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NEC Versa SX

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Using This Guide

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

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

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- Appendix B, “Specifications,” to review NEC Versa system specifications.
 - Appendix C, “Frequently Asked Questions,” (FAQs) for a look at questions that users commonly ask and the answers to those questions.
 - Glossary a listing of technical terms with definitions from this user’s guide.
 - Index for finding specific subject or keyword information within the user’s guide.

Text Setup

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

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

 **WARNING**

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

 **CAUTION**

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

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

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

Related Documents

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

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

Contents

Using This Guide	ix
Text Setup.....	x
Related Documents.....	xi
1 Introducing the NEC Versa	
Getting to Know Your NEC Versa.....	1-2
NEC Versa SX.....	1-3
Around the Front of the System.....	1-4
LCD Panel.....	1-4
Control Panel.....	1-5
Keyboard Panel and Base Unit.....	1-7
Around the Back of the System.....	1-10
Around the Left Side of the System.....	1-12
Around the Right Side of the System.....	1-14
Around the Bottom of the System.....	1-15
2 Getting Started	
Power Sources for Your NEC Versa.....	2-2
Using the AC Adapter.....	2-2
Powering On.....	2-4
Using the Main Battery Pack.....	2-5
Determining Battery Status.....	2-6
When to Change the Battery.....	2-8
Battery Handling.....	2-8
Replacing the Battery.....	2-9
Battery Precautions.....	2-11
Recharging Battery Precautions.....	2-12
Extending Battery Life.....	2-12
NEC VersaBay III and Adapter Kit.....	2-12
Internal Batteries.....	2-12
CMOS Battery.....	2-13
Bridge Battery.....	2-13
System Care.....	2-14
Precautions.....	2-14
Storage Requirements.....	2-15
Routine Cleaning.....	2-16
Introducing the Software.....	2-17
Traveling with your NEC Versa.....	2-17

Power Connections.....	2-18
Checklists.....	2-18
What to Take.....	2-18
Preparing your NEC Versa for Travel.....	2-19

3 Using the Software

BIOS Setup	3-2
How to Enter the BIOS Setup	3-2
BIOS Setup Utility Main Menu	3-3
How to Use BIOS Setup	3-3
Looking at Screens	3-4
Using Keys.....	3-5
Checking/Setting System Parameters	3-5
BIOS Setup Menus	3-11
Other BIOS Setup Options.....	3-16
Password Protection	3-16
Using BIOS Setup to Set Power Management.....	3-17
Using the Save to File (STF) Feature	3-17
Updating the BIOS	3-18
Performing the BIOS Update.....	3-19
Windows Introduction	3-20
Windows 95	3-20
Windows NT.....	3-21
NEC CSD Utilities	3-22
NEC Customize Utility.....	3-22
HDPREPEZ Utility	3-23
Using HDPREPEZ in Windows 95	3-23
Using HDPREPEZ in Windows NT.....	3-24
NEC Help Center	3-24
Software Applications and Drivers	3-25
Using the Applications and Drivers CD	3-26
Launching the Applications and Drivers CD	3-26
Installing the Software.....	3-26
Partition Magic.....	3-27
Intel LANDesk Client Manager	3-28
SystemSoft PowerProfiler.....	3-29
SystemSoft CardWizard	3-30
Intellisync 97.....	3-30
McAfee VirusScan	3-31
Microsoft Internet Explorer	3-31
Netscape Navigator	3-31

Adobe Acrobat Reader	3-31
----------------------------	------

4 Using the Hardware

LCD Panel.....	4-2
Keyboard.....	4-2
NEC VersaGlide.....	4-5
Making VersaGlide Adjustments	4-6
VersaGlide Tips	4-7
NEC VersaBay III	4-7
Removing a Device from the VersaBay III.....	4-8
Installing a Device in the VersaBay III	4-10
Customizing Your System with the VersaBay III.....	4-11
24X CD-ROM Reader	4-12
CD Loading.....	4-13
CD Care	4-13
Changing the Auto Play Setting	4-14
DVD-ROM Reader.....	4-14
PC Cards	4-15
PC Card Slots	4-15
Inserting a PC Card	4-15
Removing a Card.....	4-16
CardWizard Services	4-17
Communication Cards	4-17
Storage Cards	4-18
Other Cards	4-18
IR Port	4-18
Increasing System Storage and Memory	4-19
Hard Disk.....	4-20
Memory Module Installation.....	4-20
Switch Settings.....	4-23
Changing Switch Settings	4-24

5 Using External Devices

External Monitor	5-2
Printer	5-3
Parallel Devices.....	5-3
Serial Devices	5-4
External Keyboard/Mouse	5-6
External Bar Code Scanner	5-7
External Audio Options	5-7
USB Devices	5-9

NEC Versa Dock.....	5-10
NEC Versa PortBar	5-10

6 Using Multimedia

Audio.....	6-2
Recording.....	6-2
Line-In	6-2
CD-ROM Input	6-3
Microphone.....	6-3
Playing Back	6-3
Using Headphones.....	6-4
Using the Built-In Speakers	6-4
Using External Stereo Speakers	6-4
MIDI Files.....	6-5
Video	6-5
Using Digital Video Files	6-5
Using Animation Files.....	6-5
Multimedia Applications	6-5

7 Solving System Problems

Problem Checklist	7-2
Start-Up Problems	7-4
Post Error Messages	7-4
Using the Product Recovery CD	7-8
Full/Express Restore.....	7-9
Partition Restore.....	7-12
If You Need Assistance	7-14

8 Getting Services and Support

Quick Reference Chart	8-2
NEC NOW.....	8-3
NEC CSD Web Site.....	8-3
NEC CSD FTP Site	8-4
NEC CSD FaxFlash Service	8-4
E-mail/fax To Support Services	8-6
NEC CSD Bulletin Board	8-7
NEC CSD Support Services.....	8-9
NEC CSD Customer Assistance Center	8-10
Versa Laptop Fulfillment Hotline	8-10

A Setting Up a Healthy Work Environment

Making Your Computer Work for You	A-2
Arrange Your Equipment.....	A-3
Adjust Your Chair	A-3
Adjust Your Input Devices	A-4
Adjust Your Screen or Monitor.....	A-5
Vary Your Workday	A-6
Pre-Existing Conditions and Psychosocial Factors	A-7

B Specifications

System Components	B-2
Memory Map	B-9
Interrupt Controllers	B-10

C Frequently Asked Questions

External Mouse	C-2
Display.....	C-3
PC Cards.....	C-4
Diskette Drive	C-9
Booting	C-11
Power Management.....	C-13
Miscellaneous.....	C-16

Glossary

Index

1

Introducing the NEC Versa

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

Getting to Know Your NEC Versa

WARNING

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

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

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

NEC Versa SX

The NEC Versa SX notebook computer offers you a portable system filled with exciting resources for home, business or travel. Standard features include a powerful Intel® Pentium 233-MMX, or the Intel Pentium II 233 MHz or 266-MHz microprocessor that works together with the latest Peripheral Component Interconnect (PCI) architecture.

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

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

NEC Versa SX 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 NEC Versa. The following sections describe front features, beginning with the liquid crystal display (LCD) panel.

LCD Panel

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

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

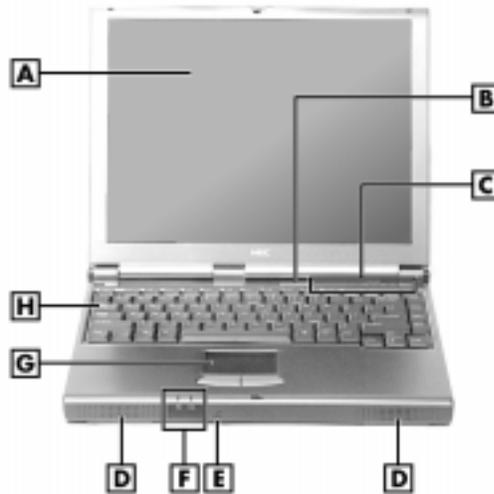
To adjust the LCD panel brightness:

- Press the **Fn-F8** and **Fn-F9** functions keys to adjust the brightness up or down. There are 8 levels of brightness.

Control Panel

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

Control panel



A - LCD Panel **B** - Power/Sleep Button **C** - LED Control Panel **D** - Speaker
E - Microphone **F** - Power Status LEDs **G** - VersaGlide **H** - Keyboard

- **Operating Status LEDs** — keeps you informed of your NEC Versa's current operating status. See the following figure and list for each icon's meaning.

Operating status LEDs



A - Hard Drive **B** - VersaBay III **C** - Caps Lock **D** - Scroll Lock **E** - Num Lock

- Hard Drive — lights when the NEC Versa writes or reads data from the hard drive.
- VersaBay III™ — lights when the NEC Versa writes data to or retrieves data from a device in the VersaBay III.
- Caps Lock — lights when Caps Lock is in effect.
- Scroll Lock — lights when Scroll Lock is in effect.
- Num Lock — lights when Num Lock mode is active.

Keyboard Panel and Base Unit

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

Keyboard panel and base unit



A - Power/Sleep Button

- **Power/Sleep Button** — press the Power/Sleep button to power on, power off, and to put the computer into Suspend mode. Your NEC Versa ships with the power on and power off function, to use the Sleep functionality, refer to “BIOS Setup” in Chapter 3 for setting up the Power/Sleep functions.
 - Press the Power/Sleep button to power on.
 - Hold the Power/Sleep button in place for 5 or more seconds to power off.
 - Hold the Power/Sleep button in place for 4 or fewer seconds to put the system into Suspend mode.

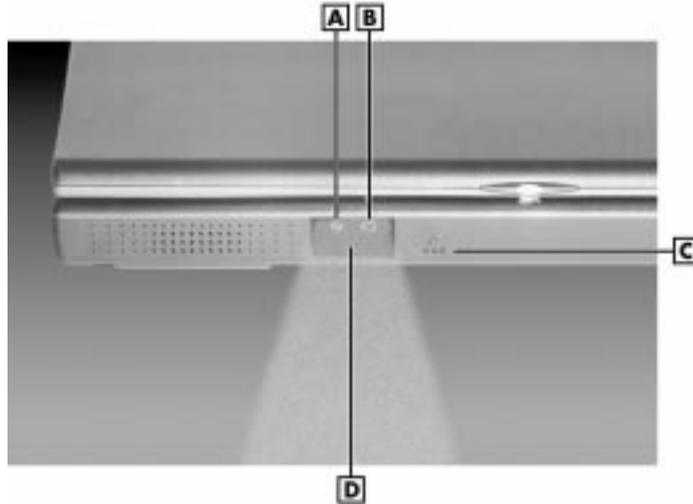
The Power/Sleep button is a “smart” switch, meaning that it recognizes when the system is in Suspend mode. If in Suspend mode, you cannot power off until you press the Power/Sleep button again to bring it out of Suspend mode.

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

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

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

System power LEDs



A - Power Status LED **B** - Battery Charging LED **C** - Microphone **D** - IR Port

— Power Status LED — lights green to indicate the power is on or amber to indicate low power condition when operating under battery power.

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

— Battery Charging LED — lights green for secondary battery or amber to indicate primary battery charging activity.

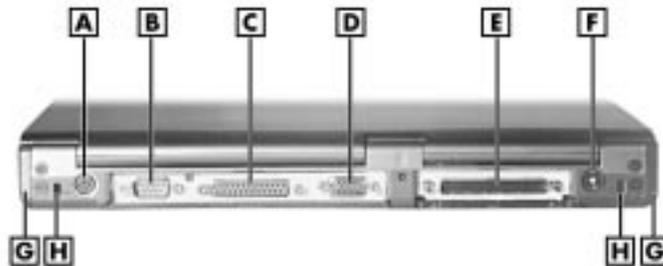
— Microphone — A strategically positioned built-in microphone allows you to record monophonic sound directly into your notebook computer. See Chapter 6, “Using Multimedia,” for details about recording.

-
- IR Port — Use this infrared (IR) port to transfer files between your NEC Versa and an IR-equipped desktop or notebook computer. Use the Windows 95 IRMON utility to communicate with other IR-equipped devices.

Around the Back of the System

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

Ports on the back of the system



A - PS/2 Port **B** - Serial Port **C** - Parallel Port **D** - External Monitor Port **E** - Expansion Port **F** - DC Power Port **G** - Tilt Feet **H** - Docking Notches

- PS/2 Port — Use the standard PS/2 port to connect an external PS/2-style mouse or a PS/2-style keyboard to the system. With an optional Y-cable adapter, you can connect both a mouse and a keyboard at the same time.
- 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 port is an Enhanced Capabilities Port (ECP). The ECP standard provides you with a greater processing speed than the conventional parallel port. It also supports Enhanced Parallel Port (EPP) bi-directional and uni-directional protocols.

-
- **External Monitor (Video) Port** — Use this 15-pin port to attach an external monitor to your NEC Versa. You can run the LCD display and the external monitor simultaneously or run either alone.
 - **Expansion Port** — This port (also called the Docking port) provides a connection for NEC Versa SX options including the NEC Versa Dock, and the NEC PortBar.



CAUTION

Only dock the NEC Versa SX or NEC Versa LX systems on the NEC Versa Dock. The cover of the docking station is specially designed to allow for proper system cooling.

- **DC Power Port** — Use the power jack to attach the NEC Versa to a DC power source, such as the AC adapter or the optional DC car adapter.
- **Tilt Feet** — Use to elevate the back of the notebook.
- **Docking Notch** — Allows the notebook to be securely mated with the NEC Versa Dock and NEC PortBar.

Around the Left Side of the System

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

Left side features



A - Audio Ports and Volume Control **B** - USB Port **C** - Fan Vent **D** - Kensington Lock Slot **E** - PC Card Slot **F** - PC Card Ejection Buttons

- Audio ports and a volume control knob.
 - External Microphone (MIC) — Allows you to connect an external microphone for monophonic recording or amplification through the unit. Plugging in an external microphone disables the built-in microphone.
 - 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/Speakers — Lets you connect external headphones or speakers to your NEC Versa. Plugging in headphones or external speakers disables the built-in system speakers.
 - Volume Control — Allows you to control the internal speaker volume and headphone volume.

-
- **USB Port** — The Universal Serial Bus (USB) port allows you to connect up to 127 USB-equipped peripheral devices (printers, monitors, scanners, etc. with optional USB hub) to your NEC Versa.
 - **Fan Vents** — Allow your system to cool properly and maintain a safe operating temperature.



CAUTION

Always keep the fan vents clear to allow proper system cooling.

- **Kensington Lock slot** — Lets you provide added security by installing an optional Kensington Lock.
- **PC card slots** — Provides two slots for inserting two Type II PC cards or one Type III PC card.

