PROPRIETARY NOTICE AND LIABILITY DISCLAIMER

The information disclosed in this document, including all designs and related materials, is the valuable property of NEC Computer Systems Division, Packard Bell NEC (NECCSD, PBNEC) and/or its licensors. NECCSD and/or its licensors, as appropriate, reserve all patent, copyright and other proprietary rights to this document, including all design, manufacturing, reproduction, use, and sales rights thereto, except to the extent said rights are expressly granted to others.

The NECCSD product(s) discussed in this document are warranted in accordance with the terms of the Warranty Statement accompanying each product. However, actual performance of each such product is dependent upon factors such as system configuration, customer data, and operator control. Since implementation by customers of each product may vary, the suitability of specific product configurations and applications must be determined by the customer and is not warranted by NECCSD.

To allow for design and specification improvements, the information in this document is subject to change at any time, without notice. Reproduction of this document or portions thereof without prior written approval of NECCSD is prohibited.

First Printing — January 1997

(For United States Use Only)

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 equipment does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio interference Regulations of the Canadian Department of Communications.

Avis de conformité aux normes du ministère des Communications du Canada
Cet appareil respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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 Computer Systems Division, Packard Bell NEC, Inc.
1414 Massachusetts Avenue
Boxborough, Massachusetts 01719
1-800-632-4525

Using this Guide

The *NEC Versa® 2500 Series User's Guide* gives you the information you need to maximize the use of your NEC Versa 2500 Series notebook computer. Read this guide to familiarize yourself with the system and its features. For specific information see

- Chapter 1, "Getting Started," to acquaint yourself with system hardware.
- Chapter 2, "Introducing the Software," for a summary of the applications loaded on your system. Software included lets you experience the full spectrum of the system, from creating vivid multimedia presentations to accessing the Internet via Netscape Navigator.
- Chapter 3, "Using Setup and Power Management," to customize your notebook's parameter and power management settings.
- Chapter 4, "Using Your NEC Versa," for an understanding of NEC Versa features and functionality. You'll also master procedures for connecting external options like headphone, microphone or speakers.
- Chapter 5, "Using Multimedia," for steps on integrating video and sound clips into impressive presentations.
- Chapter 6, "Traveling with Your NEC Versa," lists valuable tips for getting the most out of your system while on the road.
- Chapter 7, "Solving Problems," provides simple solutions to common problems that may arise while operating your notebook.

- Appendix A, “Setting Up a Healthy Work Environment,” provides guidelines to help promote a healthy work setting.
- Appendix B, “Specifications and Environment,” to review NEC Versa 2500 Series system specifications.

TEXT SETUP

To make this guide as easy to use as possible, text is set up in the following ways.

- 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 2500 Series notebook computer:

- The *NEC Versa 2500 Series Quick Setup* sheet helps you get your system up and running.
- The *NEC Versa 2500 Series Quick Reference* card provides an easy-to-carry reference to LED meanings, controls, function key combinations, and NEC help numbers.
- Depending on the operating system installed, the Microsoft® Windows 95 or Windows for Workgroups MS-DOS operating system online documentation comes loaded on your NEC Versa computer.
- An online version of this user's guide also comes on your hard disk drive. That way, you can leave the guide at home and still have all the information you need at your fingertips.

Contents

2 Understanding the Software

3 Using Setup and Power Management

4 Using Your NEC Versa Computer

1 Getting Started

⚠ 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 2500 Series system is ready to go! To get started:

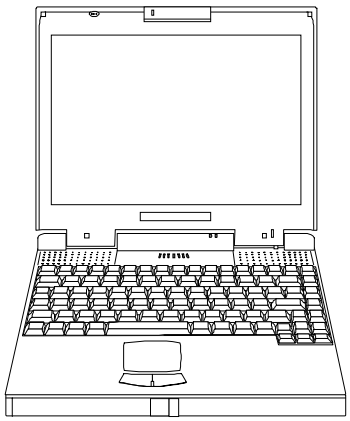
- Read Appendix A, Setting Up a Healthy Work Environment, for guidelines that help you use your computer productively and safely. Information includes how to set up and use your computer to reduce your risk of developing nerve, muscle, or tendon disorders.
- Read through this guide to familiarize yourself with the NEC Versa.

GETTING TO KNOW YOUR NEC VERSA

The NEC Versa 2500 Series notebook computer offers you a portable system filled with exciting resources for home, business or travel. Standard features include a powerful Intel® Pentium 133-MHz microprocessor that works together with the latest Extended Data Out (EDO) Random Access Memory (RAM) for exceptional performance.

In addition, your system gives you a high-performance hard disk drive, diskette drive, built-in VersaGlide and PC card slots for Personal Computer Memory Card International Association (PCMCIA) PC cards. NEC also gives you the drive bay space for installing an optional CD-ROM reader. As a multimedia system, your NEC Versa provides the tools needed to create and present impressive images using video clips and sound.

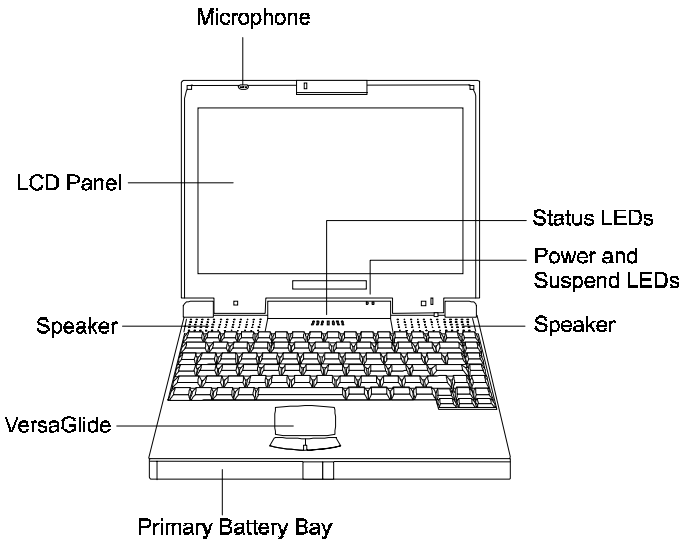
To get comfortable with your notebook, read the following sections and take a tour around your system!



NEC Versa 2500 Series notebook computer

Around the Front of the System

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



Front features

LCD Panel

Your NEC Versa 2500 Series system comes with a color LCD that you can adjust for a comfortable viewing position. The LCD is a 12.1-inch Dual Scan Super-Twisted Nematic (DSTN), cold cathode fluorescent tube (CCFT), backlit Super Video Graphics Array (SVGA) color display.

The LCD panel offers the following features:

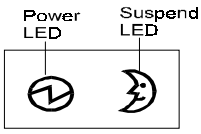
- Microphone — allows you to record monophonic sound directly into your notebook computer.

- Brightness and Contrast Controls — use convenient Fn key combinations to adjust LCD brightness and contrast. Press and hold the **Fn** key and cursor arrow as follows:
  - — **Fn-↑** increases LCD brightness.
  - — **Fn-↓** decreases LCD brightness.
  - — **Fn-→** increases LCD contrast.
  - — **Fn-←** decreases LCD contrast.

Speakers and Status LEDs

NEC Versa systems offer the following features on the LCD hinge and the upper part of the keyboard panel:

- Built-in Stereo Speakers — provide stereo sound for your multimedia presentations or listening pleasure.
- Power and Suspend status LEDs — (identified by icons) are found on the hinge just under the LCD panel.

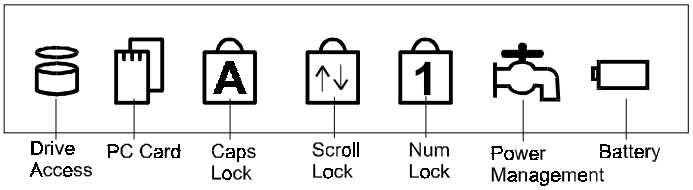


Power and Suspend LEDs

  - — Power LED — lets you know that power to the system is turned on. This LED is positioned so that you see the power state whether the LCD panel is opened or closed.
    - – Lights green when the system is powered on.
    - – Blinks green when battery power is low.

— Suspend Mode LED — lets you know that the system is currently in Suspend mode. This LED is positioned so that you see the system state when the LCD panel is opened or closed.

- Status LEDs — status lights inform you of the status of your system and its components. Status LEDs have the following meanings and light under the conditions noted:



Status LED icons

— Drive Access – lights when the NEC Versa writes data to or retrieves data from the hard disk drive, CD-ROM reader, or diskette drive.

— PC Card – lights when a PC Card installed in the PC slot is being accessed.

— Caps Lock – lights when caps lock is in effect.

— Scroll Lock – lights when scroll lock is in effect.

— Num Lock – lights when Num Lock mode is active.

— Power Management – lights when power management features are enabled.

— Battery Charging Status – lights to indicate the following:

Green indicates that the battery is charging.

Blinking green indicates that either the battery charge is very low or the battery is overheating.

No color indicates that battery charging is complete, or no battery is installed.

> NOTE A blinking battery icon indicates that system battery power has reached dangerously low levels. When this occurs, a function called trickle charge automatically activates. Trickle charge protects the battery by recharging it, and returning the battery to a usable state.

Keyboard

The NEC Versa 2500 Series system comes with an 87-key keyboard with inverted T cursor keys. (European models come with 88 keys.) See Chapter 4, "Using the Keyboard," for details about control keys, function keys, and keyboard features.

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. The left button is configured to function like the left button on a mouse. The right button is configured as a right-mouse button.

See "NEC VersaGlide" in Chapter 4 for information about customizing VersaGlide settings.

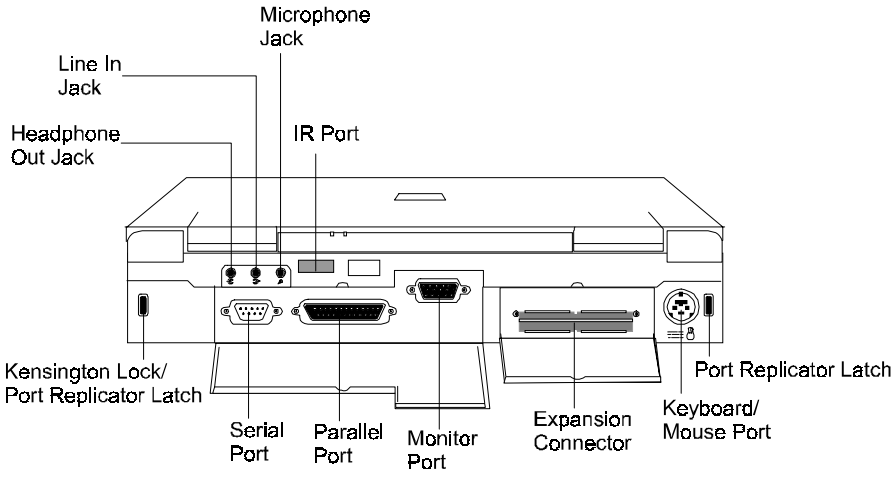
Battery Pack Bay

The NEC Versa comes with a rechargeable nickel-metal-hydride (NiMH) battery pack. You can remove the battery pack from the front bay and install an optional 8X CD-ROM reader.

> **⚠ CAUTION**
>
> Install only the battery pack or optional 8X CD-ROM reader in the front bay. **Never** try to put the diskette drive into the front bay. Doing so can damage the drive and the bay connectors.

AROUND THE BACK OF THE SYSTEM

You'll find system ports for connecting your NEC Versa to optional devices (like a printer or external monitor) on the back of your NEC Versa. For an understanding of each feature, see the descriptions that follow the figure.



Back system features

- Audio Ports
  - — Line In — Lets you use another audio system, like a home stereo, as an input source. Use a cable to connect to the Line-Out port on the other audio system to record or play.
  - — Headphones — Lets you plug in stereo headphones or powered speakers.
  - — Microphone — Allows you to connect an external microphone for monophonic recording or amplification through the unit. Plugging in an external microphone disables the built-in microphone.
- Infrared Port — Use this port to transfer files between your NEC Versa and an IR-equipped desktop or notebook computer. You can also print to an IR-equipped printer without using cables.
- Kensington Lock/Port Replicator Latch — Use this "port" for added security by using an optional Kensington Lock. This port also doubles as a latch for securing the port replicator. (You cannot connect both a lock and the port replicator at the same time.) A second Port Replicator Latch is located at the other end of the back of the system.
- Serial Port — Use this port to connect an external modem or other serial device.
- Parallel Port — Use this port to connect a parallel printer or other parallel device. The parallel port supports Enhanced Capabilities Port (ECP) and Enhanced Parallel Port (EPP) standards. Both standards provide you with a greater processing speed than the conventional parallel port. Both also support bi-directional and uni-directional protocols.

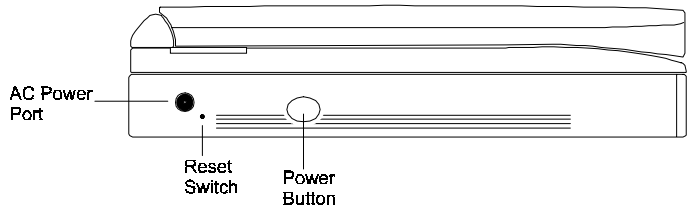
- Monitor (Video) Port — Use this 15-pin port to attach an external monitor to your NEC Versa. You can run the LCD display and the external monitor simultaneously or run either alone.
- Expansion Port — This port provides a connection for the NEC Port Replicator 2400.
- Keyboard/Mouse Port — Use the 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 SIDES OF THE SYSTEM

Your NEC Versa comes with features on both sides. This section shows you where those features are located and provides descriptions to familiarize you with their use.

The Left Side

The left side of your NEC Versa provides the features shown in the following figure. (Features are described after the figure.)



Left side features

- AC Power Port — The AC power port lets you attach the NEC Versa to the AC power source using the AC adapter that comes with your system. Keep the system connected to AC power whenever possible to keep the battery pack and internal CMOS battery charged.

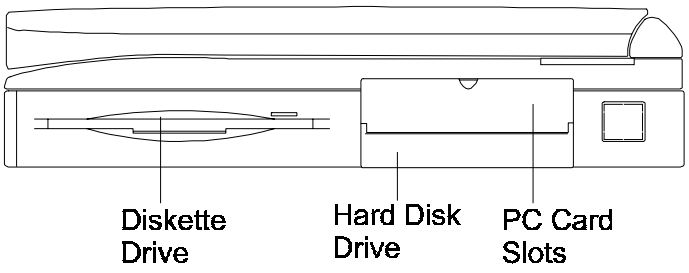
- Reset Switch — This recessed switch lets you restart your system. Use a pointed object, like a straightened paper clip, to push in the Reset button. Use this button *only* if your system locks up, fails to respond to keystrokes, or fails to respond to the Power button.
- Power Button — The Power button turns NEC Versa power on and off. Press the button to turn power on; press it again to turn power off. When power is on, the Power LED lights.

