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NEC V5000 Series

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Using this Guide

The *NEC Versa® 5000 Series User's Guide* gives you the information you need to maximize the use of your NEC Versa 5000 Series notebook computer. Read this guide to familiarize yourself with the system and its features. For specific information see:

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

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- Appendix A, “Setting Up a Healthy Work Environment,” provides guidelines to help promote a healthy work setting.
 - Appendix B, “Specifications,” to review NEC Versa 5000 Series system specifications and operating conditions.
 - Appendix C, “NECCSD Information Services,” gives details about the many support services available from NECCSD.
 - Appendix D, “Using DOS Programs,” provides guidelines for setting up and running DOS programs from Windows 95.

TEXT SETUP

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

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

**WARNING**

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

**CAUTION**

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



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 5000 Series notebook computer:

- The *NEC Versa 5000 Series Quick Setup* sheet helps you get your system up and running.
- The *NEC Versa 5000 Series Quick Reference* card provides an easy-to-carry reference to LED meanings, controls, function key combinations, and NEC help numbers.
- An online version of this user's guide on your hard disk drive lets you leave your printed guide at home and still have all the information you need at your fingertips.

Contents

Using this Guide	ix
Text Setup	x
Related Documents	xi
1 Getting Started	
Getting to Know Your NEC Versa 5000	1-2
Around the Front of the System	1-3
LCD Panel	1-3
Microphone and Speakers	1-4
Power Button and Status LEDs	1-4
Keyboard	1-7
NEC VersaGlide	1-7
UltraSlim VersaBay Drives	1-8
Around the Back of the System	1-9
Around the Sides of the System	1-10
Around the Bottom of the System	1-12
NEC Versa Power Sources	1-14
Using the AC Adapter	1-14
Powering On	1-16
Using the Main Battery Pack	1-16
Installing the Battery Pack	1-17
Recharging the Battery Pack	1-21
Battery Handling	1-21
Battery Life	1-22
Extending Battery Life	1-22
Battery Precautions	1-23
Battery Charging	1-24
Battery Disposal	1-24
Internal Batteries	1-24
CMOS Battery	1-25
Bridge Battery	1-25

System Care	1-25
Precautions	1-26
Storage Requirements	1-28
Routine Cleaning	1-29
2 Introducing the Software	
Windows 95 Introduction	2-2
Guide to Online Help	2-3
The Setup Utility	2-4
Other Software	2-4
LapLink	2-5
How to Use LapLink	2-5
McAfee AntiVirus Software	2-7
CyberMedia First Aid 97	2-8
Online Services	2-8
Prodigy Internet	2-10
America Online	2-11
CompuServe	2-12
AT&T WorldNet	2-13
Microsoft Internet Explorer	2-13
Microsoft NetMeeting	2-14
Official Airline Guide (OAG)	2-14
3 Using Setup and Power Management	
Setup Utility	3-1
How to Enter Setup	3-1
How to Use Setup	3-2
The Setup Screen	3-2
Using Keys	3-3
Checking/Setting System Parameters	3-4
Main	3-9
Advanced	3-10
Security	3-10
Power Savings	3-13
Exit	3-14
Using Power Management	3-15
Power Saving Modes	3-15
Power Management Settings	3-16

4 Using Your NEC Versa

LCD.....	4-1
Support Feet.....	4-2
Keyboard.....	4-3
Function Keys.....	4-4
NEC VersaGlide.....	4-6
Making VersaGlide Adjustments.....	4-7
VersaGlide Tips.....	4-8
UltraSlim VersaBay Use.....	4-9
20X CD-ROM Reader.....	4-12
CD Loading.....	4-13
Using Bootable CDs.....	4-14
Using Audio CDs.....	4-15
Playing Entertainment CDs.....	4-15
Playing Movie CDs.....	4-15
CD Care.....	4-16
PC Cards.....	4-16
Type II Cards.....	4-17
Type II Extended Cards.....	4-17
Type III Cards.....	4-17
Communication Cards.....	4-17
PC Card Modems.....	4-18
Storage Cards.....	4-18
Interface Cards.....	4-18
Other Cards.....	4-18
PC Card Slots.....	4-19
Inserting a PC Card.....	4-19
Removing a Card.....	4-21
IR Port.....	4-22
Increasing System Storage and Memory.....	4-23
Hard Disk.....	4-23
Removing and Installing a Hard Disk Drive.....	4-23
Installing Memory Modules.....	4-26
Running PhDisk.....	4-29
Removing a Memory Module.....	4-30
Reviewing the Memory Map.....	4-32