Around the Right Side of the System

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

Right side features



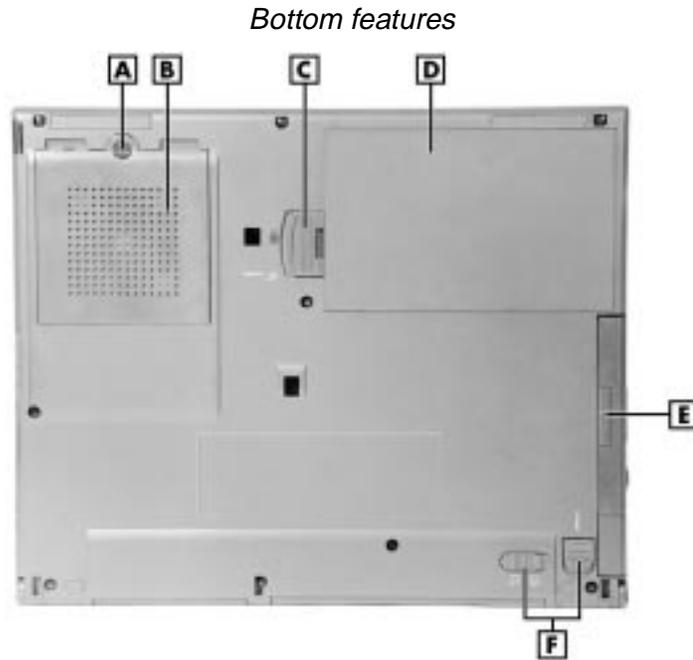
A - VersaBay III

- NEC VersaBay III — A diskette drive, 24X CD-ROM reader, an SuperDisk drive, or a DVD module comes installed in the NEC VersaBay III on the right side of your system.

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

Around the Bottom of the System

The bottom of the NEC Versa offers the features shown next. Descriptions of the features follow the figure.



A - Coin Screw **B** - Memory Expansion Bay Cover **C** - Battery Bay Release
D - Battery **E** - VersaBay III Device **F** - VersaBay Release Latches

- Memory Expansion Bay Cover — Opens with a coin screw to access two RAM expansion sockets for small outline double inline memory modules.
- Battery — Contains the system's main battery and is part of the exterior of the notebook. It is a nine-cell, Lithium-Ion (Li-Ion) battery with built in battery gauge.
- NEC VersaBay III Release Latches — Allows you to remove the option currently installed in the VersaBay III.

2

Getting Started

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

Power Sources for Your NEC Versa

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

- the AC adapter connected to an electrical wall outlet (using AC power 100-240 volts (V), 50 or 60 Hz).
- the battery pack or an optional second battery pack.
- the optional Auto adapter.

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

Using the AC Adapter

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

Keep the adapter connected whenever possible. The AC adapter charges the battery whether or not you are using the NEC Versa or have the system powered on.

WARNING

Do not attempt to disassemble the AC adapter. The AC adapter had 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 EN609050 standards.

AC adapter and power cord



A - AC adapter **B** - Power Cord

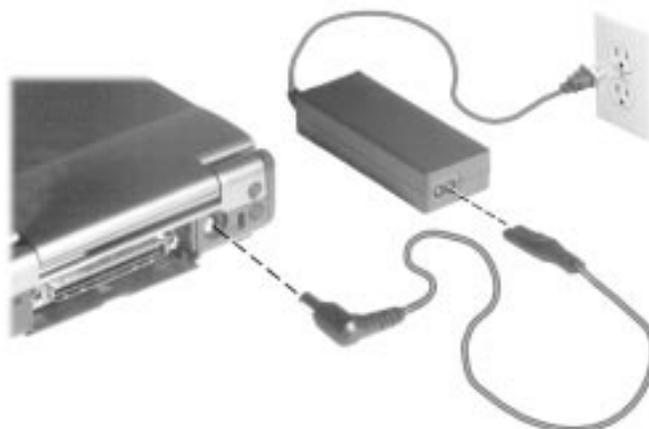
 **Note:** Check that the AC outlet voltage falls in the range of 100-240 volts AC. Verify that the cord and plug are appropriate for your AC source.

Connect the AC adapter as follows:

1. Connect the AC adapter cable to the power port on the back of your NEC Versa.
2. Plug one end of the AC power cable into the AC adapter and the other end into a properly grounded 100- or 240-volt wall outlet.

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

Connecting the AC adapter



CAUTION

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

Powering On

Power on the system as follows:

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

Powering on the system



A - Power/Sleep Button

Using the Main Battery Pack

The NEC Versa comes with a rechargeable Lithium-Ion (Li-Ion) battery pack. You can run your system on battery power for approximately two to four hours with power management features enabled. It's easy to install and remove.

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

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

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

- Press the Power button hold it in place for less than 4 seconds to put your system in Suspend mode. Remove the battery pack and replace it with a fully charged battery.

-
- Leave the battery pack in the system and connect your NEC Versa to the AC adapter and a wall outlet. If you connect the system to AC power and keep the system within standard operating temperatures, the battery recharges in approximately 2 hours whether or not you use your system.

You can also buy an optional NEC Versa battery charger to quickly charge your battery.

 **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 a short circuit.
 - Make sure the battery is properly installed in the battery bay.
 - Read the precautions printed on the battery and in the Online System Information.
-

Determining Battery Status

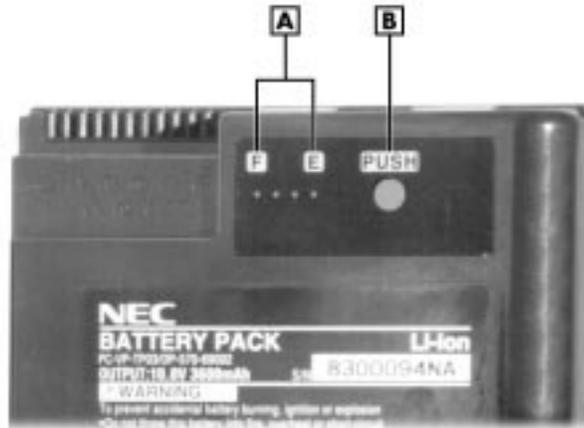
You can determine battery status via the power status LED on the Battery or via the Battery Meter provided within the Windows 95 operating system and PowerProfile in the Windows NT operating system.

- If the battery is removed from the system press the Battery test button to see the relative status of the battery. If all four LED indicators light the battery is at or near full charge and if none or one light the battery is at or near full discharge.

WARNING

If the second and fourth LEDs are on and the third is off. The battery should be charged overnight. If the LEDs are not all on in the morning after pressing the Test button, the battery may have reached its normal end of life and need to be replaced.

Battery Status Gauge



A - Status Indicator **B** - Battery Test Button

- In the Windows 95 operating system access the Battery Meter via Start from the desktop, select Settings, select Control Panel and then the Power icon. This will show you the total power remaining. click the show battery meter on taskbar to have easy access to this information from the taskbar.
- In the Windows NT operating system access the battery status via **Start**, slide to the Programs group, then slide to PowerProfiler for Windows NT. Press the VersaGlide selection button or tap the VersaGlide pad once. the main PowerProfiler screen appears.
Select the Battery tab and add the battery meter to the taskbar.

-
- At "Alarm Action" indicate whether to display a warning when the battery is low or very low, and whether to suspend the system when the battery is very low.
 - At the right you can decide whether to display a battery meter in the task bar. You can view a graphic of current battery status.
 - At "Battery Status and Alarm Settings" you can view status battery by battery or for all batteries together. You can define "low" and "very low" battery status.

When to Change the Battery

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

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

Battery Handling

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

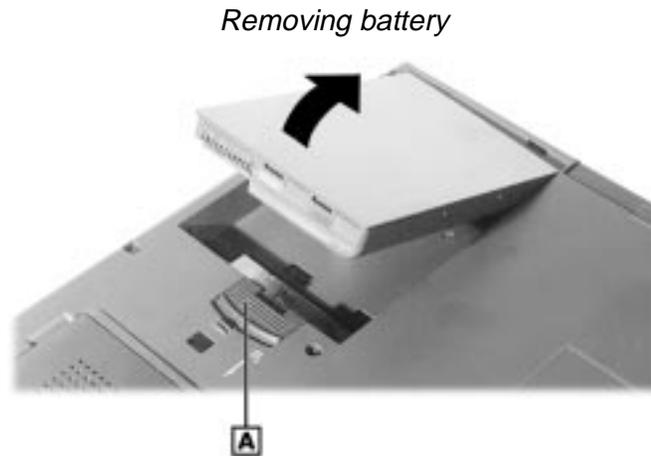
- Use only the battery designed for your system in the NEC Versa SX. Mixing other manufacturer's batteries, or using a combination of very old and new batteries can deteriorate battery and equipment performance.
- Turn off power to the system after use. Keeping system power on can degrade battery performance and shorten battery life.
- Clean the battery terminals with a dry cloth and be careful not to bend terminals.
- Keep the battery out of the reach of children.

Replacing the Battery

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

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

1. Save your files, exit Windows, and press the **Fn** and **Power** button to suspend or turn off system power.
2. Close the LCD and turn the system over.
3. Slide and hold the battery latch and lift the edge of the battery out of the notebook as shown below.



A - Battery Release Latch

4. Insert the new battery as follows:

- Locate the alignment groove tabs on the end of the battery opposite the terminals.
- Locate the alignment grooves inside the battery bay at the end opposite the terminals.
- Fit the battery alignment tabs into the grooves inside the bay.
- Lower the battery into the battery compartment while at the same time slide the battery lock lever out of the way and press gently to secure the terminal connections. Release the lock latch and your NEC Versa battery is installed.

Reinstalling battery



Battery Precautions

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

WARNING

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

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

- Keep the battery away from heat sources including direct sunlight, open fires, microwave ovens, and high-voltage containers. Temperatures over 140° F (60°C) 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 with clean water. Battery fluid can cause a skin rash and damage fabric.
 - If battery fluid gets into eyes, DO NOT rub; rinse with clear water immediately and consult a doctor.
 - Take extra precautions to keep a leaking battery away from fire. There is a danger of ignition or explosion.
-

Recharging Battery Precautions

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

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

Extending Battery Life

While on the road, it is important to be aware of the simple things you can do to extend the life of the system's main battery. One way is to keep the LCD brightness at a low setting. You can adjust the setting by pressing the function keys **Fn+F8** or **Fn+F9**. (Windows 95 systems, only).

NEC VersaBay III and Adapter Kit

The NEC VersaBay III Battery and Adapter Kit provides a second Lithium-Ion (Li-Ion) battery and adapter to use in your NEC Versa SX Series computer. Inserting a second fully charged battery increases battery life to approximately 4 to 5 hours.

See your authorized NEC CSD dealer for details about the NEC VersaBay III Battery and Adapter Kit.

Internal Batteries

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

CMOS Battery

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

Bridge Battery

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

Only an authorized NEC CSD service technician can change a bridge battery.



CAUTION

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

System Care

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



CAUTION

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

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

Precautions

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

- 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 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.
 - Do not use the system close to magnets or magnetic currents.



CAUTION

Some aircraft have trays that are magnetized. These magnetized trays generally are the type that fold up and are inserted into the armrest when not in use.

- Turn computer power off before cleaning it.
- Avoid exposing the NEC Versa or AC adapter to extreme changes in temperature or humidity. If it is unavoidable, allow your NEC Versa to adjust to room temperature before use.
- When cleaning the system, use a soft, clean, dry cloth. Avoid wiping the display surface with abrasive material, including rough fabric. Do not use a cleaning solution; this may damage the notebook's plastic.
- If the AC adapter becomes extremely hot, unplug the adapter and let it cool.
- Keep the AC adapter away from the IR ports.

Storage Requirements

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

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

 **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 computer.

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

- LCD screen — Carefully wipe the LCD screen with a soft cloth or a screen wipe designed for that purpose. Special screen wipes are available through your local computer dealer.

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

Introducing the Software

Your NEC Versa SX system ships with either the Windows 95 or Windows NT operating system.

Follow the quick setup instructions to install your operating system and related drivers. Use the Applications and Drivers CD to install additional software applications and online documentation.

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

Traveling with your NEC Versa

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

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

Power Connections

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

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

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

Checklists

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

What to Take

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

- Extra fully charged batteries (and a VersaBay III battery adapter)
- 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
- NEC Versa Quick Reference card
- AC extension cord.

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

Preparing your NEC Versa for Travel

Here is what you should do before you leave home:

 **Note:** Speed the trip through airport security by carrying a charged system. Inspectors want to see the screen display a message. The boot message is usually sufficient.

If your system is fully charged, the inspection only takes a minute or so. Otherwise, be prepared to attach the AC adapter and power cable. And if you don't have these, the inspection might include a disassembly of the system.

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

3

Using the Software

- BIOS Setup
- Windows Introduction
- NEC CSD Utilities
- NEC Help Center
- Software Applications

BIOS Setup

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

Use BIOS Setup to:

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

How to Enter the BIOS Setup

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

Press <ESC> for Boot Messages, <F2> for Setup.

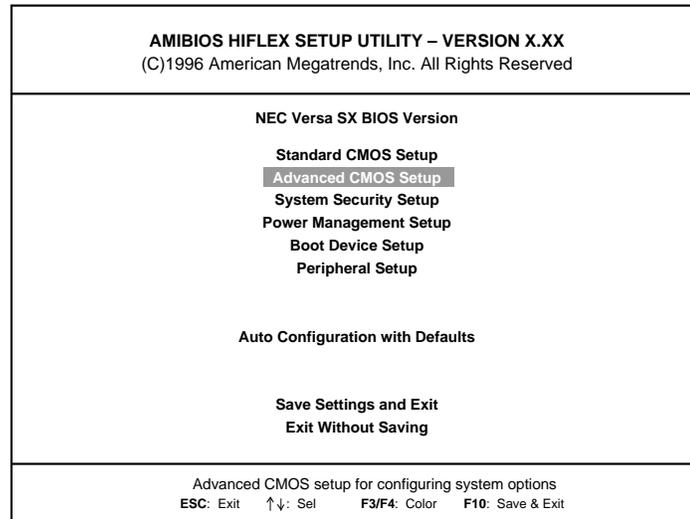
When you press **F2** to enter BIOS Setup, the system interrupts the Power-On Self-Test (POST) and displays the current CMOS RAM available settings.

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

BIOS Setup Utility Main Menu

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

BIOS Setup Main Menu



Use the up and down arrow keys (located on the lower right corner of the keyboard) to toggle through the BIOS Setup menu items. (The Change User Password option is only available if a Supervisor Password is defined.)

How to Use BIOS Setup

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

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

Looking at Screens

BIOS setup screens have three areas as shown next.

Advanced CMOS Setup menu

AMIBIOS SETUP – ADVANCED CMOS SETUP (C)1996 American Megatrends, Inc. All Rights Reserved		
LCD Panel View Expansion	OFF	Item-specific help text appears here.
PS/2 Port Hot Swap	Enabled	
Internal Mouse	Enabled	
		ESC Exit ↑↓ Select PgUp/PgDn: Modify F3/F4: Color

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

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

Using Keys

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

BIOS Setup Key Functions

Key	Function
↑ ↓	Moves the cursor between the displayed parameters.
PgUp/PgDn	Modifies the current parameter settings.
Tab	For some parameter settings, moves the cursor between the subfields. Also moves the cursor to the next line or selection. For example, for System Time, Tab moves the cursor from hour to minute to second.
Esc	Exits the current screen and returns to the Main Menu screen. From the Main Menu screen, displays the prompt, "Quit without saving."
F3/F4	Changes the screen color.