> NOTE After turning off the system, wait 5 seconds before turning it back on. This gives system components a chance to power down properly.

The Power button also acts as a Resume button when the system is in Save-to-File mode.

The Right Side

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



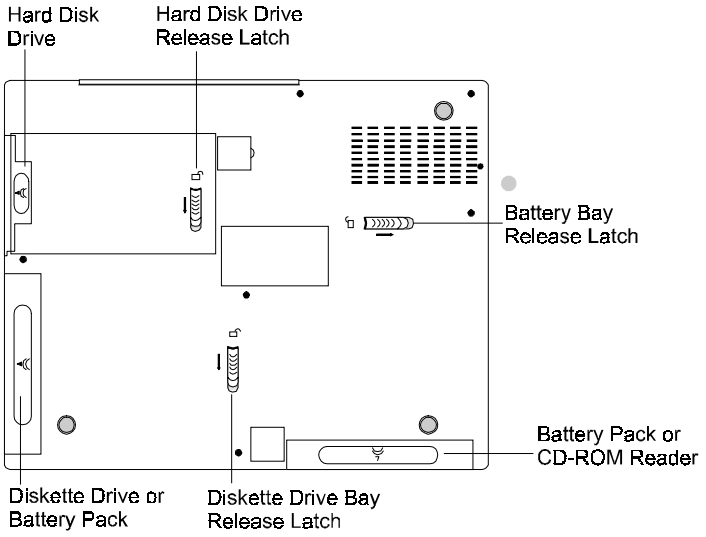
Right side features

- Diskette Drive — A 3.5-inch, 1.44-MB diskette drive comes installed in the NEC Versa 2500 Series system. The drive accepts 1.44-MB high-density diskettes as well as 720-KB double-sided double-density diskettes.

  If you remove the diskette drive, the diskette drive bay also supports an optional second battery pack.
- PC Card Slots — Two PC card slots let you insert two Type II PC cards or one Type III PC card.
- Hard Disk Drive — A removable hard disk drive ships standard with your system and is located in a drive bay below the PC Card Slots. This bay contains a 1-gigabyte (GB) hard disk drive. See Appendix B for hard disk drive specifications.

AROUND THE BOTTOM OF THE SYSTEM

The bottom of the NEC Versa contains the release latches shown in the following figure. Pressing the release latch lets you remove the option installed in the corresponding bay.



Bottom of the system

The following release latches are provided:

- Diskette drive bay release latch — allows you to remove the diskette drive or an optional second battery pack installed in the bay.
- Hard disk drive release latch — lets you remove the hard disk drive installed.
- Battery bay release latch — lets you remove the battery pack or optional CD-ROM reader.

NEC VERSA POWER SOURCES

The NEC Versa can be powered using different sources, making it a truly portable system. Operate your NEC Versa system 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 and/or an optional second battery pack.

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.

⚠ 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. Both must meet EN60950 standards.

When connected, the AC adapter charges the battery whether or not the NEC Versa is powered on. The LED on the AC Adapter indicates the current battery charge status as follows:

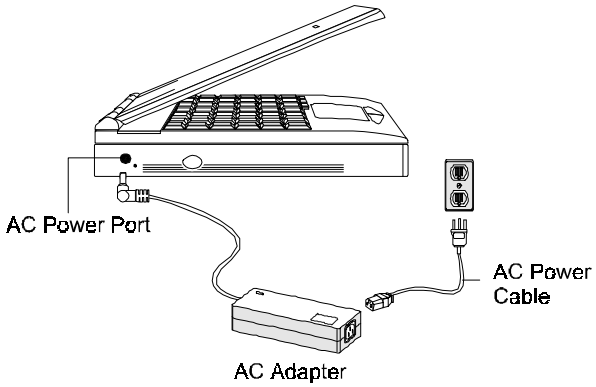
- Green indicates that the battery is fully charged.
- Orange indicates that the battery is charging.

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:

> **⚠ CAUTION**
>
> Use only the AC Adapter that comes with your NEC Versa 2500 Series system. Although other AC adapters may look similar, using them can damage the system.

1. Connect the AC adapter cable to the power port on the left side of your NEC Versa 2500 Series system.
2. Plug one end of the AC power cable into the AC adapter and the other end into a 120- or 240-volt wall outlet.



Connecting the AC adapter

> **⚠ WARNING**
>
> Do not cover or place objects on the AC adapter. Doing so can cause the adapter to overheat.

Powering On

To power on, locate the power button on the left side of the system and push it in. To power off the system, push the power button a second time.

Using the Main Battery Pack

The NEC Versa 2500 Series system comes with a rechargeable nickel metal-hydride (NiMH) battery pack. You can run your system on battery power for up to 4 hours with 2 batteries installed and power management features enabled. Battery packs are easy to install and remove.

> NOTE Although the battery is fully charged at the factory, transit and shelf time may reduce the initial battery charge. We recommend that the first time you use your system, you connect it to AC power using the AC adapter. This will also recharge your battery.

Your NEC Versa 2500 Series system provides two tools to help you keep track of the main (or an optional) battery's power level. These include the status LEDs described earlier in this chapter, and the Battery Gauge utility. Both let you know how much battery power remains. See Chapter 2, “Introducing the Software,” for more details on using the Battery Gauge utility.

When battery power is very low, the power LED blinks and the system beeps a warning.

Installing the Battery Pack

Install the battery pack in your system as follows. (For information about replacing a battery pack, see "Replacing the Battery Pack," a little later in this section.)

> **⚠ CAUTION**
>
> Be sure to save your data before replacing the battery pack or connecting the AC adapter. Failure to do so can result in data loss.

1. If your system is on, save your data, close any applications running, and power off the system.
2. Align the battery pack with the bay where you plan to install it. Make sure the battery contacts are aligned properly with the connector inside the bay.

   The primary battery pack is usually installed in the front bay. However, you can install it in the Diskette Drive bay instead.
3. Push the battery pack into the bay until the locking latch on the bottom of the system clicks into place.

When to Change the Battery Pack

When battery power gets low, proceed as follows:

1. If your system is on, save your data, close any applications running, and power off the system.
2. Connect your system to the AC adapter and AC power or install a charged battery pack.
3. Power on 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 terminals to prevent causing a short circuit.
> - Make sure the battery is properly installed in the battery bay.
> - Read the precautions printed on the battery.

Battery Handling

Review the following before handling a NiMH battery

- Use NiMH batteries only in the NEC Versa computer for which they are designed. Mixing other manufacturer's 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 terminals with a dry cloth if they get dirty.
- When not in use, store the battery in a cool dry area.

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

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

Replacing the Battery Pack

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

1. Save your files, exit Windows, and turn off system power.
2. Close the LCD and turn the system over.
3. Press the battery release latch and slide the battery out of the system. (See “Drive Bays” in Chapter 4 for release latch location.)
4. Insert the new battery into the bay, pressing it firmly until the release latch clicks.
5. Turn the system over, open the LCD panel, and power on the system.

Battery Life

The NEC Versa NiMH battery has an approximate life of 2 hours under the following conditions:

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

Enabling power management features increases battery life.

Extending Battery Life

While on the road, it is important to be aware of the simple things you can do to extend the life of the system's main battery. Use the power management features enabled through Setup to extend battery life. See "Using Power Management" in Chapter 3 for details.

Battery Charging

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

- When the system is off or in Suspend mode and the AC adapter is connected, charge time is approximately 2 hours.
- When the system is powered on and the AC adapter is connected, charge time is approximately 4 hours.

For maximum battery performance, fully discharge the battery before recharging it. To do so, unplug the AC adapter, turn off power management features (through Setup and Windows), and turn on the system. (Do not leave any applications running.) Once the battery is fully discharged, plug in the AC adapter and recharge the battery.

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

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

Battery Precautions

Comply with the following NiMH battery 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.

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

Battery Disposal

Before disposing of the NiMH battery, put adhesive tape on the terminals. The main battery is made of nickel metal-hydride (NiMH).

Contact your local waste management officials for information regarding environmentally sound collection, recycling, and disposal of batteries.

INTERNAL BATTERIES

A nickel metal-hydride battery is the main power source in your NEC Versa computer. Appendix B lists NiMH battery specifications. In addition to this battery, the CMOS battery provides power to maintain system configuration settings.

CMOS Battery

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

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 and AC adapter.

- Always plug the AC adapter cord into an easily accessible outlet. It is important to be able to easily shut off power to the computer by unplugging the AC adapter.
- 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 or diskette drive 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 option bays, connectors, and slots.
- Avoid using the computer or AC adapter for extended periods in direct sunlight.
- Do not use the system in humid or dusty environments.
- Keep liquids and food away from the system.
- Turn computer power off before cleaning it.
- Avoid exposing the 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.
- Do not use the IR port directly under fluorescent lighting, or near flashing incandescent light.

⚠ CAUTIONS

This equipment uses an ungrounded power cable. Replace the cord if it becomes damaged. U.S. and Canadian replacement cords must be UL-approved (CSA certified in Canada) type SPT-2, 18 AWG, 2-conductor cord with a permanently attached NEMA type 5-15P plug at one end, and a permanently attached connector body on the other. Cord length may not exceed 15 feet. Outside the U.S. and Canada the cord must be rated for at least 250VAC at 10 amps, and must indicate international safety agency approval. The plug must be a type appropriate for the country where it is used.

Obtain replacement cords at an authorized service center. The replacement must be of the same type and voltage rating as the original cord.

Disconnect all supply lines before the expansion memory slot cover is removed. Replace the expansion memory slot cover before the unit is restarted.

Storage Requirements

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

- Maintain storage temperatures between –20°C and 60°C (–4°F and 140°F).

> **⚠ 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.

- 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.
>
> 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 — NEC recommends that you carefully wipe the case with a slightly damp, almost dry cloth.

2 Understanding the Software

This chapter introduces you to the software that comes with the NEC Versa 2500 Series system, including:

- the Windows 95 operating system or the Windows for Workgroups operating system with MS-DOS®
- Online Help
- NEC Utilities
  - Setup
  - Battery Gauge Utility (Windows for Workgroups only)
  - PHDisk
- Other Software
  - Phoenix Card Manager
  - LapLink® for Windows
  - McAfee VirusScan™
  - McAfee WebScan™
  - VideoSaver™
  - XingMPEG Player™
  - Microsoft Works (standard on Windows 95-only models)
  - Microsoft Money (standard on Windows 95-only models)

NOTE Windows 95-only systems are only available in the United States.

- Microsoft Return of Arcade (standard on Windows 95 only models)
- Microsoft Sampler (Windows 95 only models)
- Netscape Navigator Dial Up Edition
- Win 95 Online Services
  - AT & T WorldNet Signup
  - America Online
  - CompuServe & WOW!
  - Official Airline Guide (OAG®)
  - Internet Explorer (Windows 95 only models)
- Windows for Workgroups Online Services
  - Netscape Navigator Dial Up Edition
  - America Online
  - Compuserve

WINDOWS INTRODUCTION

Your NEC Versa either comes with the Windows 95 operating system preinstalled, or gives you the option of installing either Windows 95 or Windows for Workgroups on your system. Both 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.

Both Windows 95 and Windows for Workgroups employ a graphical interface to make the operating systems easy to use.

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.

In 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 — once you delete a file, it's placed here, providing a safety area for files deleted by mistake.
- The Internet — lets you automatically set up a new connection to the Internet, or manually configure an existing account for your NEC Versa.
- NEC Setup — Double click the NEC Setup shortcut and select Customize to give your desktop a distinct NEC look and feel.

  For example, NEC customizations include loading McAfee VirusScan 95 and the Vshield icon on your toolbar, and removing the default Microsoft Windows 95 desktop wallpaper, and installing NEC's unique desktop wallpaper.
- The Microsoft Network — shows you the computers connected to your workgroup and those on the entire network (if your system is connected to a network).

- My Briefcase — allows easy file transfer between the NEC Versa and other systems.
- Online Services — a folder containing your system's online service setup programs including America Online, AT&T WorldNet Setup, Setup CompuServe 3.0, and Setup WOW! from CompuServe.
- VideoSaver — VideoSaver is a very special addition to your desktop. Select from a great list of screen savers that reflect your lifestyle!
- Start — displays a pop-up menu with which to start programs and applications, opens documents, accesses system settings, looks at online help, and shuts down your system.
- NEC Versa 2500 InfoCenter — gives you easy access to NEC Versa system online help and customer service information.

Windows for Workgroups

Windows for Workgroups offers the well-established Windows interface. Application icons are placed in groups, which are represented by group icons. To start an application, highlight and double click or double tap the application icon.

The Program Manager contains the following groups.

- Main — Includes programs and tools to help you control printing; set up printers, plotters, and modems; customize the desktop; and manage files.
- Accessories — Includes desktop programs that come with Windows, such as a simple word processing program, a drawing program, a calendar, and a calculator.
- Startup — Lets you add programs to start automatically when you enter Windows.

- Games — Gives you a way to practice your VersaGlide skills or just relax.
- NEC Versa 2500 InfoCenter — Includes online topics specific to the NEC Versa 2500 Series, NEC customer support, Windows, and DOS.
- NEC Utilities — Includes small programs written by NEC to help you manage your NEC Versa computer.

DOS INTRODUCTION

MS-DOS is the Microsoft disk operating system that runs the computer. It is helpful if personal computer users have a little background using DOS commands. The Windows environment makes it possible for you to manage your system and application programs without knowing DOS commands, but as you become more comfortable with computers you may want to begin learning DOS.

GUIDE TO ONLINE HELP

The NEC Versa has online information for you. You can access online documents from the NEC Versa 2500 InfoCenter icon on the desktop. The NEC Versa 2500 InfoCenter contains information about your NEC Versa, as follows.

- *NEC Versa 2500 Series Online User's Guide*

  The *NEC Versa 2500 Series Online User's Guide* provides general information on system usage as well as more extensive topics including using power management, PC card technology and system memory map.
- *NEC Customer Support Guide*

The *NEC Customer Support Guide* discusses the various levels of support NEC offers you, our customer. We provide information to help you become self-sufficient with your NEC Versa, but if you need help, we're there for you. (If you purchased your system outside of the United States, please contact your local NEC dealer for customer support information.)