Installing Options.....	4-33
External Keyboard or Mouse	4-33
Printer	4-35
Serial Devices.....	4-35
Parallel Devices	4-37
External Monitor	4-38
External Diskette Drive Connection.....	4-40
External USB Devices	4-40
Audio Devices	4-41
NEC PortBar 5000	4-42
PortBar Ports.....	4-43
Attaching the PortBar 5000.....	4-43
Disconnecting the PortBar.....	4-44
5 Using Multimedia	
Audio	5-1
Recording	5-1
Line-In	5-3
Microphone	5-3
Playing Back	5-4
Using Headphones	5-5
Using the Built-In Speakers.....	5-5
Using External Stereo Speakers.....	5-5
MIDI Files.....	5-5
Video.....	5-6
Using Animation Files.....	5-6
Multimedia Applications	5-7
6 Traveling with Your NEC Versa	
Power Connections	6-1
Checklists.....	6-2
What to Take.....	6-2
Preparing Your NEC Versa for Travel	6-3
7 Solving Problems	
Problem Checklist.....	7-1
Start-Up Problems	7-3

POST Error Messages	7-3
If You Need Assistance.....	7-6
Updating the System BIOS	7-6
Using the Product Recovery CD.....	7-7
Full Restore	7-7
Selective Installation	7-10
A Setting Up a Healthy Work Environment	
Making Your Computer Work for You.....	A-1
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	
C NECCSD Information Services	
How to Reach Us.....	C-2
NECCSD Diskette Fulfillment Center	C-2
NECCSD Customer Service and Technical Support Center (TSC)	C-3
NECCSD Customer Assistance Center.....	C-4
NECCSD FaxFlash Service	C-4
Using FaxFlash.....	C-4
Ordering Information	C-5
NECCSD Bulletin Board System (BBS).....	C-6
Logging On	C-7
Logging Off.....	C-8
NECCSD on CompuServe	C-9
Using CompuServe	C-9
NECCSD on America Online.....	C-10
Using America Online.....	C-10
NECCSD on the Internet.....	C-11
NECCSD WWW and FTP Sites	C-11
NECCSD E-Mail and Fax	C-12

Warranty and Non-Warranty Repair Service C-12

D Using DOS Programs

Setting Up DOS Mode Games..... D-1
Adding a Game Icon to the Desktop D-1
Specifying MS-DOS Mode D-2

Glossary

Index

1

Getting Started

WARNING

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

After completing the steps in the quick setup sheet that comes with your computer, your NEC Versa 5000 Series system is ready to go! To get started:

- Read Appendix A, Setting Up a Healthy Work Environment, for guidelines that help you use your computer productively and safely. Information includes how to set up and use your computer to reduce your risk of developing nerve, muscle, or tendon disorders.
- Read through this guide to familiarize yourself with the NEC Versa 5000.

GETTING TO KNOW YOUR NEC VERSA 5000

The NEC Versa 5000 Series notebook computer offers you a thin, lightweight, portable system filled with exciting resources for home, business, or travel. Standard features include a powerful Intel® Pentium MMX microprocessor that works together with at least 16 megabytes (MB) of pre-installed Extended Data Out (EDO) Random Access Memory (RAM) for exceptional performance.

In addition, your system gives you: a high-performance hard disk drive, a 20X CD-ROM reader, diskette drive, built-in VersaGlide (like a mouse), and PC card slots. As a multimedia system, your NEC Versa 5000 also provides the tools needed to create and present impressive images using video clips and sound.

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



NEC Versa 5000 Series notebook computer

AROUND THE FRONT OF THE SYSTEM

The NEC Versa 5000 is compact with features on every side. First, look at the front of the system. The following sections describe front features, beginning with the liquid crystal display (LCD) panel.