Checking/Setting System Parameters

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

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

BIOS Setup Parameters

Parameter	Default Setting	Alternate Setting(s)
Standard CMOS Setup		
System Date	mm/dd/yyyy	
System Memory	Auto detect: total memory shown in MB	Auto detected
System Time	hh/mm/ss	hh/mm/ss
Diskette Drive A	1.44 MB, 3.5	Not installed/ 1.2 MB, 5.25 1.44 MB, 3.5
Diskette Drive B ¹	Not installed	1.2 MB, 5.25 1.44 MB, 3.5 Not installed
Internal	Auto	Not installed User defined Auto CD-ROM LS-120
VersaBay ¹	Auto	Not installed User defined Auto CD-ROM LS-120
DS VersaBay ¹	Auto	Not installed User defined Auto CD-ROM LS-120
DS Internal ¹	Auto	Not installed/User defined CD-ROM/LS-120
Advanced CMOS Setup		
LCD Panel View Expansion	Off	On Off
PS/2 Port Hot Swap	Enabled	Disabled Enabled
Internal Mouse	Enabled	Disabled Enabled

BIOS Setup Parameters

Parameter	Default Setting	Alternate Setting(s)
Power Management Setup		
ACPI Aware O/S	Yes	Yes No
System Switch	Power Button	Sleep Button Power Button
Power Management Under AC	Off	On Off
Power Savings Level	Longest Life	Off Custom High Perform Longest Life
Hard Disk Time-out ¹	2 min	Off 5 seconds 30 seconds 45 seconds 1 minutes 2 minuets 4 minutes 6 minutes 8 minutes 10 minutes 15 minutes
Video Time-out ⁴	2 min	Off 30 seconds 45 seconds 1 minutes 2 minutes 4 minutes 6 minutes 8 minutes 10 minutes 15 minutes
Peripheral Time-out ⁴	On	Off On
Audio Device Time-out ⁴	On	Off On

BIOS Setup Parameters

Parameter	Default Setting	Alternate Setting(s)
Standby Time-out ⁴	4 min	Off 1 minutes 2 minutes 4 minutes 6 minutes 8 minutes 10 minutes 15 minutes
Auto Suspend Time-out ³	10 min	Off 5 minutes 10 minutes 15 minutes 20 minutes 25 minutes 30 minutes
LCD Suspend/Resume	Off	On Off
Suspend Option	Suspend	STF Suspend
Auto Save To File	Enabled	Disabled Enabled
Panel Brightness	Auto	User Defined Auto
Suspend Warning Tone	Enabled	Disabled Enabled
Modem Ring Resume	Enabled	Enabled Disabled
Wake Up Alarm	Disabled	Enabled Disabled
Resume Alarm Time ⁵	8:00 AM	12:00 AM to 11:55 PM, 5 min increments
Power Savings		
Power Management Timeout	Off	Longest Life
CPU Speed	100%	100%
Hard Disk Timeout	Off	2 minutes
Video Timeout	Off	2 minutes

3-8 Using the Software

BIOS Setup Parameters

Parameter	Default Setting	Alternate Setting(s)
Peripheral Timeout	Off	On
Audio Device Timeout	Off	On
Standby Timeout	Off	4 minutes
Auto Suspend Timeout	Off	10 minutes

System Security Setup

Change Supervisor Password		
Change User Password ³		
Boot Password Required ⁴	Yes	No
Resume Password Required ⁴	Yes	No
Power Management Timeout	Off	High Performance

Boot Device Setup

Setup Question	Default	Options
Quick Boot	Enabled	Disabled Enabled
Docking Station Video	Dock Stn.	Portable Dock Stn.
BootUp Num-Lock	Auto	Off On Auto
1 st Boot Device ⁶	LS-120	CD-ROM SCSI Network Disabled IDE HD Floppy
2 nd Boot Device ⁶	CD-ROM	Disabled IDE HD Floppy LS-120
3 rd Boot Device ⁶	FLOPPY	LS-120 CD-ROM Disabled IDE HD

BIOS Setup Parameters

Parameter	Default Setting	Alternate Setting(s)
4 th Boot Device ⁶	1 st IDE	Floppy LS-120 CD-ROM Disabled IDE HD
1 st IDE Hard Drive	Internal	VersaBay DS Internal DS VersaBay
2 nd IDE Hard Drive	VersaBay	DS Internal DS VersaBay Internal
3 rd IDE Hard Drive	DS Internal	DS VersaBay Internal VersaBay
4 th IDE Hard Drive	DS VersaBay	DS VersaBay Internal VersaBay

Peripheral Setup

Setup Question	Default	Options
Internal Hard Drive	Enabled	Disabled Enabled
USB Controller	Disabled	Enabled Disabled
Serial Port	Auto	Disabled COM1, IRQ4 COM2, IRQ3 COM3, IRQ4 COM4, IRQ3 Auto (PnP OS Setup)
Parallel Port	Auto	Disabled LPT1 LPT2 Auto (PnP OS Setup)
Parallel Mode	ECP	Uni-Dir Bi-Dir EPP ECP

BIOS Setup Parameters

Parameter	Default Setting	Alternate Setting(s)
IR Serial Port	Disabled	Disabled COM2, IRQ3 COM3, IRQ4 COM4, IRQ3 Auto (PnP OS Setup)

Notes:

- 1 These setup items will only be visible when system is cold docked.
- 2 These setup items will only be changeable when power savings is set to custom. Otherwise, they will display settings based upon the following power savings defined setting table.
- 3 Greyed out until supervisor password is set up.
- 4 Only active after a password is set up.
- 5 Resume alarm time is selectable when wake up from suspend alarm is set.
- 6 Bootable device when set to IDE Hard Drive. Only one IDE device is allowed to be bootable. Appears only when configured by Windows 95 device manager.

BIOS Setup Menus

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

Standard CMOS Setup

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

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

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

- **System Memory** — Displays the amount of system memory.

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

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

- Diskette Drives — Lets you designate the drive type for your diskette drives.
- Internal Hard Disk Drive — Allows you to enable or disable the internal hard drive(s) in your system.
- Docking Station Drives — Enable and disable the drives installed in a docking station. (These options are only available when the NEC Versa is docked.)

Advanced CMOS Setup

Advanced CMOS settings let you define the following functions.

- LCD Panel View Expansion — Specifies whether the panel view is reduced/off or expanded/on.
- PS/2 Port Hot Swap — Specifies whether or not you can swap a PS/2 device during system operation.
- Internal Mouse — Specifies whether or not you can use both the internal and the external mouse.

System Security Setup

- Change Supervisor Password — Allows you to establish password protection for entering the BIOS setup utility, booting the system, and resuming from suspend.
- Change User Password — Allows you establish a user password once a Supervisor password is set.
- Boot Password Required — Indicates whether or not a password is required during system boot.
- Resume Password required — Indicates whether or not a password is required during system resume.

Power Management Setup

Your NEC Versa uses the Advanced Configuration and Power Interface (ACPI) which enables the operating system to manage the power given to each attached device and to turn off a device when not in use. In addition, ACPI enables manufacturers to develop computers that automatically power up with a touch to the keyboard.

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

- **ACPI Aware OS** — Specifies whether or not the system will boot to an ACPI-aware operating system.
- **Power Switch Button** — Lets you use the Power button as a power switch or a sleep button.
- **LCD Suspend/Resume** — Allows you to lock the power switch setting when the LCD panel is closed.
- **Power Management Under AC** — Specifies whether to enable power management features when AC power is in use. When AC power is connected to your NEC Versa system, power management is usually disabled. If you enable this parameter, the system automatically activates the power management profile you set, even when AC power is used.
- **Power Savings Level** — Lets you choose one of four levels of power management.
 - **High Perform** provides the greatest system performance with only minimal power conservation.
 - **Longest Life** provides the maximum amount of power savings.
 - **Off** disables power management and all device timeouts.
 - **Custom** lets you define your own power management configuration by selecting values for specific device timeouts. Custom lets you set the following timeouts.
 - **Hard Disk Timeout** — Allows you to select the amount of time before your hard disk shuts down.

-
- Video Timeout — Allows you to select the amount of time before your video shuts down.
 - Peripheral Timeout — Lets you choose the amount of time before your peripherals are controlled by power management.
 - Audio Device Timeout — Selects the amount of time before your audio device shuts down.
 - Standby Timeout — Allows you to select the system standby timeout period.
 - Auto Suspend Timeout — Defines how much time elapses before the system automatically enters Suspend Mode.
- LCD Suspend/Resume — Allows you to suspend/resume when the LCD panel is opened and closed.
 - Suspend Option — Allows you to specify either Suspend or Save to File (STF) as the default power management mode. In Suspend, after a specified amount of inactivity, your NEC Versa shuts down all devices as you specified in Power Management Setup or applies default timeouts. All your data is automatically recovered from where you left off when you Resume.
 - Automatic STF — After 30 minutes in Suspend mode the current file is automatically saved to a special file on the hard disk and the system shuts down. To resume, you must press the power button. The system reads the saved file and sets up your system accordingly.

If Auto Save to File is set to Off and HDPREPEZ is present, pressing the **Fn-Power/Sleep** key combination puts the system into Save to File mode.

- Panel Backlight — Lets you select the LCD screen backlight intensity.
- Suspend Warning Tone — Specifies whether the system warning tone sounds when Suspend mode starts. It is best to keep this option enabled.

-
- Modem Ring Resume — Lets you choose whether the system resumes automatically when an external modem receives a ring signal.
 - Wake Up from Suspend Alarm/Resume Alarm Time — Lets you set a resume time from Suspend mode.

Boot Device Setup

Boot Device Setup allows you to define the following functions.

- Quick Boot — Specifies whether or not the system performs all tests during system boot.
- Docking Station Video — Selects whether or not the Docking Station video card is enabled at system boot.
- Bootup NumLock — Specifies whether NumLock is On or Off at system startup.
- Boot Devices — Specifies the sequence of boot devices and whether or not the system attempts to boot from a device other than those specified.
- Other Boot Devices — Allows you to specify IDE devices as bootable devices.

Peripherals Setup

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

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

-
- Internal Hard Drive — Allows you to enable or disable the Internal Hard Drive.
 - Serial Port — Allows you to disable the port or change its address assignment.
 - Parallel Port/Parallel Mode — Lets you disable or reassign the parallel port and select a parallel port mode.
 - IR Serial Port — Allows you to disable or reassign the IR Serial port.
 - USB Controller — Allows you to enable or disable the USB controller.

Other BIOS Setup Options

BIOS Setup offers other options, including the following:

- Auto Configuration with Defaults — Loads default settings.
- Save Settings and Exit — Accepts changes made to current settings, saves to CMOS, and exits BIOS Setup.
- Exit Without Saving — Reverts to previously selected settings and exits Setup.

Password Protection

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

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

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

Using BIOS Setup to Set Power Management

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

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

Using the Save to File (STF) Feature

STF protects the integrity of your working files. For example, if you are called away from your NEC Versa and Suspend mode is selected with auto Save to File active, your system automatically goes into Suspend mode after 10 minutes. After 30 minutes, if you don't return, your working environment is saved to a special file on your hard disk.

Using STF can benefit you in the following ways.

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

To configure your NEC Versa's STF feature:

1. Access the BIOS setup utility.
2. Select Power Management from the Setup Main Menu.

-
3. Move the cursor down and highlight Suspend Mode.
 4. Press the **PgUp** key and select STF.
 5. Save the settings and exit BIOS Setup.

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

- After 30 minutes of inactivity, your NEC Versa automatically invokes STF, provided you have configured STF in the BIOS Setup utility.
- You can manually invoke STF by pressing **Fn + Power** button simultaneously, before you leave your NEC Versa.

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

Updating the BIOS

Use the BIOS Update Diskette (BUDLite) to update your NEC Versa system BIOS. Specifically, the BIOS is the code transmitted onto the ROM (Read-Only Memory) on your system.

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

If you are informed that the default BIOS needs an upgrade, to receive a copy of the BUDLITE contact the Versa Laptop Fulfillment Hotline at (800) 842-6446, or NEC CSD Support Services at (800) 632-4525, Fax (978) 635-4100.

You should only use the BIOS upgrade diskette for your specific model.

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

Reference the booklet, "Getting Service and Support in Asia, Australia, and Europe," to find out how to contact the local office in your country.

Performing the BIOS Update

Use the following procedure to perform the actual BIOS update.

1. Make sure that the computer is operating under AC power, and that the power is off. Insert the BIOS Update diskette into diskette drive A.
2. Power on the computer with the diskette in drive A. The computer boots and automatically loads the utility. A message similar to the following appears:

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

3. Press **Enter** to continue.

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

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

Press any key to return to the Main menu.

5. Highlight the "Install New BIOS" option and press **Enter**.
6. Press **Y** and then press **Enter**. After a brief pause, a message appears telling you to remove the diskette in drive A.

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

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

8. Enter Setup at Start up by pressing **F1** at power on to restore the default parameter settings.

Windows Introduction

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

Windows 95

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

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

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

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- Online Services — Includes setup icons for online services.
 - NEC Customization Utility — Installs NEC-designed custom wallpaper, and launches the Applications and Drivers CD and the IR Setup Utility.
 - NEC Help Center — Includes online topics specific to the NEC Versa, NEC customer support, and Windows. (In some countries, the system ships with an online user's guide instead of the Online Help Center.)
 - Start — Displays a pop-up menu with which to start programs and applications, open documents, access system settings, look at online help, and shut down your system.

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

Windows NT

Windows NT allows you to run applications created specially for Windows NT and Windows 95. You can also run applications created for other versions of Windows, MS-DOS[®], and character-based MS[®] OS/2[®] 1.x as well as POSIX-compliant applications.

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

- My Computer — Provides access to drives, printers, the Control Panel, and network features.
- Network Neighborhood — Shows you the network, integrated LANs, and WANs.
- Inbox — Lets you access the Microsoft mail software as well as Microsoft services.
- Recycle Bin — Gives you a trash container in which to put unwanted files.

-
- NEC Help Center — Includes online topics specific to the NEC Versa, NEC customer support, and Windows. (In some countries, the system ships with an online user's guide instead of the Online Help Center.)
 - NEC Customization Utilities — Includes NEC custom wallpaper and launches the Applications and Driver CD.

NEC CSD Utilities

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

The NEC CSD utilities include:

- NEC Customization Utility
- HDPREPEZ Utility for MS-DOS and Windows NT

NEC Customize Utility

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

- install NEC CSD custom wallpaper
- launch the Applications and Drivers CD
- install the drives to use the full functionality of Hot and Warm Swap

 **Note:** For detailed installation procedures refer to the associated notes on the Applications and Drivers CD.

- access the IR setup utility to enable the IR port (Windows 95 only).

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

Follow these steps to use the NEC Customize utility.

1. Double click the NEC Customize icon.
2. From the display window, select the option that you want to execute.
3. Click Launch to execute the selected option.
4. Click OK when the program execution is complete.
5. Click Exit.

