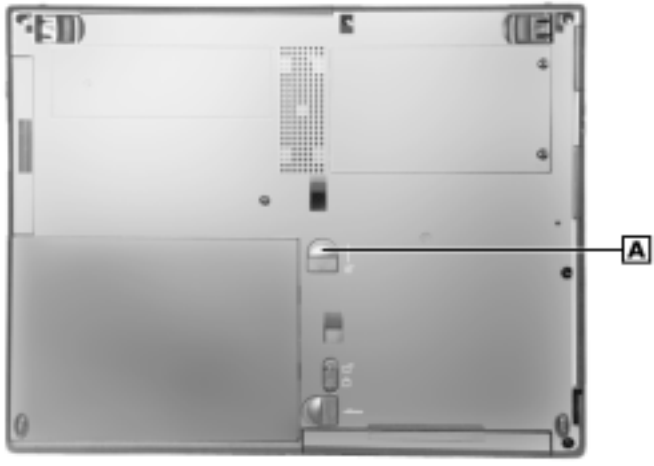
Hard Disk

You can increase the system's storage capacity by replacing the standard hard disk drive or adding a second hard disk drive in the VersaBay III. Adding a second hard disk drive is described in the section "Customizing Your System with the VersaBay III."

The hard disk drive is located under the battery bay in your NEC Versa notebook computer. You must remove the system's main battery before replacing the hard disk drive. Replace the hard disk drive as follows.

1. Save your files, exit Windows, and turn off system power.
2. Close the LCD and turn over the system.

3. Slide the battery release latch toward the back of the system and hold firmly.



A — Battery Release Latch

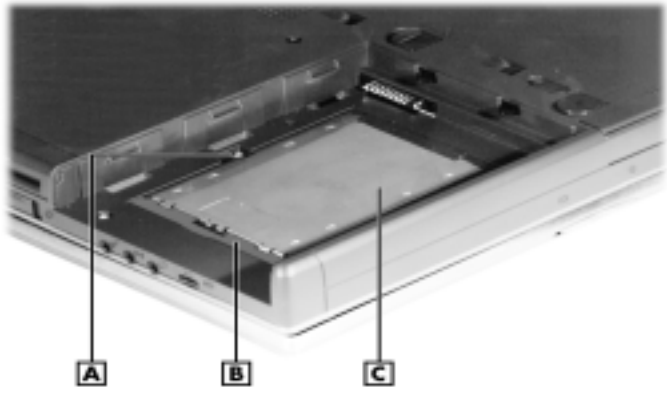
4. Continue to hold the battery release latch as you slide the battery out of the system.

Removing the battery

5. Remove the disk drive as follows:

- Remove the screw that secures the hard disk drive.
- Place your finger in the center notch of the hard drive lever and pull up the lever. Be sure that both sides of the lever are raised. If you encounter any resistance when lifting the lever, carefully loosen both sides of the lever before lifting.

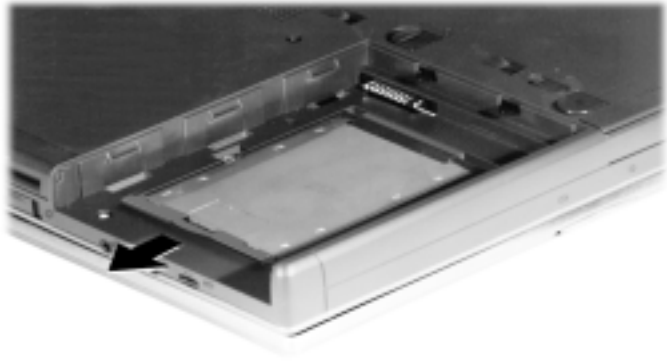
Hard Disk Drive in the drive bay



A – Screw B – Hard Disk Drive Lever C – Hard Disk Drive

- With the lever raised, place your fingers on the inside edge of the lever and on each side of the center notch. Pull the drive toward the open side of the battery bay. Do not apply pressure to the drive surface as you pull.

Disconnecting the drive



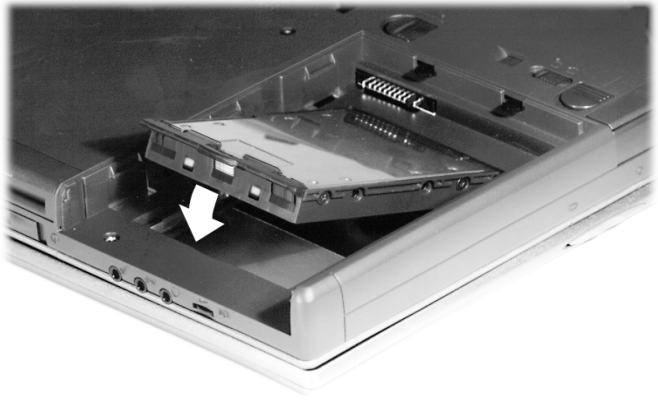
- Once the drive is disconnected, use the lever to lift the drive out of the system. Once removed, only handle the drive by its sides.

Lifting the drive out of the bay

6. Replace the new drive as follows:

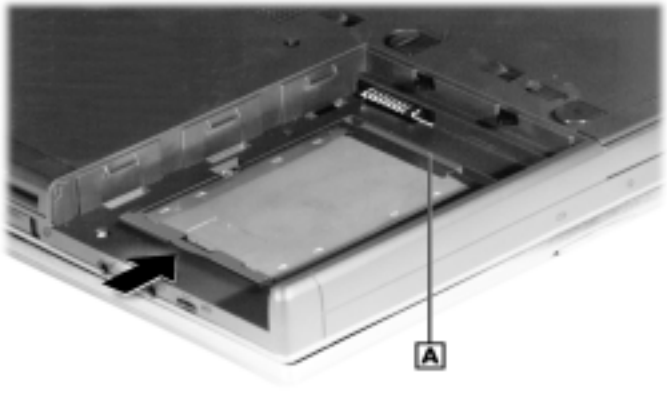
- Holding the drive by its sides, pull up the hard drive lever.
- Keeping the lever raised, lower the new drive into the drive bay.

Lowering the drive into the bay



- Align the drive connector with the connector in the drive bay.
- Pressing against the outer edge of the lever, slide the drive toward the connectors and push firmly to secure the connection. Do not apply pressure to the drive surface as you push.

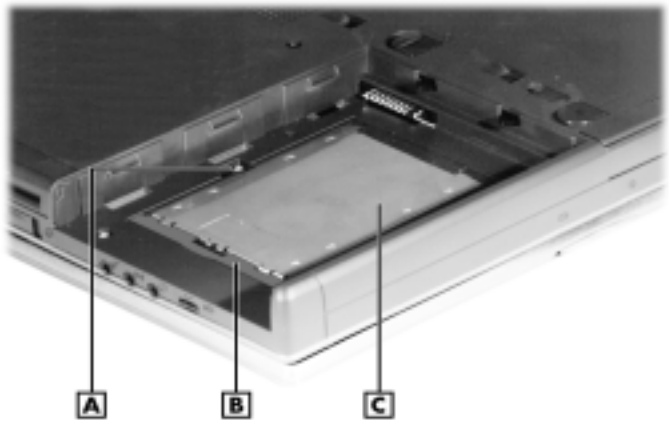
Connecting the drive



A – Drive Connectors

- Press down on both sides of the drive lever to lock it into place.
- Replace the screw to secure the hard disk drive.

Securing the drive



A – Screw B – Hard disk drive lever C – Hard Disk drive

7. Replace the battery pack as follows:
   - Locate the alignment groove on the edge of the battery.
   - Locate the alignment groove inside of the battery bay.
   - Align the grooves on the battery with the grooves in the bay.
   - Slide the battery into the battery bay until securely locked into place.

Inserting the battery pack

Memory Module Installation

Your NEC Versa LX computer comes standard with 64 megabytes (MB) of random access memory (RAM), depending on your model. You can increase system memory to a maximum of 256 MB, depending on your model. The RAM combinations vary depending on which two of the listed single bank SO-DIMMs are used.

- 32-MB memory module
- 64-MB memory module
- 128-MB memory module (when available).

⚠ CAUTION

Only install NECC supplied/approved memory module options to ensure proper functionality of your NEC Versa notebook computer.

Contact your NECC dealer for information about available NEC-supplied/approved memory modules.

Installing a memory module involves the following procedures.

- removing the keyboard retainers
- lifting and moving the keyboard out of the way
- installing the SO-DIMM
- reassembling the unit.

⚠ CAUTION

Before handling any internal components, discharge static electricity from yourself and your clothing by touching a nearby metal surface.

Use the following steps to install a memory module.

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

3. Locate the two keyboard retainers, slide each one toward the outside edge of the system and remove.

Removing the keyboard retainers

4. Gently lift up the edge of the keyboard nearest the LCD and slide the keyboard toward the LCD screen to release the tabs that secure it.

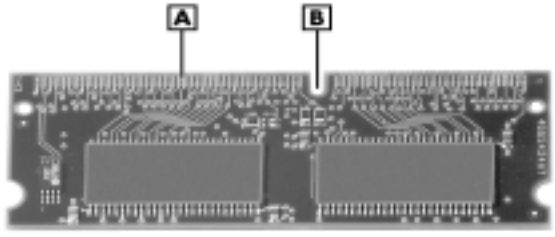
⚠ CAUTION

Be careful not to disconnect the keyboard or keyboard cable entirely from the system.

Positioning the keyboard

5. Carefully turn over the keyboard and place it face down on the VersaGlide. Be careful not to twist or disconnect the keyboard cable.
6. Locate the connectors and alignment key on the SO-DIMM.

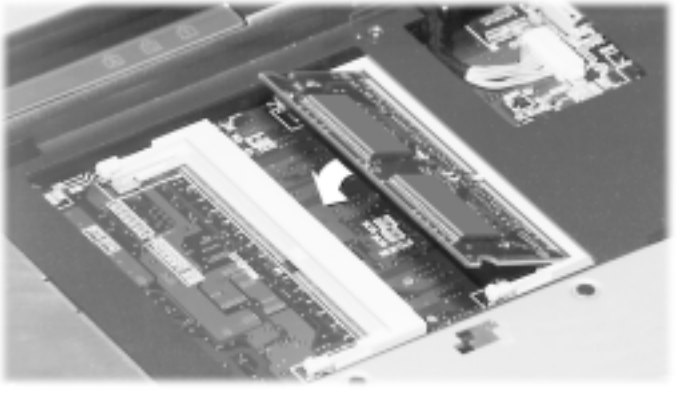
SO-DIMM features



A – Connectors **B** – Alignment Key

7. Locate the SO-DIMM expansion port and proceed as follows:
   - Hold the SO-DIMM at a 45 degree angle and align the SO-DIMM contacts with the socket in the system. Push the connector into the socket.
   - Press down on the edge of the SO-DIMM opposite the contacts until the lock tabs on the sides snap into place, securing the module.

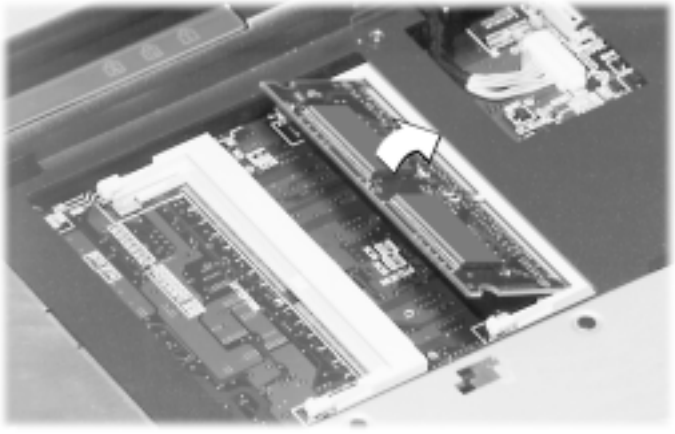
Installing the SO-DIMM



If you are replacing a SO-DIMM and need to remove one that is already installed, do so as follows:

- Press the locking tabs away from the sides of the SO-DIMM and hold while gently lifting on the edge of the SO-DIMM.
- When the edge of the SO-DIMM pops up and is at approximately a 60 degree angle, pull the SO-DIMM from the socket.