Front features

LCD Panel

Your NEC Versa 5000 Series system comes with a color LCD that you can adjust for a comfortable viewing position. Some models have a 12.1-inch, Thin Film Transistor (TFT), backlit Super Video Graphics Array (SVGA) color LCD display. Other models come with a 13.3-inch Extended Graphics Array (XGA) LCD display.

To adjust the LCD panel brightness, press the **Fn-F5** key combination after the system is powered on.

Microphone and Speakers

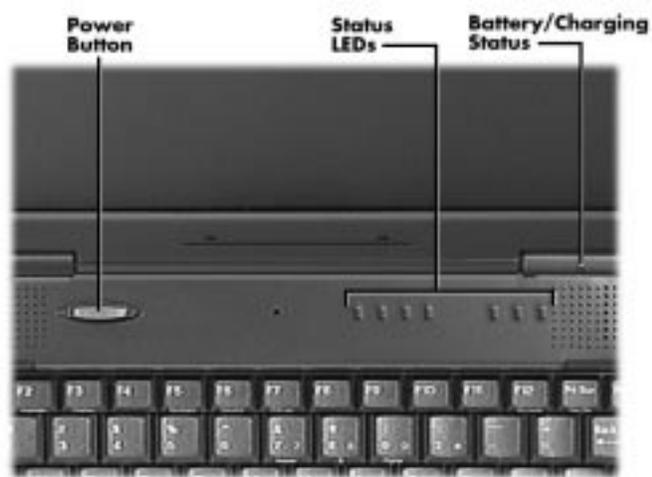
A microphone is built into the panel just below the LCD and lets you record monophonic sound directly into the NEC Versa 5000.

Two stereo speakers are also built into the panel, one on the left and one on the right, for your multimedia presentations or listening pleasure.

Turn the volume control wheel (located on the left side of the NEC Versa 5000) clockwise to increase, or counter-clockwise to decrease sound volume.

Power Button and Status LEDs

Your NEC Versa provides a Power button and LEDs to track system status. Descriptions of these features follow the figure.



Power button and Status LED location

-
- **Power Button** — The Power button is located on the chassis just below the LCD. It turns NEC Versa 5000 power on and off. Press the button to turn power on; press it again to turn power off.

When power is on, the Power LED to the right of the Power button lights. (The Power LED is the left-most LED in the row of LEDs.) See “Setup Parameters” in Chapter 3 for information about defining this button as a Suspend/Resume button.

If your system is in Suspend mode or has gone into Save to Disk mode, pressing the Power button puts the system in Operation mode.



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



- The Battery/Charging Status LED is located on the right-hand LCD hinge and lights to indicate the following:
 - Green – the battery is fully charged and the system is connected to AC power.
 - Amber – the battery is recharging.
 - Off – the AC adapter is disconnected or the battery is not installed.

-
- A bank of status LEDs is located on the chassis at the top of the keyboard to the right of the Power button. These LEDs are identified by icons and include the following (described from left to right):



- The Power LED lights in the following sequence to indicate system operation status.
 - lights green when running on AC power.
 - blinks green when the system is in Suspend mode.
 - lights amber when running on battery power with a charged battery.

The Power LED also warns you about a low battery state. The system emits a beep and the Power LED behaves as follows:

- blinks amber when battery power is low.
- flashes amber when battery power is extremely low.

The Power LED remains unlit under the following conditions:

- if the system is not connected to AC power and the battery is not charged or installed.
- the system is not powered on.
- the system is in Save to Disk mode.



— Hard Disk Drive – Lights when the NEC Versa 5000 writes data to or retrieves data from the hard disk drive.



— CD-ROM Reader – Lights when data is read from a compact disc in the CD-ROM drive.



— Diskette Drive – Lights when data is written to or retrieved from the 3.5-inch diskette drive.

A

— Caps Lock – Lights when Caps Lock is on.

1

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



— Scroll Lock – Lights when the Scroll Lock is on.

Keyboard

The NEC Versa 5000 Series system comes with an 85-key keyboard, featuring an embedded numeric keypad and inverted T cursor keys. See Chapter 4, “Using Your NEC Versa,” for details about control keys, function keys, and keyboard features.

NEC VersaGlide

The NEC VersaGlide works like a standard computer mouse. Simply move your fingertip over the VersaGlide to control the position of the cursor. Use the selection buttons below the VersaGlide to select menu items. The left button is configured to function like the left button on a mouse. The right button is configured as a right-mouse button.