HDPREPEZ Utility

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

Procedures for using HDPREPEZ for Windows 95 and Windows NT systems differ. See the instructions appropriate for your system.

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

Using HDPREPEZ in Windows 95

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

Follow these steps to run the HDPREPEZ utility.

1. Power off and restart your NEC Versa.
2. At the statement "Starting Windows 95," press **F8**.
3. From the Startup menu, select Option 6, "Safe Mode Command Prompt Only."
4. Enter MS-DOS. At the c: prompt, type **cd \necutils\hdprep** and press **Enter** to change to the \necutils\hdprep directory.
5. Type **HDPREPEZ** and press **Enter**. The utility automatically prepares your NEC Versa for the newly installed memory.

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6. Power off your system and then power on. A file, large enough to accommodate your system's memory is created on the hard disk drive.

Using HDPREPEZ in Windows NT

In Windows NT, run the HDPREPEZ utility

Follow these steps to run the HDPREPEZ utility.

1. Go to Start, Programs, AMI Save to File.
2. Select "Create STF File."

A DOS box displays and prompts you to "Proceed Y/N?"

3. Enter **Y** to create the STF file.

The STF file is created. When complete, a warning message indicates that the system will reboot.

NEC Help Center

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

The NEC Help Center includes the following sections.

- The *System Tour* provides a multimedia version of system features and functions as described in Chapter 1 of the printed user's guide.
- *System Information* provides an online version of Chapters 2-7 and appendices A and B of the printed user's guide and describes:

- Getting Started
- Using the Software
- Using the Hardware
- Using External Devices
- Using Multimedia
- Solving System Problems

— Setting Up a Healthy Work Environment

— System Specifications

- *Service and Support* includes Chapter 8, “Getting Services and Support,” from the printed user’s guide, as well as the *NEC Versa UltraCare Product Guide*.
- *FAQs* (Frequently Asked Questions) provides answers to the questions that NEC Versa users most frequently ask.

 **Note:** If you purchased your system outside of the U.S. or Canada, refer to the booklet, “Getting Service and Support in Asia, Australia, and Europe,” to find out how to contact the local office in your country.

Software Applications and Drivers

A variety of software* applications and drivers are provided on the Applications and Drivers CD for the NEC Versa LX/SX that ships with your system. These applications and drivers let you take full advantage of your system resources. The rest of this chapter discusses each application and how to use the Applications and Drivers CD to install the software.

Once you have installed an application from the Applications and Drivers CD access the program through the Start, Programs menu.

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

- Powerquest® PartitionMagic®
- Intel LANDesk® Client Manager
- SystemSoft® PowerProfiler
- SystemSoft® CardWizard
- Puma Intellisync™ 97

-
- McAfee VirusScan™
 - Microsoft® Internet Explorer
 - Netscape Navigator™
 - Adobe® Acrobat® Reader

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

Using the Applications and Drivers CD

Use the Applications and Drivers CD to install applications, drivers, utilities, Internet browsers, and the NEC Help Center.

Launching the Applications and Drivers CD

Follow these steps to launch the Applications and Drivers CD using NEC Customize.

1. Insert the Applications and Drivers CD into the CD-ROM reader.
2. Double click the NEC Customize icon.
3. Select “Launch Applications and Drivers CD.”
4. Click Install to launch the CD.

The Applications and Drivers CD dialog box appears.

Installing the Software

The Applications and Drivers CD dialog box consists of the following components.

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

-
- Exit — Clicking the Exit button closes the Applications and Drivers CD dialog box.

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

1. Click the selection tab of your choice.
2. Click the plus (+) box beside the desired application, driver, etc. to expand the selection.
3. Click the Installation selection to activate the Install button.
4. Click the Install button to install your selection.
Follow the on-screen instructions to install your selection.
5. Click Exit to close the Applications and Drivers CD dialog box.
6. Remove the CD from the CD-ROM reader when the installation is complete.

Partition Magic

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

 **CAUTION**

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

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

Intel LANDesk Client Manager

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

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

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

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

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

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

 **Note:** During the setup and installation of LANDesk Client Manager, you may be prompted to install Microsoft's Internet Explorer. Be sure to install Internet Explorer before installing LANDesk Client Manager.

After Internet Explorer is installed you must run the LANDesk Client Manager setup program again.

SystemSoft PowerProfiler

SystemSoft PowerProfiler™ for Windows NT lets you manage power resources, balancing performance with battery conservation. You can group power management settings into “profiles” for best performance and best conservation. You can also create custom profiles.

PowerProfiler provides status information, alarms, and timers that let you easily monitor and control power consumption.

Access PowerProfiler through the Start, Programs menu.

SystemSoft CardWizard

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

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

Access CardWizard through the Start, Programs menu or through the CardWizard toolbar icon.

Intellisync 97

Intellisync 97 is a powerful PC-to-PC synchronization solution that enhances your productivity by letting you synchronize all your key data. With Intellisync 97 for Windows you can:

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

Before using Intellisync 97 for infrared transfer, enable the IR port on your NEC Versa. For details about how to enable the IR port, see Chapter 4, “Using the Hardware.”

Before using Intellisync 97 for parallel or serial communication, connect the appropriate cable to the appropriate port on the back of your NEC Versa. For details about how to connect parallel and serial cables, see Chapter 5, “Using External Devices.”

For more information about Intellisync 97, install the application from the Applications and Drivers CD and refer to the online Help Center.

McAfee VirusScan

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

Access McAfee VirusScan through the Start, Programs menu.

Microsoft Internet Explorer

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

Netscape Navigator

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

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

Adobe Acrobat Reader

Adobe Acrobat Reader allows you to view, navigate, and print PDF files from your local hard drive, your local network, or the Internet.

4

Using the Hardware

- LCD Panel
- Keyboard
- NEC VersaGlide
- NEC VersaBay III
- 24X CD-ROM Reader
- DVD-ROM Reader
- PC Card Slots
- IR Port
- Increasing System Storage and Memory
- Switch Settings

LCD Panel

You control the brightness of the NEC Versa notebook LCD panel, with the **Fn+F8** and **Fn+F9** function keys on the NEC Versa keyboard. Press **Fn+F8** to increase the brightness and **Fn+F9** to decrease brightness. There are a total of 8 settings for brightness. Use a low brightness setting to conserve energy.

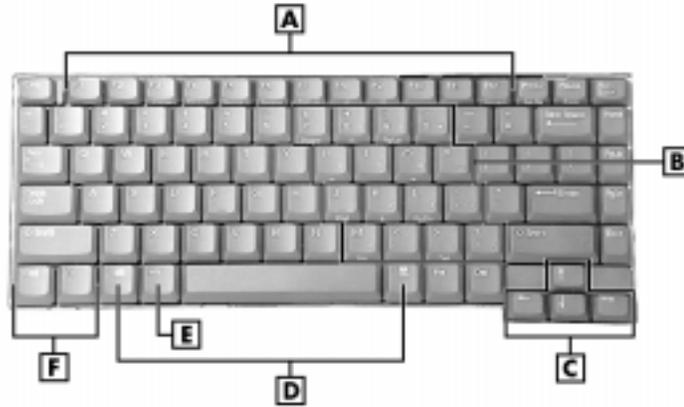
Keyboard

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

- Function keys
- Windows 95 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



A – Function Keys **B** – Numeric Keys **C** – Cursor Control Keys **D** – Windows 95 Keys **E** – Control Key **F** – Control Keys

- **Function keys** — Twelve function keys, **F1** through **F12**, are available on the NEC Versa keyboard. These keys work together with the **Fn** key to activate special functions. Nine keys are preprogrammed with dual functions, seven of which are printed in blue on the key. For more information about each function key, see the *NEC Versa SX Quick Reference Card*.

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

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

Fn-F3 — toggles between three video modes LCD, CRT, or both (LCD and CRT).

Fn-F4 — sets standby power management mode on. Press any key to turn off standby mode.

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

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

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

Fn-F8 — adjusts the LCD panel brightness.

adjusts brightness (gradually) up for XGA panels.

Fn-F9 — adjusts the LCD panel brightness.

adjusts panel brightness (gradually) down for XGA panels.

Fn-F10 — toggles zoom in and zoom out.

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

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

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

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

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

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

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



Display the Start menu



Quick access to shortcut menus

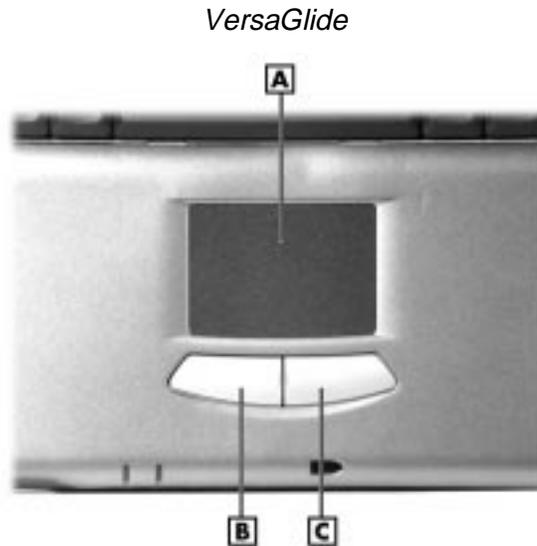
- **Control keys** — **Ctrl**, **Alt**, **Fn**, and **Shift** are controls used in conjunction with other keys to change their functions. To use control keys, press and hold the control key while pressing another key. For example, “press **Ctrl c**” means to hold down the **Ctrl** key and type the letter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

NEC VersaGlide

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

- Single tap to the touchpad, equivalent to a click of the left mouse button.
- Double tap to the touchpad or a double click of the left VersaGlide selection button, equivalent to a double click of the left mouse button.

In addition, the VersaGlide is equipped with edge detection technology. When your finger reaches the border of the VersaGlide pad, the cursor continues in the direction your finger was traveling. To stop the cursor, gently move your finger away from the border, or simply lift your finger from the pad surface.



A – Glide Surface B – Left Button C – Right Button

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

 **Note:** If you install another mouse driver over the shipping default, some of the VersaGlide features such as double-tap may be lost.

Making VersaGlide Adjustments

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

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

For more details, access the help files through the mouse icon on the Control Panel.

VersaGlide Tips

Follow these basic ergonomic tips while working:

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

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

NEC VersaBay III

The NEC VersaBay III is the drive bay on the right side of the NEC Versa SX Series. Your NEC Versa ships with a standard 3.5 inch, 1.44-MB diskette drive or a SuperDisk LS-120 drive installed in the bay. However, if you choose, you can remove the diskette drive or LS-120 drive and install the 24X CD-ROM reader that also ships with your system.

Locating the VersaBay III



A – Device in VersaBay III

In addition to the CD-ROM reader, the VersaBay III accepts the following options:

- a second battery pack
- a second hard disk drive
- a DVD drive
- the LS-120 SuperDisk drive
- a Weight Saver
- or a Zip drive.

Removing a Device from the VersaBay III

Use the following steps to remove the standard diskette drive, SuperDisk LS-120 drive, or other device from the VersaBay III.

1. Make sure the NEC Versa is powered off, all options are disconnected, and the LCD panel is closed.

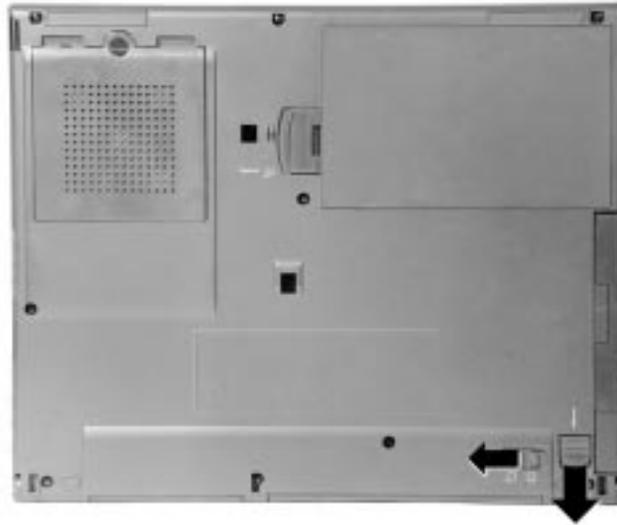


CAUTION

Your system must be powered off before removing or inserting devices in the VersaBay III.

2. Turn the system upside down.
3. Locate the VersaBay III release latches on the bottom of the unit.

VersaBay III release latches



4. Slide the locking latch towards the left of the system and hold it.
5. Slide the release latch towards the rear of the system until the drive pops part way out of the unit.
6. Continue to hold the release latch and pull the device the rest of the way out of the system.

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

Removing the device



Installing a Device in the VersaBay III

Use the following steps to install a device in the VersaBay III. These steps show how to install the 24X CD-ROM reader that ships standard with the system. Use these steps to install other devices as well.

 **Note:** A CD-ROM reader installed in the VersaBay III is specified as a master.

Your system *must* be powered off before removing or inserting devices in the VersaBay III.

1. Make sure the NEC Versa is powered off, all options are disconnected, and the LCD panel is closed.
2. Turn the system upside down.
3. Locate the VersaBay III release latches on the bottom of the unit.

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4. Slide the release latch towards the rear of the system and hold it.
 5. Align the CD-ROM reader in the VersaBay III and push it in until it locks into place.
 6. Turn the system over and open the LCD panel.
 7. Power on the system.

Customizing Your System with the VersaBay III

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

 **Note:** If you install a second hard disk drive in the VersaBay III, it is set as master.

Add another hard disk drive or second Li-Ion battery pack as follows.

1. Remove the standard diskette drive, LS-120 drive, or CD-ROM reader from the VersaBay III as described in “Removing a Device from the VersaBay III.”
2. Prepare your option for installation as follows.

To install a battery pack, first connect it to the VersaBay adapter that came with the battery. (Follow the instructions that come with the battery pack.)
3. Holding the front VersaBay III release latch towards the hard disk drive bay, align the option and its carrier in the VersaBay III.
4. Push in the option until it clicks into place.
5. Turn the system over, open the LCD panel, and power on. The system automatically recognizes the newly installed option.

24X CD-ROM Reader

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

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

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

24X CD-ROM reader



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

- 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 disc from the CD-ROM reader if the eject function is disabled by software or a power failure occurs.

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

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

CD Loading

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

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

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

CD Care

When handling CDs, keep the following guidelines in mind.

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



CAUTION

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

Changing the Auto Play Setting

Your system is not configured so that a CD inserted into the reader will automatically start playing. Although this feature makes using your CDs very convenient, it interferes with the system's power management function.

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

1. From the Windows 95 Start menu, select Settings and Control Panel.
2. In the Control Panel, highlight and double-click on the System icon.
3. Select the Device Manager tab.
4. Locate and open the CD-ROM folder.
5. Highlight the Toshiba CD-ROM XM 1702B line.
6. Press the properties button at the bottom of the window and select the Settings tab.
7. Proceed as follows:
 - To enable Auto Play, click to add a check mark next to the line "Auto insert notification."
 - To disable Auto Play, click to remove the check mark next to the line "Auto insert notification."
8. Select OK twice to accept the settings in the Settings tab and exit the Properties window.
9. To activate the new setting, reboot the system when prompted.