Removing an installed SO-DIMM



Note: The system switches are also located underneath the keyboard. Therefore, if you need to set any system switches, you might want to do so while the system is already disassembled. The system switches are defined in the following section.

8. Reassemble the system as follows:

   - Lift up the keyboard and align the tabs on the front of it with the system grooves in the system.
   - Reseat the keyboard in its original position.
   - Slide the keyboard retainers back onto the system.

Reassembling the system

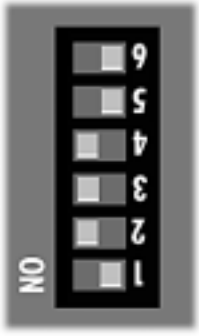
Switch Settings: six-position dip switch

A six- or four-position dip switch is located underneath the keyboard. The following list identifies each switch setting and its function.

- Switch 1, Password Override Switch — The default setting is “OFF.” If you forget your password and cannot access the data on your NEC Versa, change the setting to “ON” and your current password is erased.
- Switch 2 — Keyboard select; Default is “ON” for U.S. 85 key keyboard.
- Switch 3 — Reserved for factory use; Default is “ON.”
- Switch 4 — Keyboard select; Default is “ON” for U.S. 85 key keyboard.

- Switch 5 — BIOS flash enable; Default is “OFF” (disable). Before updating your BIOS, change the setting to “ON.”
- Switch 6 — Logo select; Default is “OFF” for U.S.

Default Switch Settings



Changing Switch Settings

Use the following steps to change switch settings.

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

3. Locate the two keyboard retainers, slide each one towards the outside edge of the system, and remove them.

Removing the keyboard retainers

4. Gently lift up the edge of the keyboard nearest the LCD and slide the keyboard toward the LCD screen to release the tabs that secure it.

⚠ CAUTION

Be careful not to disconnect the keyboard or keyboard cable entirely from the system.

5. Gently rest the keyboard on top of the base unit to view and access the dip switch block. Be careful not to twist or disconnect the keyboard cable.

6. Locate the dip switch block. Using a fine-tipped object, change the appropriate switch to the required setting. See “Switch Settings” for dip switch functions and settings.

⚠ CAUTION

Never use a pencil to change switch settings.
Residue from the pencil can damage the system.

Password Override Switch set to On

> **Note:** The system memory expansion slots are also located underneath the keyboard. Therefore, if you need to install/replace SO-DIMM modules, you might want to do so while the system is already disassembled.

7. Reassemble the system as follows:

- Lift up the keyboard and align the tabs on the front of it with the grooves in the system.
- Reseat the keyboard in its original position.
- Slide the keyboard retainers back onto the system.

Reassembling the system

Switch Settings: four-position dip switch

A four-position dip switch is located underneath the keyboard. The following list identifies each switch setting and its function.

- Switch 1, Password Override Switch — The default setting is "OFF." If you forget your password and cannot access the data on your NEC Versa, change the setting to "ON" and your current password dissolves.
- Switch 2 — Keyboard select; Default is "ON" for U.S. 85 key keyboard.
- Switch 3 — Reserved for factory use; Default is "OFF."
- Switch 4 — Reserved for factory use; Default is "OFF."

Default Switch Settings

Changing Switch Settings

Use the following steps to change switch settings.

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

3. Locate the two keyboard retainers, slide each one towards the outside edge of the system, and remove them.

Removing the keyboard retainers

4. Gently lift up the edge of the keyboard nearest the LCD and slide the keyboard toward the LCD screen to release the tabs that secure it.

WARNING

Be careful not to disconnect the keyboard or keyboard cable entirely from the system.

5. Gently rest the keyboard on top of the base unit to view and access the dip switch block. Be careful not to twist or disconnect the keyboard cable.

6. Locate the dip switch block. Using a fine-tipped object, change the appropriate switch to the required setting. See “Switch Settings” for dip switch functions and settings.

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Never use a pencil to change switch settings. Residue from the pencil can damage the system.

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- Lift up the keyboard and align the tabs on the front of it with the grooves in the system.
- Reseat the keyboard in its original position.
- Slide the keyboard retainers back onto the system.

Reassembling the system

5

Using External Devices

- External Monitor
- Printer
- External Keyboard/Mouse
- External Bar Code Scanner
- External Television Connections
- External Audio Options
- USB Devices
- NEC Versa Dock
- NEC Versa PortBar

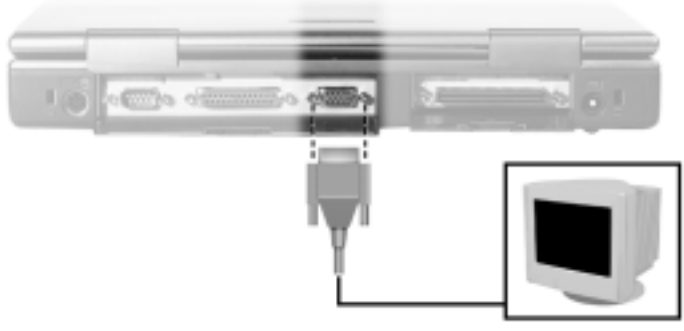
External Monitor

You can add a standard external monitor to your NEC Versa. You need a display signal cable (usually provided with the monitor). One end of the cable must have a 15-pin connector for the system.

Follow these steps to connect an external monitor to your NEC Versa.

1. Check that the NEC Versa is powered off and the monitor power switch is turned off.
2. Open the left-most port cover on the back of the system.
3. Attach the 15-pin cable connector to the monitor port on the system. Secure the cable connection with the screws provided.

Connecting a monitor



4. Connect the monitor power cable and plug it into a properly grounded wall outlet.
5. Follow any setup instructions in the monitor's user's guide.
6. Turn on power to the system and device.
7. Press **Fn-F3** to toggle through the video modes.

Printer

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

Parallel Devices

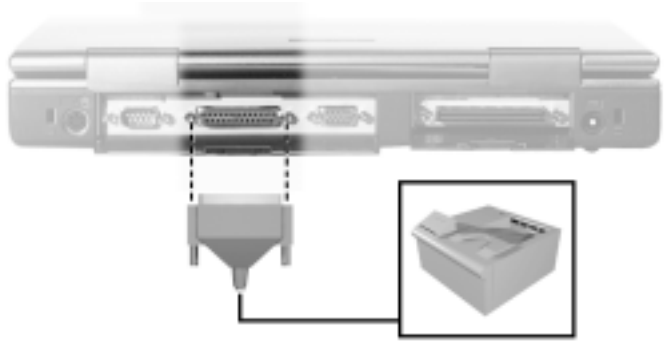
To install a parallel device such as a printer, you need a cable with a male 25-pin connector for the system and, for most parallel printers, a Centronics®-compatible 36-pin connector.

> ***Note:*** When you connect a printer, be sure to install the appropriate printer driver through the Windows control panel.

Connect a parallel device to your NEC Versa as follows.

1. Check that power to both the NEC Versa and the device is off.
2. Open the left-most port cover on the back of the system and locate the parallel port.
3. Align and connect the 25-pin parallel cable connector to the parallel port on the system. Secure the cable with the screws provided.
4. Align and connect the other end of the cable to the parallel port on the device. Lock the connector clips.

Connecting a parallel printer



5. Connect the power cable to the device and a properly grounded wall outlet.
6. Turn on power to the system and the device.

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

Serial Devices

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

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

Follow these steps to connect a serial device to your NEC Versa.

1. Check that power to both the NEC Versa and the device is off.
2. Open the left-most port cover on the back of the system and locate the serial port.

3. Align and connect the 9-pin connector with the serial port on the system. Secure the connection with the screws provided.

4. Align and connect the other end of the cable to the appropriate port on the device. Secure the connections with the screws provided.

Connecting a serial device

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

6. Turn on power to the system and the device.

> ***Note:*** Make sure your device is online before trying to print. See the device specific guide for instructions.

External Keyboard/Mouse

You can add a full-size PS/2-style keyboard or PS/2-style mouse to your NEC Versa using the Plug and Play feature. The PS/2 style keyboard and the PS/2 style mouse are warm insertable allowing you to connect the devices while the NEC Versa is powered on. You can continue to use the system keyboard and VersaGlide touchpad while an external keyboard or mouse is connected.

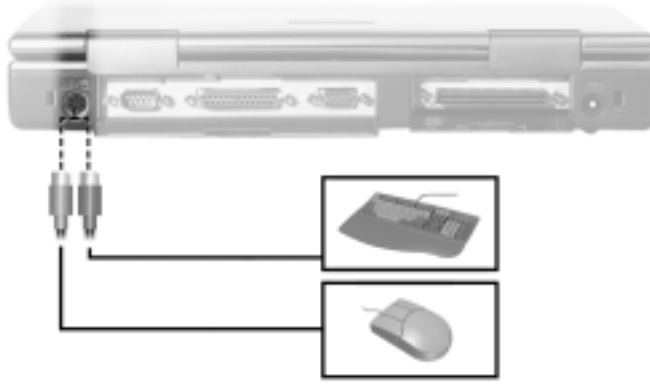
> **Note:** For information about disabling the VersaGlide while an external mouse is connected, refer to, "How to Use BIOS Setup," in chapter 3. The Internal Mouse parameter in the Advanced CMOS Setup section of the BIOS Setup parameters allows you to enable or disable the VersaGlide touchpad.

To attach both an external keyboard and a external mouse at the same time, use the optional NEC Y-adapter. For ordering information, contact your NECC dealer.

> **Note:** If you purchased this product outside the U.S. or Canada, contact the local NECC office or their dealers for ordering information.

To connect an external keyboard or mouse simply put the system into a suspended state, connect the device to the keyboard/mouse port, then resume the system when the connection is secure. You are now ready to use your external keyboard or mouse.

Connecting an external keyboard/mouse



Note: For instructions on connecting an external keyboard or external mouse to the NEC Versa Dock, see the *NEC Versa Dock User's Guide*.

External Bar Code Scanner

You can use an external bar code scanner using a PS/2-style connector with your NEC Versa's Plug and Play feature. You can still use the system keyboard while a scanner is connected.

To connect a bar code scanner, follow the instructions under "External Keyboard/Mouse." If the system does not recognize the scanner, attach a keyboard to the keyboard port on the scanner or disable the BIOS setting, "PS/2 Port Warm Swap." For details about BIOS settings, refer to Chapter 3, "Using the Software."

External Television Connections

Your NEC Versa LX is equipped with two TV out ports that allow you to use a television as an external display device in the Windows 95 environment.

- The RCA TV out port requires an RCA-to-RCA cable and a television equipped with a standard RCA input jack.
- The S-video TV out port requires an S-video cable and a television equipped with an S-video input jack. (S-video transmission provides sharper picture images and superior color definition.)

Both TV out ports support 640x480, 800x600, and 1024x768 display settings. However, for optimal resolution when using the TV out ports, select the following settings:

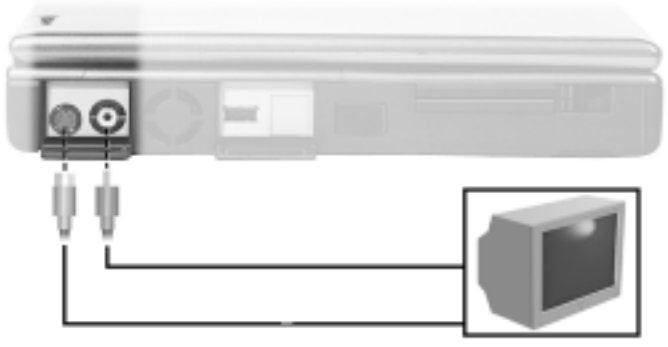
- 640x480 when the video output device is a television.
- 800x600 or 1024x768 when the video output device is an LCD panel or an external monitor (CRT).