- *NEC UltraCare Guide*

  The *NEC UltraCare Guide* describes NEC's extended warranty program to help you protect your investment in an NEC Versa Series system. (If you purchased your system outside of the United States, please contact your local NEC dealer for extended warranty information.)

- Using Windows 95

  This online "book" lets you explore Windows 95 and learn about navigating through the new interface. (This file is available only when Windows 95 is the operating system loaded.)

- The Windows QuickStart Guide

  This online "book" provides lessons on using Microsoft Windows, which runs on the NEC Versa. (This file is available only when Windows for Workgroups 3.11 is the operating system loaded.)

  The MS-DOS QuickStart Guide 6.22This online "book" offers lessons on using MS-DOS, which also runs on the NEC Versa. (This file is available only when Windows for Workgroups 3.11 is the operating system loaded.)

GUIDE TO NEC UTILITIES

NEC provides several programs and routines designed to make your NEC Versa run more efficiently. These programs are known as utilities.

Setup

The Setup utility automatically configures your NEC Versa each time you start it up. This utility is not accessible from Windows. Access Setup at power-on. Just press **F2** when the following prompt appears.

```
Press <F2> to enter SETUP
```

See Chapter 3, "Using Setup," for a discussion of the Setup utility. In addition, online help assists you in changing settings.

Battery Gauge Utility

This utility lets you quickly identify how much battery power you have available. (Windows for Workgroups modesl only)

PHDisk

This utility creates a file on the hard disk that is large enough to contain all the program and data residing in the NEC Versa dynamic memory. Your system ships with a file that is approximately 17 MB. You only need to update this file size if you upgrade the amount of memory in your system to more than 16-MB. Run this utility in DOS mode or DOS environment. It will not run on a compressed drive

To use this utility, exit Windows and go to the DOS prompt. Enter the following at the DOS prompt:

```
PHDisk  /create
```

After executing this command, the file is resized based on the current NEC Versa memory size.

OTHER SOFTWARE

Your NEC Versa comes with other programs that let you take full advantage of your system resources. The rest of this chapter discusses each program, including what it can do for you, how to get started, and how to use the program help.

Phoenix Card Manager

The Phoenix Card Manager lets you manage your PC Cards and slots in your Windows for Workgroups system. Through Phoenix Card Manager, you can do the following:

- view card slot activity and availability
- be alerted to missing or improperly installed card drivers
- receive help to address resource conflicts and memory window allocation problems.

Once Phoenix Card Manager identifies and resolves configuration issues, it automatically configures PC cards each time they are installed.

Phoenix Card Manager is only available in Windows for Workgroups systems. Card management software is built into Windows 95.

LapLink

LapLink offers the following features:

- File Transfer — lets you move or copy files between computers. To speed file transfer, LapLink compares files being updated and transfers only the changed information.
- Remote Control — gives you access and control over a remote computer. Activity you perform on a system, such as keystrokes, file access and change, and program execution, actually occurs on the remote system.

- Chat — provides a way for you to exchange information, instructions, or other messages with a user at a remote computer.

LapLink software must be loaded on both the sending (local) and receiving (remote) system for communication between them to work properly.

How to Use LapLink

Follow these steps to get started using LapLink. Once you have LapLink up and running, refer to the LapLink online help for more information.

1. Start LapLink as follows:

   - In Windows for Workgroups, locate and double click the LapLink for Windows icon in the LapLink for Windows program group.
   - In Windows 95, press Start, slide the cursor to Programs, and locate LapLink for Windows 95. Highlight the LapLink for Windows 95 line and press the VersaGlide selection button or tap the pad once.

     If you do not have a port enabled, LapLink prompts you to enable one. (The IR port is enabled for wireless communications when the system ships.) Press **Yes** to do so and follow the on-screen instructions to configure the port. Otherwise, press **No**.

2. Once your ports are configured, select your communication method by pressing the appropriate button. The buttons give you the following connection options.

   - Connect over cable
   - Connect over wireless
   - Connect over modem (if installed)
   - Connect over network

- Connect over dial-up network

Once communication is established between systems, the LapLink window is displayed.

3. Select the procedure you want to use by pressing one of the last three buttons in the LapLink toolbar at the top of the screen.
   - Press the file transfer button to transfer files between systems.
   - Press the Remote Control button to exercise control over a remote system.
   - Press the Chat button to converse with another user at the remote system.
4. When you finish, press the disconnect button to break the link between the local and remote systems. Press **OK**.

   The other system is notified of the break in communication.

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

McAfee Anti-Virus Software

The McAfee Anti-Virus software is installed to scan your system for any virus infections. WebScan and VirusScan are two scanning software tools included on the NEC Versa 2500 Series system. In Windows for Workgroups, a Vshield icon is shipped minimized as an icon on the desktop to easily determine whether protection-level software is running or not, as well as provide a virus alert chime message when a virus is resident.

- WebScan software protects your system against virus infection from files attached to mail messages or from files you download from the Internet. WebScan is activated any time you download executable and Microsoft Word document files and scans mail through the Pegasus Mail system. Also included is the SPRY Mosaic browser and the WebScan Web browser, which gives access to the Internet.
- VirusScan, detects, identifies and disinfects known DOS, Windows for Workgroups, and Windows 95 computer viruses. It checks memory as well as both the system and data areas of disks for virus infections. In most cases, it will eliminate and fully repair infected programs or system areas to their original condition.

Set up the WebScan software on your NEC Versa 2500 computer using the easy-to-follow setup program.

> NOTE Before you can use the WebScan software and connect to the Internet, you must first purchase and install a modem card or external serial modem. Make sure the PC Card is connected to a working phone line. The line must be an analog line. If you are unsure what type of line you have, call your local telephone company.
>
> It is strongly recommended that you install the modem card in your NEC Versa prior to running the WebScan Setup program. As part of the Setup program, it recognizes the modem information. If you run the Setup program without an installed modem, you will have to manually enter the modem information the first time you use the online service.

VideoSaver

The VideoSaver software package that comes preloaded on selected systems gives a variety of full-screen video clips that you can use as screen savers. Simply select VideoSaver from the list of screen savers in your Windows list.

> NOTE You can only use this as a screen saver when running on AC power.

For Windows 95, modify how the screen saver runs as follows:

1. Double click the VideoSaver icon on the desktop.
2. Click the Preview button to see the current clip selected.
3. To modify the video settings, press the Settings button.

The settings screen shows the available video clips and gives you options to:

- Rearrange the order in which the clips appear.
- Mute the sound.
- Preview the videos available.

XingMPEG Player™

Provides MPEG Playback software for Windows 95 or Windows for Workgroups. See Chapter 5, “Using Multimedia” for instructions on using this application.

Microsoft Works

Microsoft Works gives you all that you need to create forms, format letters, start a data base and pull it all together to create reports. Works includes a word processing program, data base program, and sets of preformatted documents for you to use. (Available in Windows 95-only systems.)

> NOTE Windows 95-only systems are available exclusively in the United States.

Microsoft Money

Microsoft Money gives you a new option for handling your finances. With this package, you can balance your checking account, track spending trends, and even make payments over the network. (Available in Windows 95-only systems.)

Microsoft Return of Arcade

Provides you with several of the favorite classic computer games, including Pac-Man. (Available in Windows 95-only systems.)

Microsoft Sampler

This CD offers demonstration versions of games and other Microsoft software. (Available in Windows 95-only systems.)

ONLINE SERVICES

In Windows 95 systems, your NEC Versa comes with the most popular online services available including America Online, CompuServe, and AT&T WorldNet Signup. These can be found in the Online Services program group on the desktop. To use the services, you need to install the software. Simply highlight and click on the installation icon and follow the on-screen instructions.

In Windows for Workgroups, online services include the Install America Online and Install CompuServe programs. Simply highlight and click on the installation icon and follow the onscreen instructions.

For a fee, online services give you access to the Internet, e-mail, the World Wide Web, travel information, news reports, and more, depending on the service selected. Some online services give you a free trial period.

> NOTE It is strongly recommended that you install a modem card (or an external serial modem) in your NEC Versa prior to running the online service setup program. As part of the setup program, it recognizes your modem information. If you run the setup program without an installed modem, you will have to manually enter the modem information the first time you use the online service.

Here are the things you must do in order to use an online service:

- purchase and install a modem card into your NEC Versa. Make sure the PC card is connected to a working phone line. The line must be an analog line. If you are unsure what type of line you have, call your local telephone company. You can also use an external modem connected to the serial port.
- set up the selected online service on your NEC Versa using an easy-to-follow setup program.
- select the newly created online service icon, register with the service, and begin your online adventure.

Just follow these steps to set up and use your selected online service:

1. Connect your modem card to a phone line.
2. Continue as follows:
   - From the Program Manager in Windows for Workgroups, locate and double click on the Online Install program group. Double click on the icon for the service you want to install.
   - In Windows 95, press Start, move to the Programs group, slide to Online Install, and slide to the online service group that you want to install. Tap the VersaGlide pad once or click once.
3. The setup screen for the selected online service displays. Follow the on-screen instructions to install the service on your NEC Versa.

   For both Windows for Workgroups and Windows 95, a program group will be created for your selected online service.

4. To use the selected online service, follow the on-screen instructions to log onto the service.

America Online

If you subscribe to America Online, you can use the service to obtain information about NEC and its products. Use America Online to E-mail technical questions to NEC's Technical Support staff, post technical questions and messages on the Message Board, and access the NEC Software Library to download files.

> NOTE If you are using this computer outside North America, there may not be any local access points for this online service. It may require a long distance or international call.

Use the following steps to access America Online and NEC's online information services.

1. Log onto America Online.
2. At the opening screen, click on Go To in the Main Menu.
3. At the Go To menu, click Keyword.
4. At the prompt, type either NECTECH or NEC, then either press **Enter** or click on Go.
5. At the NEC menu, double-click on one of the following topics, then follow the prompts:
   - About NEC
   - Terms and Conditions
   - News

- Product Information
- Questions and Answers
- NEC Web Site
- Message Board
- Software Library.

6. Exit anytime by double-clicking on the rectangle in the upper left corner of the screen.

CompuServe and WOW! from CompuServe

Installation programs for CompuServe, and its youth-oriented counterpart WOW! from CompuServe are part of your Windows 95 software.

If you subscribe to CompuServe, you can use the service to obtain information about NEC and its products. Use CompuServe to E-mail technical questions to NEC's Technical Support staff, post technical questions and messages on the Bulletin Board, and access NEC's Bulletin Board.

> NOTE You cannot download information from the NEC Bulletin Board from CompuServe. You must call the NEC Bulletin Board directly to download information.
>
> If you are using this computer outside North America, there may not be any local access points for online services. It may require a long distance or international call.

Use the following steps to access CompuServe and NEC's online information services.

1. Log onto CompuServe.
2. At the opening screen, click on Service, type in NEC TECH at the prompt, and click OK.
3. At the NEC menu, double-click on one of the following topics, then follow the prompts:
   - NEC Bulletin Board
   - Information About This Service
   - Access NEC BBS
   - Access CompuServe Information Services
   - Exit.
4. Exit anytime by double-clicking on the rectangle in the upper left corner of the screen.

   You may obtain information about NEC and its products by visiting our web site at WWW.NEC.COM.

AT&T WorldNet

One of the world's largest telephone service providers now offers internet access. Click on AT&T WorldNET Signup in the Online Services group to install this software, learn more about it, and sign up with this service. (Available on Windows 95 systems only.)

Netscape Navigator Dial Up Edition

The first time you use Netscape Navigator, you must register your copy of the program and allow the system to detect your modem.

> NOTE Before setting up Netscape Navigator, connect your modem. During the setup procedure, the system tries to detect the modem. If it is not connected, the process stops.
>
> If you connect the modem and the system fails to detect it, open the Windows Control Panel, select the modem icon, and specify your modem type and port.

Set up Netscape Navigator as follows:

- Windows for Workgroups systems — In the Program Manager, double-click the Netscape Navigator icon. Next double-click the Netscape Navigator Install icon to establish dial-up networking services within Windows for Workgroups. When you complete the required information, the system restarts Windows for Workgroups. Continue the installation by running the Account Setup Wizard.
- Windows 95 systems — use the Netscape Navigator Install program in the Windows 95 Programs menu.

  The Install program includes the a Read.me document, Online Books, Account Setup Wizard and Netscape Navigator Install. Choose the Netscape Navigator Install icon first to establish dial-up networking services within Windows 95. When you complete the required information, the system restarts Windows 95. Continue the installation by running the Account Setup Wizard.

The completion of Netscape Navigator Install generates a Netscape Navigator group and a shortcut icon on your desktop.

Official Airline Guide (OAG)

This program demonstrates the convenience of "information to go." You can purchase the full package or subscribe to future releases through the software publisher. The software publisher also provides technical support for these programs.

The Official Airline Guide is an online service that gives you access to flight details for all commercial airlines worldwide. NEC provides a sample of the monthly data that OAG provides. You can call OAG for a free copy of the most current information. OAG offers NEC Versa owners a special rate when they subscribe to OAG for monthly updates.

OAG is an invaluable service for anyone who travels on a regular basis. All you have to do is enter your departure city, destination city, and date. If you have a preferred airline, you can also enter its name. The service then lists all the flights available from the departure city, the times, and the flight numbers. You can also check on seat availability and prices.

1. Access OAG as follows.

   - Purchase and install a modem card into your NEC Versa. Make sure the card is connected to a working phone line.
   - From the Program Manager in Windows for Workgroups, locate and double click on the OAG FlightDisk Worldwide Edition icon in the OAG FlightDisk program group.

- In Windows 95, press **Start**, move the cursor to the Programs group and open the OAG FlightDisk group. In the group, highlight "OAG FlightDisk Worldwide Edition" and release the mouse button.

2. The first time you open OAG, an agreement screen appears. Follow the on-screen instructions.
3. In the Trip Plan screen, fill in the fields with the trip information requested. Press **Enter** after making selections from the available drop-down lists.
4. To retrieve seat availability and price information, press the appropriate button.
5. Follow the on-screen instructions to register for a free trial of the OAG travel service.

3 Using Setup and Power Management

Your NEC Versa 2500 Series system comes with a hardware configuration program called Setup that allows you to view and set system parameters. Setup also allows you to set power management levels. This lets you conserve energy, save battery power, extend the life of your LCD backlight, and protect against data loss due to low battery power.

The chapter describes these NEC Versa features.

SETUP UTILITY

The NEC Versa Setup program lets you view and set system parameters. Setup also includes security features that protect your system from unauthorized use.