DVD-ROM Reader

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

PC Cards

PC Card Slots

Your NEC Versa SX notebook integrates two card bus slots for inserting two Type II PC cards or one Type III PC card. The 32-bit card bus also has zoomed video support in the both slots.

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

Using the system's card bus 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, follow these steps.

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

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

Inserting a card



A – Ejection Buttons

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

Removing a Card

Follow these steps to remove a PC card in Windows 95 and Windows NT.

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

Windows 95 alerts you if any applications are still using the card. If all applications using the card are closed, services for that card are shut down. You receive a message saying that it is safe to remove the card.

-
4. Press the button on the side of the PC card in the slot.

CardWizard Services

CardWizard, a software interface, manages the automatic allocation of system resources in Windows NT. It detects when a PC card is installed or removed. CardWizard also provides an interface to other software in order to load any necessary hardware drivers.

CardWizard provides Socket Services, a Basic Input Output System (BIOS) software interface that isolates driver software from the hardware. It provides a variety of system-specific functions, such as system slot and card detection while the system is operating.

Communication Cards

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

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

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

You can insert a network card in either slot.

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

You can insert a fax/modem card 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.

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

Storage Cards

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

Other Cards

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

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

IR Port

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

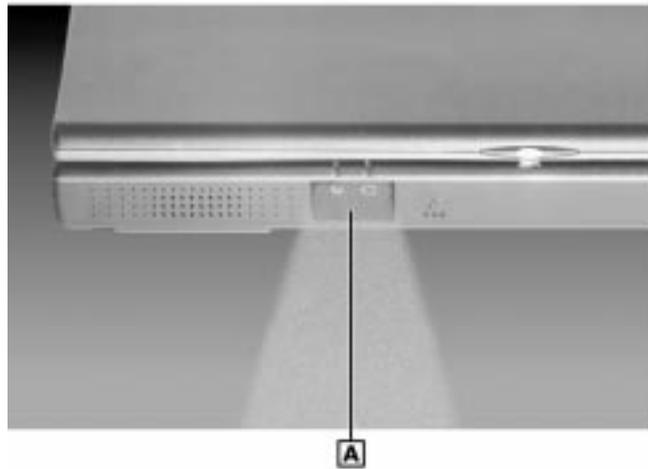
IR transfer speed ranges from 2.4 Kbit/sec to 4.0 Mbit/sec. You can limit the IR transfer speed through the Infrared icon in the Windows 95 control panel. Double click the icon and select the options to access the speed parameter.

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

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

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

Using the IR port



A – IR Window

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 adding a second hard disk drive in the VersaBay III. (Adding a second hard disk drive is described in the section "Customizing Your System with the VersaBay III.")

Memory Module Installation

Your NEC Versa SX computer comes standard with 32 megabytes (MB) of random access memory (RAM). You can increase system memory to a maximum of 192 MB or 256 MB depending on model. The RAM combinations possible are 32, 64, 96 and 128 MB depending on which two of the listed small outline-dual inline memory modules (SO-DIMM) are used.



CAUTION

Only install NEC CSD supplied/approved memory module options. Memory modules not supplied/approved by NEC CSD may not function properly in the NEC Versa SX notebook computer.

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

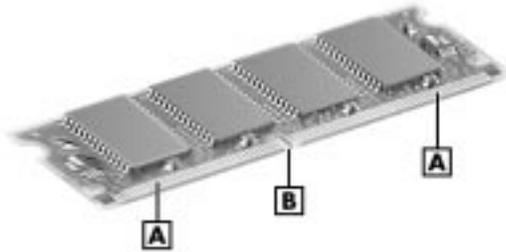
Installing a memory module involves the following procedures.

- removing the coin screw
- lifting the memory module bay cover
- installing the SO-DIMM
- reassembling the unit.

Use the following steps to install a memory module.

-
1. Make sure that the system is powered off and that no peripheral devices are attached.
 2. Close the LCD panel, turn the NEC Versa over.
 3. Locate the coin screw and remove it from the notebook by turning counter clockwise.
 4. Lift the Memory module bay cover.
 5. Locate the lock notches and alignment key on the SO-DIMM.

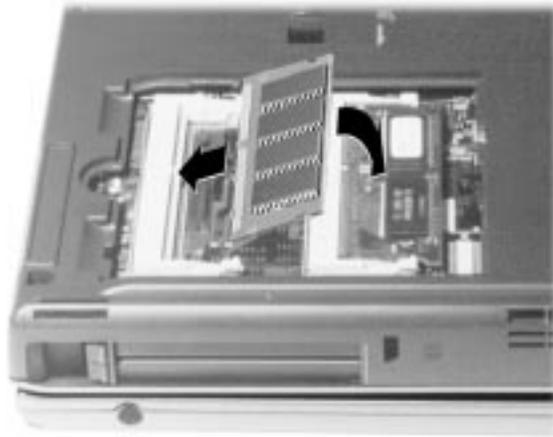
SO-DIMM memory module



A - Contacts **B** - Lock Notch

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

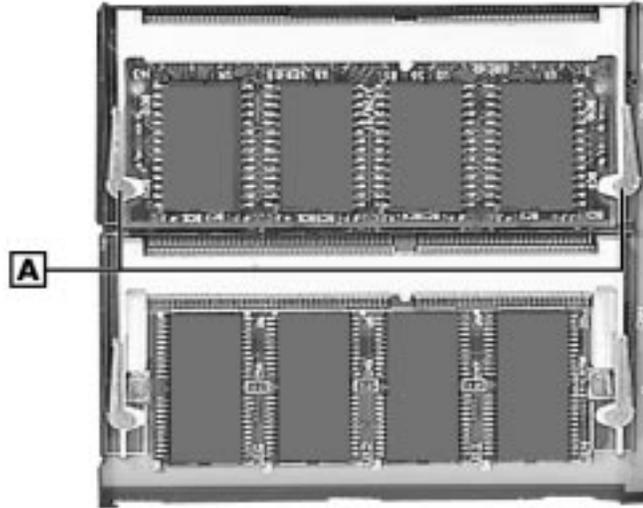
Installing the SO-DIMM



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

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

Removing an installed SO-DIMM



7. Reassemble the system as follows:
 - Reseat the memory module bay cover in its original position.
 - Replace and tighten the coin screws.

Switch Settings

A four-position dip switch is located underneath the keyboard. (Instructions for accessing the switches follow the section that explains updating the BIOS.) The following lists identifies each switch setting and its function.

- Switch 1, Password Override Switch — The default setting is “OFF.” For example, if you forget your password and cannot access the data on your NEC Versa, change the setting to “ON” and your current password dissolves.
- Switch 2 — Keyboard type; default is “ON” for 85 key US.
- Switch 3 — Reserved for factory use.

-
- Switch 4 — HDD search wait inhibit mode; default is “OFF.”

Changing Switch Settings

Use the following steps to change switch settings.

1. Make sure the system is powered off and that no peripheral devices are attached.
2. Locate and remove the rubber cap and the Phillips-head screw on the upper left hand corner of the keyboard cover of the NEC Versa.

Locating the rubber cap



3. Press down using slight pressure on the right hand side of the keyboard retainer and slide to the left.

Keyboard retainer

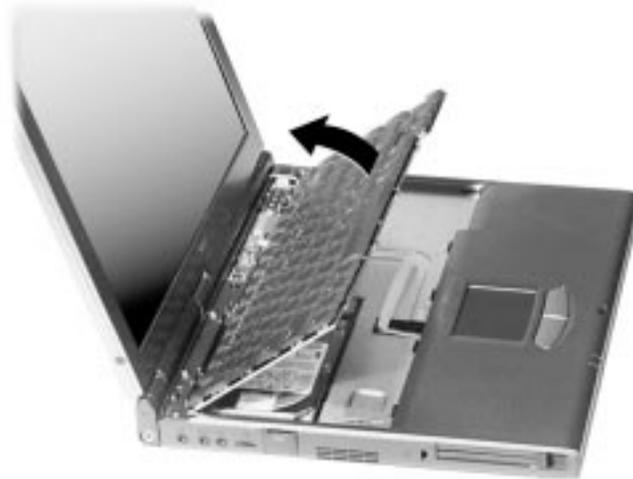


4. Gently lift up the edge of the keyboard nearest the LCD and slide the keyboard toward the LCD screen to release the tabs that secure it.
5. Carefully tilt the keyboard and place it against the LCD panel. Be careful not to twist or disconnect the keyboard cable.

WARNING

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

Lifting the keyboard



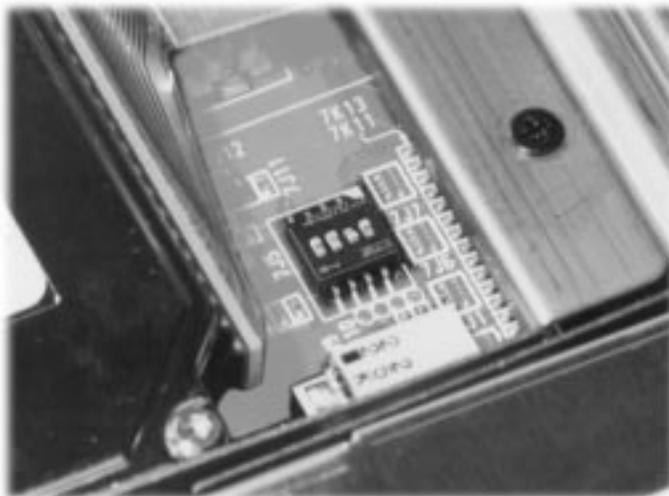
6. Locate the dip switch block. Using a fine-tipped object, change the appropriate switch to the required setting. See “Switch Settings” for dip switch functions and settings.



CAUTION

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

Dip Switch



7. Reassemble the system as follows:
 - Reposition the keyboard and align the tabs with the grooves in the system.
 - Reseat the keyboard in its original position.
 - Replace the keyboard retainer on the system.
 - Replace the screw and insert the rubber cap.

5

Using External Devices

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

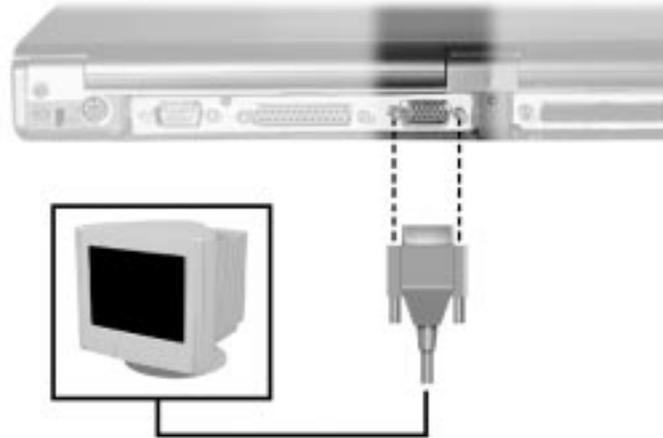
External Monitor

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

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

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

Connecting a monitor



4. Connect the monitor power cable and plug it into a properly grounded wall outlet.
5. Follow any setup instructions in the monitor's user's guide.
6. Turn on the power to the monitor.

-
7. Press the Power/Sleep button to resume Active mode or power on the NEC Versa.
 8. Press **Fn-F3** to toggle between the LCD, CRT, and simultaneous CRT/LCD display.

Printer

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

Parallel Devices

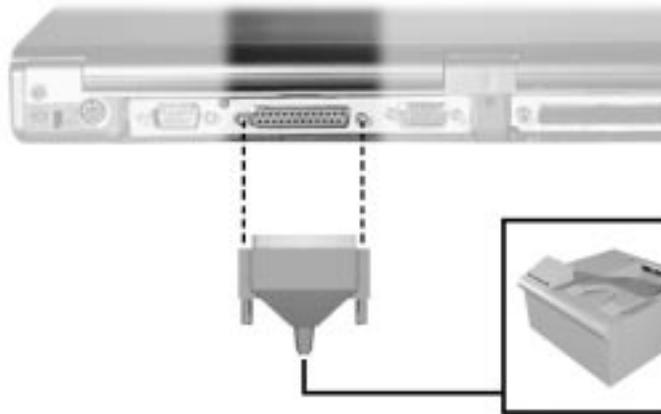
To install a parallel device such as a printer, you need a cable with a male 25-pin connector for the system and, for most parallel printers, a Centronics[®]-compatible 36-pin connector.

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

Connect a parallel device to your NEC Versa as follows.

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

Connecting a parallel printer



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

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

Serial Devices

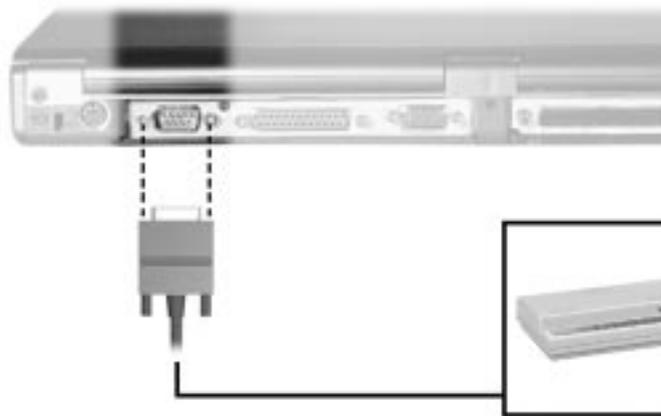
To install a serial device such as a printer or an external modem, you need a cable with a female 9-pin connector.

 **Note:** When you connect a printer, 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 power to both the NEC Versa and the device is 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.

External Keyboard/Mouse

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

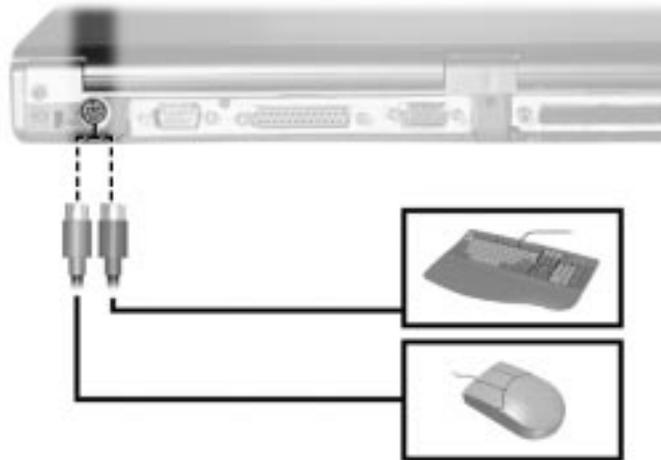
 **Note:** For information about disabling the VersaGlide while an external mouse is connected, refer to "How to Use BIOS Setup" in Chapter 3. The Internal Mouse parameter in the Advanced CMOS Setup section of the BIOS Setup parameters allows you to enable or disable the VersaGlide touchpad.