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

UltraSlim VersaBay Drives

The NEC Versa 5000 support the following drives that fit in the UltraSlim VersaBay as follows:

- **CD-ROM Reader** — A 20X CD-ROM lets you load and start programs from compact discs, or insert and play your favorite audio CDs. The CD-ROM reader is assigned drive letter E.



The CD-ROM reader ships with a paper shipping restraint installed. Remove the restraint by lifting on the paper edge near the center hole. Do not insert a CD with the restraint installed.

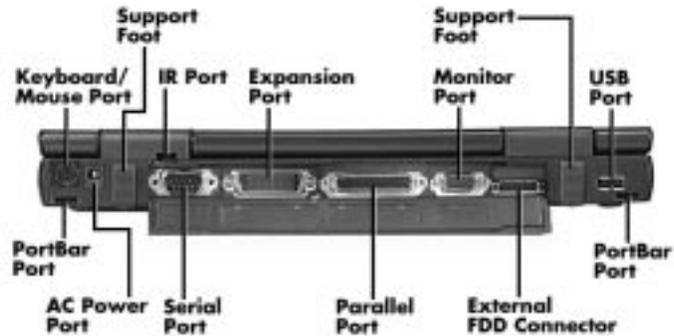
Save the shipping restraint to use if you plan to travel with the CD-ROM reader installed.

- **Diskette Drive** — A 3.5-inch, 1.44-MB diskette drive that accepts 1.44-MB high-density diskettes as well as 720-KB double-sided double-density diskettes, or a SuperDisk LS-120 optical drive that accepts 120-MB or 1.44-MB diskettes and is assigned drive letter A.

Your system also ships with an External Diskette Drive cable that lets you connect the diskette drive to the back of your system while the CD-ROM reader is installed in the VersaBay.

AROUND THE BACK OF THE SYSTEM

System ports for connecting your NEC Versa 5000 to optional devices (like a printer or external monitor) are located on the back of the system. For an understanding of each feature, see the descriptions that follow the figure.



Back system features

- **Keyboard/Mouse Port** — Use the standard PS/2 port to connect an external PS/2-style mouse or a PS/2-style keyboard to the system.
- **Support Feet** — Slide the two support feet down from the back of the unit to tilt your system forward for more comfortable keyboard access.
- **Infrared (IR) Port** — Use this port to transfer files between your NEC Versa and an IR-equipped desktop or notebook computer. You can also print to an IR-equipped printer without using cables.
- **Expansion Port** — Use this 120-pin port to connect to the NEC PortBar 5000.
- **Monitor (Video) Port** — Use this 15-pin port to attach an external monitor to your NEC Versa 5000. You can run the LCD display and the external monitor simultaneously or run either alone.

-
- **USB Port** — Use this port to connect a USB device or devices to your NEC Versa system.
 - **PortBar Ports** — Use these ports to secure the optional PortBar. PortBar ports are located on the back and sides of the system at each end.
 - **External Diskette Drive Connector** — Connect the External Diskette Drive cable that came with your system to this port. Using the FDD connector frees up the VersaBay for installing the 20X CD-ROM reader.
 - **Parallel Port** — Use this 25-pin port to connect a parallel printer or other parallel device. This port provides ECP mode support. The ECP standard provides you with a greater transfer speed than the conventional parallel port. It also supports bi-directional and uni-directional protocols.
 - **Serial Port** — Use this 9-pin port to connect an external modem or other serial device.
 - **AC Power Port** — Lets you attach the NEC Versa 5000 to the AC power source using the AC adapter that comes with your system. Keep the system connected to AC power whenever possible to keep the battery pack and internal CMOS battery charged.