To change display settings, access Start, Settings, Control Panel, Display, and select the Settings tab.

Follow these steps to connect your television as an external display device.

1. Connect one of the following cables:
   - Connect one end of the standard composite cable into the TV Out (RCA) yellow-colored port on your NEC Versa and the other end of the cable into the standard RCA jack on your television or VCR.
   - Connect one end of the S-Video cable into the TV Out (S-video) port on your NEC Versa and the other end of the cable into the S-video input jack on your television.
2. Go to Settings, Control Panel, Display Properties, Settings, and place a check in the TV box.
3. Use **Fn-F3** to toggle to TV Out display mode.

Connecting an external display device



Note: The default TV Out setting is for NTSC transmission. The U.S. and Japan use the default NTSC signal; Hong Kong and most European countries use the PAL signal. If you require the PAL setting, use the Advanced CMOS Setup section of the BIOS setup utility to change the setting.

The NEC Versa does not support the SECAM signals used in some countries.

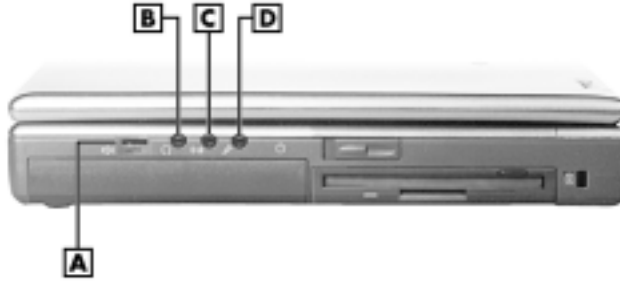
External Audio Options

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

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

1. Locate the audio port that you want to use.
2. Plug the jack into the appropriate port on the right side of the NEC Versa.

Audio ports



A – Volume Control **B** – Headphones **C** – Line In **D** – External Microphone

Note: If you are using external speakers or an external microphone and experience sound distortion or feedback, lower the volume.

Some feedback is caused by having the microphone and speakers too close to each other, so moving the external audio option away from the unit may also help.

USB Devices

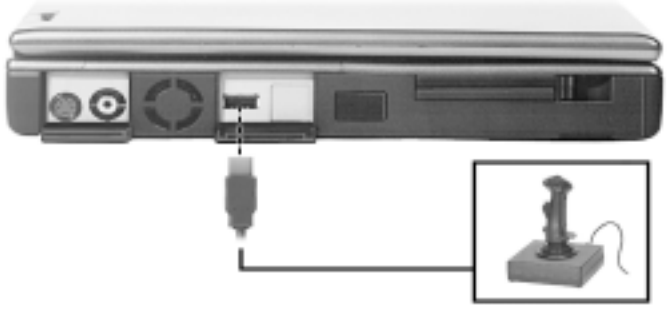
The USB port on the left side of your system allows you to connect up to 127 USB equipped peripheral devices to your NEC Versa notebook computer for Windows 98 and Windows 95 systems, only. These peripherals may include digital cameras, scanners, printers, CD-ROM drives, modems, keyboards, telephones, and game devices.

USB devices called USB hubs can serve as connection ports for other USB peripherals. Only one device needs to be plugged into your NEC Versa. Additional peripherals can be connected in a daisy chain configuration where one device is connected to another in a series. Up to 127 devices can be connected together in this way.

Connect an external USB device to your system as follows.

1. Locate the center port cover on the left side of your system and open the cover door.
2. Plug in the USB device to the USB port on the left side of the opening.

Connecting a USB device



NEC Versa Dock

The optional NEC Versa® Dock lets you turn your portable computer into a desktop or a full-blown multimedia workstation, providing:

- two internal PCI expansion slots
- two external bays
- connector ports for the following external devices; USB, parallel, serial, external monitor, external keyboard, mouse, audio, and MIDI/game devices.

See the *NEC Versa Dock User's Guide* for instructions on connecting and using the docking station.

⚠ CAUTION
Only dock the NEC Versa LX computer on an NEC Versa Dock. The cover is specially designed to allow for proper cooling during system operation.

NEC Versa PortBar

The NEC Versa PortBar™ duplicates the ports found on the back of your NEC Versa LX system. Plus, the PortBar adds a 15-pin MIDI/game port connector. Keep the NEC Versa PortBar in your office connected to peripherals while you take your NEC Versa notebook on the road.

PortBar Ports

The ports on the PortBar are described next.

- Serial Port — Connects a serial device to your notebook computer, such as an external modem or mouse.
- Parallel Port — Connects a printer to your notebook computer.
- External CRT (VGA) Port — Connects an external VGA/SVGA monitor to your notebook computer.

- External Keyboard Port — Connects to a 6-pin standard PS/2 style keyboard.
- External Mouse Port — Connects to a 6-pin standard PS/2 style mouse.
- USB Port — Connects a USB device or chain of USB devices to your system.
- External FDD Connector Port — Connects the external FDD (floppy disk drive) cable that attaches to the external FDD. (Not for use on the NEC Versa LX.)
- MIDI/game Port — Connects a joystick or MIDI device to your notebook computer.
- AC Adapter Port — Connects to the AC Adapter for AC power operation and battery charging.

> ***Note***: For details on attaching and disconnecting the PortBar, reference the information sheet that comes with the NEC Versa PortBar.

6

Using Multimedia

- Audio
- Video
- Multimedia Applications

Audio

The NEC Versa provides entertainment-level sound quality through internal stereo speakers. It handles MIDI files, digital audio files, and analog audio sources. This means the NEC Versa recognizes .WAV, .MID, and .AVI files. The system is 3D-stereo, Sound Blaster PRO™ compatible.

Recording

All information on a computer must be stored in digital form. Analog audio signals from sources such as tape cassettes or music CDs must be digitized before being recorded and stored on disk.

You can make recordings from two classes of audio input: line level and microphone level. Line level accepts analog audio signals from electronic sources such as tape cassettes, VCRs, and CD players through the Line-In port. Microphone level inputs come through the microphone port.

> ***Note:*** When using the built-in microphone, make sure the speaker volume is turned down before using the microphone or feedback may occur.

The following procedure describes how to use the Microsoft® Sound Recorder to record sound into a file on the NEC Versa.

1. To record from an external device such as a portable CD or tape player, you need a cable with audio jacks on both ends. Set up your hardware as follows:
   - Connect one end of the audio cable to the Line-Out jack on the external device. (On some devices, you can record from the headphones port.)
   - Connect the other end of the cable to the Line-In port on the NEC Versa. (You can also use the microphone port to record monaural sound.)

2. Go to Start, Programs, Accessories, Entertainment (Windows 98) or Multimedia (Windows 95 or NT), and select Sound Recorder.
3. Specify the default sound quality before you record.
   - Select Audio Properties from the Sound recorder edit menu.
   - Use the slide bar to adjust recording volume.
   - Use the dropdown menus and Customize button to adjust device and quality settings.
4. Select File, New from the Sound Recorder menu bar.
5. Click the record button (solid round dot) to begin recording.
6. Click the stop button (solid rectangle) to stop recording.
7. Select File, Save As from the Sound Recorder menu bar.
8. Name and save your file.

You can play your recording in Sound Recorder or in Media Player. See the section, "Playing Back," later in this chapter.

Optimizing the Sound Quality

To ensure optimal sound quality when using the record and playback features on your NEC Versa be sure to configure the microphone volume control as follows.

1. Right click the sound horn on the right side of the taskbar.
2. Click Open Volume Controls, select the Options menu, and select Properties.
3. Scroll down in the Show the following controls window, place a check in the Mic box and click OK.
4. Click Open Volume Controls, select the Options menu, and select Advanced Controls.
5. Remove the check from the Mute box on the Mic panel.

6. From Advanced Controls, click the Advanced button on the microphone panel, check the box labeled 1 20dB boost, then click Close.

⚠ CAUTION
Adjust the microphone volume to remove feedback.

You are now ready to record and playback on your NEC Versa notebook computer!

Line-In

Analog signals come in through the NEC Versa's Line-In port. The analog signals are converted into digital bits and bytes (digitized) through a converter known as an ADC (analog-to-digital converter). The resulting digital sound bytes can be stored, edited, processed, and transferred. You can record ambient sound effects, specific sound effects, or music to enhance a presentation.

Ambient sound effects create a sense of place or environment and include sounds such as rain, heavy traffic, chirping birds. Specific sound effects accent or illustrate an action. Examples of specific sound effects include footsteps, a crash, a clock chime. There are many sources of prerecorded sound effects available on the market, or you can record your own sounds.

Line-In accepts analog signals from external devices such as a tape deck, a stereo CD-player, a docking station, or a stereo tuner. The Line-In port has a mini-pin connector. You may need an adapter to connect your input device to the NEC Versa through Line-In.

CD-ROM Input

You can record music and sound effects from a CD (compact disc) and store them on your hard disk. The audio signal from the CD-ROM drive connects directly to your NEC Versa. Simply follow the instructions in "Recording" to record sound from your CD player.

Microphone

You can capture and record sounds through the internal microphone on the NEC Versa or through an external microphone that connects to the system through the microphone port. You can record voice-overs for narration, reminders, or special instructions.

See “Recording,” explained earlier in this chapter, for details about recording sound with the microphone. Although the example given shows how to record sound from a CD or tape, the procedure is the same for recording with a microphone.

Mixing

With the Microsoft Sound Recorder on your NEC Versa, you can mix data from two separate wave files to create a new sound file. You can also mix the microphone volume to create soft background sounds to accompany a voice-over or another more prominent sound. Mixing lets you blend digital and MIDI audio files to get the final, high-quality soundtrack you want.

See the online help that is available with the Sound Recorder for more information.

Playing Back

You can play back your recorded soundtrack through stereo headphones, the internal NEC Versa stereo speakers, or external stereo speakers. You can play .wav and .mid files as well as CD audio. Adjust the volume through the software or with the volume control knob on the right side of the system.

Play audio from files or audio devices as follows. (This example shows how to use the Media player option in Accessories. You can also play audio through the Sound Recorder. See the Sound Recorder help files for details on its use.)

1. From the Accessories group, highlight Entertainment (Windows 98) or Multimedia (Windows 95 and NT) and select the Media Player option.

2. Select your audio source as follows:
   - If playing a file, use the File menu to specify the file name.
   - If playing from a device, use the Device menu to select your audio source.
3. Once your file is open or your source specified, press the Play button.
4. Press the square Stop button to stop playing the audio.

Using Headphones

The NEC Versa headphone port delivers sound at half a watt. Stereo headphones (not shipped with your system) plug in through the headphone jack located on the right side of the NEC Versa. Adjust the volume with the volume control knob on the right side of the system or through the software using the sound horn on the taskbar.

Using the Built-In Speakers

The NEC Versa has built-in stereo speakers that are always available. Adjust the volume through the software using the taskbar icon (sound horn) or with the volume control knob located on the right side of the NEC Versa.

> ***Note:*** When your NEC Versa is docked, use the Windows 98 or 95 device manager to select the internal speakers on your notebook computer or the external speakers connected to the NEC Versa Dock.
>
> For additional details about how to modify the speaker settings, refer to the *NEC Versa Dock User's Guide*.

Using External Stereo Speakers

For full stereo sound impact, you can plug a pair of stereo speakers into the headphone jack located on the right side of the system. Adjust the volume through the software using the taskbar (sound horn) icon, with the volume control knob located on the right side of the system, or through the controls on the speakers.

MIDI Files

The musical instrument digital interface (MIDI) lets you enhance a presentation by adding computer-generated music and sound effects. Using MIDI, you can record multiple tracks of performances from a master controller, such as a keyboard, and orchestrate playback on one or more instruments. You can also purchase a wide range of public domain and commercial recordings in MIDI format.

MIDI files require only a fraction of the storage space of digital audio files.