To attach both an external keyboard and an external mouse at the same time, use one of the following options NEC Y-adapter, NEC Versa Dock or NEC Versa PortBar.

 **Note:** If you purchased this product outside the U.S. or Canada, contact the local NEC CSD office or their dealers for ordering information. Reference the booklet, "Getting Service and Support in Asia, Australia, and Europe," to find out how to contact the local office in your country.

To connect an external keyboard or mouse simply connect the device to the keyboard/mouse port. You are now ready to use your external keyboard or mouse.

Connecting an external keyboard or mouse



 **Note:** For instructions on connecting an external keyboard or external mouse to a NEC Versa Dock or NEC Versa PortBar, see the user's guide that came with your option.

External Bar Code Scanner

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

To connect a bar code scanner, follow the instructions under “External Keyboard/Mouse.”

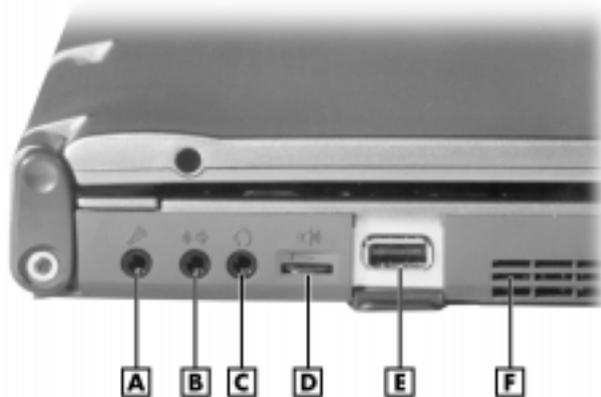
External Audio Options

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

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

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

Audio ports



A - Microphone B - Line-In C - Headphones/Speaker D - Volume Knob
E - USB Port F - Fan Vent

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

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

USB Devices

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

USB device



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

NEC Versa Dock

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

- two internal expansion slots (PCI)
- integrated bay with battery charging
- two half height bays for a 5.25-inch drive-one available if the VersaBay III is installed

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



CAUTION

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

NEC Versa PortBar

The NEC Versa PortBar™ duplicates the ports found on the back of your NEC Versa SX system, providing the following and an additional USB port:

- Monitor Port
- External Diskette Drive Port
- Joystick/Midi Port
- Parallel Port
- Serial Port
- PS/2 Keyboard Port
- PS/2 Mouse Port
- USB (two)

- DC In Port

Keep the PortBar in your office connected to peripherals while you take your NEC Versa on the road.

See the instruction sheet that comes with the PortBar for details about connecting and using the PortBar.

6

Using Multimedia

- Audio
- Video
- Multimedia Applications

Audio

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

Recording

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

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

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

To record, access Microsoft Sound Recorder located in Accessories under the Multimedia group and select Sound Recorder. This program provides the required software to record sound on your NEC Versa notebook computer.

Line-In

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

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

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

CD-ROM Input

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

Microphone

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

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

Playing Back

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

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

Using Headphones

The NEC Versa headphone port delivers sound at half a watt. The stereo headphones plug in through the headphone jack located on the left side of the NEC Versa. Adjust the volume with the audio software on the NEC Versa to the maximum and then you will have the full range of adjustment using the volume knob.

Using the Built-In Speakers

The NEC Versa has built-in stereo speakers that are always available. Adjust the volume through the software or with the volume control knob located on the left side of the NEC Versa.

 **Note:** The internal speakers are disabled when the system is docked.

Using External Stereo Speakers

For full stereo sound impact, you can plug a pair of stereo speakers into the headphone jack located on the left side of the system. Adjust the volume through software, with the volume control knob located on the left side of the system, or through the controls on the speakers.

MIDI Files

The musical instrument digital interface (MIDI) lets you enhance a presentation by adding computer-generated music and sound effects. Using MIDI, you can record multiple tracks of performances from a master controller, such as a keyboard, and orchestrate playback on one or more instruments. You can also obtain 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 SX Series computer features a dazzling TFT color high-resolution display for sharp effective visuals right on the NEC Versa or on an external CRT monitor. The NEC Versa XGA TFT display has high resolution of 1024 x 768 pixels.

Using Digital Video Files

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

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. Graphic animation can add punch to a presentation with an animated illustration, a flashing arrow, or a flying logo.

Multimedia Applications

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

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

7

Solving System Problems

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

Problem Checklist

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

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

Troubleshooting

Problem	What To Do
The system does not power on.	<p>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.</p> <p>If you have the AC adapter attached, check that the electrical outlet you are using works.</p>
LCD screen is dark and blank.	<p>Power-saving mode has shut off the backlight. Press a keyboard key or the Suspend button.</p> <p>The built-in LCD may not be selected. Press Fn F3 once or twice.</p> <p>Screen brightness needs adjustment. Adjust the control.</p> <p>The system entered Suspend mode due to low battery power. (Check the Status bar for a half-moon icon.) Plug in the AC adapter or replace the battery pack, and then press the Suspend button to resume operation.</p>
Battery power does not last long.	<p>Use power-saving modes.</p> <p>Fully charge and discharge the battery several times to recondition it.</p> <p>Replace the battery.</p>
Information on the LCD is difficult to see.	<p>Adjust the brightness control.</p>
An optional component does not work.	<p>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.</p>
The Suspend/Resume button does not work.	<p>A disk drive might be busy. Wait until the disk drive stops and try again.</p> <p>If system does not resume, it may have auto suspended on a low battery. Attach the AC Adapter and try again.</p> <p>If the system does not resume, check that Auto Play is disabled. See "Changing the Auto Play Setting" in Chapter 4 for details.</p> <p>The NEC Versa may be connected to a docking station. Some power management functions do not work when the NEC Versa is docked.</p>

Start-Up Problems

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

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

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

To continue start-up procedures, press **F2** 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 SX Series computer has a built-in checking program that automatically tests its components when you turn the system power on. This diagnostic test is called the Power-On Self-Test (POST). If the system finds a problem during the POST, the system displays an error message or emits a series of beep signals. If this happens, follow the instructions in the POST Error Messages table or the Beep Code table, as appropriate.

Post Error Messages

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

Post Error Messages

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

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

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

Beep Codes are listed in the table that follows.

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

Using the Product Recovery CD

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

In the Windows NT environment you can use the repair/emergency disk to restore your system to its current state of operation without reverting to its initial installation state. For details about creating the repair/emergency disk, refer to the Windows NT documentation.

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

The Product Recovery CD gives you the following choices.

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

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

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

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

 **Note:** Use partition restore if your hard disk is partitioned into two or more partitions (drives).

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

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

- Setup Files — Lets you install the Windows 95 Setup Files into the Windows\Options\Cabs directory. If for any reason your Windows 95 system prompts you to rerun the Windows 95 setup program, use the Product Recovery CD to install the setup files.
- Exit — Exits the restore program.

Full/Express Restore

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

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



CAUTION

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

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

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

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

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

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



CAUTION

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

5. Choose Full or Express to restore your hard disk drive to its original factory installed state.
 - If you choose Full, the Confirm Your Choice screen appears. Proceed to step 6.
 - If you choose Express, the recovery process begins immediately. A screen with progress bars displays and lets you know the progress of the recovery.

Proceed to step 8.



CAUTION

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

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

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

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

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

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



CAUTION

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

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

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

You are required to reenter your Microsoft license number.

Partition Restore

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

 **CAUTION**

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

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

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

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

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

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

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

 **CAUTION**

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

If the hard disk was configured with multiply or extended partitions you may have to reinstall some software because configuration settings and shared files may be lost.

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

6. Read the Confirm Your Choice screen.

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

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

If you select Exit, the restore program exits.

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

 **CAUTION**

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

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

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

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

You are required to reenter your Microsoft license number.

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, see Chapter 8, “Getting Services and Support,” for details about contacting NEC CSD.

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

Reference the booklet, "Getting Service and Support in Asia, Australia, and Europe" to find out how to contact the local office in your country.

8

Getting Services and Support

- Quick Reference Chart
- NEC NOW
- NEC CSD Web
- NEC CSD FTP Sites
- NEC CSD FaxFlash Service
- Email/fax To Support Services
- NEC CSD Bulletin Board
- NEC CSD Support Services
- NEC CSD Customer Assistance Center
- Versa Laptop Fulfillment Hotline

Quick Reference Chart

Service	Contact Information
NEC NOW	888-8NEC-NOW (888-863-2669) or 888-306-4636 Web address: www.nec-now.com
NEC CSD Web and FTP Sites	Web address: www.nec-computers.com FTP site: ftp.neccsdeast.com
NEC CSD FaxFlash SM Service	U.S. and Canada: 888-329-0088 International: 978-635-6090
E-mail to NEC CSD Support Services through a commercial online service or the Internet.	Internet e-mail address: tech-support@neccsd.com
Fax Service to NEC CSD Support Services	978-635-4100
NEC CSD Bulletin Board System	978-635-4706
NEC CSD Support Services (U.S. and Canada customers only).	800-632-4525
NEC CSD Customer Assistance Center	888-632-9128
Versa Laptop Fulfillment Hotline	800-842-6446

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

See the booklet, *Getting Service and Support in Asia, Australia, and Europe* to find out how to contact the local office in your country.

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

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

NEC NOW

If you are interested in purchasing another system, or upgrades and options for your existing system, contact NEC NOW. NEC NOW offers standard configuration components, customized, “build-to-order” systems, or the name of the NEC reseller nearest you.

Whether you purchase through the Online Store or by calling an NEC NOW System Consultant, NEC NOW makes your computer shopping easy.

To access the NEC NOW web site and purchase through the Online Store, enter the following Internet Uniform Resource Locator (URL) in your browser:

<http://www.nec-now.com/>

To contact a System Consultant (8:00 a.m. to 8:00 p.m. EST) to obtain additional information about your purchase simply dial:

**1-888-8NECNOW (1-888-863-2669) or
1-888-306-4636**

NEC CSD Web Site

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

Look in the Service and Support area for the following:

- technical documentation, including Frequently Asked Questions, reference manuals, and warranty information

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

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

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

NEC CSD FTP Site

You can use the Internet to access the NEC CSD FTP (file transfer protocol) site to download various files (video drivers, printer drivers, BIOS updates, and Setup Disk files). The files are essentially the same files as on the NEC CSD Web site and the NEC CSD Bulletin Board System.

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

<ftp.neccsdeast.com/>

Once in the file menu, follow the prompts to choose and download the file(s) you want.

NEC CSD FaxFlash Service

The NEC CSD FaxFlash service is a self-help, automated electronic information service for obtaining up-to-date product application notes, installation procedures, troubleshooting tips, data sheets, technical information bulletins, illustrated parts lists, part numbers, and other information about your system.

Using a fax machine, you can obtain information from FaxFlash 24 hours a day, 7 days a week. Simply call the FaxFlash number on your touch-tone telephone and order the information you want by following the voice prompts. FaxFlash automatically faxes the information to you.

If you are new to FaxFlash, first order one of the following catalogs. Each catalog lists the available documents and their document numbers. Current catalogs include:

- Catalog 1, NEC CSD Telephone Directory and Online Service Information
- Catalog 3, NEC CSD Computer Product Specifications, Warranty Policy, UltraCare Guidelines, and Sales Information
- Catalog 5, NEC ProServa™ and Express Serva Product Information
- Catalog 6, NEC Ready Consumer Desktop Systems
- Catalog 7, NEC PowerMate Commercial Desktop Systems
- Catalog 8, NEC Portable Systems (including Versa® Notebook and MobilePro™ Handheld computers).

Catalogs 5, 6, 7, and 8 contain technical support information, including Technical Information Bulletins, Illustrated Parts lists, Frequently Asked Questions (FAQs) lists, and other product support documents.

Order information from FaxFlash as follows.

1. Be sure that your fax machine or fax/modem is on. Have the document number ready for the document you want.
2. At your touch-tone telephone, enter 888-329-0088 (U.S. and Canada only) or 978-635-6090 (international).
3. Listen to the instructions provided by the voice prompts.

Press **1** if you do not want an introduction to FaxFlash. Follow the automated instructions for ordering your document or catalog.

Press **2** if you want an introduction to FaxFlash. Follow the automated instructions for ordering your catalog or document.

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4. When prompted, enter your fax number and name.

For international use, first enter the international long distance access number (011), your country code, your area code or city code, then your fax number.

The information you request will be automatically sent to your fax machine. Please wait for the ordered document to arrive at your fax machine before calling to order more documents. If FaxFlash attempts to send the second order before the first order is completed, the order may be canceled. After three tries, FaxFlash assumes that your line is busy and terminates any further processing of the order.

E-mail/fax To Support Services

The NEC CSD Support Services offers technical support by E-mail over the Internet network if you have a modem. The Internet address is:

tech-support@neccsd.com

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

(978)-635-4100

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

- Desktop
- Monitor
- CD-ROM
- Printer
- Notebook.

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

NEC CSD Bulletin Board

If you have access to a modem, you can use the NEC CSD Bulletin Board System (BBS) to get the latest information on hardware and software. The BBS allows you to download files (video drivers, printer drivers, BIOS updates, etc.) to a diskette for system enhancements and upgrades.



CAUTION

NEC CSD recommends that you download files from a Bulletin Board System to a diskette and not to your hard disk drive.

The BBS can also be accessed through the CompuServe online service. Log onto the BBS as follows.

1. From the Windows desktop, click the **Start** button.
2. Point to Programs. Point to Accessories and then click **HyperTerminal**.
3. Double click the **Hypertrm.exe** icon. The HyperTerminal program appears.
4. Follow the instructions on the screen to set up your modem. Click the **HyperTerminal** help button for information about dialing the phone number.

If you need to check communications settings, check that the settings match the following BBS parameters.

- Baud rate: select any baud rate that matches your modem

-
- Parity: none
 - Data bits: 8
 - Stop bits: 1
 - Flow control: Xon/Xoff (select Hardware if using 14.4 bps or higher).
5. Following the HyperTerminal instructions, enter the BBS phone number (978-635-4706). Your business phone system and/or location might require a **9 1** or **1** prefix.

 **Note:** The first time that you use the BBS, you are requested to provide information for a new user questionnaire.

6. Press **Enter** twice.
7. Enter your first name, last name, and password. Press **Enter** after each.
8. Follow the screen prompts until the Main Menu is displayed.
9. At the Main Menu, select **J** to join a conference. Select **Conference 2** for the laptop and portable PC conference.
10. From the Main Menu, press **F** and **Enter** for the File menu.
11. At the File menu, select **F** for a list of downloadable files. Follow the prompts to select a file for downloading.

 **CAUTION**

Executable files automatically format your diskette in Drive: A when you download files from the BBS. Formatting destroys any data on the diskette in Drive: A. before you download files from the BBS, check that you do not have information on the diskette that you need in the future.

After you complete downloading your file, log off the BBS as follows:

1. Press **Enter** (to continue).
2. Press **G** (command for Goodbye/Hangup).
3. Press **Enter**.

NEC CSD Support Services

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

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

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

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

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

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

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

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

NEC CSD Customer Assistance Center

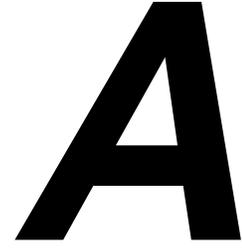
NEC CSD offers Customer Service for extended warranty and contract information, spare parts ordering, warranty claims, repair services, and service authorizations.