AROUND THE SIDES OF THE SYSTEM

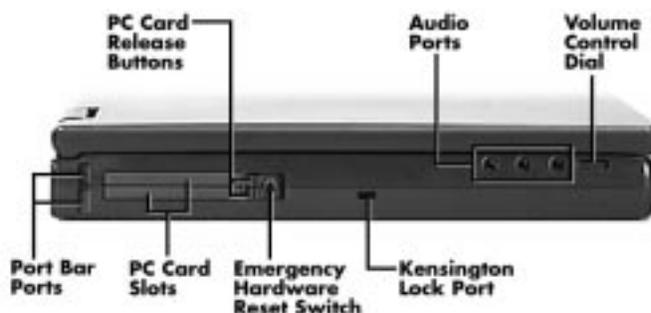
Your NEC Versa 5000 comes with many features on the left side of the system. The right side of the system features a port for securing the PortBar and air vents. Keep the air vents clear to allow for proper air circulation.



CAUTION

Do not block the air vents. Doing so can damage the system by causing it to overheat.

The features found on the left side of the system are shown in the following figure. Descriptions follow the figure.



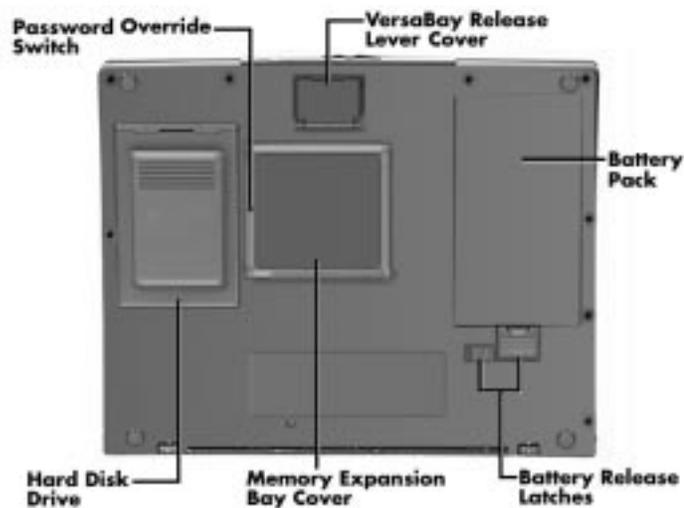
Left side features

- **PC Card Release Buttons** — Press the Release button when you want to remove an installed PC card.
- **Audio Ports** — Use these ports to attach your external audio options, including the following:
 - **Microphone** — Connects to an external microphone for monophonic recording or amplification through the unit. Plugging in an external microphone disables the built-in microphone.
 - **Stereo Line In** — Lets you use another audio system, like a home stereo, as an input source. Use a cable to connect to the Line-Out port on the other audio system to record or play.
 - **Headphones** — Lets you plug in stereo headphones or powered speakers.
- **Volume Control Dial** — Turn the volume control dial clockwise to increase speaker volume, or counterclockwise to decrease speaker volume.
- **Kensington Lock Port** — Use this port for added security by attaching a Kensington Lock.

-
- **Emergency Reset Switch** — This recessed switch lets you restart your system. Use a pointed object, like a straightened paper clip, to push in the Reset switch. Use this button only if your system locks up, fails to respond to keystrokes, or fails to respond to the power button.
 - **PC Card Slots** — Two PC card slots let you insert one or two Type II PC cards, or one Type III PC card. See “PC Cards” in Chapter 4 for more about PC cards and their use.
 - **PortBar Port** — Use these ports to secure the PortBar. A matching PortBar port is located on the right side of the system. Two others are located on the back.

AROUND THE BOTTOM OF THE SYSTEM

The bottom of the NEC Versa 5000 is the location of the system’s memory module sockets, password override switch, battery pack release latches, VersaBay release lever and hard disk drive bay, as described next.



Bottom of the system

-
- **Password Override Switch** — This recessed switch removes any settings that you made in the Setup utility, including your system password.

To remove your password, power on your system. Use a pointed object, such as a straightened paper clip, to push in the switch. Power off, then power on to restart your computer. Go into the Setup utility and set a new password. Reset any other system settings that you may have changed.

- **VersaBay Release Lever Cover** — Open the release lever cover to access the VersaBay Release Lever. Pushing the lever towards the front of the system releases the device currently installed in the VersaBay.



Opening the VersaBay Release Lever Cover immediately puts the system into Suspend mode. After installing the VersaBay device, close the VersaBay Release Lever Cover and press the Power button to resume the system from Suspend. The VersaBay Release Lever Cover must be closed to allow the system to return to the active mode.