Use 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 Setup

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

```
Press <F2> to enter SETUP
```

The Setup Main screen appears, displaying current parameter settings.

When you press **F2** to enter Setup, the system automatically detects current parameter settings with the Power-On Self-Test (POST).

If the system detects an error during POST, it prompts you with a double beep and a message: "Press <F1> to resume boot attempt, <F2> for Setup." If you press **F1**, POST continues. 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**.

After you press **F2**, the system displays the Setup Main screen.

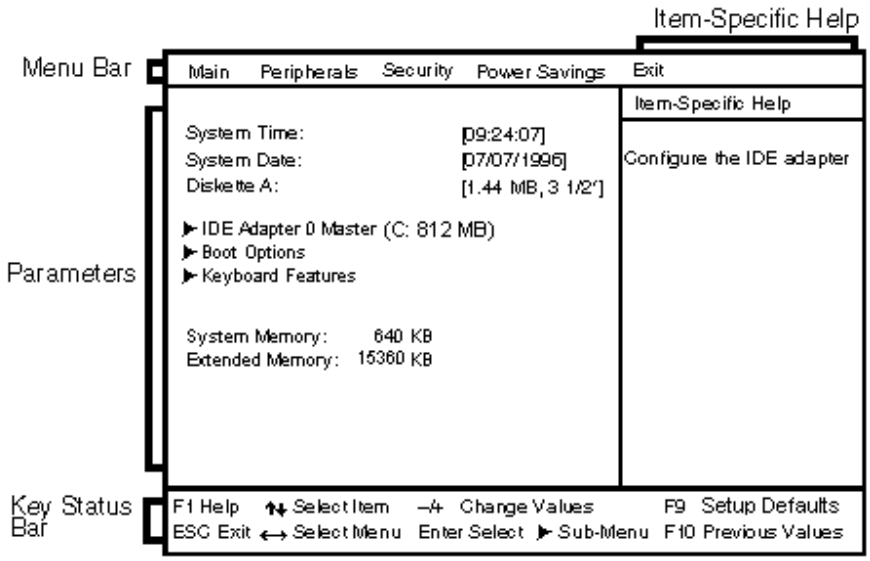
How to Use Setup

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

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

Looking at Screens

Setup screens look similar to the one shown next and have four basic areas.



- Item-Specific Help
  The right part of the screen. This area describes each parameter and its available settings.
- Menu Bar
  The top line of the screen. Each of the five selections displays its own screen.
- Parameters
  The left part of the screen. This area lists parameters and their current settings
- Key Status Bar
  The bottom part of the screen. These lines display the keys available to move the cursor, select a particular function, and so forth.

Using Keys

The following table lists Setup keys and their functions.

Setup Key Functions

KEY	WHAT IT DOES
← →	Chooses a selection from the menu bar.
Home/End	Moves to the first/last parameter on the current screen.
PgUp/PgDn	Displays the previous/next page of the current screen if scrollable.
↑ ↓	Moves the cursor between the displayed parameters.
Enter	Displays additional fields for parameters marked with a ▶.
Tab	For some parameter settings, moves the cursor between the subfields. For example, for System Time, Tab moves the cursor from hour to minute to second.
–/+	Selects the next lower/higher setting.
F9	Selects the default settings for the displayed parameters only.
F10	Selects the settings of the displayed parameters as they were upon entering the screen.
Esc	Displays the Exit screen.
F1	Displays the General Help screen.

Checking/Setting System Parameters

See the following table for a list of parameters, their factory default settings, and alternate settings. As you set each parameter, its available settings are explained in the Item-Specific Help area in the right part of the screen.

Reset the parameters on the displayed screen to their factory default settings by pressing **F9**. Or, reset all parameters by selecting Set Default Values on the Exit screen.

Setup Parameters

PARAMETER	DEFAULT SETTING	ALTERNATE SETTINGS
Main		
System Time	HR:MIN:SEC	
System Date	MO/DAY/YEAR	
Diskette Drive A	1.44MB, 3.5"	Not Installed
IDE Adapter 0 Master Autotype Fixed Disk	Auto	User, CD, None
Boot Options		
Boot Sequence	A:, CD-ROM (If installed) then C:	C: then A; C: only
SETUP prompt	Enabled	Disabled
POSTS Errors	Enabled	Disabled
Keyboard Features		
Numlock	Off	On
Keyboard auto-repeat rate	30 per second	2, 6, 10, 13.3, 18.5, 21.8, 26.7, 30 per second
Keyboard auto-repeat delay	1/2 second	1/4, 1, 3/4 second
System Memory	640 KB	
Extended Memory	15360 KB	
Peripherals		
Serial Port	3F8, IRQ 4	2E8, IRQ 3; 3E8, IRQ 4; 2F8, IRQ3; Disabled
Infrared Serial Port	2F8, IRQ 3	3F8, IRQ 4; 2E8, IRQ 3; 3E8, IRQ 4; Disabled
Parallel Port	378, IRQ 7	278, IRQ 5; 3BC IRQ 7; 378, IRQ 5; Disabled
Parallel Mode	ECP	Enhanced, Bi-directional, Unidirectional
Diskette Controller	Enabled	Disabled
IDE Adapter	Enabled	Disabled
On Board Audio	Enabled	Disabled
I/O Channel	220h	230h; 240h; 250h
IRQ Channel	IRQ5	IRQ7; IRQ10; IRQ9
DMA Channel	DMA CH1	DMA CH3; DMA CH0

PARAMETER	DEFAULT SETTING	ALTERNATE SETTINGS
MPU I/O	300h	310h; 320h; 330h
Game Port	Enabled	Disabled
Display to TV	Disabled	NTSC; PAL
Plug & Play O/S	No	Yes
Security		
User Password is	Disabled	Enabled
Set Password	Press **Enter**.	
Password on boot	Disabled	Enabled
Password on resume	Disabled	Enabled
Power Savings		
Power Savings	Disabled on AC	Disabled/Enabled
Standby Timeout	2 min.	1, 4, 8, 16 min., Off
Auto Suspend Timeout	2 min.	1, 4, 8, 16 min., Off
Suspend Mode	Suspend	Save to File
Hard Disk Timeout	2 min.	1, 4, 8, 16 min., Off
Video Timeout	2 min.	1, 4, 8, 16 min., Off
Cover Switch Control	Backlight Off	Suspend
Serial Port Ring Resume	Off	On

Main

The Setup Main screen displays the System Time and System Date parameters as well as drive parameters.

- Time/Date
  Use System Time and System Date to set the current time and date. The settings remain in memory even after you turn off system power.

  To set the time, enter the current hour, minute, and second in *hr*::*min*:*sec*, 24-hour format. Use the Tab key to move from field to field. For example, type **13:30:00**, tabbing from field to field for 1:30 p.m.

- To set the date, enter the current day, month, and year in *mo*/*day*/*year* format.

The drive parameters let you check and change settings for your drives, including the internal hard drive, diskette drive, or the CD-ROM reader.

Boot Options lets you specify the boot sequence that the system follows. For example, you specify if the system looks only to C: drive for start up information, or if it looks to the diskette drive first. Boot options also let you specify whether the setup prompt to press F2 appears. You can also have the system stop during POST if an error occurs.

Peripherals

The Peripherals screen displays the connection location between the system and the Input/Output (I/O) ports.

Security

Your NEC Versa supports a password for system security on several levels. Using the Security screen, you can require that a password be entered

- to use Setup
- at each startup or boot
- each time the system resumes from Suspend mode.

You are not prompted to enter a password until you set an initial password. Your system is not protected until you set a password.

Once you set a password, you must enter it before you can enter Setup; this feature allows only an authorized user to change system parameters. In addition, you can choose to require the password be entered each time you start the system and each time the system resumes from Suspend mode.

Setting an Initial System Password

Set an initial password as follows.

1. Select Security from the menu bar.
2. Select "Set Password" by pressing **Enter**.
3. At the prompt, enter a password up to seven characters long. Then, as prompted, reenter your password for verification. Write your password down and keep it in a secure place in case you forget it.
4. Press **Enter** to return to the Security screen.
5. If you want to require the password each time you start your system, move the cursor to “Password on boot” and select “Enabled.”
6. If you want to require the password each time the system resumes from Suspend mode, move the cursor to “Password on Resume” and select “Enabled.”
7. Press **ESC** to display the Exit screen. Here you can select “Save Changes and Exit” to save your password and reboot your system.

   You will have three attempts to enter the password correctly. After the third attempt, the system will be disabled. Press the Power button to reboot the system and try to reenter the password.

Removing a Password

To remove a password, press **Enter** at “Set Password.” Press **Enter** at “Enter new password” and press **Enter** again at “Re-enter new password.” Your password clears and you are no longer prompted to enter one.

You can also use the “Enter new password” and “Re-enter new password” prompts to change to a new password.

Power Savings

The Power Savings screen lets you balance high performance and energy conservation using parameters including the following.

> NOTE Some operating systems such as Windows for Workgroups and Windows 95 have their own power management software which overrides CMOS settings. In this case, be sure to set your desired power management settings accordingly.

- Power Savings -- This option lets you turn on and off power management features. You can specify that power management is enabled all the time (Enabled) or disabled all the time (Disabled). You can also disable power management when using AC power.
- Suspend Mode -- Suspend mode includes a method of operation called Suspend/Resume that stores information in RAM and maintains RAM contents after shutting down all local devices. You can also select Save to File, which saves all your open data files to a special file on the hard disk whenever the system goes into Suspend mode. All your data is automatically recovered from where you left off when you Resume.

Power Savings also lets you set timeouts for various peripherals and control the cover switch function.

USING POWER MANAGEMENT

Power Management in the NEC Versa lets you conserve energy, save battery power, extend the life of your LCD backlight, and protect against data loss due to low battery power.

You can set some features to function automatically or activate them manually with the keyboard or a button.

It is wise to keep your Power Management features enabled, even when using AC power.

Power Saving Modes

The NEC Versa has three different power consumption states, these include:

- Active Mode — All components are turned on and active.
- Standby Mode — This mode eliminates unnecessary power consumption when you operate the system on battery or AC power. Standby mode shuts down the LCD panel, providing privacy as well as power savings.
- Suspend Mode — This power-saving mode shuts down all possible devices in the system while retaining data and system status.

  The system resumes Active mode when you press **Fn-Esc** or any key, the system detects a modem ring, or you press the Power button. Suspend mode lets you save power without first saving the working data.

  Press the **Fn-Esc** to enter 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. You can toggle between Suspend mode and Active mode.

You can set your system to enter Suspend mode automatically after a specified number of minutes of system inactivity. You specify how long system inactivity elapses before the system enters Suspend mode. System activity includes keyboard, VersaGlide, diskette or hard disk drive access, PCMCIA modem, network, or LAN card, serial, or printer port communications.

Power Management Settings

The system arrives set up with many power-saving features already enabled. You can change the timeout period for these devices using Setup. See the following table.

Automatic Power-Saving Features

Device	Default Timeout	Comment
Standby Timeout	2 minutes	System enters Standby mode after total system inactivity.
Auto Suspend Timeout	2 minutes	This settings specifies how long the system remains in Standby mode before entering Suspend mode.
Hard Disk Timeout	2 minutes	Hard disk motor stops when hard disk is not accessed for specified timeout.
Video Timeout	2 minutes	The video screen shuts off after the timeout specified elapses.

In Windows 95 systems, power management settings under Windows override the settings established in Setup. Make the Windows 95 power saving settings match those in Setup for the best results.

Using Fn-Esc

Press the **Fn-Esc** to put the NEC Versa into 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. Press the key combination again to bring the NEC Versa out of Suspend mode.

Suspend mode shuts down all possible devices in the system while retaining data and system status. The screen goes dark when the system is in Suspend mode.

> NOTE If the system goes into Suspend while in CRT-only display mode (**Fn-F10**), it resumes in the same mode whether or not the CRT is still attached. Press **Fn-F10** to toggle to LCD or LCD/CRT mode.

4 Using Your NEC Versa Computer

The more you use your NEC Versa 2500 Series system, the more proficient you will become at everything — from using function keys to setting up presentations.

This chapter gives concise information on these and other important tasks, including how to use:

- the LCD panel
- the keyboard
- the NEC VersaGlide
- drive bays
- the *optional* 8X CD-ROM reader
- PC Card slots
- IR port.

In addition, this chapter focuses on installing options, expanding hard disk space and memory.

LCD

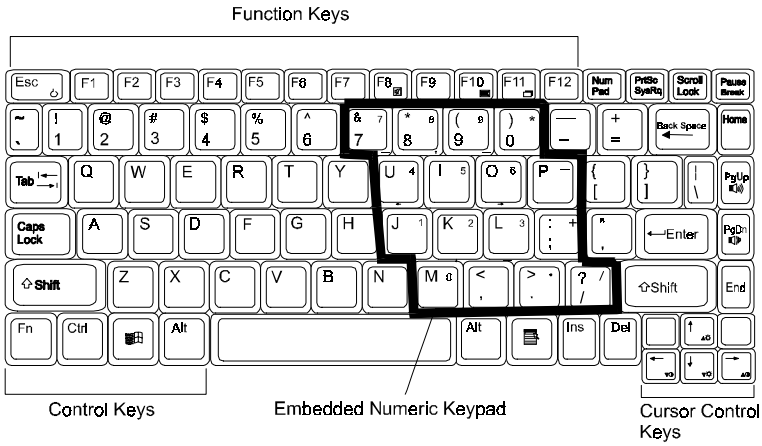
The LCD panel on your NEC Versa 2500 Series system is fully adjustable to provide comfortable viewing. To adjust the viewing angle, gently push the LCD panel into position.

KEYBOARD

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

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

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



Keyboard

Function Keys

A number of function keys (**F1** through **F12, Esc, PgUp, PgDn, NumLock)** are available on the NEC Versa keyboard. These keys work together with the **Fn** key to activate special functions. Keys that are preprogrammed with dual functions have an icon representing the function printed in blue on the key.

Function keys **F1** through **F12** 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 pre-programmed for the NEC Versa.

  Fn-Esc — puts the system into Suspend mode; resumes system operation when pressed a second time. (The Power button also acts as a Resume switch when your system is in Save-to-Disk mode.)

  Fn-F8 — toggles the battery low warning speaker on and off.

  Fn-F10 — toggles between using the LCD display panel, an external CRT monitor, or both simultaneously.

  Fn-F11 — toggles the LCD display panel backlight on and off.

  Fn-NumLock — activates the embedded numeric keypad.