Direct assistance is available Monday through Friday from 8:30a.m. to 8:00p.m.. Call the NEC CSD Customer Assistance Center, toll free, at **1-888-632-9128** (U.S. and Canada only).

Versa Laptop Fulfillment Hotline

(800) 842-6446

NEC CSD 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. Call the fulfillment center from 8:30 AM to 6:00 PM (EST), Monday through Friday.



Setting Up a Healthy Work Environment

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

Making Your Computer Work for You

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

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

WARNING

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

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

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

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

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

 **Note:** To increase your comfort and safety when using your notebook computer as your primary computer system at your home or office, note the following recommendations:

use a separate, external keyboard attached to your notebook computer

use a separate, external monitor attached to your notebook computer.

Arrange Your Equipment

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

Adjust Your Chair

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

Check the following:

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

Adjust Your Input Devices

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

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

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

Adjust Your Screen or Monitor

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

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

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

Vary Your Workday

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

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

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

Pre-Existing Conditions and Psychosocial Factors

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

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

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

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

B

Specifications

- System Components
- Memory Map
- Interrupt Controllers

System Components

The following system component specifications are standard except where noted.

System Processor

- Intel Pentium — 233-MHz MMX
- Intel Pentium II — 233-MHz, 266 MHz

Architecture

32-bit Peripheral Component Interconnect (PCI)

Random Access Memory

- Standard Main Memory — 32 or 64-MB SO-DIMM
- Optional Expansion — 1 slot. Expandable in 32-MB, 64-MB or 128-MB increments. Maximum 192 MB total for Intel Pentium and 256 MB total for Pentium II.
- Video Ram — 2 MB SGRAM internal
- Cache RAM
 - Level 1:32 KB
 - Level 2:512 KB

Read-Only Memory

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
- Serial — 1 port, 9-pin D-sub
- Infrared — 1 port on the front of system; 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, for optional NEC Versa Dock, optional Versa PortBar, or optional external FDD Connector Kit.
- Microphone — 1 port, 3-pin, Mini Pin Jack
- Stereo Headphones — 1 port, 3-pin, Mini Pin Jack, .5 watts per channel
- Stereo Line-In — 1 port, 3-pin, Mini Pin Jack
- DC In — 1 port, for AC adapter cable
- USB port — 1 port, 4 pin

Main Battery

- Type — Lithium-Ion (Li-Ion), nine-cell
- Output Voltage — 10.8 V
- Capacity — 3,600 mAh
- Battery Life — Approximately 2-4 hours depending on model, with power management features enabled.
- Recharging Time — Approximately 2 hours when the system is on or off.

Speakers

Two built-in, 0.3 watts (W) each with a maximum 0.5 watts (W) output

- 16-bit stereo
- Sound BlasterPRO compatible
- Sound Controller - ESS 1978SA

PC Card Slots

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

LCD Panel

- Panel — 13.3-inch high resolution active matrix Thin Film Transistor (TFT), Extended Graphics Array (XGA) color display
- Resolution — 1024 x 768
- Dot Pitch — 0.264 mm x 0.264 mm
- Colors — 64K

- Panel — 14.1-inch high resolution active matrix Thin Film Transistor (TFT), Extended Graphics Array (XGA) color display
- Resolution — 1024 x 768
- Dot Pitch — 0.264 mm x 0.264 mm
- Colors — 64K

Keyboard

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

- Function keys — 12 keys
- Cursor Control keys — 8 keys; arrow keys arranged in inverted T layout
- Numeric keypad — embedded
- Fn key — function key for ROM-based key functions
- Stroke — 2.8 mm

Diskette 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 PC87338VJG

VersaBay III SuperDisk™ LS-120 Drive

External 3.5 inch Pack

- Data Transfer Rate — 4 MB/sec
- Track to track seek rate — 3 ms
- Formatted Capacity:
 - Optical diskette — 120 MB
 - High Density floppy diskette — 1.44 MB
 - Double Density floppy diskette — 720 MB

Hard Disk Drive

- Capacity — Internal 2.1 GB or 3.2 GB 9.5 mm removable IDE hard disk drive
- Track-to-track seek rate — 3 ms
- Average seek time — 13 ms (read), 14 ms (write)
- Revolutions per minute — 4200
- Data transfer rate — 16.6 MB/sec
- Media data rates — 69.8 bit/sec(Max)
- Mean Time Between Fails (MTBF) — 300,000 hours

24X-speed CD-ROM Reader

- Type — 5-inch CD-ROM Pack
- Average Data Transfer Rates — 1500 KB/second (mode 1), 1710 KB/ second (mode2)
- Read Rate — 1650 KB/sec max, 1500 KB/sec avg
- Burst Transfer Rate — 11.1 MB/sec (PIO mode 2); 13.3 MB/sec DMA mode; PIO Mode 3 compatible (with IORDY)
- Average Access Time — 150 milliseconds (ms)
- Memory Buffer — 128 KB
- Interface — IDE (ATAPI)
- Photo CD Compatibility — Multisession Photo CD, Video CD (CD-1, CD-I Ready, CD-G, CD-Plus, CD-DA, CD-EXTRN, and CD-ROM XA)

Power

AC Adapter

- Input Voltage — 100 to 240 volts (V) AC, 50 or 60 Hz, 1.0 A
- Output Voltage — 15.0 V DC, 4.0 A (60W)
- Australia, Europe and Asia use an AC power cable specific to each country's standards.

Battery Pack

- Type — nine-cell Lithium Ion (Li-Ion)
- Output Voltage — 10 V
- Capacity — 3,600 mAH
- Battery Life — Approximately 2-4 hours, under typical operating conditions.
- Recharging Time — Approximately 2 hours when the system is on or off.

Bridge Battery

When fully charged, backs up memory contents and system status for up to 30 minutes under Suspend mode; battery charge time is under 5 minutes.

Dimensions

System

- Width — 12 in. (304.8 mm)
- Depth — 9.8 in. (248.9 mm)
- Height — 1.28 in. (32.5 mm)

Battery Pack

- Width — 3.44 in. (87.4 mm)
- Depth — 5.63 in. (143 mm)
- Height — 0.78 in. (19.8mm)

Weight

- NEC Versa — 4.74 lb (2.15 kg)
- Battery Pack — .85 lb (.38 kg)

Recommended Environment

Operation

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

Storage

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

Memory Map

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

System Memory Map

Memory Space	Size	Function
000000-0002FFh	768 bytes	BIOS Interrupt Vector Table
000300-0003FFh	256 bytes	BIOS Stack Area
000400-0004FFh	256 bytes	BIOS Data Area
000500-09FFFFFFh	639 KB	Applications Memory (used by the OS, device drivers, TSRs, and all DOS applications)
0A0000-0AFFFFFFh	64 KB	Video Buffer (EGA and VGA)
0B0000-0B7FFFFh	32 KB	Video Buffer (monochrome, CGA color, VGA monochrome)
0B8000-0BFFFFFFh	32 KB	Video Buffer (CGA, EGA color, and VGA color)
0C0000-0CBFFFFh	48 KB	Video ROM (EGA and VGA)
0CC000-0CFFFFFFh	16 KB	Unused. (Reserved for Adapter ROMs and other devices requiring ROMs)
0D0000-0DFFFFFFh	64 KB	Used by Adapter ROMs (i.e., network controllers, hard disk controllers, SCSI host adapters)
0E0000-0EFFFFFFh	64 KB	Used by System ROM adapters (i.e., network controllers with boot capability)
0F0000h-0FFFFFFh	64 KB	System AMIBIOS (includes Setup and hard disk drive utilities)
100000h-1FFFFFFF	32 MB	Built-In Extended Memory
2000000-5FFFFFFF	64 MB	Extended Memory

Interrupt Controllers

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

System Interrupt Controllers

Controller Master/Slave	Priority	Name	Device
Master	0	IRQ00	SystemTimer 1
Master	1	IRQ01	Keyboard
Master	2	IRQ02	Programmable Controller
Slave	3	IRQ08	Real-time Clock
Slave	4	IRQ09	Infrared Port
Slave	5	IRQ10	USB Port
Slave	6	IRQ11	PC Card Bus Controller
Slave	7	IRQ12	PS/2 Mouse
Slave	8	IRQ13	Math Coprocessor (built into CPU)
Slave	9	IRQ14	Hard Disk Controller 1
Slave	10	IRQ15	IDE NEC Versa Dock or PC card in NEC Versa Dock
Master	11	IRQ03	Not used, available
Master	12	IRQ04	Serial Port
Master	13	IRQ05	Sound
Master	14	IRQ06	Diskette Drive Controller
Master	15	IRQ07	Parallel Port

C

Frequently Asked Questions

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

External Mouse



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



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



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



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

Display



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



The maximum resolution in simultaneous mode is 1024 x 768 because this is the maximum resolution supported by the LCD panel. You can obtain higher resolutions if you connect a higher-resolution external monitor and switch to CRT-only mode.



How can I change my video drivers?



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

PC Cards



In which slots do my PC cards go?



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



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



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



What precautions should be taken when running NEC PC card drivers with MemMaker?



You may experience some difficulty when running with some PC card drivers loaded in the upper memory. You may have to move these drivers back to lower memory.



How can I determine if non-NEC PC network or modem cards will work with NEC PC card drivers?



If the PC card was not supplied by NEC, check for the following:

- If it is a modem card, the NEC Versa beeps twice when you insert the card, letting you know that it is recognized.
- If it's a network card (LAN, Ethernet), an NEC PC card is the only one that works directly. The CECFG.EXE file enables the beep tones. This file is on the diskette that comes with the NEC network card. Windows 95 will automatically recognize your card or prompt you for drivers.

Other cards can be made to work but require extensive PC card and network knowledge. See the user's guide that comes with the network card.

NEC CSD cannot comment on the suitability of non-NEC PC cards. NEC notebook computers are preloaded with SystemSoft's CardWizard software. Refer to the manual that came with any non-NEC PC card for information on the drivers it provides.



Can I run two of the same type cards simultaneously?



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



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



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



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



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



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



One of the following may be the cause of the problem:

- The PC card controller is configured in a manner that makes IRQ lines 4 and 10 unavailable for PC card use. Choose another IRQ for use with the PC Card.
- To provide a stable platform free of conflicts, NEC CSD excluded some resources from PC card use.

Diskette Drive



Why can't I boot from the diskette drive?



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

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



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



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



How do I format a diskette?



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

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



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



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

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

Some systems ship with the SuperDisk LS-120 drive that uses 100 megabyte diskettes. You can store up to 100 MB of information on these diskettes.

Booting



What are all those messages on my screen when I start up my computer?



At power on, the system displays configuration messages as it performs diagnostic tests. The tests check major hardware components, such as memory and interface circuits. The system compares the hardware it finds with parameters last saved by the Setup program. This process is the Power-On Self-Test (POST).

 **Note:** You can bypass the POST memory test by pressing the space bar.



Why can't I boot from the diskette drive?



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

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



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



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

To use a warm boot, press and hold Ctrl, Alt, and Del twice if in Windows 95 or once if in DOS. When all three keys are pressed, the system resets.

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

Press the system unit power switch to perform a cold boot. If power is on, turn the power off using the system unit power switch, wait at least five seconds, and then turn the power on.

 **Note:** When possible, use a warm boot to restart your notebook computer.

Power Management



Does my system come with power management features enabled?



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

When your screen goes blank, before the system goes into Suspend mode, just press the space bar or move your mouse to reactivate your system.



What is the function of Suspend mode?



Suspend mode provides the greatest power savings by putting the system in a maximum power shutdown. When the system goes into Suspend mode, it saves data and system status and then shuts off power to all possible components. Suspend mode lets you save power without first saving your work.



How do I bring my system out of Standby mode?



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



How do I bring my system out of Suspend mode?



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



What is a time-out?



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



level?

Can I change my system's power management



Yes. Simply press the Power Management switch (Fn+F7) on the system keyboard.

In Windows 95, click on Start, Settings, Control Panel. In Control Panel, double click on the Power icon. In the Power Properties screen, uncheck "Allow Windows to manage power use on this computer."

Miscellaneous



How do I set the time and date?



You can change the time and date in Windows 95 and Windows NT as follows.

- Double click the time in the lower right corner of the screen.
- Change the date and time as needed.



How do I speed up my application?



If the application you are using runs really slow, close any other applications you are not using - this should speed things up.

If this doesn't help, save your work, close the application, and exit Windows. Restart Windows and the application you want to run.

If your application still runs slow, you might consider installing additional memory (see "Memory Module Installation" in Chapter 4).

Also, refer to your operating system's documentation for tips on optimizing system performance.



Why do I get a message "Insufficient memory" when I run some games? I have 32 MB of memory.



The "Insufficient memory" refers to the 640 kilobytes of base memory. Since there are drivers being loaded at power on, the amount of memory can be lower than the game requires.

Contact the game manufacturer and request advice to create a boot disk. This will load only the drivers necessary to run the game.



How do I find help in a Windows application?



If you need help in a Windows application, click on a Help button or Help menu item. Most applications provide online help. If the application doesn't provide these, try pressing **F1**.



How do I save a file?



You save a file by selecting File then Save from the drop down menu. If the file was not previously named, you will be prompted for a file name. In Windows 95 and Windows NT, you can use up to 255 characters to name a file.



I do?

I'm having a problem using the IR port. What can



Check that both the sending and receiving system device are using the same transmission application and version.

If you are transmitting underneath a fluorescent light, try repositioning the system and device so that they are not directly under the fluorescent light.