Be sure to disable power management if you are using a MIDI device. See Chapter 3 for details about disabling power management.

Video

The NEC Versa LX computer features a dazzling TFT 16 million color high-resolution display for sharp effective visuals on the NEC Versa or on an external CRT monitor. The NEC Versa XGA TFT display has high resolution of 1024 x 768 pixels.

In addition to the superior display panel, your NEC Versa LX is equipped with a Pentium II processor with AGP (Advanced Graphics Port). AGP adds new features for graphics accelerators such as dedicated access to main memory and faster transfer rates. AGP further expands current 3D capabilities to new levels of visual realism providing higher performance 3D graphics capabilities.

Use your NEC Versa to run full motion, full-screen MPEG video. In Windows 98, Windows 95 and Windows NT, the Active Movie Control gives you MPEG capabilities. In Windows NT, you must install Internet Explorer to use the Active Movie Control function.

Access the Active Movie Control as follows:

1. Go to Start, Programs, Accessories, Entertainment (Windows 98), or Multimedia (Windows 95 and NT), and select Active Movie Control.

   An Open dialog box displays.

2. Locate your CD-ROM drive and double click on the appropriate drive to display its contents.

4. Open your file and press the Play button. (To play full screen MPEG video, you may need to press the Window maximize button to bring your video to full size.)

Using Digital Video Files

With commercial video capture hardware and application software, you can plug any video device, including VCRs, televisions, camcorders, and laser disc players into your NEC Versa and record motion graphics to your hard drive.

Use a video frame grabber and store a stream of grabbed stills on your hard disk.

Using Animation Files

You can create a dynamic presentation using an animation application. Animation can illustrate a concept, drive home an important point, or command attention. Graphics animation can add punch to a presentation with an animated illustration, a flashing arrow, or a flying logo.

Multimedia Applications

A growing number of multimedia applications are available for PC users. These multimedia software packages include graphics packages, animation software, and presentation authoring systems as follows:

- Animation software allows you to create 3-D effects and 3-D titles and add interest to an otherwise static presentation.
- Authoring packages let you pull all the elements of your design into an exciting, interactive multimedia presentation.

7

Solving System Problems

- Problem Checklist
- Start-Up Problems
- Using the Product Recovery CD
- If You Need Assistance

Problem Checklist

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

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

Problem	What To Do
The system does not power on.	If you are operating the system with battery power, check that the battery pack is correctly inserted. Attach the AC adapter to recharge the battery.
	If you have the AC adapter attached, check that you are using a working the electrical outlet.
LCD screen is dark and blank.	Power-saving mode has shut off the backlight. Press a keyboard key or move the mouse.
	The built-in LCD may not be selected. Press **Fn F3** once or twice to select the LCD video mode.
	Screen brightness needs adjustment. Use the **Fn-F8** and **Fn-F9** functions keys.
	The system entered Suspend mode due to low battery power. (Check the Battery Gauge LED for power status.) Plug in the AC adapter or replace the battery pack, and then press the Power button to resume operation.
Battery power does not last long.	Use power-saving modes.
	Fully charge and discharge the battery several times to recondition it.
	Replace the battery.
Information on the LCD is difficult to see.	Adjust the brightness control. Use the slide switch at the bottom of the LCD (SVGA panels, only) or the **Fn-F8** and **Fn-F9** functions keys.
An optional component does not work.	Make sure the component is securely installed or connected. Verify that the system parameter for the I/O port configuration is set correctly in Setup.
The Power/Sleep button does not resume the system from Suspend mode.	If system does not resume, it may have auto suspended on a low battery. Attach the AC adapter and try again.
The system does not auto-suspend.	A disk drive might be busy. Wait until the disk drive stops and try again.
	Check that Auto Play is disabled. See "Changing the Auto Play Setting" in Chapter 4 for details.
Upon resuming from a manual STF the system displays the message, "Following system component(s) changed since last suspend – System Memory. Do you want to (B)oot or (P)ower down?	Power down the system and reseat the memory.
	If new memory was installed prior to manual STF, remove new memory before resuming from suspend.

Start-Up Problems

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

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

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

To continue start-up procedures, press **F2** (or **F1** when prompted) and run the Setup utility to set current system parameters.

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

> ***Note:*** When the NEC Versa detects an error related to display devices, it cannot display on either the LCD or a CRT. The system warns you by beeping.

Post Error Messages

The NEC Versa LX computer has a built-in checking program that automatically tests its components when you turn the system power on. This diagnostic test is called the Power-On Self-Test (POST). If the system finds a problem during the POST, the system displays an error message or emits a series of beep signals. If this happens, follow the instructions in the POST Error Messages table or the Beep Code table, as appropriate.

Post Error Messages

Message	What To Do
Address line is short	Error in the address decoding circuitry on the system board. Contact your NECC service representative for service work.
C: Drive Error	Hard disk drive C: does not respond. Confirm that C: hard disk type in Setup is correct.
C:Drive Failure	Hard disk drive C: does not respond. You may need to replace the hard disk drive. Contact your NECC service representative for service work.
Cache Memory Bad, Do Not Enable Cache	Cache memory is defective. It must be replaced. Contact your NECC service representative for service work.
CH-2 Timer Error	Most ISA computers include two timers. There is an error in timer 2. Contact your NECC service representative for service work.
CMOS Battery State Low	CMOS RAM is powered by a battery. The battery power is low. Connect the system to AC power to charge the CMOS battery. If the battery does not charge, contact your NECC service representative to replace the CMOS battery.
CMOS Checksum Failure	After CMOS RAM values are saved, a checksum value is generated for error checking. The previous value is different from the current value. Run Setup to reset the value.
CMOS System Options Not Set	The values stored in CMOS RAM are either corrupt or nonexistent. Run Setup to reset the value.
CMOS Display Type Mismatch	The amount of memory on the system board is different than the amount in CMOS RAM. Run Setup to reset the value.
CMOS Time and Date Not Set	Run Setup to set the time and date.
Diskette Boot Failure	The boot diskette is corrupt. It cannot be used to boot the computer. Use another boot disk and follow the on-screen instructions.
DMA Error	Error in the DMA controller. Contact your NECC service representative to replace the CMOS battery.
DMA#1 Error	Error in the first DMA channel. Contact your NECC service representative for service.

Post Error Messages

Message	What To Do
DMA#2 Error	Error in the second DMA channel. Contact your NECC service representative for service.
FDD Controller Failure	The BIOS cannot communicate with the floppy disk controller. Contact your NECC service representative to check all appropriate connections.
HDD Controller Failure	The BIOS cannot communicate with the hard disk drive controller. Contact your NECC service representative to check all appropriate connections.
INTR #1 Error	Interrupt channel 1 failed POST. Contact your NECC service representative for service.
INTR #2 Error	Interrupt channel 2 failed POST. Contact your NECC service representative for service.
Invalid Boot Diskette	The BIOS can read the diskette in disk drive, but cannot boot the computer. Use another boot diskette.
Keyboard is Locked Unlock It	The keyboard lock on the computer is engaged. The computer must be unlocked to continue.
Keyboard Error	There is a timing problem with the keyboard. Set the Keyboard option in Setup to Not Installed to skip the keyboard POST routines.
KB/interface Error	There is an error in the keyboard connector. Contact your NECC representative for service.
Off Board Parity Error	Parity error installed in an expansion slot. Contact your NECC service representative to be sure that the memory module is installed correctly. The error format is: OFF BOARD PARITY ERROR ADDR(HEX) = (XXXX) XXXX is the hex address where the error occurred.
On Board Parity Error	Parity error in system board memory. Contact your NECC service representative for service.
Parity Error ????	Parity error in system memory at an unknown address. Contact your NECC service representative for service.

Fatal errors that occur during POST are communicated through a series of beeps. All beep code errors, except beep code 8, are fatal errors and do not allow the system to continue to boot.

If beep codes occur during POST, check the items in the Problem Checklist (at the start of this chapter), verify that all the hardware is set up properly and securely connected, and try rebooting. If you still get a beep code, go to the section "If You Need Assistance" at the end of this chapter.

Beep Codes are listed in the table that follows.

Beep Codes

Number of Beeps	Error	Description
1	Refresh Failure	The memory refresh circuitry on the motherboard is faulty.
2	Parity Error	Parity error in the first 64 KB of memory.
3	Base 64 KB Memory Failure	Memory failure in the first 64 KB.
4	Timer Not Operational	Memory failure in the first 64 KB of memory or Timer 1 on the motherboard is not functioning.
5	Processor Failure	The CPU on the motherboard generated an error.
6	Gate A20 Failure	The keyboard controller may be bad. The BIOS cannot switch to protected mode.
7	Processor Exception Interrupt Error	The CPU generated an exception interrupt.
8	Display Memory Read/Write Error	The system video adapter is either missing or its memory is faulty. (This is not a fatal error.)
9	ROM Checksum Error	The ROM checksum value does not match the value encoded in the BIOS.
10	CMOS Shutdown Register Read/Write Error	The shutdown register for CMOS RAM failed.
11	Cache Error/External Cache Bad	The external cache is faulty.

Using the Product Recovery CD

If you determine that you need to restore your system to its initial installation state follow the instructions given here.

In the Windows NT environment you can use the repair/emergency disk to restore your system to its current state of operation without reverting to its initial installation state. To create a repair/emergency disk, open a DOS command box and type RDISK to launch the RDISK utility. Refer to the online help for information about the RDISK utility. For details about using the repair/emergency disk, look in the online help under the NT Commands, RDISK and WINNT32.

> ***Note:*** Only use the Product Recovery CD as a last resort. Check the problem checklist at the beginning of this chapter for information about solving problems before using the CD. The Product Recovery CD provides a variety of options that either remove or replace existing files. This may result in data loss.

Guidelines for Using the Product Recovery CD

Use the following guidelines when using the Product Recovery CD.

- Use AC power.
- Do not dock the system.
- Remove all optional hardware such as PC cards, USB devices, printers, and monitors. For more information, see the online documentation.

Recovery Choices

The Product Recovery CD gives you the following choices.

- Full — Completely rebuilds your hard disk drive, destroying all existing data in the process. Once you choose this option, you are prompted to confirm your choice. When your choice is confirmed, the recovery proceeds without requiring any intervention or responses on your part. Simply walk away and return in about half an hour.

  Note: Use full restore if your hard disk consists of one partition (drive).

- Partition — Lets you preserve your existing hard disk drive partition structure and format only the primary partition without affecting the extended partition(s).

  Partition restore formats drive C (of a multiple partitioned drive) and restores drive C to its initial installation state. Additional partitions, e.g. drives D, E, etc. remain intact.

  Note: Use Partition Restore if your hard disk is partitioned into two or more partitions (drives).

- Express — A full restore option that completely rebuilds your hard disk drive, destroying all existing data in the process. Once you choose this option, the recovery proceeds without requiring any intervention or responses on your part. Simply walk away and return in about half an hour.

  Note: Use Express Restore if your hard disk consists of one partition (drive).

- Exit — Exits the restore program.

Full/Express Restore

If your preinstalled software becomes unusable and you cannot boot from the hard disk, use the Product Recovery CD to restore your system to its initial shipping configuration.

Full/Express Restore *erases* the hard disk *completely* before reinstalling the files.

⚠ CAUTION

A Full/Express restore deletes *all* files on the hard drive and replaces them with the original factory installed files.

Only use a Full/Express Restore if the preinstalled software is unusable.

Use the Product Recovery CD to perform a full/express restore as follows:

1. Check the Product Recovery CD title and make sure that it is the correct CD for your NEC Versa computer and operating system.
2. Put the CD into the CD-ROM drive tray, close the drive door, and reboot your computer.
3. Read the License Agreement screen that appears. Use the VersaGlide touchpad to position the cursor on the Accept button. Left click to accept the agreement.

   You have the option of accepting or declining the agreement. If you decline the agreement, the recovery program exits.
4. In the Restore Choices screen, use the VersaGlide touchpad to select the type of restore procedure to use.