  Fn-PgUp — increases speaker volume.

  Fn-PgDn — decreases speaker volume.

- Windows 95 keys — You can use the following two key combinations to facilitate your work

  — Shortcut/Application key– provides quick access to shortcut menus. (This key acts like a right mouse button.)

  — Floating Window key – displays the Start menu.

- Cursor Control keys — Cursor control keys let you position the cursor on the screen where you want. On the screen, the cursor is a blinking underline, block, or vertical bar depending on the application. The cursor indicates where the next text typed is inserted.

  When combined with the **Fn** key, the cursor control arrows also let you control LCD contrast and brightness as follows:

  — **Fn-↑** increases LCD brightness.

  — **Fn-↓** decreases LCD brightness.

  — **Fn-→** increases LCD contrast.

  — **Fn-←** decreases LCD contrast.

- Typewriter keys — The typewriter keys (also called alphanumeric keys) are used to enter text and characters. Keys that have blue printing on them behave differently when combined with control keys or **Fn**.

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

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

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

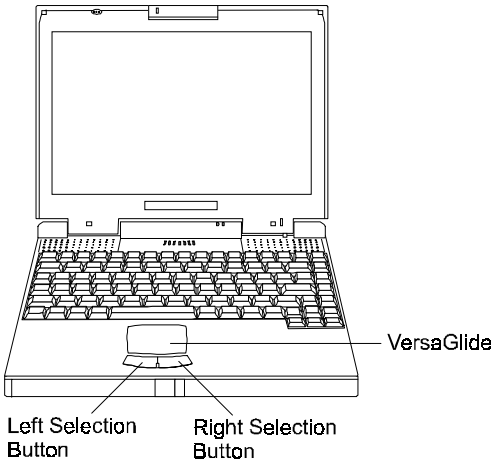
  To use the functions printed on the front of the keys, press **Fn** and the key. (These functions are not available when NumLock is enabled.)

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

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. You can select items in one of two ways:

- Double tap your finger on the VersaGlide.
- Double click the left button (this is the primary button).



VersaGlide features

Try both ways and decide which you prefer. If you find the double tap difficult to use, go to the next section for general directions about adjusting the touchpad properties.

> NOTE If you install another mouse driver over the shipping default, the double-tap capability is lost.

Making VersaGlide Adjustments

The NEC VersaGlide (also called the Synaptics Touchpad) lets you customize how it functions with the cursor. You can control the size and color of the cursor, cursor speed, double-click speed, and selection button orientation.

You can also disable the touchpad tap and drag feature. Use the online help button for details about configuring your VersaGlide. See the appropriate section that follows for your operating system.

Windows 95 VersaGlide Adjustments

To access and adjust your VersaGlide and cursor, follow these steps.

1. Select “Start,” “Settings,” “Control Panel.”
2. From the Control Panel, tap (or click) on the Mouse icon. A Mouse Properties screen appears.

3. Along the top of the Mouse Properties screen, tabs represent the primary functions available.

   - Button – lets you select or change which button is the Primary or Secondary button. Also lets you modify the speed required when double clicking selection buttons.
   - Pointers – lets you change the pointer scheme and define which symbols you want to use for various Windows tasks.
   - Motion – lets you adjust the pointer speed and specify a short or long pointer trail.
   - Touchpad – lets you change features specific to the touchpad, including touch threshold, tap features, and edge motion properties.
   - General – lets you change or update mouse drivers.

4. Click **OK** or **Cancel** to accept or cancel the adjustments you make.

Another way to reset VersaGlide properties is to select the mouse icon on the bottom right of the system tray. This allows you to view a TouchPad Enhancements menu. This menu gives you immediate access to the Mouse Control Panel, and lets you set Scroll Zone and Speed settings.

Windows for Workgroups VersaGlide Adjustments

To access and adjust your VersaGlide and cursor, follow these steps.

1. From the Program Manager, open the Main program group, and double-click the Control Panel icon.
2. Double click on Synaptics TouchPad icon. A control panel screen appears.

3. Along the top of the screen, tabs represent the primary functions available.

   - Pointer – lets you define the color and size of the on-screen mouse cursor; also lets you set all touchpad settings back to their defaults.
   - Motion – fine-tunes the responsiveness of the screen pointer, VersaGlide double-click speed, cursor acceleration, and extra precision functions for using key/button combinations for some pointer functions.
   - Orientation – adjusts the direction of the pointer device motion (rotation) and lets you specify the Primary and Secondary VersaGlide button.
   - Shortcuts – assigns autojumps and hotspots to reduce the keystrokes or button clicks needed. You can also customize keyboard functions or VersaGlide buttons.
   - Touchpad – fine-tunes VersaGlide movement, including:

     — Edge Motion – helps with long distance cursor movements.

     — Touch Threshold – controls the finger pressure needed for the VersaGlide to respond.

     — Gestures – provides the option of recognizing several gestures that simulate mouse clicks simply by pressing the pad surface.

4. Click **OK** or **Cancel** to accept or cancel the adjustments you make.

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.

DRIVE BAYS

The NEC Versa comes with three drive bays — one in the front of the system and two on the right-hand side. The bays support the following:

- Front Bay — You can install the battery pack or the optional 8X CD-ROM reader into the front bay. Contact your NEC Versa dealer to purchase the 8X CD-ROM reader. To run on battery power while using the CD-ROM reader, insert the battery into the Diskette Drive Bay.

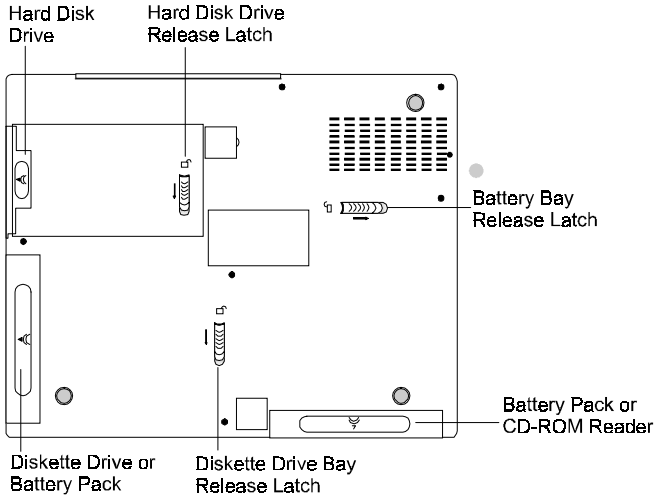
> **⚠ CAUTION**
>
> Install only the battery pack or optional CD-ROM reader in the front bay. **Never** try to put the diskette drive into the front bay. Doing so can damage the drive and the bay connectors.

- Diskette Drive Bay — Your system ships with a standard 3.5-inch 1.44-MB diskette drive already installed in the front bay. You can remove the diskette drive and install an optional second battery pack into this bay.
- Hard Disk Drive Bay — The side bay closest to the back of the system contains the hard disk drive. PC Card slots are located directly above the hard disk drive bay.

Removing Devices from Drive Bays

Use the following steps to remove the diskette drive (or other device) from the drive bay.

1. Make sure the NEC Versa is powered off, all external options are disconnected, and the LCD panel is closed.
2. Turn the system upside down.
3. Locate the bay release latches on the bottom of the unit. Each latch releases the component installed in its associated bay.



Bay release latches

4. Slide the bay release latch and hold it.

5. Firmly grasp the device and pull it away from the system. Each device has a depression marked with a direction icon, **))>,** for easy removal.

> NOTE If you release the latch before completely removing the device, the device casing catches.

Installing Devices in Drive Bays

Use the following steps to install a device in a drive bay.

Your system must be powered off before removing or inserting devices in drive bays.

1. Verify that system power is turned off and the LCD panel is closed. Turn the system upside down.
2. Align the device in the bay you plan to use. Push the device into the bay until it locks into place.
3. Turn the system over, open the LCD panel (if needed), and power on the system.

Customizing Your System

It's easy to customize your NEC Versa 2500 Series system using the drive bays. You can work with AC power and have the diskette drive installed. If you need additional battery power, you can remove the diskette drive and plug in an optional second battery pack. Do so as follows:

1. Remove the standard diskette drive or CD-ROM reader from the drive bay as described in the previous section.
2. Align the option with the drive bay opening and push it in until the option clicks into place.
3. Turn the system over and power on.

OPTIONAL 8X CD-ROM READER

You can purchase the optional 8X CD-ROM reader from your local NEC Versa dealer. The 8X CD-ROM reader features the latest in CD-ROM technology. The CD-ROM reader is assigned the drive letter E: in Windows for Workgroups systems. It is assigned to the next available drive letter in Windows 95 systems.

Use the CD-ROM reader to load and start programs from a compact disc (CD). You can also use the CD-ROM reader to play your audio CDs (see "Audio CDs" in this chapter). The optional 8X CD-ROM reader is compatible with Kodak Multi-session Photo CDs™ and industry data and audio CDs.

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

The CD ROM reader is a Class 1 Laser Product.

CD-ROM reader features include the following:

- Release Button — ejects the CD tray. Press this button when power is on to insert a CD into or remove a CD from the reader.
- Emergency Eject Hole — allows you to manually remove a CD from the reader if the eject function is disabled by software or a power failure occurs. (Available on most CD-ROM readers.)

  To remove a CD, insert the end of a paper clip into the eject hole, and push in until you hear a click. Now you can manually open the drawer.
- 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 optional 8X CD-ROM reader, follow these steps.

1. Press the release button and pull the CD tray out from the reader door.
2. Put your CD, printed side up, into the circular impression in the tray.
3. Push the CD tray in until it clicks shut.

> NOTE Some CDs vibrate when playing. This does not affect CD-ROM reader functioning.

Using Audio CDs in Windows for Workgroups

Follow these instructions to play audio CDs in Windows for Workgroups. The first time you play an audio CD, you need to add the device to the Media Player's Device option list or select the icon Audio Rack. Follow these steps to do so. You only need to perform this procedure the first time. After that, go directly to "Playing the CD." For more details, see your *Microsoft Windows 3.11 User's Guide.*

Adding the CD Audio Option

Add the CD Audio option to the Media Player's Device list as follows:

1. Insert the audio CD into the CD-ROM reader tray.
2. From the Program Manager, open the Main program group and double click the Control Panel icon.
3. Double click the Drivers icon and select Add.

4. Scroll through the list of drivers and highlight **[MIC] CD Audio** and click "OK."

   A message similar to the following appears:

   One CDROM drive was detected. Installation is complete.

   If you see a prompt stating that the mcicda.drv is already on the system, select "New."

5. Press "OK" and close the Control Panel.

6. Go to the next section, "Play Audio CDs."

Playing Audio CDs

Play audio CDs in Windows for Workgroups as follows:

1. If you have not yet done so, insert a CD into the tray.

2. Double click the icon Audio Rack.

3. Click the Play button.

Using Audio CDs under Windows 95

Follow these instructions to play audio CDs in Windows 95. For more details, see your *Microsoft Windows 95 User's Guide*.

1. Double click the Audio Rack 32 icon.

2. Click the Play button.

Playing Entertainment CDs using Windows 95

Use the following steps to run a game or educational CD.

1. Press the Stop/Eject button to open the CD tray. Insert a CD into the tray. Push the CD tray in until it clicks shut.

2. Follow the installation instructions that come with your CD-ROM title. For example, you will have to enter the drive letter assigned to the CD-ROM reader.

3. Exit the setup utility. Select **Yes** to save your settings.
4. Click on the game icon created when you ran the CD title's setup utility. You are now ready to play!

CD Care

When handling CDs, keep the following guidelines in mind.

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

PC CARDS

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

Type II Cards

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

Type II Extended Cards

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

Type III Cards

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

- Network Cards
- Fax/Modem Cards

  You can insert a fax/modem in either slot.

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

PC Card Modems

You can use a PC card modem with your NEC Versa to communicate with others via fax, e-mail, 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.)

Storage Cards

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

The following table provides sample drive designations.

Sample Drive Designations

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

Interface Cards

You can connect most standard Small Computer System Interface (SCSI) devices using the optional NEC PCMCIA SCSI card. This PC card is also known as the New Media "Visual Media" 500-KB Card.

Other Cards

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

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

PCM Plus Drivers

The PCM Plus drivers are installed on your system. When installed, the program assigns parameters to the driver, indicated such things as memory allocation, slot assignment, and address size.

> NOTE The following drivers do not apply to the Windows 95 operating environment.

PCM Plus Drivers

DRIVER	PURPOSE
CNFIGNAM.EXE	Specifies which PCM Plus configuration should be accessed from the PCM.INI file.
PCMATA.SYS	Used with SRAM, rotating disk cards, or solid-state mass storage cards for IDE hard disk emulation.
PCMCSFUL.EXE or	Supports Card Services. Works at the

PCM Plus Drivers

DRIVER	PURPOSE
PCMCS.EXE	operating system level to manage all PC cards. PCM Plus installs PCMSFUL only if you plan to use Flash memory cards. Otherwise, it installs PCMCS.
PCMFFCS.EXE	Acts as a high-level bridge between MSFLASH.SYS and Card Services.
DRIVER	PURPOSE
PCMMTD.EXE	Supports the Microsoft Flash File System (FFS) protocol. Used with SRAM and Flash memory cards.
PCMRMAN.SYS	Initializes the Card Services resource database.
PCMSCD.EXE	Used with Fax/Modem and LAN cards.
PCMSS.EXE	Supports Socket Services. Works at the BIOS level as an interface between the PCMCIA card socket and the Card Services program.

PC Card Enablers

Some PC cards have custom software written by the card manufacturer, known as *Enablers*, instead of Card and Socket Services. This custom software works well if only one or two PC cards are used on a particular system.

Although many of these were considered compliant with PCMCIA Release 2.0 specifications, they did not provide a truly compatible environment for exchanging and sharing PCMCIA operations. The following are some guidelines for using PC cards with Enablers.

- Do not use more than one Enabler at once unless you know what system resources are used by each Enabler. One Enabler may crash another if there is a conflict.
- Hot swap may not work with some Enablers.

- An Enabler may only work in Windows Standard Mode.
- Enablers have minimal memory requirements. For example, they require as little as 4 KB for a modem, 16 KB for Ethernet, and 24 KB for Token Ring.

Know your system resources (see the CONFIG.SYS file); command line arguments cannot use resources being used by other devices.

Disabling Preloaded PCMCIA Drivers

You can disable all of the PCMCIA drivers that come preloaded in your NEC notebook computer. However, doing so limits some of the flexibility of PCMCIA. You can still use PC cards that have Enabler software, but you can install and run only one at a time. The card must rely on the software supplied by the card vendor (Enablers).