Index

A

AC adapter, 2-2, 2-17, 2-18, 2-19
 using, 2-2
AC outlet, 2-3
AC Power port, 1-11
Adapter kit, 2-12
Applications and Drivers CD, 3-26
 using, 3-26
Audio
 AVI files, 6-2
 MIDI files, 6-2
 WAV files, 6-2
Auto Play, 4-14
Automatic Save to File, 3-14

B

Base unit, 1-7
Battery
 handling, 2-8
 pack, 2-17
 recharging precautions, 2-12
 secondary, 2-17
 when to change, 2-8
Battery bay, 1-15
Battery pack
 precautions, 2-11
 using, 2-5
Battery status, 2-5
Battery status icons, 1-9
BBS, 8-7
Beep codes, 7-7
BIOS setup, 3-2
BIOS setup utility
 advanced CMOS setup, 3-12
 checking system parameters, 3-5
 looking at screens, 3-4
 main menu, 3-3

 other options, 3-16
 save to file, 3-18
 standard CMOS setup, 3-11
 using keys, 3-5

Bridge battery, 2-13
Brightness control, 1-4

C

CD-ROM reader, 6-3
CD-ROM reader features, 4-12
Cleaning your NEC Versa, 2-16
CMOS battery, 2-13
Control panel, 1-5
Custom settings, power management,
 3-13

D

Dimensions
 battery pack, B-7
 system, B-7
Dip switch settings, 4-23
Diskette busy icon, 1-6
Diskette drives, 3-12
Docking port, 1-11
Docking Station drives, 3-12
DVD-ROM reader, 4-14

E

Entering BIOS setup, 3-2
Expansion port, 1-11
External audio options, 5-7

F

Fan vents, 1-13
Full Restore, 7-9

H

Hard disk drive, 4-20

HDPREPEZ utility, 3-23
Headphones, 1-12

I

Increasing system storage
 hard disk drive, 4-20
Infrared port, 4-18
Installing external devices
 external monitor, 5-2
 keyboard, 5-6
 mouse, 5-6
 parallel device, 5-3
 printer, 5-3
 serial device, 5-4
Internal hard disk drive, 3-12
Internal mouse, 3-12
Interrupt Controllers, B-10
Introducing the Software, 2-17
IR port, 4-18
IRQs, B-10

K

Kensington Lock, 1-13
Keyboard
 control keys, 4-2
 cursor control keys, 4-2
 function keys, 4-2
 numeric keypad, 4-2
Keyboard panel, 1-7

L

LCD panel controls, 4-2
LCD panel features, 1-4
LCD panel view expansion, 3-12
LCD status bar, 1-6
Line-In, 6-2
Lithium-Ion battery, 2-12
Low battery power, 2-5

M

Main battery, 2-12
Main power source

DC power, 2-18
Memory Map, B-9
Memory module installation, 4-20
Microphone, 1-12
MIDI files, 6-5
Modem ring resume, 3-15
Monitor port, 1-11
Mouse port, 1-10
Multimedia
 digital files, 6-5
 microphone, 6-3
 playing back, 6-3
 recording, 6-2
 using animation files, 6-5
 using external speakers, 6-4
 using headphones, 6-4
 using internal speakers, 6-4
 video, 6-5
Multimedia applications, 6-5

N

NEC CSD
 bulletin board, 8-7
 Customer Assistance Center, 8-10
 email/fax, 8-6
 FaxFlash service, 8-4
 FTP site, 8-4
 support services, 8-9
 web site, 8-3
NEC Customize, 3-22
NEC Customize utility, 3-23
NEC NOW, 8-3
NEC Versa Dock, 5-10
NEC Help Center, 3-25
NEC Versa PortBar, 5-10
NEC VersaBay III, 1-14
NEC VersaGlide, 1-8

O

Online help
 NEC Help Center, 3-25
Operating systems

Windows 95, 3-20
Windows NT, 3-21
Optional battery charger, 2-6

P

Panel backlight, 3-14
Parallel port, 1-10
Partial Restore, 7-12
Password protection, 3-16, 3-17
PC card slots, 4-15
PC cards
 Cardwizard services, 4-17
 communication cards, 4-17
 inserting a card, 4-15
 removing a card, 4-16
 storage cards, 4-18
Pentium II microprocessor, 1-3
Peripheral Component Interconnect (PCI),
 1-3
POST error messages, 7-4
Power button, 1-8
Power connections, 2-18
Power LED, 1-9
Power management, 3-17
 custom settings, 3-13
Power management under AC, 3-13
Power sources, 2-2
Powering on, 2-4
Power-on self test (POST), 3-2
Precautions, 2-14
Preparing your NEC Versa for travel,
 2-19
Problem checklist, 7-2
Product Recovery CD
 how to use, 7-8
PS/2 Hot Swap, 3-12

R

Recharging the battery, 2-6
Recommended operating environment,
 B-8
Replacing the battery pack, 2-9

S

Save to file
 feature, 3-18
Serial port, 1-10
Setting system parameters, 3-5
 peripherals, 3-15
 power savings, 3-13
Setting up a healthy work environment,
 A-2
Smart switch, 1-8
Software applications, 3-26
Specifications
 calendar clock, B-2
 CD-ROM reader, B-6
 diskette drive, B-5
 hard disk drive, B-6
 input/output facilities, B-3
 keyboard, B-5
 LCD panel, B-4
 LS-120 SuperDisk drive, B-5
 main battery, B-3
 PC card slots, B-4
 power, B-7
 Random Access Memory, B-2
 Read-Only Memory, B-2
 speakers, B-4
 system processor, B-2
Start-up problems, 7-4
Storage requirements, 2-15
Supplemental CD, 2-17
Suspend mode, 3-14
Suspend warning tone, 3-14
Switch settings, 4-23
 changing, 4-24
System care, 2-14
System date, 3-11
System features
 back, 1-10
 bottom, 1-15
 front, 1-4
 left, 1-12
 right, 1-14

System memory, 3-12
System software, 3-26
System time, 3-11

T

Technical support, 7-14
Traveling checklist, 2-18
Traveling with your system, 2-17

U

Updating the BIOS, 3-18
USB port, 1-13, 5-9
Using the AC Adapter, 2-2
Using the battery pack, 2-5
Using the NEC VersaGlide, 4-5

V

Versa Laptop Fulfillment Hotline, 8-10
VersaBay, 4-7
 customizing your system, 4-11
 installing devices, 4-10
VersaBay III release latches, 1-15
VersaGlide
 adjustments, 4-6
 features, 4-5
 tips, 4-6
Volume control, 1-12

W

Wake up, suspend alarm, 3-15
Weight
 battery pack, B-8
 system, B-8
Windows 95, 3-20
Windows 95 keys, 4-5
Windows NT, 3-21

Y

Y-cable adapter, 1-10

Glossary

A

AC Adapter

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

A/D Conversion

The process of converting an analog signal into a digital signal.

animation

The art of making things appear to move in two-dimensional (2-D) or three-dimensional (3-D) space and making events happen over time.

applications programs

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

audio

The range of frequencies that humans hear.

B

base RAM

Area of system memory between 0 and 640 kilobytes available to the user for the operating system and application programs.

BIOS

Basic Input Output System. A collection of primitive computer routines, usually burnt into ROM, that controls the real-time clock, keyboard, disk drives, video display, and other peripheral devices.

bit

Binary digit. The smallest unit of computer data.

bits per second

(bps) A unit of transmission. Also called baud rate.

board

Printed circuit board (PCB). Board on which computer components are soldered and thin wires are printed to connect the components.

boot

To start up a computer. See cold boot and warm boot.

bus

An electronic circuit within a computer used for transmitting data or electrical power from one device to another.

byte

Group of eight contiguous bits.

C**CD**

Compact disc. A polished metal platter capable of storing digital information. The most prevalent types of compact disks or those used by the music industry to store digital recordings and CDs used to store computer data. Both types are read-only, which means that once the data is recorded onto them, they can only be read or played.

CD audio

Also called digital audio, uses the same format as conventional music CDs. CD audio sounds have been digitized at a high sampling rate.

CD-ROM reader

Compact Disc Read-Only Memory. A computer-controlled device that reads high-capacity optical discs and sends the output to the computer.

clock

Electronic timer used to synchronize computer operations.

CMOS

Complementary Metal Oxide Semiconductor. A chip that contains nonvolatile memory in the Versa. CMOS is backed up by an internal battery that preserves clock/calendar data and system configuration parameters stored in CMOS.

cold boot

Process of starting up the computer by turning on the power. If power is already on, the process means to turn off the computer and turn it on again. A cold boot reinitializes all devices.

crt

Cathode-Ray Tube. A type of display screen used in desktop monitors. It forms the screen image using tiny dots called, pixels. See also LCD.

cursor

A movable image on the display screen that indicates where the next entered data appears.

D**default**

A value, option, or setting that the computer automatically selects until you direct it otherwise.

digital audio

Recorded sounds such as speech and sound effects. These are played back by the audio circuit's Digital-to-Analog Converter (DAC).

digital sound

A description of a sound wave that consists of binary numbers.

digitizing

The process of converting an analog signal into a digital representation.

diskette

A thin flexible platter coated with a magnetic material for storing information.

diskette drive

A magnetic drive that writes on and retrieves data from a diskette.

DSTN

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

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**FM synthesis**

A technique for synthesizing sound that uses a combination of modulated sine waves to produce different waveforms.

function key

The set of keys on the keyboard (usually F1 through F12) that let you get help and error message information or quickly select frequently used commands.

H**hard disk**

A rigid magnetic storage device that provides fast access to stored data.

hardware

The electrical and mechanical parts from which a computer is made.

hertz

(Hz) A unit of frequency equal to one cycle per second.

hot key

Combination of two or three keys that you press simultaneously for a particular function.

I**input/output**

(I/O) The process of transferring data between the computer and external devices.

IDE

Intelligent Drive Electronics. A hard disk drive type that has controller electronics built into the drive and delivers high throughput.

interface

A connection that enables two devices to communicate.

interrupt

A special control signal from an I/O device that diverts the attention of the microprocessor from the program to a special address.

K**kilobyte**

(KB) 1024 bytes.

L**LAN**

Local Area Network.

LCD

Liquid Crystal Display. An LCD consists of a thin sandwich of two glass plates with sealed edges, containing nematic liquid-crystal material that forms the screen image. Versa displays are LCD type.

load

To copy a program into the computer's memory from a storage device.

M

megabyte

(MB) 1,048,576 bytes.

memory

Electronic storage area in a computer that retains information and programs. A computer has two types of memory — read-only memory (ROM) and random access memory (RAM).

menu

A video display of programs or options.

microprocessor

A semiconductor central processing unit that is the principal component of a microcomputer. Usually contained on a single chip that includes an arithmetic logic unit, control logic, and control-memory unit.

MIDI

Musical Instrument Digital Interface. A standard serial bus, digital interface designed to connect electronic musical devices. MIDI has no innate sound of its own.

MMX

A set of 57 multimedia instructions built into Intel's newest microprocessors. MMX-enabled microprocessors can handle many common multimedia operations, such as digital signal processing (DSP), that are normally handled by a separate sound or video card. However, only software especially written to call MMX instructions — MMX-enabled software — can take advantage of the MMX instruction set.

mode

A method of operation; for example, the Versa operates in either normal or power-saving modes.

modem

MOdulator-DEModulator. A device that links computers over a telephone line.

MPEG

The MPEG (Moving Pictures Experts Group) standard is used to encode motion images. The MPEG player program in Windows for Workgroups and Windows 95 applications lets you play back MPEG files.

multimedia

Computer technology that integrates different forms of media such as sound, text, graphics, and video.

N**nonvolatile memory**

Storage media that retains its data when system power is turned off. Nonvolatile memory in the Versa is a complementary metal oxide semiconductor (CMOS) chip which is backed up by an internal battery. The backup battery preserves the clock/calendar data and system configuration parameters stored in CMOS. See volatile memory.

O**operating system**

Set of programs that manage the overall operation of the computer.

overwrite

Storing information at a location where information is already stored, thus destroying the original information.

P**page**

A type of message transmission in which a message is sent or received via modem to a paging device from a computer (with paging communications software) or telephone.

parallel interface

Interface that communicates eight bits at a time.

parallel printer

A printer with a parallel interface.

parameter

A characteristic of a device or system.

password

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

PC Cards

A credit card sized peripheral interface standard for portable devices. Types of PC cards (also known as PCMCIA cards) currently offered by major vendors include fax/modems, LAN, storage cards, and wireless communications devices.

peripheral

Input or output device not under direct computer control. A printer is a peripheral device.

pixels

Picture elements. Tiny dots that make up a screen image.

port

Provides the means for an interface between the microprocessor and external devices. A cable connector is usually plugged into the port to attach the device to the computer.

processor

In a computer, a functional unit that interprets and executes instructions.

prompt

A special symbol indicating the beginning of an input line. Also a message that appears on the screen indicating that the user must take a certain action.

R**RAM**

Random Access Memory. A storage device into which data is entered and from which data is retrieved in a nonsequential manner.

read

To extract data from a storage device such as a diskette.

ROM

Read-Only Memory. Memory in which stored data cannot be modified by the user except under special conditions.

reset

The process of returning a device to zero or to an initial or arbitrarily selected condition.

resolution

The degree of screen image clarity. Video display resolution is determined by the number of pixels on the screen. Resolution is usually specified in pixels by scan lines, for example, 640 by 480. See pixels.

RS-232C

Standard interface for serial devices. This port is sometimes referred to as the serial port.

S**scanner**

An optical device that reads printed material and converts it to a computer screen image.

serial interface

An interface that communicates information one bit at a time.

serial printer

A printer with a serial interface.

SO-DIMM

Small outline dual-inline memory module. A small circuit board that holds memory chips. A dual in-line memory module (DIMM) has a 64-bit path.

software

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

SVGA

Super Video Graphics Array. Graphics technology that supports up to 256 colors and a graphics resolution of 800 by 600 pixels.

system board

The main printed circuit board inside the system unit into which other boards and major chip components, such as the system microprocessor, are connected.

T**TFT**

Thin Film Transistor. A type of NEC Versa LCD color screen that supports 256 colors.

U**USB**

Universal Serial Bus. This new external bus standard supports the connection of up to 127 peripheral devices, such as mice, modems, and keyboards. USB supports plug-and-play installation on some systems.

V**VGA**

Video Graphics Array. Graphics technology that supports up to 256 colors and a graphics resolution of 640 by 480 pixels.

volatile memory

Storage media that loses its data when system power is turned off. Standard memory and memory that you add to the Versa are volatile memory. See nonvolatile memory.

W**warm boot**

Process of resetting the computer without turning off the power through keyboard input (pressing Ctrl, Alt, and Del keys simultaneously). The system returns to an initial or arbitrarily selected condition.

waveform

A graphic representation of a sound wave as displayed on an oscilloscope, which converts sound waves into electronic signals.

write

To record or store information to a storage device.

X**XGA**

Extended Graphics Array. This high-resolution graphics standard supports 640 x 480 – 1024 x 768 pixel and 65 thousand simultaneous colors. XGA also supports non-interlaced monitors.

Z**zoomed video**

Zoomed video technology allows data transfer directly between a PC card and VGA controller. This allows notebook computers to connect via PC card to real-time multimedia devices such as video cameras.

Battery Replacement

A lithium battery in some computers maintains system configuration information. In the event that the battery fails to maintain system configuration information, NEC CSD recommends that you replace the battery. For battery replacement information, call your NEC CSD dealer or the NEC CSD Customer Assistance Center.

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 remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

Battery Disposal

The main battery is made of Lithium-Ion (Li-Ion) and the CMOS clock battery is made of Lithium. Your bridge battery (not the main battery) is made of nickel-metal hydride (NiMH).

Contact your local waste management officials for other information regarding the environmentally sound collection, recycling, and disposal of the batteries. For additional information on the proper collection or disposal of rechargeable batteries, please call 1-800-8-BATTERY.

Federal Communications Commission Radio Frequency Interference Statement



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 Class B limits per radio noise emissions or digital apparatus, set out in the Radio Interference Regulation of the Canadian Department of Communications.

Avis de conformité aux normes du ministère des communications du Canada

Cet équipement ne dépasse pas les limites de Classe B d'émission de bruits radioélectriques pour les appareils numériques, telles que prescrites par le Règlement sur le brouillage radioélectrique émis 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.

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