⚠ CAUTION

Choose your restore option carefully to prevent losing data and applications installed on your system.

5. Choose Full or Express to restore your hard disk drive to its original factory installed state.

   - If you choose Full, the Confirm Your Choice screen appears. Proceed to step 6.
   - If you choose Express, the recovery process begins immediately. A screen with progress bars displays and lets you know the progress of the recovery.

   ⚠ CAUTION
   Do not turn off or disturb the system during the recovery process.

   Proceed to step 8.

6. If you chose Full, read the Confirm Your Choice screen.

   A warning displays indicating that your hard disk is about to be erased.

7. Select Continue to proceed to perform a Full restore.

   If you select Go Back, the restore program returns to the prior screen which has an exit option.

   If you select Continue, a screen with progress bars displays and lets you know the progress of the recovery.

   ⚠ CAUTION
   Do not turn off or disturb the system during the recovery process.

8. When the recovery process is complete, you are prompted to remove the CD from the CD-ROM drive and reboot your system.
9. Press **Enter**, click Reboot, or press **Alt-R** to reboot your system.

A series of hardware detection screens display, the system reboots and the Windows Setup screen appears. Follow the on-screen instructions to set up Windows.

You are required to reenter your Microsoft license number.

Partition Restore

If your preinstalled software on drive C: of your multiple partitioned drive becomes unusable and you cannot boot from the hard disk, use the Product Recovery CD to restore your primary partition to its initial shipping configuration.

⚠ CAUTION

Use Partition Restore only if your hard disk drive consists of multiple partitions *and* if drive C: contains the operating system and related drivers. Move all other data and applications to other partitions (drives) or the Partition Restore process will erase them completely.

A Partition restore deletes *all* files on drive C and replaces them with the original factory installed files.

Only use a Partition Restore if the preinstalled software on drive C: is unusable.

Use the Product Recovery CD to perform a partition restore as follows:

1. Check the Product Recovery CD title and make sure that it is the correct CD for your NEC Versa computer and operating system.
2. Put the CD into the CD-ROM drive tray, close the drive door, and reboot your computer.
3. Read the License Agreement screen that appears. Use the VersaGlide touchpad to position the cursor on the Accept button. Left click to accept the agreement.

   You have the option of accepting or declining the agreement. If you decline the agreement, the recovery program exits.

4. In the Restore Choices screen, use the cursor arrows or VersaGlide touchpad to select the type of restore procedure to use.

> **⚠ CAUTION**
> Choose your restore option carefully to prevent losing data and applications installed on your system.
>
> If the hard disk is configured with multiple or extended partitions you may have to reinstall some software to restore configuration settings and shared files.

5. Choose Partition if you wish to restore drive C: of a multiple partitioned drive to its original factory installed state.

6. Read the Confirm Your Choice screen.

   A warning displays indicating that drive C: (the primary drive/partition) is about to be erased and formatted. It may be necessary to reinstall software to the other drives (partitions) to reestablish Start Menu links and other configuration requirements stored on drive C:.

7. Select Continue to proceed, if you wish to perform a Partition Restore.

   If you select Go Back, the restore program returns to the prior screen which has an exit option.

   If you select Continue, a screen with progress bars displays and lets you know the progress of the recovery.

> **⚠ CAUTION**
> Do not turn off or disturb the system during the recovery process.

8. When the recovery process is complete, you are prompted to remove the CD from the CD-ROM drive and reboot your system.

9. Press **Enter**, click Reboot, or press **Alt-R** to reboot your system.

   A series of hardware detection screens display, the system reboots, and the Windows Setup screen appears. Follow the on-screen instructions to set up Windows.

   You are required to reenter your Microsoft license number.

Windows NT Recovery CDs

Your Windows NT system ships with two Product Recovery CDs for Microsoft Windows NT.

- The 1st CD, labeled Product Recovery CD (1 of 2), contains a mirror image of the Windows NT system as it shipped from the factory. Only use this CD as a last resort as it removes or replaces existing files, which results in data loss.
- The 2nd CD, labeled Product Recovery CD (2 of 2), contains a subset of the Microsoft Windows NT 4.0 Workstation software. Whenever you install an additional Windows NT component, the following Windows NT Setup screen appears.

  > Setup needs to copy some Windows NT files.
  >
  > Setup will look for the files in the location specified below.
  >
  > If you want Setup to look in a different place, type the new location.
  >
  > When the location is correct, click Continue.

  When prompted with this screen, insert the Product Recovery CD (2 of 2) for Microsoft Windows NT, enter ***F*:\I386** (where *F* refers to the letter assigned to the CD-ROM drive), and click on Continue. Then follow the on-screen instructions.

If You Need Assistance

If you have a problem with your computer, first review the checklist and troubleshooting table at the beginning of this chapter.

If you still have a problem, see Chapter 8, “Getting Services and Support,” for details about contacting NECC.

> ***Note:*** If you purchased and are using this product outside the U.S. or Canada, please contact the local NECC office or their dealers for the support and service available in your country.

8

Getting Services and Support

- Services and Support Contact Information
- NECC Web Site
- NECC FTP Site
- NECC Support Services
- Email/Fax to Support Services

Services and Support Contact Information

Service	Contact Information
NECC Web and FTP Sites	Web address: www.nec-computers.com FTP site: ftp.neccsdeast.com
NECC Support Services (U.S. and Canada customers only).	800-632-4525 Fax: 801-981-3133
Email to NECC Support Services through a commercial online service or the Internet.	Internet email address: tech-support@neccsd.com

Note: If you purchased your computer outside of the U.S. or Canada, please contact the local NECC office or their dealers for support and service.

If you have access to a telephone, modem, and/or fax machine, you can use these services to obtain information about your system at any time, day or night, seven days a week.

Not only do these services provide information about your NEC system, they can also be used to answer your questions and help solve any problems you may have with your system, should that ever be necessary.

NECC Web Site

If you have a modem or are connected to a network, you can access the NECC Web site. You can do this through a commercial online service or through your Internet account. The NECC Web site contains general information about NECC and its products, an online store, press releases, reviews, and service and support information.

Look in the Service and Support area for the following:

- technical documentation, including Frequently Asked Questions, reference manuals, and warranty information
- BIOS updates, drivers, and Setup Disk files to download
- contact information, including telephone numbers for Technical Support, and links to vendor Web sites
- Click, the NECC Customer Service newsletter
- an automated email form for your technical support questions
- a Reseller's area (password accessible).

To access NECC's Home Page, enter the following Internet Uniform Resource Locator (URL) in your browser:

http://www.nec-computers.com/

NECC FTP Site

Use the Internet to access the NECC FTP (file transfer protocol) site to download various files (video drivers, printer drivers, BIOS updates, and Setup Disk files). The files are essentially the same files as on the NECC Web site.

To access the NECC FTP site, enter the following Internet ftp address through your service:

ftp.neccsdeast.com/

Once in the FTP site, select the pubs directory link and follow the links to choose and download the file(s) you want.

NECC Support Services

NECC also offers direct technical support through Support Services. (NECC Support Services is for U.S. and Canadian customers only; international customers should contact the local NECC office or dealer for the support and service available in your country.)

Direct assistance is available 24 hours a day, 7 days a week. Call the NECC Support Services, toll free, at **1-800-632-4525** (U.S. and Canada only) for the following support.

- System hardware — toll-free phone support is limited to the length of the standard warranty.

  For hardware support after the standard warranty, get system hardware support for a fee.

- Preinstalled software — toll-free phone support for 90 days from the time of your first call to the NECC Support Services.

  After the initial 90 days, get preinstalled software support for a fee.

Please have available your system's name, model number, serial number, and as much information as possible about your system's problem before calling.

For outside the U.S. or Canada, please contact your local NECC office or dealer for the support and service available in your country.

Email/Fax to Support Services

The NECC Support Services offers technical support by email over the Internet network if you have a modem. The Internet address is:

tech-support@neccsd.com

You can also fax technical questions to the NECC Support Services if you have access to a fax machine or fax/modem. The fax number is:

801-981-3133

When using the email or fax support service, you should include the following words in the subject field for prompt response from the appropriate technical person:

- Desktop
- Monitor
- Notebook.

You should provide as much specific information about your questions as possible. Also, if you are sending a fax, please include your voice telephone number, fax number, model number and system serial number with the question. You will receive a response to your questions within one business day.

A

Setting Up a Healthy Work Environment

- Making Your Computer Work for You
- Arrange Your Equipment
- Adjust Your Chair
- Adjust Your Input Devices
- Adjust Your Screen or Monitor
- Vary Your Workday
- Pre-Existing Conditions and Psychosocial Factors

Making Your Computer Work for You

Computers are everywhere. More and more people sit at computers for longer periods of time. This appendix explains how to set up your computer to fit your physical needs. This information is based on ergonomics - the science of making the workplace fit the needs of the worker.

Some nerve, tendon, and muscle disorders (musculoskeletal disorders) may be associated with repetitive activities, improper work environments, and incorrect work habits. Examples of musculoskeletal disorders that may be associated with certain forms of repetitive activities include: carpal tunnel syndrome, tendinitis, tenosynovitis, de Quervain's tenosynovitis, and trigger finger, as well as other nerve, tendon, and muscle disorders.

⚠ WARNING

Prolonged or improper use of a computer workstation may pose a risk of serious injury. To reduce your risk of injury, set up and use your computer in the manner described in this appendix.

Although some studies have shown an association between increasing hours of keyboard use and the development of some musculoskeletal disorders, it is still unclear whether working at a computer causes such disorders. Some doctors believe that using the keyboard and mouse may aggravate existing musculoskeletal disorders.

Note: Contact a doctor if you experience pain, tenderness, swelling, burning, cramping, stiffness, throbbing, weakness, soreness, tingling and/or numbness in the hands, wrists, arms, shoulders, neck, back, and/or legs.

Some people are more susceptible to developing these disorders due to pre-existing conditions or psychosocial factors (see “Pre-existing Conditions and Psychosocial Factors” later in the appendix).

To reduce your risk of developing these disorders, follow the instructions in this appendix. If you experience discomfort while working at your computer or afterwards, even at night, contact a doctor as soon as possible. Signs of discomfort might include pain, tenderness, swelling, burning, cramping, stiffness, throbbing, weakness, soreness, tingling and/or numbness in the hands, wrists, arms, shoulders, neck, back, and/or legs.

> ***Note:*** To increase your comfort and safety when using your notebook computer as your primary computer system at your home or office, note the following recommendations:
>
> use a separate, external keyboard attached to your notebook computer
>
> use a separate, external monitor attached to your notebook computer.

Arrange Your Equipment

Arrange your equipment so that you can work in a natural and relaxed position. Place items that you use frequently within easy reach. Adjust your workstation setup to the proper height (as described in this appendix) by lowering the table or stand that holds your computer equipment or raising the seat height of your chair. Position your notebook computer directly in front of you for increased safety and comfort.

Adjust Your Chair

Your chair should be adjustable and stable. Vary your posture throughout the day.

Check the following:

- Keep your body in a relaxed yet upright position. The backrest of your chair should support the inward curve of your back.

- Use the entire seat and backrest to support your body. Tilt the backrest slightly (90° to 105°). The angle formed by your thighs and back should be 90° or more.
- Your seat depth should allow your lower back to comfortably contact the backrest. Make sure that the backs of your lower legs do not press against the front of the chair.
- Extend your lower legs slightly so that the angle between your thighs and lower legs is 90° or more.
- Place your feet flat on the floor. Only use a footrest when attempts to adjust your chair and workstation fail to keep your feet flat.
- Be sure that you have adequate clearance between the top of your thighs and the underside of your workstation.
- Use armrests or forearm supports to support your forearms. If adjustable, the armrests or forearm supports should initially be lowered while all the other adjustments discussed in this appendix are made. Once all these adjustments are completed, raise the armrests or adjust the forearm supports until they touch the forearms and allow the shoulder muscles to relax.