- **Battery Pack** — A Lithium-Ion (Li-Ion) rechargeable battery pack comes installed in this bay on the bottom of the NEC Versa.
- **Battery Release Latches** — Let you remove the battery pack installed in the battery bay.
- **Memory Expansion Bay Cover** — Pop open the protective cover to access two RAM expansion sockets for small outline double inline memory modules (SO-DIMM). See “Increasing System Storage and Memory” in Chapter 4 for details on memory expansion.

-
- **Hard Disk Drive** — A removable hard disk drive ships standard with your system and is located on the bottom of the unit. Depending on your configuration, this bay contains a 1.6, 2.1, 3.2 or 4.x-gigabyte (GB) hard disk drive. (Chapter 4 describes how to remove this drive.)

The drive letter assigned to 1.6-GB and 2.1-GB hard drives is C:. If your system ships with a 3.2 or 4.x-GB drive, it is partitioned into two drives. Drive letters are C: and D:.

NEC VERSA POWER SOURCES

The NEC Versa 5000 can be powered using different sources, making it a truly portable system. Operate your NEC Versa system just about anywhere using one of the following power sources:

- the AC adapter connected to an electrical wall outlet (using AC power)
- the optional PowerExtender Airplane and Automobile Adapter
- the battery pack.

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

Using the AC Adapter

Use the AC adapter and power cable that came with your NEC Versa 5000 to run your computer on alternating current (AC) power, or to recharge the battery pack. Use the AC adapter whenever a wall outlet is nearby.

 **WARNING**

Do not attempt to disassemble the AC adapter. The AC adapter has no user-replaceable or serviceable parts inside. Dangerous voltage in the AC adapter can cause serious personal injury or death. The AC adapter is intended for use with the NEC Versa 5000 only.

The AC adapter, when connected, charges the battery whether or not the computer is powered on.

 **WARNING**

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

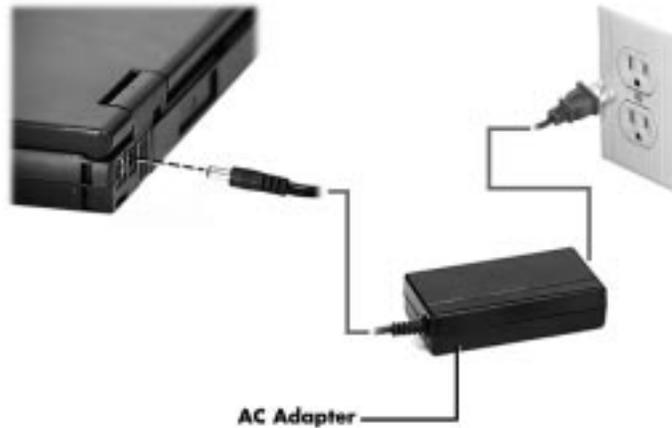
 **CAUTION**

Use only the AC adapter that comes with your NEC Versa 5000 Series system. Although other AC adapters may look similar, using them can damage the system.

Connect the AC adapter as follows:

1. Connect the AC adapter cable to the power port on the back of your NEC Versa 5000 Series system.

-
2. Plug one end of the AC power cable into the AC adapter and the other end into a 120 or 240-volt wall outlet.



Connecting the AC adapter

⚠ CAUTION

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

Powering On

To power on, locate the Power button just below the LCD screen near the left hinge and push it in. To power off the system, use the Windows 95 Start menu Shut Down selection.

Using the Main Battery Pack

The NEC Versa 5000 Series system comes with a rechargeable Lithium-Ion (Li-Ion) battery pack.



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

Your NEC Versa 5000 Series system provides two tools to help you keep track of the main battery's power level:

- Battery Status LED (located on the right hinge beneath the LCD), described earlier in this chapter.
- Battery Meter, which lets you quickly identify how much battery power you have available.

The system also emits a beep to warn you that your battery power is getting low. When you hear the beep, save your files and put your system into Suspend mode. Connect your system to AC power, if available, or insert a charged battery pack.

Installing the Battery Pack

Install the battery pack in your system as follows.