Remove the preloaded PCMCIA drivers by modifying the CONFIG.SYS file as follows.

1. Select the File menu in Windows Program Manager.
2. Select Run, type **sysedit** in the command line, and press Enter. This should take you to the System Configuration Editor.
3. Click on the CONFIG.SYS window and scroll down to the following line:

   ```
   ====== PCMCIA Device Drivers ======
   ```

4. Type **rem** for "remark" in front of all lines showing PCMCIA device drivers. This tells the operating system to ignore those lines.
5. Save and exit the file.
6. Reboot the system for the changes to take effect.

PC Card Slots

Your NEC Versa integrates two PC card slots for inserting two Type II PC cards or one Type III PC card.

> NOTE This 32-bit structure is backward compatible, but also accepts new cards.

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

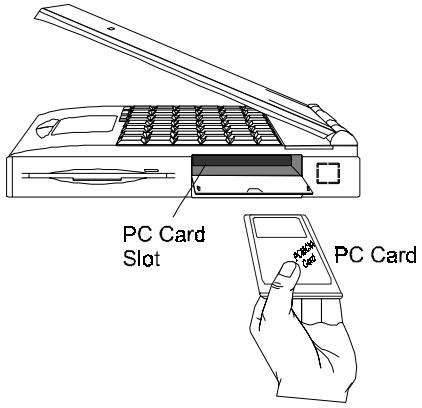
Inserting a PC Card

To insert a PC card, open the slot cover and follow these steps.

> NOTE NEC recommends that you keep the PC card slot cover open if you are using a PC card for a long period of time. Some PC cards can overheat and damage the system.

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

> **⚠ CAUTION**
>
> When pushing the PC card into the slot, be careful not to press the Power button on the other side of the unit. This can accidentally power off the system.
>
> Other two-tone sequences such as high, then low tones indicate that the card is inserted, but the card type is unknown.



Inserting a PC card

3. You can use the Phoenix Card Manager software preinstalled on your system to check PC card slot availability. For example, look for the PCM icon in the Windows Program Manager or the PC Card icon. It shows which slot contains a PC card and which is empty.

Removing a Card

Remove PC cards from Windows for Workgroups (Windows 3.11) systems as follows. Go to step 3 for Windows 95 systems.

1. To remove the card, press the eject button on the side of the slot. A double tone sounds.
2. Pull the card firmly out of the slot.

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

Or, remove PC cards from Windows 95 system as follows.

3. From the screen, select "My Computer," then "Control Panel."
4. Select the PC Card icon.
5. Select the PC Card to remove and select "Stop." Windows 95 alerts you if any applications are still using the card. If all applications using that card are closed, services for that card are shut down, and you get a message telling you it is safe to remove the card.
6. Press the button on the side of the PC card in the slot.
7. Pull the card out of the slot.

IR Port

The IR port on the back of your system lets your NEC Versa 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.

When your NEC Versa ships, the IR port is enabled.

For the infrared technology to work, follow these guidelines:

- position the NEC Versa no more than three feet way from the IR peripheral device you are using, also
- keep the IR ports between the computer and the device parallel.

The LapLink software that ships with your NEC Versa system provides ways for you to use the IR port. Read the instructions in Chapter 2, "How to Use LapLink."

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 with a drive with greater storage capacity. See the section "Drive Bays" for details about removing a hard disk drive and adding a new one. After you install the drive, you may need to go into Setup to specify your new drive type.

Installing a Memory Module

Your NEC Versa comes standard with 16 megabytes (MB) of Extended Data Out (EDO) memory. This new technology gives your system higher performance. You can increase system memory to a maximum of 48 MB by installing two double inline memory modules (DIMM) in the system.

The following module capacities are available:

- 8-MB memory module
- 16-MB memory module.

NOTE Always use modules of the same capacity when installing two modules. Modules with different capacities that are installed together do not work properly.

Install DIMMs as follows.

1. Make sure the system is powered off and that no peripheral devices are attached.
2. Open the LCD panel.
3. Locate the two speaker caps. Slide each one away from the system and pop it off the unit.
4. Gently lift the edge of the keyboard nearest the LCD up, turn it upside down, and rest it on the VersaGlide. Be careful not to twist the keyboard cable.

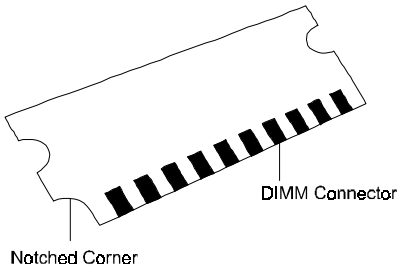
⚠ CAUTION

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

5. Locate the LED guard and pry it up and off of the system.
6. Locate the DIMM sockets. The top socket is connector 0 and should be used when installing only one module.

   The bottom socket sits a little in front of the top socket for easier access. However, installation for both sockets is the same.

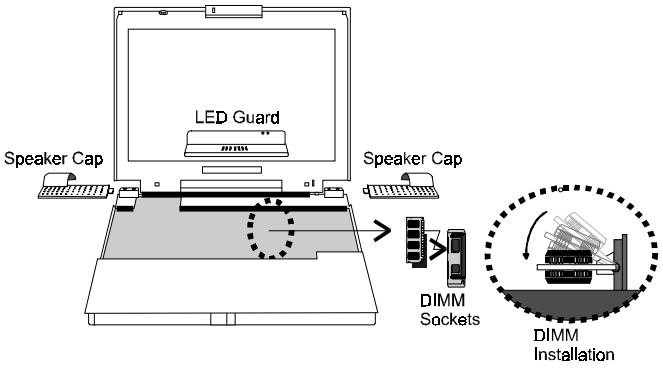
7. Locate the notched corner on the DIMM.



DIMM features

8. Hold the notched corner towards the front of the system and insert the module as follows:

   - Hold the DIMM at a 60 degree angle and align the DIMM connector with the socket in the system. Push the connector into the socket.
   - Press down on the DIMM until the locking tabs on the sides snap into place, securing the module.



Inserting DIMMs

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

9. Replace the NEC Versa components as followins.
   - Snap the LED guard back into place.
   - Gently reposition the keyboard.
   - Slide the speaker caps from the sides of the system over the speakers.
10. Run the Setup program to register the new memory.

Reviewing the 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.

Memory Map

MEMORY SPACE	SIZE	FUNCTION
00000000h-0009FFFFh	640 KB	Base Memory
000A0000h-000AFFFFh	64 KB	Video Memory (graphics)
000B0000h-000B7FFFh	32 KB	Upper Memory Block (UMB)
000B8000h-000BFFFFh	32 KB	Video Memory (text)
000C0000h-000CBFFFh	48 KB	Video BIOS
000CC000h-000D0FFFh	20 KB	PCMCIA Window (available as UMB in Windows '95)
000D1000h-000E3FFFh	76 KB	Upper Memory Block (UMB)
000E4000h-000FFFFFh	128 KB	System BIOS ROM
00100000h-02FFFFFFh	47 MB	Extended Memory

INSTALLING OPTIONS

The back of your NEC Versa notebook provides industry-standard connectors so that you can integrate the following.

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

In addition, NEC offers the NEC Port Replicator 2400 which was developed to work specifically with your NEC Versa.

See the following sections for steps on using the options.

External Monitor

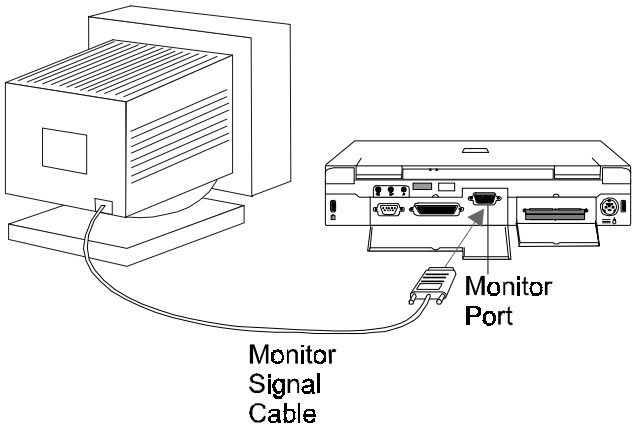
You can add a standard external monitor to your NEC Versa. You need a display signal cable (usually provided with the monitor). One end of the cable must have a 15-pin connector for the system.

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.

> NOTE The NEC Versa must be powered off while the monitor is being connected.

2. Open the 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 monitor.
7. Power on the NEC Versa.

Press the **Fn-F10** function key combination to toggle between the LCD, CRT, or simultaneous display on both.

Printer

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

Parallel Devices

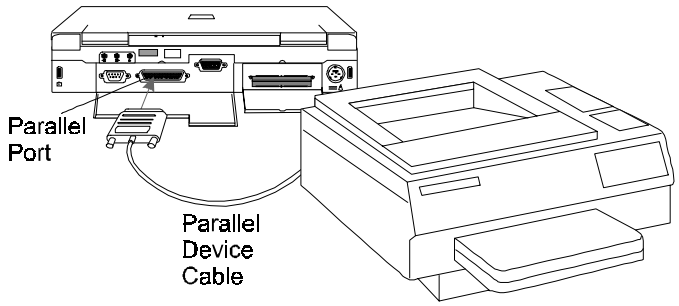
To install a parallel device, such as a printer, you need a cable with a male 25-pin connector for the system and, for some parallel printers, a Centronics®-compatible 36-pin connector.

> 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 both the NEC Versa and parallel device power are off.
2. Open the 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 device

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

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

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

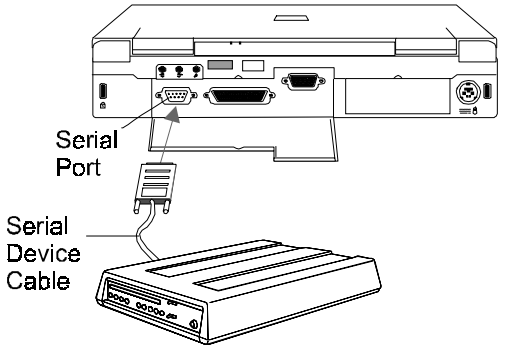
Serial Devices

To install a serial device such as a printer or an external mouse, you need a cable with a female 9-pin connector. See the information under "Serial Mouse Use" following the device connection instructions.

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

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

1. Check that both the NEC Versa and the device power are off.
2. Open the 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 printer is online before trying to print. See the printer guide for instructions.

Serial Mouse Use

In addition to the standard PS/2-style mouse, your system also supports a serial mouse. To use a serial mouse, you must make a few software adjustments to allow your system to recognize the serial mouse.

Prepare your system for serial mouse installation as follows:

1. Turn off system power and attach the serial mouse to the external COM port on the back of the system.
2. Power on your system and boot into Windows.
3. Go to one of the next sections and follow the instructions that are appropriate for your system (either Windows 95 or Windows for Workgroups).

Windows 95 Systems

Follow these instructions to add a serial mouse to your Windows 95 system.

1. From the Windows 95 Start menu, select Settings and then Control Panel.
2. Double click the Add New Hardware icon.
3. Press the **Next** button to begin installing the hardware. Press **Next** again to allow Windows to automatically detect the new hardware. Press **Next** a third time to begin the detection process.

4. Once detection is complete, press the Finish button. Both the serial mouse and the NEC VersaGlide touchpad will function.

   If you remove the serial mouse and restart your system, the mouse icon appears in the device manager list with a circled exclamation point over it. This indicates that the mouse is not available.

MS-DOS Mode

To use the serial mouse in MS-DOS mode for Windows 95 systems, you must modify the MS-DOS start file. Modifying this file disables the VersaGlide touchpad in MS-DOS mode. (It is still available in Windows.) Therefore, to access VersaGlide functions in MS-DOS mode, you must change your system start file back to its original form.

Follow these instructions to use a serial mouse in MS-DOS mode.

1. With system power turned off, connect the serial mouse to the COM port and power on your system.
2. From the Windows 95 Start menu, select Programs and the MS-DOS Prompt to open the MS-DOS window.
3. At the C:\WINDOWS> prompt, type the following command and press **Enter**.

   edit dosstart.bat

4. Locate the following line in the dosstart file:

   C:\SYNTOUCH\SYNTOUCH

5. Modify the line by adding **/C1** to the end of the line. The line should look like the following:

   C:\SYNTOUCH\SYNTOUCH /C1

6. Press **Alt**, **F**, and **X** to exit. Press **Y** to save changes.

7. Type **exit** and press **Enter** to return to Windows 95.

   Whenever you restart your system in MS-DOS mode, the serial mouse is available; the VersaGlide is not.

To enable the VersaGlide in MS-DOS mode, remove the /C1 that you added from the line in dosstart. This disables the serial mouse in MS-DOS mode and enables the VersaGlide.

Windows for Workgroups Systems

Follow these instructions to add a serial mouse to your Windows for Workgroups system. Adding a serial mouse and modifying the AUTOEXEC.BAT file as described here disables the VersaGlide. If you boot your system without the serial mouse attached, you will have no VersaGlide or mouse functions.

1. From the Program Manager File menu, select Run.
2. Enter the following command and press the OK button.

   sysedit

3. Locate the following line in the AUTOEXEC.BAT file:

   C:\SYNTOUCH\SYNTOUCH

4. Modify the line by adding ***/C1*** to the end of the line. The line should look like the following:

   C:\SYNTOUCH\SYNTOUCH /C1

5. Press File, Exit, and Yes to save the change.
6. Press **Alt-F4** and press the **OK** button to exit Windows.
7. Press **Ctrl-Alt-Del** to reboot your system and wait for Windows to reload.
8. Setup your serial mouse drivers as follows:

- In the Main program group, double click Windows Setup. From the Options pull-down menu, select Change System Settings.
- Press the down arrow next to the mouse field. Locate and highlight the following line:

  Mouse Systems serial or bus mouse
- Press OK.
- Press Current (if available).
- Press Restart Windows.

To use the serial mouse functions to regain use of the VersaGlide, follow these steps. (If you restarted your system with no mouse attached, go to the next section.)

1. From the Main group, double click Windows Setup. From the Options pull-down menu, select Change System Settings.
2. Press the down arrow next to the mouse field. Locate and highlight the following line:

   Synaptics Touchpad
3. Press OK. Press Current (if available). Press Restart Windows.

   Once Windows restarts, the VersaGlide is enabled and the serial mouse is disabled.