Adjust Your Input Devices

Note the following points when positioning your notebook computer or any external input devices.

- Position your keyboard directly in front of you. Avoid reaching when using your keyboard or mouse.
- If you use a mouse, position it at the same height as the keyboard and next to the keyboard. Keep your wrists straight and use your entire arm when moving a mouse. Do not grasp the mouse tightly. Grasp the mouse lightly and loosely.

- Adjust the keyboard height so that your elbows are near your body and your forearms are parallel to the floor, with your forearms resting on either armrests or forearm supports, in the manner described previously. If you do not have armrests or forearm supports, your upper arms should hang comfortably at your sides.
- Adjust the keyboard slope so that your wrists are straight while you are typing.
- Type with your hands and wrists floating above the keyboard. Use a wrist pad only to rest your wrists between typing. Avoid resting your wrists on sharp edges.
- Type with your wrists straight. Instead of twisting your wrists sideways to press hard-to-reach keys, move your whole arm. Keep from bending your wrists, hands, or fingers sideways.
- Press the keys gently; do not bang them. Keep your shoulders, arms, hands, and fingers relaxed.

Adjust Your Screen or Monitor

Correct placement and adjustment of the screen or external monitor can reduce eye, shoulder, and neck fatigue. Check the following when you position the screen or external monitor.

- Adjust the height of your screen or external monitor so that the top of the screen is at or slightly below eye level. Your eyes should look slightly downward when viewing the middle of the screen or external monitor.
- Position your screen or external monitor no closer than 12 inches and no further away than 28 inches from your eyes. The optimal distance is between 14 and 18 inches.
- Rest your eyes periodically by focusing on an object at least 20 feet away. Blink often.

- Position the screen or external monitor at a 90° angle to windows and other light sources to minimize glare and reflections. Adjust the monitor tilt so that ceiling lights do not reflect on your screen or external monitor.
- If reflected light makes it hard for you to see your screen or external monitor, use an anti-glare filter.
- Clean your screen or external monitor regularly. Use a lint-free, non-abrasive cloth and a non-alcohol, neutral, non-abrasive cleaning solution or glass cleaner to minimize dust.
- Adjust the screen or external monitor's brightness and contrast controls to enhance readability.
- Use a document holder placed close to the screen or external monitor.
- Position whatever you are looking at most of the time (the screen or reference material) directly in front of you to minimize turning your head while you are typing.
- Get regular eye check-ups.

Vary Your Workday

If you use your computer for prolonged periods, follow these instructions.

- Vary your tasks throughout the day.
- Take frequent short breaks that involve walking, standing, and stretching. During these breaks, stretch muscles and joints that were in one position for an extended period of time. Relax muscles and joints that were active.
- Use a timer or reminder software to remind you to take breaks.
- To enhance blood circulation, alter your sitting posture periodically and keep your hands and wrists warm.

Note: For more information on workstation setup, see the American National Standard for Human Factors Engineering of Visual Display Terminal Workstations. ANSI/HFS Standard No. 100-1988. The Human Factors Society, Inc., P.O. Box 1369, Santa Monica, California 90406.

Pre-Existing Conditions and Psychosocial Factors

Pre-existing conditions that may cause or make some people more susceptible to musculoskeletal disorders include the following: hereditary factors, vascular disorders, obesity, nutritional deficiencies (e.g., Vitamin B deficiency), endocrine disorders (e.g., diabetes), hormonal imbalances, connective tissue disorders (e.g., arthritis), prior trauma (to the hands, wrists, arms, shoulders, neck, back, or legs), prior musculoskeletal disorders, aging, fluid retention due to pregnancy, poor physical conditioning and dietary habits, and other conditions.

Psychosocial factors associated with these disorders include: workplace stress, poor job satisfaction, lack of support by management, and/or lack of control over one's work.

Contact a doctor if you experience pain, tenderness, swelling, burning, cramping, stiffness, throbbing, weakness, soreness, tingling and/or numbness in the hands, wrists, arms, shoulders, neck, back, and/or legs.

This appendix was prepared in consultation with Dr. David Rempel of the University of California/San Francisco Ergonomics Program and Mr. M.F. Schneider of HUMANTECH, Inc., Ann Arbor, Michigan.

B

Specifications

- System Components
- Memory Map
- Interrupt Controllers

System Components

The following system component specifications are standard except where noted.

System Processor

Intel Pentium II — 300-PE, 333-MHz, 366-MHz; all with AGP (Advanced Graphics Port)

Architecture

64-bit Peripheral Component Interconnect (PCI)

Random Access Memory

- Standard Main Memory
  - — 64-MB SDRAM SO-DIMM
- Optional Expansion — 1 slot
  - — Expandable in 32-MB, 64-MB, or 128-MB increments
  - — Maximum 256 MB
- Video Ram — 8 MB SDRAM
- L2 Cache RAM — 256 KB

Read-Only Memory

512 KB x 8 bit, Flash ROM

Calendar Clock

Year/month/day/hour/minute/second maintained by internal back-up battery

Input/Output (I/O) Facilities

Integrated industry-standard interfaces

- Parallel — 1 port, 25-pin D-sub (ECP and EPP support)
- Serial — 1 port, 9-pin D-sub
- Infrared — 1 port, IrDA-1 compatible
- VGA — 1 port, 15-pin high-density D-sub
- External Keyboard/External Mouse — 1 port, PS/2, 6-pin MiniDin; exclusionary use or both supported with optional Y-cable adapter
- Expansion — 1 port, 240-pin for optional NEC Versa Dock and optional NEC Versa PortBar
- Microphone — 1 port, 3-pin, Mini Pin Jack
- Stereo Headphones — 1 port, 3-pin, Mini Pin Jack, .5 watts per channel
- Stereo Line-In — 1 port, 3-pin, Mini Pin Jack
- TV Out
  - — 1 port; 2-pin RCA Jack
  - — 1 port, 7-pin S-Video Jack
- DC In — 1 port, for AC adapter cable
- USB port — 1 port, 6 pin

Speakers

Two built-in, 1.4 watts (W) each with a maximum 3W output

- 16-bit stereo, 48 Khz
- Sound BlasterPRO compatible
- MIDI Roland: MPU401, UART Mode compatible
- ESS Maestro2E (PCI Audio) + ESS 1920 (AC97 Link)

PC Card Slots

- Two 32-bit card slots for two Type II PC cards or one Type III PC card, 5 V or 3.3 V interface
- 32-bit CardBus support

LCD Panel

The LCD panel varies, depending on the model.

- 13.3-inch or high resolution active matrix Thin Film Transistor (TFT), Extended Graphics Array (XGA) color display
  - Resolution — 1024 x 768
  - Colors — 16 Million, max.
- 14.1-inch high resolution active matrix Thin Film Transistor (TFT), Extended Graphics Array (XGA) color display
  - Resolution — 1024 x 768
  - Colors — 16 Million, max.

Keyboard

Membrane 85 keys (both U.S. and International) with standard QWERTY-key layout (International keyboards are country-specific)

- Function keys — 12 keys
- Cursor Control keys — 8 keys; arrow keys arranged in inverted T layout
- Numeric keypad — embedded
- Fn key — function key for ROM-based key functions
- Stroke — 3 mm

Diskette Drive

- Size — 3.5-inch
- Capacity — 1.44 MB (formatted), 2 MB (unformatted)
- Transfer Rate — 250 to 500 K/bps

- Interleave 1:1
- Controller — NS PC97338VJG

SuperDisk™ Drive

- Formatted Capacity:
  - Optical diskette — 120 MB
  - High Density floppy diskette — 1.44 MB
  - Double Density floppy diskette — 720 KB
- Data Transfer Rate
  - 120-MB: 680 KB/S (max.)
  - 1.44-MB: 150 KB/S (max.)
  - 720-KB: 75 KB/S (max.)
- Track to track seek rate
  - 120-MB: 20ms (typ)
  - 1.44-MB/720-KB: 25ms (typ)

Hard Disk Drive

Specifications vary depending upon model:

- Ultra DMA/33 support
- Capacity — Internal 4.x GB, 6.x or 10 GB
- Drive height — 9.5 mm, 12.5 mm, or 12.7 mm
- Read/write track-to-track seek rate — 3 ms – 4.5 ms
- Average seek time — 12 ms – 14 ms
- Revolutions per minute — 4000 - 4200

- Data transfer rate
  - 16.6 MB/sec (PIO mode4/DMA mode2)
  - 33.3 MB/sec (ultra DMA)
- Media data rates — 88.0 bit/sec – 118.0 bit/sec
- Mean Time Between Errors (MTBF) — 300,000 hours

24X-speed CD-ROM Drive

- Type — 5-inch CD-ROM Pack
- Average Data Transfer Rates
  - 2550 KB/second (mode 1)
  - 2907 KB/ second (mode2)
- Read Rate — 3600 KB/sec max, 2550 KB/sec avg
- Burst Transfer Rate — 16.7 MB/sec, PIO mode4/DMA mode
- Average Access Time
  - 120 ms (Random)
  - 250 ms (Fullstroke)
- Memory Buffer — 128 KB
- Interface — IDE (ATAPI)
- Photo CD Compatibility — Multisession Photo CD, Video CD (CD-1, CD-I Ready, CD-G, CD-Plus, CD-DA, CD-EXTRN, and CD-ROM XA)

Power

AC Adapter

- Input Voltage — 100 to 240 volts (V) AC, 50 or 60 Hz, 1.5 A
- Output Voltage — 15.0 V DC, 60 Watt

- Australia, Europe and Asia use an AC power cable specific to each country's standards.

Battery Pack

- Type — twelve-cell Lithium Ion (Li-Ion)
- Output Voltage — 10.8 V
- Capacity — 4,800 mAH
- Recharging Time —- Approximately 2.7 hours when the system is on or off.

Bridge Battery

When fully charged, backs up memory contents and system status for up to 5 minutes under Suspend mode.

Dimensions

System

- Width — 12.1 in. (309 mm)
- Depth — 10.0 in. (254 mm)
- Height — 1.85 in. (47 mm)

Battery Pack

- Width — 4.47 in. (114 mm)
- Depth — 6.19 in. (158 mm)
- Height — 0.72 in. (18.5 mm)

Weight

- NEC Versa
  - — 5.65 lb (2.57 kg) to 5.83 lb (2.65 kg) without primary battery or VersaBay III device installed
  - — 7.7 lb (3.5 kg) to 7.9 lb (3.59 kg)

- Battery Pack — 1.12 lb (.51 kg)

Recommended Environment

Operation

- Temperature — 41°F to 95°F (5°C to 35°C)
- Relative Humidity — 20% to 80% (Noncondensing)

Storage

- Temperature — -4°F to 104°F (-20°C to 40°C)
- Relative Humidity — 20% to 80% (Noncondensing)

Memory Map

The system supports system and video shadowing, both controlled through complementary metal oxide semiconductor (CMOS). The system supports BIOS as a cacheable area with write protection. The following table shows the system's memory map.

System Memory Map

Memory Space	Size	Function
000000-0002FFh	768 bytes	BIOS Interrupt Vector Table
000300-0003FFh	256 bytes	BIOS Stack Area
000400-0004FFh	256 bytes	BIOS Data Area
000500-09FFFFh	639 KB	Applications Memory (used by the OS, device drivers, TSRs, and all DOS applications
0A0000-0AFFFFh	64 KB	Video Buffer (EGA and VGA)
0B0000-0B7FFFh	32 KB	Video Buffer (monochrome, CGA color, VGA monochrome)
0B8000-0BFFFFh	32 KB	Video Buffer (CGA, EGA color, and VGA color)
0C0000-0CBFFFh	64 KB	Video ROM (EGA and VGA)
0D0000-0DFFFFh	64 KB	Used by Adapter ROMs (i.e., network controllers, hard disk controllers, SCSI host adapters)
0E0000-0EFFFFh	64 KB	Used by System ROM adapters (i.e., network controllers with boot capability)
0F0000h-0FFFFFh	64 KB	System AMIBIOS (includes Setup and hard disk drive utilities)
100000h-1FFFFFF	32 MB	Built-In Extended Memory
2000000-5FFFFFF	up to 256 MB	Extended Memory

Interrupt Controllers

Using interrupts, hardware can request software services. If non-Plug and Play software is being used, the interrupt may need to be moved for software application or driver compatibility. Some interrupts cannot be moved. Fifteen interrupts can be used with a cascade connection of 8259INTC x 2. The table shows default interrupt level assignments 0 through 15, in order of decreasing priority.