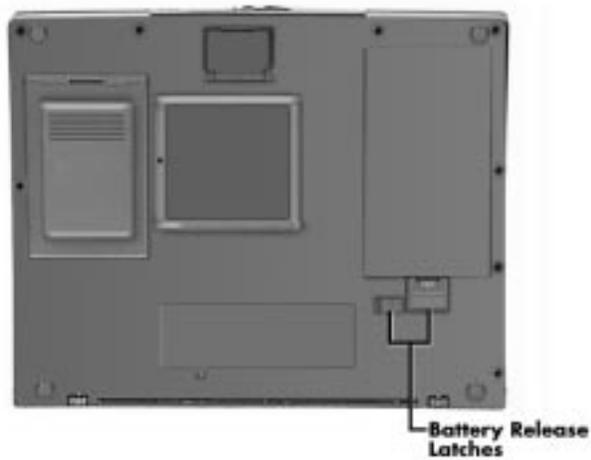


CAUTION

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

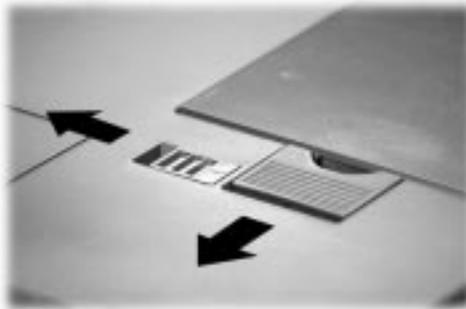
1. If your system is on, save your data, close any applications that are running, and power off. Remove any cables or external devices attached to your system.

-
2. Close the LCD panel and turn the system upside down. Locate the battery bay latches on the bottom of the system.



Battery Release latches

3. Press the small battery bay latch towards the middle of the system to unlock the other latch.
4. Press the other battery bay latch away from the battery.



Sliding the battery release latches

-
5. Lift up the end of the installed battery pack closest to the latches.
 6. Pull the battery away from the bay and lift it out.



Removing the battery pack

7. To install the charged battery pack, lower the end of the battery pack without connectors into the bay.

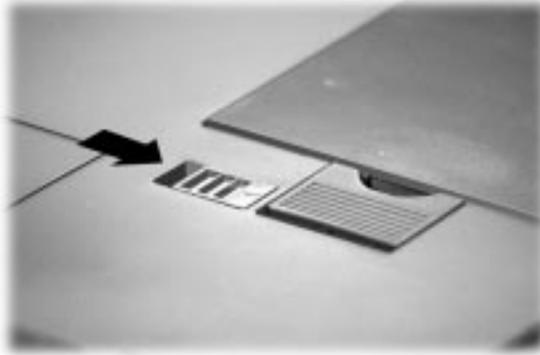


Installing the battery pack

-
8. Make sure the battery contacts are aligned properly with the connector inside the bay and press down on the battery pack to secure the connection.

The large battery bay latch snaps into place.

9. Slide the smaller latch towards the side of the unit to lock the large battery bay latch.



Replacing the latch

Recharging the Battery Pack

When battery power gets low, do one of the following to resume operation.

- Connect your system to the AC adapter and AC power to recharge the battery pack. Your system is again ready for use and the battery recharges during use. The recharge time is about the same whether or not the system is powered on or off (see “Using the AC Adapter”).
- Save your files, put your system in Suspend mode, and replace the battery pack with a charged battery pack.

Press the Power button to resume your system.

 **WARNING**

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

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

Battery Handling

Review the following before handling a Li-Ion battery.

- Use batteries only in the computer for which they are designed. Mixing other manufacturer's batteries can deteriorate battery and equipment performance.
- Turn off power to the system after use. Keeping system power on can degrade battery performance and shorten battery life.
- Clean the battery terminals with a dry cloth if they get dirty.
- When not in use, store the battery in a cool dry area.

The following symptoms indicate that battery life is nearing an end. Discard batteries (as described later in this chapter) that display these symptoms:

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

Battery Life

The NEC Versa 5000 battery life on a single charge is as follows.

- 2 – 3 hours, with power management enabled
- 1 hour and 30 to 50 minutes, without power management.

These estimates are made under the following conditions:

- When the battery is new and fully charged.
- When no peripherals are connected to the NEC Versa.

Your actual operation time on a single battery charge may vary significantly, depending on the intensity of system usage.

Extending Battery Life

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

Battery Precautions

Always comply with the following battery precautions.