If you boot your system with no serial mouse attached and would like to regain use of the VersaGlide, proceed as follows:

1. From the Windows Program Manager, press **Alt-F4** and **Enter**.

2. At the prompt, type the following and press **Enter**.

   cd \windows

3. Type the following and press **Enter**.

   setup

4. Press the up arrow to move the highlight to the mouse field and press **Enter**.

5. Use the down arrow to locate and highlight Synaptics Touchpad and press **Enter**.

6. Press **Enter** to accept the current list. Press **Enter** again to keep the current driver.

7. At the DOS prompt, type **win** and press **Enter** to restart Windows. Once Windows restarts, VersaGlide functions return.

External Keyboard/Mouse

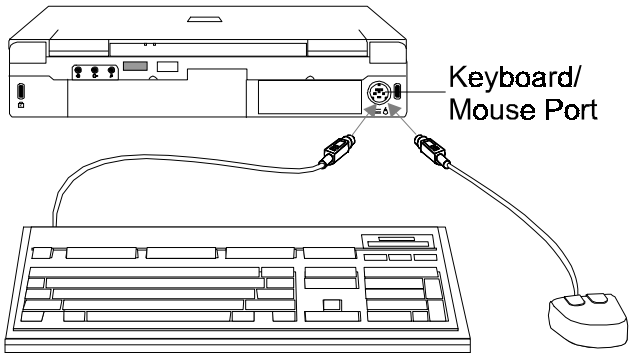
You can add a full-size PS/2-style keyboard or PS/2-style mouse to your NEC Versa.

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

To attach both an external keyboard and a external mouse at the same time, use the optional NEC Y-adapter. Contact the authorized NEC dealer in your area for information.

Follow these steps to connect an external keyboard/mouse to your system.

1. Connect the keyboard/mouse cable connector to the keyboard/mouse port on the system.



Connecting an external keyboard/mouse

2. If power is turned off, power on the NEC Versa to resume operation.

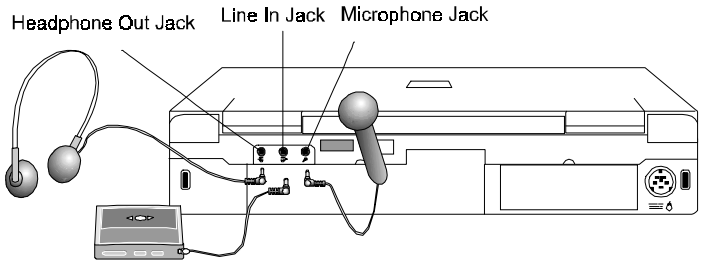
The system immediately recognizes the keyboard/mouse.

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 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 port on the back of the system.



Audio ports

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

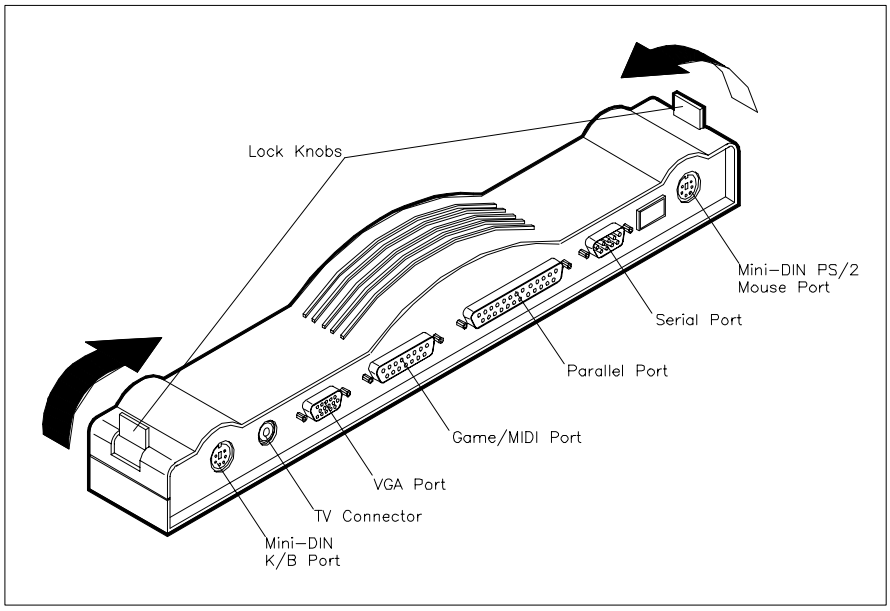
NEC Port Replicator 2400

The NEC Port Replicator™ 2400 is an options that duplicates the ports found on the back of your NEC Versa 2400 Series system. Keep the NEC Port Replicator 2400 in your office connected to peripherals while you take your NEC Versa on the road. (Replicator ports are described in the next section.)

Using the Port Replicator 2400

Follow these steps to install the optional port replicator.

1. Plug the port replicator into the expansion connector on the back of the NEC Versa 2500 Series computer.
2. Press the two Lock Knobs on both sides to connect the port replicator.



Port Replicator ports and lock knobs

The ports on the port replicator are described next.

- Mini-DIN K/B Port — Connects to a 6-pin standard PS/2 101 keyboard.
- TV Connector — Connects to an NTSC or PAL television. Please follow the instructions listed later in this sheet to setup your computer for TV mode.

- VGA Port — Connects an external VGA/SVGA monitor to your notebook computer.
- MIDI Game Port — Connects a joystick or MIDI device to your notebook computer.
- Parallel Port — Connects a printer to your notebook computer. You can change the LPT Mode in the Setup program.
- Serial Port — Connects a serial device to your notebook computer, such as an external modem or mouse.
- Mini-DIN PS/2 Mouse Port — Connects to a PS/2 mouse.

Using TV Output

To use your TV or VCR as an output device with your NEC Versa 2500 Series computer and port replicator, you must first complete the following

- change video settings to 640x480 pixels, 256 colors
- connect the NEC Versa 2500 Series computer to the TV
- set the NEC Versa 2500 Series system BIOS to TV mode

These steps are described in detail next.

NOTE TV and LCD screens use different video resolutions. Therefore, you may lose the top or bottom part of the video image or program you're trying to view. For example, in Windows 95, if the Start icon is normally positioned at the bottom of the screen, you will need to reposition it by placing the cursor over the icon and using the two-sided arrow to move it up.

Changing Video Settings

Use the instructions that follow to change video setting for your operating system.

For Windows 95 Users Only

1. Click on the Windows 95 Start icon and select "Settings," then click "Control Panel."
2. Double click the Display icon and select the "Settings" tab.
3. Use your mouse and position the cursor on the arrow in the Desktop area. Move the arrow to the left, or toward "less" until the display reads 640x480 pixels.
4. Use your mouse and position the cursor on the arrow in the Color palette area. Select "256 colors."
5. Click "Ok."
6. If prompted, restart your computer.

For Windows for Workgroups Users Only

1. In the Main program group double click the Windows Setup icon. Next click "Options," and "Change System Settings."
2. Select the Display menu to view a list of video drivers.
3. Select "CHIPS 65GDX-PCI 640x480x256."

4. Click “Ok.” Click “Current.”
5. Click “Restart Windows” for the new video settings to take effect.

> NOTE If a laplink remote message displays, just click “No” to continue.

6. Go on to the next set of instructions to connect the NEC Versa 2500 Series computer to a TV or VCR.

Connecting Your Notebook to a TV

Use these steps to connect your NEC Versa 2500 Series computer to a TV or VCR. You will need an RCA-to-RCA type cable to complete this procedure. You can purchase one of these at a local video supply store.

1. Power off your computer.
2. Connect the port replicator to the computer via the expansion connector on the back of the system.
3. Use an RCA-to-RCA type cable and connect one end to the port replicator’s TV connector.
4. Connect the other end to the video input connector on the TV or VCR.
5. Go on to the next set of instructions to set the computer’s system BIOS to display in TV mode.

Setting the System BIOS to TV Mode

Complete these steps to set the computer’s system BIOS to display in TV mode using the computer’s Setup utility. If you’d like more information on Setup, see Chapter 3, “Using Setup and Power Management.”

1. Power on your NEC Versa 2500 Series computer.
2. When you see the "System BIOS Shadowed" screen, press **F2** to enter Setup.
3. Use the right arrow key and highlight "Peripherals."
4. Use the down arrow key and highlight "Display to TV."
5. Use the "-" key to change the setting to "NTSC," or "PAL" if in Europe.
6. Press **Esc**. Press **Enter** to "Save Changes and Exit."
7. Press **Enter** to continue. The system restarts in TV display mode.

> NOTE When you need to return to using the computer's LCD as your output device, remember to disable the TV mode setting in Setup before disconnecting the TV and port replicator.

Disabling TV Mode

With the TV and port replicator still connected, use Setup to disable TV mode as follows.

1. Follow steps 1 through 4 in "Setting the System BIOS to TV Mode" above.
2. Use the "-" key to change the setting to "Disabled."
3. Press **Esc**. Press **Enter** to "Save Changes and Exit."
4. Press **Enter** to continue. The system automatically restarts in Normal display mode.

After disabling TV mode in Setup, disconnect the RCA cable from the TV and reset the video settings for use with the computer's LCD. Refer to the steps in "Changing Video Settings" listed previously in this sheet and change the video settings:

- Display area, 800x600 pixels
- Color palette, 256 colors

> NOTE If your NEC Versa 2500 Series computer is accidentally started in TV mode without a TV/VCR connection, the LCD blanks immediately following the Power On Self Test (POST). However, if you press the **F2** key during POST, you can access Setup and disable TV mode as described previously.

5 Using Multimedia

With its fast Pentium™ processor and enhanced audio and video capabilities, you can perform fantastic multimedia feats with your NEC Versa 2500! This section describes the NEC Versa 2500's multimedia features and how you can use them to create high-quality, powerful presentations.

Multimedia combines audio, text, animation, photo images, and video sources into one presentation.

AUDIO

The NEC Versa 2500 provides entertainment-quality sound through stereo speakers. It handles musical instrument digital interface (MIDI) files, digital audio files, and analog audio sources. In other words, the NEC Versa 2500 recognizes .WAV, .MID, and .AVI files. The system is also Sound Blaster™ 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.

NOTE When using the built-in microphone, make sure the speaker volume is turned down or feedback may occur.

You can use either the Sound Recorder in the Microsoft Windows Accessories group or the AudioRack software to record sound on your system. The following procedures give an example of recording sound using the Sound Recorder and saving it to a file on the NEC Versa. (For details, see the online help that becomes available when you open the Sound Recorder.)

1. Locate the Sound Recorder:

   - In Windows for Workgroups, open the Accessories group and double click on the Sound Recorder icon.
   - In Windows 95, slide the cursor over Programs, Accessories, Multimedia, and the Sound Recorder line. Release your finger from the VersaGlide to open the recorder. (You may have to press the left selector button on the VersaGlide.)

   To use AudioRack32 program group and select the Audio Recorder.

2. Use the VersaGlide to press the record button on the screen. (In Windows 95, the record button has a red circle in the middle. In Windows for Workgroups, the record button has a microphone on it.)
3. Speak into the microphone to create a sound file.
4. When you finish recording, press the Stop button. Be careful when recording; audio files can become quite large.

To listen to the sounds you've recorded, use the VersaGlide to press the play button. (The play button has a single right facing triangle on it.)

To use the AudioRack software, check the online help file that becomes available when you open the program. (In Windows 95, the package is called AudioRack32.)

Line-In

Analog signals come in through the NEC Versa 2500'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, or a stereo tuner. The Line-In port has a mini-type connector. You may need an adapter to connect your input device to the NEC Versa 2500 through Line-In.

Using Line-In does not disable the internal speakers.

Microphone

You can capture and record sounds through the internal microphone on the NEC Versa 2500. You can record voice-overs for narrations, reminders, or special instructions.

See “Recording” earlier in this chapter, for details about recording sound with the microphone.

Playing Back

You can play back your recorded soundtrack through stereo headphones, the internal NEC Versa 2500 stereo speakers, or external stereo speakers. You can play .WAV and MIDI files as well as CD audio. Adjust the volume through the software. (A volume control feature can be found in Accessories.)

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 by opening a file through the Sound Recorder and pressing the play button.)

1. In Windows for Workgroups, open the Accessories group, highlight the Media Player icon, and double click to open it.

   In Windows 95, go to Programs, Accessories, Multimedia, and open the Media Player.

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.

     If you want to use a CD-ROM reader and it does not appear in the list, see “Adding the CD Audio Option” in Chapter 4. This should only occur in Windows for Workgroups systems.

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 plug in through the headphone jack located on the back of the NEC Versa. Use the audio software that comes on your system to adjust the volume.

Using the Built-In Speakers

The NEC Versa 2500 has built-in stereo speakers. The built-in speakers are disabled if headphones are connected. (Adjust speaker volume through the software.)

Using External Stereo Speakers

For full stereo sound impact, you can plug a pair of stereo speakers into the Headphones jack located on the back of the system. Adjust the volume through software or through the controls on the external 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.

VIDEO

The NEC Versa 2500 features a DSTN backlit SVGA color display for sharp effective visuals right on the system or projected onto an external CRT monitor.

The NEC Versa 2500 comes with the Microsoft Video for Windows player. In Windows for Workgroups and Windows 95, the Xing player gives you MPEG capabilities.

Access either the Microsoft or the MPEG video player as follows:

1. Open the Media Player in accessories.
2. Under Device, select the video player you want to use.
3. 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 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.

VideoSaver

The VideoSaver software package, that comes preloaded on selected systems, gives a variety of full-screen MPEG video clips that you can view or use as screen savers. Simply select VideoSaver from the list of screen savers in your Windows list. Modify how the screen saver runs as follows.

In Windows for Workgroups, follow these steps:

1. Double click the Control Panel icon in the Main program group.
2. Double click the Desktop icon in the Control Panel.
3. Go to the Screen Saver tab and select VideoSaver.
4. Press the Test button to see the current video clip selected. To modify the video settings, press the Setup button.

   The settings screen show the available video clips and give options to:

   - Rearrange the order in which the clips appear.
   - Mute the sound.

In Windows 95, follow these steps.

1. Click Start, Settings, and the Control Panel.
2. Double click the Display icon from the Control Panel. The Display Properties screen appears.
3. Click the Screen Saver tab from the choices along the top of the screen.
4. Scroll through the screen saver choices. Highlight and click on Video Saver. (This may be listed as VSaver on your system.)
5. To modify the video settings, press the Settings button.