System Interrupt Controllers

Controller Master/Slave	Priority	Name	Device
Master	0	IRQ00	SystemTimer 1
Master	1	IRQ01	Keyboard
Master	2	IRQ02	Programmable Controller
Slave	3	IRQ08	Real-time Clock
Slave	4	IRQ09	USB Port
Slave	5	IRQ10	PC CardBus Controller/Video
Slave	6	IRQ11	VersaBay in Versa Dock
Slave	7	IRQ12	PS/2 Mouse/NEC VersaGlide
Slave	8	IRQ13	Math Coprocessor (built into CPU)
Slave	9	IRQ14	Hard Disk Controller 1
Slave	10	IRQ15	VersaBay III
Master	11	IRQ03	Infrared Port, when enabled
Master	12	IRQ04	Serial Port
Master	13	IRQ05	Sound/PC CardBus Controller
Master	14	IRQ06	Diskette Drive Controller
Master	15	IRQ07	Parallel Port

C

Frequently Asked Questions

- External Mouse
- Display
- PC Cards
- Diskette Drive
- Booting
- Power Management
- Miscellaneous

External Mouse

How can a PS/2 mouse and an external keyboard be connected to the note book at the same time?

The NEC Versa LX computer has only one PS/2 port that accommodates either a mouse or a keyboard. You can get around this by purchasing an optional Y adapter or NEC Versa PortBar. Both options provide two PS/2-style ports.

Contact your NECC dealer for ordering information.

Why won't a serial mouse work when connected to the PS/2 port with the appropriate adapter?

The NEC Versa LX computer is designed to find a mouse connected to the PS/2 port only. The system does not recognize a serial mouse with an adapter.

Display

What is the maximum resolution I can run in simultaneous mode?

The maximum resolution in simultaneous mode is 1024 x 768 for XGA panels. You can obtain higher resolutions if you connect a higher-resolution external monitor and switch to CRT-only mode.

How can I change my video drivers?

In Windows 98 or 95 and Windows NT, press Start, Settings, and Control Panel. In the Control Panel, double click the Display icon. Click the Settings tab. Next, click Advanced Properties and press "Change." Click show all devices from the Select Device screen. Find the video driver you need, or insert a diskette or CD into the appropriate drive. Click on "Have Disk."

PC Cards

In which slots do my PC cards go?

Your PC cards can go into either slot if they are NEC-approved cards. Other software may not support the use of both slots. Type III cards only fit in the bottom slot (slot 0).

Is there any instance when a modem or network card is only supported in one slot?

This could be true in cases where the PC card firmware is being upgraded. Read the release notes that accompany the upgrade.

Can I run two of the same type cards simultaneously?

Yes, Windows 98 or 95 configures each card. If they are both modems, configure each for a different Com port and different available interrupts under the ports icon in the Windows control panel or from Device Manager in Windows 98 or 95.

CardWizard for NT will assist in configuring PC cards in the Windows NT environment. Configure each modem for a different Com port and different available interrupts using the Modem icon (Install Modem Wizard) in the Control Panel.

Why do certain PC cards cause my battery life to drop noticeably?

Certain hard disk cards and wireless radio cards consume more power than others and can impact battery life. When not using any PC card, close all applications using the card and pop it part of the way out of the slot to save power.

If my NEC Versa LX system is docked in the NEC Versa Dock and I'm using a LAN card, the card does not work.

You may have an address conflict between your PC LAN card and your Docking Station. Check the manual that came with your PC card for alternate addresses and use CardWizard or Windows 98 or 95 Device Manager to reset the address.

In Setup, I disabled or reconfigured peripheral devices (like the ports or sound), yet I am unable to use the freed IRQs or I/O address resources with my PC Cards?

To provide a stable platform free of conflicts, NECC excluded some resources from PC card use.

Diskette Drive

Why can't I boot from the diskette drive?

To boot from the diskette drive, be sure that you have a diskette in drive A: containing operating system files. Be sure to check the Boot Device Setup parameters in the BIOS Setup Utility to determine the designated sequence of boot devices. See Chapter 3, "Using BIOS Setup."

See your operating system documentation for information about creating system diskettes.

What happens if I leave a diskette in my diskette drive?

Shutting down your system with a diskette in the diskette drive can damage the data on your diskette and your diskette drive. You should remove the diskette before powering off.

How do I format a diskette?

In Windows 98, Windows 95 or Windows NT, double click on the My Computer icon and then right click (click the right-hand mouse button) on the 3.5 Floppy or SuperDisk (A:) icon (depending upon your hardware configuration. Select Format and choose the format process that best suits your needs.

To format high density 1.44-MB diskettes - In DOS, type format a: and press Enter. If you want a bootable diskette, type format a:/s and press Enter.

What type of diskette do I use in my diskette drive?

Some systems ship with a 1.44-megabyte (MB) diskette drive that uses 3.5-inch high density (HD) diskettes. These diskettes are also called double-sided, high-density (DSHD) diskettes. You can store 1.44 MB of information on these diskettes.

Your diskette drive can also use 3.5-inch double-sided, double-density (DSDD) diskettes. These diskettes only hold 720 kilobytes of data - about half the amount of data that 1.44-MB diskettes hold.

Some systems ship with the SuperDisk™ drive that uses 120-MB diskettes. You can store up to 120-MB of information on these diskettes. The SuperDisk drive is backward compatible and uses 720-KB and 1.44-MB diskettes.

Booting

What is the difference between a warm boot and a cold boot?

A warm boot restarts the system while system power is on. A warm boot is also a software reset. A warm boot clears volatile system memory and reloads the operating system.

To use a warm boot, press and hold the Ctrl, Alt, and Del keys. When all three keys are pressed, the system resets. In Windows 98/95, press **Ctrl**, **Alt**, and **Del** twice to restart the system or go to Start, Shut Down, Restart the computer.

A cold boot is a system start with power off. A cold boot also resets the hardware. It checks the hardware and reloads the operating system.

Press the system unit power button to perform a cold boot or go to Start, Shut Down, Shut down the computer. If power is on, turn the power off using the system unit power button, wait at least five seconds, and then turn the power on.

Power Management

Does my system come with power management features enabled?

Yes, your system comes with power management features enabled. If you do not use the keyboard, mouse, or drives for the preset length of inactive time, your screen goes blank and your system goes into a power saving mode of operation. This is known as Standby mode.

When your screen goes blank, before the system goes into Suspend mode (power status LED blinks), just press the space bar or move your mouse to reactivate your system.

What is the purpose of Suspend to RAM?

You can initiate full Suspend-to-RAM by pressing the Power/Sleep button and holding it in place for 4 or fewer seconds. This places the system in a deeper state of "sleep" and requires that you press the Power button again to bring it back to Active mode. *(Before using the Power/Sleep button to put the system into Suspend mode, set the System Switch BIOS parameter to Sleep button.)*

Putting your system into Suspend initiates the Suspend power-saving mode and is a convenient way of conserving energy when you are going to be away from your system for short period of time.

What is the function of Suspend-to-File?

Suspend-to-File provides the greatest power savings by putting the system in a maximum power shutdown. When the system goes into STF mode, it saves data and system status and then shuts off power to all components. STF mode lets you save power without first saving your work. Resuming from STF mode requires less time than performing a cold boot.

How do I bring my system out of Standby mode?

Moving your VersaGlide pointer or using your keyboard brings the system out of Standby mode.

How do I bring my system out of Suspend mode?

Sliding the Power/Sleep button forward brings the system out of Suspend mode.

What is a time-out?

A time-out is the amount of time your system or a particular component is inactive.

Can I disable my system's power management features?

Yes. Simply press the Power Management switch (Fn+F7) on the system keyboard until you hear a single beep. Other Power Management settings include:

- Custom, 2 beeps
- Highest Performance, 3 beeps
- Longest Life, 4 beeps

In Windows 98 or 95, click on Start, Settings, Control Panel. In Control Panel, double click on the Power icon. In the Power Properties screen, uncheck "Allow Windows to manage power use on this computer."

Miscellaneous

How do I set the time and date?

You can change the time and date in Windows 98 or 95 and Windows NT as follows.

- Double click the time in the lower right corner of the screen.
- Change the date and time as needed.

How do I speed up my application?

If the application you are using runs really slow, close any other applications you are not using - this should speed things up.

If your application still runs slow, you might consider installing additional memory (see “Memory Module Installation” in Chapter 4).

Also, refer to your operating system’s documentation for tips on optimizing system performance.

Why do I get a message “Insufficient memory” when I run some games? I have 64 MB of memory.

The “Insufficient memory” refers to the 640 kilobytes of base memory. Since there are drivers being loaded at power on, the amount of memory can be lower than the game requires.

Contact the game manufacturer and request advice to create a boot disk. This loads only the drivers necessary to run the game.

How do I find help in a Windows application?

If you need help in a Windows application, click on a Help button or Help menu item. Most applications provide online help. If the application doesn't provide these, try pressing **F1**.

How do I save a file?

You save a file by selecting File then Save from the drop down menu. If the file was not previously named, you will be prompted for a file name. In Windows 98, Windows 95 and Windows NT, you can use up to 255 characters to name a file.

I'm having a problem using the IR port. What can I do?

Verify that the IR port is enabled. Enter the BIOS Setup Utility, access the Peripheral Setup menu and be sure that the IR serial port setting contains an available COM port and IRQ setting.

Check that both the sending and receiving system and device are using the same transmission software.

If you are transmitting underneath a fluorescent light, try repositioning the system and device so that they are not directly under the fluorescent light.

Reference the IR setup online help for further information.

Glossary

A

AC adapter

A device that connects an NEC Versa portable computer and an AC wall outlet to provide AC power for running the system and recharging the battery.

A/D conversion

The process of converting an analog signal into a digital signal.

AGP

Advanced Graphics Port is an interface specification designed for the throughput demands of 3D graphics. AGP introduces a point-to-point channel allowing the graphics controller direct access to main memory, increases bandwidth to 266-MBps, and supports throughputs of 533-MBps and 1.07-GBps.

animation

The art of making things appear to move in two-dimensional (2-D) or three-dimensional (3-D) space and making events happen over time.

applications programs

Software designed to perform specific functions, like solving business or mathematical problems.

audio

The range of frequencies that humans hear.

B

base RAM

Area of system memory between 0 and 640 kilobytes available to the user for the operating system and application programs.

BIOS
Basic Input Output System. A collection of primitive computer routines, usually burnt into ROM, that controls the real-time clock, keyboard, disk drives, video display, and other peripheral devices.

bit
Binary digit. The smallest unit of computer data.

bits per second
(bps) A unit of transmission. Also called baud rate.

board
Printed circuit board (PCB). Board on which computer components are soldered and thin wires are printed to connect the components.

boot
To start up a computer. See cold boot and warm boot.

bus
An electronic circuit within a computer used for transmitting data or electrical power from one device to another.

byte
Group of eight contiguous bits.

C

CardBus
A 32-bit high-performance bus defined by the new PC Card Standard and released by the PCMCIA standards body and trade associations. CardBus offers wider and faster 32-bit bus and bus mastering operation for improved adapter performance and can operate at speeds up to 32-MHz.

CD
Compact disc. A polished metal platter capable of storing digital information. The most prevalent types of compact disks or those used by the music industry to store digital recordings and CDs used to store computer data. Both types are read-only, which means that once the data is recorded onto them, they can only be read or played.