   The settings screen shows the available video clips and gives you options to:

   - Rearrange the order in which the clips appear.
   - Mute the sound.
   - Preview the videos available.
   - Get information to upgrade to the VideoSaver Pro video package.
6. To adjust the wait time before the VideoSaver is initiated, use the up or down arrow to change the time.
7. Click OK to accept your settings. The VideoSaver is now activated.

NOTE When running MPEG video clips as a screen saver, power management will not occur due to the disk and panel activity.

VideoSaver does not work as a screen saver when running on battery power.

6 Traveling with Your NEC Versa

The NEC Versa 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 at the end of 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 2500 Series system 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, 50 to 60 Hz.

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.

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

You should take the following 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 computer and other equipment for customs check
- customer support phone numbers for your software
- AC extension cord.

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.
- Put your system into Suspend or Standby mode so you can 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.

7 Solving Problems

Once in a while you may encounter a problem with your NEC Versa 2500. If the screen is blank, the instructions don't help, or no error message appears, use the information here to determine and fix the problem. You still may be able to solve the problem yourself!

PROBLEM CHECKLIST

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

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

Troubleshooting

PROBLEM	WHAT TO DO
The system does not power on.	If you are operating the system with battery power, check that the battery pack is correctly inserted. Attach the AC adapter to recharge the battery. If you have the AC adapter attached, check that the electrical outlet you are using works.
LCD screen is dark and blank.	Power-saving mode has shut off the backlight. Press a keyboard key or **Fn-Esc**. The built-in LCD may not be selected. Press **Fn-F10** once or twice. Screen brightness needs adjustment. Adjust the control. The system entered Suspend mode due to low battery power. Plug in the AC adapter before resuming operation.
Battery power does not last long.	Use power-saving modes.
Information on the LCD screen is difficult to see.	Adjust the brightness and contrast using **Fn** and the cursor arrows.
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 Suspend/Resume button does not work.	A disk drive might be busy. Wait until the disk drive stops and try again.

START-UP PROBLEMS

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

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

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

To continue start-up procedures, press **F2** and run the 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 2500 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. If this happens, follow the instructions in the POST error message table.

POST Error Messages

MESSAGE	WHAT TO DO
Diskette drive A failure or	Drive A does not work or is not properly connected. Drive A is the diskette drive.
No Floppy Drive	Check that drive A is securely connected and power is on.
	Press **F2** to start Setup to check the diskette drive parameters.
	If there's still a problem, the drive might need repair.
General Failure Reading Drive A or Diskette Read Failure – press **F2** to run Setup. Press any other key to retry boot	Remove the diskette from drive A and press **F2** to start the system from the hard disk.
	Or, insert a bootable disk in drive A and press any other key.
Non-system disk or disk error; Replace and press any key when ready	Remove the diskette from drive A or CD from the CD-ROM reader and press any key to start the system from the hard disk.
	Or, insert a bootable disk in drive A and press any key.
Operating System Not Found or Fixed Disk Failure 0	Press **F2** to start Setup. Change the hard disk type to the correct setting. Exit and save Setup changes.
Invalid configuration information – run Setup program	One or more system configuration parameters are not properly set. Start Setup, set them correctly, and exit and save to update the parameters.

POST Error Messages

MESSAGE	WHAT TO DO
Real time clock failure	Set time and date using Setup. Exit and save to update the parameters.
Time-of-day not set – run Setup	Set the time and date using Setup. Exit and save Setup changes to update the parameters.
System CMOS Checksum Bad – run Setup or Press (F1) to resume, (F2) to setup.	Press **F2** to enter Setup. Under Exit, set the default values. Under Main, set the date and time. Save your changes and exit.
Fixed disk configuration error	Start Setup. Exit and save to update the parameters. Check to see if the hard disk connector is seated properly. If there is still a problem, the hard disk might need repair.
Fixed disk failure	Press **F2** to start Setup. Exit and save to update the parameters. Check to see if the hard disk connector is seated properly. If there is still a problem, the hard disk might need repair.
Fixed disk controller failure	Press **F2** to start Setup. Exit and save to update the parameters. Check to see if the hard disk connector is seated properly. The hard disk controller does not work and might need repair.

POST Error Messages

MESSAGE	WHAT TO DO
Keyboard clock line failure	Unplug external keyboard if attached. Have the keyboard repaired.
Keyboard data line failure	Unplug external keyboard if attached. Have the keyboard repaired.
Keyboard controller failure	Unplug external keyboard if attached and reboot the system. If it still fails, have the system repaired. Repeated keystrokes during boot may produce an error message.
xx Key Stuck Keyboard Error	A key is jammed. Remove any obstruction you find. You may have repeatedly pressed the **F2** key when trying to enter Setup. If the error message remains, the keyboard may need repair.

IF YOU NEED ASSISTANCE

If you have a problem with your computer, first review the checklist and troubleshooting table in the previous section.

If you still have a problem, call the NECCSD Technical Support Center, toll free, at 1-800-632-4525. Direct technical assistance is available 24 hours a day, seven days a week.

If you purchased your computer outside of the U.S., please contact the local NEC office or their dealers for the support and service available in your country.

GETTING HELP

NEC is ready and willing to help you with our products.

> NOTE If you purchased your computer outside of the U.S., please contact the local NEC office or their dealers for the support and service available in your country.

You may also use the following service that is available in the U.S.

NECCSD Versa Diskette Fulfillment Center

(800) 842-6446

NEC provides driver files and BIOS updates free of charge through our Bulletin Board System (BBS). Also, diskettes containing these updates can be mailed at a rate of $15/per disk for duplication, shipping and handling.

NECCSD Technical Support Center Center

(800) 632-4525

Call the Technical Support Center for help in resolving problems that arise while using your NEC Versa system.

NECCSD Customer Service

(800) 632-4525

Fax: (508) 635-4666

Call Customer Service for spare parts ordering, warranty claims, repair services, and service authorizations.

NEC FastFacts™ Service

U.S. and Canada: (800) 366-0476

International: (708) 860-9500, x2621

This automated fax service offers product brochures, installation procedures, quick reference guides, promotional forms, troubleshooting information and more. Automated fax service is not toll free for overseas customers.

NECCSD Electronic Bulletin Board System (BBS)

(508) 635-4706

The NECCSD Bulletin Board is a remote database system containing files that are dedicated to enhancing the functions of NEC products. It also gives general public access to drivers for NEC products for use with various software applications.

CompuServe Password "GO NECTECH"

Internet Address tech-support@NECTECH.com

America Online nectech@aol.com

Worldwide Web Address:

www.nec.com

NEC is a member of TSANet (Technical Support Alliance Network).

Updating the System BIOS

If you receive a BIOS Update diskette from NEC, simply insert the diskette in the drive and reboot your system. Follow the on-screen instructions.

DISTRIBUTION DISKETTE CREATOR (DDC)

The Distribution Diskette Creator, or DDC, is a program that comes preloaded on your NEC Versa 2500 series computer. The program allows you to make backup diskettes of important system drivers (for example, the Chips and Technologies Video Drivers). The DDC is located in the NEC Versa 2500 Utilities group on your desktop in both Windows 95 and Windows for Workgroups systems.

1. In Windows 95, click Start from the taskbar, highlight Programs, highlight NEC Versa 2500 Utilities and double click the Distribution Diskette Creator icon.

   In Windows for Workgroups, double click the NEC Versa 2500 Utilities folder, then double click the Distribution Diskette Creator icon.

   The remainder of the steps are the same for both Windows 95 and Windows for Workgroups systems.

2. An NEC Distribution Diskette Creator menu appears, showing a list of driver diskettes.

3. To create a backup diskette of a specific system driver, complete the following:

   - Highlight the driver. Select “Create Disk.”
   - Insert a 3 1/2-inch, formatted diskette into the diskette drive.
   - Click “Ok.”
   - A prompt appears instructing you how to label the backup diskette.

4. Click “Exit” when you finish making backup diskettes.

NOTE After you've completed making a backup diskette of all system drivers, you can use the "Delete Image" option in the DDC to remove the drivers from your system.

NEC WARRANTY/NON-WARRANTY REPAIR SERVICE

Before you call for repair service, see the previous sections in this chapter to determine if you can solve the problem yourself, within your company, or through your NEC authorized dealer.

Direct assistance is available 24 hours a day, 7 days a week. Call the Customer Service Response Center at 1-800-632-4525 for the following support:

- Preinstalled software — toll-free phone support for 90 days from your first phone call.

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

- System hardware — toll-free phone support for one year after the date of purchase (standard warranty).

  For hardware support after the 1 year warranty, get system hardware support for a fee.

Before calling, please have ready your system name, model number, serial number, and purchase date. Also have ready as much information as possible about the problem you are having, including any message errors that occurred.

NOTE Free technical specifications, troubleshooting tips and other helpful information for out-of-warranty products are available through FastFacts at 1-800-366-0476 and requesting catalog number seven.

If you purchased your computer outside of the U.S., please contact the local NEC office or the NEC dealers in your area for your specific warranty service.

A Setting Up a Healthy Work Environment

⚠ 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.

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.

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.

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.

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 backwards. 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 and Environment

The following specifications are standard except where noted.

System Processor

P54CSLM/133 (Intel Pentium-133 MHz)

Architecture

32-bit Peripheral Component Interconnect (PCI)

Random Access Memory (RAM)

- Standard Main Memory
  - — 16-MB high-speed interleaved access
- Optional Expansion — 2 DIMM slots. Expandable in 8-MB or 16-MB increments. Maximum 48 MB total.
- Video RAM — 1 MB
- Cache RAM — 256 KB, L2 cache

Read-Only Memory (ROM)

256 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 (supports both ECP and EPP modes)
- 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-adapter
- Expansion — 1 port, 160-pin for optional NEC Port Replicator 2500
- Stereo Headphones — 1 port, Mini Pin Jack, .5 watts per channel
- Stereo Line-In — 1 port, Mini Pin Jack
- Microphone — 1 port, Mini Pin Jack
- DC In — 1 port, for AC adapter cable

Main Battery

Type — Nickel-Metal Hydride (NiMH), 10-Long A Size

Output Voltage — 12.0 V

Capacity — 3,500 mAh

Battery Life — Approximately 2 hours depending on model and power management features enabled.

Recharging Time — Approximately 2 hours when system is not in use; approximately 4 hours when system is in use.

Speakers

Nominal 0.5W/Max 1W

Card Slots

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

LCD Display

- 12.1-inch Dual Scan Super-Twisted Nematic (DSTN), cold-cathode fluorescent tube (CCFT) backlit Super VGA (SVGA) color
- Resolution — 800 x 600 pixels
- Dot Pitch — 0.29 mm
- Colors — 256,000/18 bits

Keyboard

Membrane-type, 87 keys (88-keys for international models)

- Function keys — 12 keys
- Cursor Control keys — 4 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

Standard 1.44-MB drive

- Size — 3.5 inch
- Capacity — 1.44 MB (formatted), 2 MB (unformatted)
- Access Time (average) — 94 ms
- Transfer Rate — 250 to 500 K/bps
- Interleave 1:1
- Controller— NS PC87336VJG

Hard Disk Drive

Internal 1-GB, 2.5-inch, IDE

8X Speed CD-ROM Reader

Thin-type CD-ROM Pack

Data Transfer Rate — 16.7 MB maximum

Access Time — 200 milliseconds

Interface — IDE (ATAPI)

Photo CD Compatibility — Multisession Photo CD, Single Session Photo CD, Video CD, CS-I, CD-I Ready, CD-G and CD-Plus)

AC Adapter

Input Voltage — 100 to 240 volts (V) AC, 50 to 60 Hz, 1.0 A, 36 watt (max.)

Dimensions

System

- Width — 299 mm (11.66 in.)
- Depth — 240 mm (9.36 in.)
- Height — 51 mm (1.98 in.)

Weight

NEC Versa 2500 Series — 2.9 kg (6.39 lb)

Recommended Environment

Operation

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

Storage

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

Interrupt Controllers

The following table shows default interrupt level assignments 0 through 15.

IRQ Settings

NAME*	PRIORITY**	DEVICE
IRQ00	0	System Timer
IRQ01	1	Standard Keyboard
IRQ02	2	Programmable Interrupt Controller
IRQ03	11	COM2
IRQ04	12	COM1
IRQ05	13	Audio
IRQ06	14	Floppy Diskette Controller
IRQ07	15	ECP LPT1
IRQ08	3	RTC
IRQ09	4	Reserved (PC Card)
IRQ10	5	Reserved (PC Card)
IRQ11	6	Reserved (PC Card)
IRQ12	7	PS/2 Port Mouse
IRQ13	8	Floating Point Unit (FPU)
IRQ14	9	Primary IDE
IRQ15	10	Secondary IDE

*IRQs 00 through 07 are serviced by the Master controller; 08 through 15 are serviced by the Slave controller.

**The lower the priority number, the higher the priority level.

DMA Settings

NAME	DEVICE
DMA01	Audio
DMA02	Floppy Diskette Controller
DMA03	Not Used
DMA04	DMA Controller

BATTERY REPLACEMENT

A lithium CMOS clock battery in your computer maintains system configuration information. In the event that the battery fails to maintain system configuration information, NEC recommends that you replace the battery. Have an authorized NEC service representative replace the battery.

⚠ 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.

⚠ ATTENTION

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 and CMOS clock battery are 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. For additional information on the proper collection or disposal of rechargeable batteries, please call 1-800-8-BATTERY.

Glossary

A

applications programs

Software designed to perform specific functions, like solving business or mathematical problems.

AC Adapter

A device that connects an NEC Versa portable computer and an AC wall outlet to provide AC power for running the system or recharging the battery.

B

base RAM

Area of system memory between 0 and 640 kilobytes available to the user for 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. Board onto 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

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 lithium 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

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

Double-Scan Super-Twisted Nematic. A type of technology used in some Versa LCD screen displays.

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

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 (such as **Ctrl-Alt-D**) 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.

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.

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.

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.

password

A string of characters that the user must enter before the system allows access or system privileges.

PCMCIA

A credit card sized peripheral interface standard for portable devices. Types of 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.

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.

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.

software
Programs that run on a computer, such as operating systems, word processors, and spreadsheets.

super video graphics array (SVGA)
A color bit-mapped graphics display standard, that provides a resolution of 1024x 768 with up to 256 colors displayed simultaneously.

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.

T

TFT

Thin Film Transistor. A type of Versa LCD color screen that supports 256 colors and provides exceptional screen display.

V

VGA

Video Graphics Array. Graphics technology that supports up to 256 K 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) or the reset button. The system returns to an initial or arbitrarily selected condition.

write

To record or store information to a storage device.

Index