CD audio

Also called digital audio, uses the same format as conventional music CDs. CD audio sounds have been digitized at a high sampling rate.

CD-ROM drive

Compact Disc Read-Only Memory. A computer-controlled device that reads high-capacity optical discs and sends the output to the computer.

clock

Electronic timer used to synchronize computer operations.

CMOS

Complementary Metal Oxide Semiconductor. A chip that contains nonvolatile memory in the Versa. CMOS is backed up by an internal battery that preserves clock/calendar data and system configuration parameters stored in CMOS.

cold boot

Process of starting up the computer by turning on the power. If power is already on, the process means to turn off the computer and turn it on again. A cold boot reinitializes all devices.

crt

Cathode-Ray Tube. A type of display screen used in desktop monitors. It forms the screen image using tiny dots called, pixels. See also LCD.

cursor

A movable image on the display screen that indicates where the next entered data appears.

D

default

A value, option, or setting that the computer automatically selects until you direct it otherwise.

digital audio

Recorded sounds such as speech and sound effects. These are played back by the audio circuit's Digital-to-Analog Converter (DAC).

digital sound
A description of a sound wave that consists of binary numbers.

digitizing
The process of converting an analog signal into a digital representation.

diskette
A thin flexible platter coated with a magnetic material for storing information.

diskette drive
A magnetic drive that writes on and retrieves data from a diskette.

DSTN
Dualscan Super-Twisted Nematic. A type of technology used in some NEC Versa LCD screen displays.

DVD
A denser, faster CD that can hold video as well as audio and computer data. Short for *digital versatile disk* or *digital video disk*, this new type of CD-ROM holds a minimum of 4.7-GB (gigabytes), enough for a full-length movie.

E

enhanced VGA
A video interface that offers more colors or higher resolution than VGA.

extended RAM
The area of RAM above the first megabyte of memory in the system available for enhancing system performance.

F

FIR
Fast Infrared, an infrared technology that sends data at 4.0 Mbit/second (4 million bits per second).

FM synthesis
A technique for synthesizing sound that uses a combination of modulated sine waves to produce different waveforms.

function key
The set of keys on the keyboard (usually F1 through F12) that let you get help and error message information or quickly select frequently used commands.

H

hard disk
A rigid magnetic storage device that provides fast access to stored data.

hardware
The electrical and mechanical parts from which a computer is made.

hertz
(Hz) A unit of frequency equal to one cycle per second.

hot key
Combination of two or three keys that you press simultaneously for a particular function.

I

input/output
(I/O) The process of transferring data between the computer and external devices.

IDE
Intelligent Drive Electronics. A hard disk drive type that has controller electronics built into the drive and delivers high throughput.

infrared
Technology that uses infrared waves to communicate data between the IR-equipped devices without the use of cables. the port on the NEC Versa is Infrared Data Association (IrDA) compatible.

interface
A connection that enables two devices to communicate.

interrupt
A special control signal from an I/O device that diverts the attention of the microprocessor from the program to a special address.

K

kilobyte
(KB) 1024 bytes.

L

LAN
Local Area Network.

LCD
Liquid Crystal Display. An LCD consists of a thin sandwich of two glass plates with sealed edges, containing nematic liquid-crystal material that forms the screen image. Versa displays are LCD type.

load
To copy a program into the computer's memory from a storage device.

M

megabyte
(MB) 1,048,576 bytes.

memory
Electronic storage area in a computer that retains information and programs. A computer has two types of memory — read-only memory (ROM) and random access memory (RAM).

menu
A video display of programs or options.

microprocessor

A semiconductor central processing unit that is the principal component of a microcomputer. Usually contained on a single chip that includes an arithmetic logic unit, control logic, and control-memory unit.

MIDI

Musical Instrument Digital Interface. A standard serial bus, digital interface designed to connect electronic musical devices. MIDI has no innate sound of its own.

MIR

Medium Infrared, an infrared technology that sends data at 1.152 Mbit/second (1,152,000 bits per second).

MMX

A set of 57 multimedia instructions built into Intel's newest microprocessors. MMX-enabled microprocessors can handle many common multimedia operations, such as digital signal processing (DSP), that are normally handled by a separate sound or video card. However, only software especially written to call MMX instructions — MMX-enabled software —can take advantage of the MMX instruction set.

mode

A method of operation; for example, the Versa operates in either normal or power-saving modes.

modem

MOdulator-DEModulator. A device that links computers over a telephone line.

MPEG

The MPEG (Moving Pictures Experts Group) standard is used to encode motion images. The MPEG player program in Windows for Workgroups and Windows 95 applications lets you play back MPEG files.

multimedia

Computer technology that integrates different forms of media such as sound, text, graphics, and video.

N

nonvolatile memory

Storage media that retains its data when system power is turned off. Nonvolatile memory in the Versa is a complementary metal oxide semiconductor (CMOS) chip which is backed up by an internal battery. The backup battery preserves the clock/calendar data and system configuration parameters stored in CMOS. See volatile memory.

O

operating system

Set of programs that manage the overall operation of the computer.

overwrite

Storing information at a location where information is already stored, thus destroying the original information.

P

page

A type of message transmission in which a message is sent or received via modem to a paging device from a computer (with paging communications software) or telephone.

parallel interface

Interface that communicates eight bits at a time.

parallel printer

A printer with a parallel interface.

parameter

A characteristic of a device or system.

partition

Process of dividing mass storage (hard disk drive) into isolated or separate sections. Partitioning a hard drive creates additional logical drives, e.g. a 5.1GB hard drive partitioned into three logical drives creates drives C, D, and E. Partitioning facilitates file management by allowing you to isolate the computer's operating system to drive C while storing applications and data files on separate drives D and E (also referred to as partitions).

password

A string of characters that the user must enter before the system allows access or system privileges.

PC Cards

A credit card sized peripheral interface standard for portable devices. Types of PC cards (also known as PCMCIA cards) currently offered by major vendors include fax/modems, LAN, storage cards, and wireless communications devices.

peripheral

Input or output device not under direct computer control. A printer is a peripheral device.

pixels

Picture elements. Tiny dots that make up a screen image.

port

Provides the means for an interface between the microprocessor and external devices. A cable connector is usually plugged into the port to attach the device to the computer.

processor

In a computer, a functional unit that interprets and executes instructions.

prompt

A special symbol indicating the beginning of an input line. Also a message that appears on the screen indicating that the user must take a certain action.

Q

QWERTY

The QWERTY keyboard, designed in the 1800s for mechanical typewriters, refers to the first six keys (QWERTY) on the top row of letters on the standard keyboard.

R

RAM

Random Access Memory. A storage device into which data is entered and from which data is retrieved in a nonsequential manner.

read

To extract data from a storage device such as a diskette.

ROM

Read-Only Memory. Memory in which stored data cannot be modified by the user except under special conditions.

reset

The process of returning a device to zero or to an initial or arbitrarily selected condition.

resolution

The degree of screen image clarity. Video display resolution is determined by the number of pixels on the screen. Resolution is usually specified in pixels by scan lines, for example, 640 by 480. See pixels.

RS-232C

Standard interface for serial devices. This port is sometimes referred to as the serial port.

S

scanner

An optical device that reads printed material and converts it to a computer screen image.

serial interface
An interface that communicates information one bit at a time.

serial printer
A printer with a serial interface.

SIR
Serial Infrared, an infrared technology that sends data at 2.4 Mbit/second (2,400,000 bits per second).

SO-DIMM
Small outline dual-inline memory module. A small circuit board that holds memory chips. A dual in-line memory module (DIMM) has a 64-bit path.

software
Programs that run on a computer such as operating systems, word processors, and spreadsheets.

SuperDisk
A high capacity diskette drive that uses the laser-servo technology to read from and write to specially designed 120-MB diskettes. The SuperDisk is backward compatible and reads 1.44-MB and 720-MB diskettes.

Suspend mode
A state of power management that puts the system to "sleep." Suspend mode shuts down all devices in the system while retaining data and system status.

SVGA
Super Video Graphics Array. Graphics technology that supports up to 256 colors and a graphics resolution of 800 by 600 pixels.

system board
The main printed circuit board inside the system unit into which other boards and major chip components, such as the system microprocessor, are connected.

s-video

Short for *super-video*, a technology for transmitting video signals over a cable by dividing the video information into two separate signals: one for color, and the other for brightness. When sent to a television, s-video produces sharper images and superior color definition.

T

TFT

Thin Film Transistor. A type of NEC Versa LCD color screen that supports 256 colors.

U

USB

Universal Serial Bus. This new external bus standard supports the connection of up to 127 peripheral devices, such as mice, modems, and keyboards. USB supports plug-and-play installation on some systems.

V

VersaGlide

A small, touch-sensitive pad used as a pointing device on your NEC Versa notebook computer. With the VersaGlide, you can move your finger along the pad to move the cursor or simulate a mouse click by tapping the pad.

VGA

Video Graphics Array. Graphics technology that supports up to 256 colors and a graphics resolution of 640 by 480 pixels.

volatile memory

Storage media that loses its data when system power is turned off. Standard memory and memory that you add to the Versa are volatile memory. See nonvolatile memory.

W

warm boot

Process of resetting the computer without turning off the power through keyboard input (pressing Ctrl, Alt, and Del keys simultaneously). The system returns to an initial or arbitrarily selected condition.

warm swap

Process of swapping devices in and out of a computer system without turning off the power. The system must be in suspend mode before removing or inserting a device.

waveform

A graphic representation of a sound wave as displayed on an oscilloscope, which converts sound waves into electronic signals.

write

To record or store information to a storage device.

X

XGA

Extended Graphics Array. This high-resolution graphics standard supports 640 x 480 – 1024 x 768 pixel and 16 million simultaneous colors. XGA also supports non-interlaced monitors.

Z

zoomed video

Zoomed video technology allows data transfer directly between a PC card and VGA controller. This allows notebook computers to connect via PC card to real-time multimedia devices such as video cameras.

Index

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Y

Federal Communications Commission
Radio Frequency Interference Statement

WARNING

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This is a Class B Digital Device. 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 generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that 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 to an outlet on a circuit different from the one to which the receiver is connected.

To meet FCC standards, shielded cables and power cords are required to connect this device to a personal computer or other Class B certified device.

Canadian Department of Communications Compliance Statement
This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations (pursuant to ICES-003 Issue 2, Revision 1).

Avis de conformité aux normes du ministere des communications du Canada
Cet equipment numérique de la Classe B respecte toutes les exigences du Reglement sur le matérial brouillage du Canada (en conformité avec ICES-003 Emission 2, Révision 1).

European Community Directive Conformance Statement
This product is in conformity with the protection requirements of EC Council Directive 89/336/EEC on the approximation of laws of the Member States relating to electro-magnetic compatibility. This product satisfied the Class B limits of EN 55022.

NEC Computers Inc.
15 Business Park Way
Sacramento, California 95828

Battery Replacement

A lithium battery in some computers maintains system configuration information. In the event that the battery fails to maintain system configuration information, NECC recommends that you replace the battery. For battery replacement information, call your NECC dealer.

⚠ WARNING

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

⚠ AVERTISSEMENT

Il y a danger d'explosion s'il y a replacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type recommandé par le constructeur. Mettre au rébut les batteries usagées conformément aux instructions du fabricant.

Battery Disposal

The main battery is made of Lithium Ion (Li-Ion) and the CMOS clock battery is made of Lithium. Your bridge battery (not the main battery) is made of nickel-metal hydride (NiMH).

Contact your local waste management officials for other information regarding the environmentally sound collection, recycling, and disposal of the batteries.

NEC Computers Inc.

DECLARATION OF CONFORMITY

We, the Responsible Party

NEC Computers Inc.
15 Business Park Way
Sacramento CA 95828

declare that the product

NEC Versa LX

is in compliance with FCC CFR47 part 15 for Class B digital devices.