WARNING

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or recommended equivalent type. Discard used batteries promptly according to the instructions found in the battery disposal sheet at the back of this manual.

- Keep the battery away from heat sources including direct sunlight, open fires, microwave ovens, and high-voltage containers. Temperatures over 212°F (100°C) may cause damage.
- Mishandling the battery can create a fire or chemical burn hazard.
- 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 the battery away from children.
- 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.

Battery Charging

The time to completely recharge your main battery should be about the same whether or not your system is powered on or off. Recharge time is approximately 4 hours.

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

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

Battery Disposal

Before disposing of the main battery, put adhesive tape on the terminals. The main battery is made of Lithium Ion (Li-Ion).

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

INTERNAL BATTERIES

Your Lithium Ion battery is the main power source in your NEC Versa 5000 computer.

Appendix B lists Li-Ion battery specifications. In addition to this battery, the CMOS battery and bridge battery provide power for system backup.

CMOS Battery

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

Only an authorized NEC service technician can replace the CMOS battery.

Bridge Battery

The bridge battery provides power to the NEC Versa 5000 when main battery power is very low (and the system is about to shut down). If you put the system into Suspend mode, the bridge battery also provides power during the short time it takes to remove and replace the main battery. The bridge battery gives you time to do the following:

- save your unsaved data, close your open programs, and shut down the system.
- install a fully charged battery or plug in an AC power adapter.

Only an authorized NEC dealer can change a bridge battery.

SYSTEM CARE

The NEC Versa 5000 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 5000 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 cabinet.

Precautions

Follow these precautions when using your NEC Versa 5000 and AC adapter.

- Always plug the AC adapter cord into an easily accessible outlet. It is important to be able to easily disconnect 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 pack.
- Keep the air vents on the side of the system clear of papers, books, or objects. Blocking the air vents can cause the system to overheat.
- Avoid moving the NEC Versa during system operation, especially while the hard disk, CD-ROM reader, 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 and nominal 50 – 60 Hz. Never use the AC adapter if the voltage falls outside of this range. (Watch for this when traveling to other countries.)

-
- Turn computer power off before attaching or removing non-plug and play devices.
 - Do not push any foreign objects into the NEC Versa option bays, connectors, and slots.
 - Avoid using the computer or AC adapter for extended periods in direct sunlight.
 - Do not use the system in humid or dusty environments.
 - Keep liquids and food away from the system.
 - Turn computer power off before cleaning the computer.
 - Avoid exposing the NEC Versa 5000 or AC adapter to extreme changes in temperature or humidity. Allow your NEC Versa to adjust to room temperature before use, if it has been exposed to temperature or humidity extremes.
 - When cleaning the system, use a soft, clean, dry cloth. Avoid wiping the display surface with abrasive material, including rough fabric. Do not use a cleaning solution; this may damage the notebook's plastic.
 - If the AC adapter becomes extremely hot, unplug the adapter and let it cool.
 - Do not use the IR port directly under fluorescent lighting, or near flashing incandescent light.
 - Do not direct an IR port towards the LCD panel.
 - Keep the AC adapter away from the IR port.

 **CAUTION**

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

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

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

Storage Requirements

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

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

 **CAUTION**

If the temperature of the NEC Versa 5000 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 adjusts to 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 5000.

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 cloth.

2 Introducing the Software

This chapter introduces you to the software* that comes with the NEC Versa 5000 Series system, including:

- the Windows 95 operating system
- Online help
- Setup utility
- Other software
 - LapLink[®]
 - McAfee VirusScan[™]
 - McAfee WebScan[™]
 - CyberMedia[®] First Aid[®] 97
- Online services
 - Prodigy Internet[™]
 - America Online[®]
 - AT&T WorldNet[™] Setup
 - CompuServe[®] 3.0
 - Microsoft NetMeeting[™]
 - Reed Travel Group Official Airline Guide (OAG[®])

* The software listed here is current as of December 1997. The list is subject to change without notice.

WINDOWS 95 INTRODUCTION

Your NEC Versa 5000 Series system comes with Microsoft Windows 95 ready to use.

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

In Windows 95, the following icons are loaded on your desktop:

- My Computer — provides access to drives, printers, the control panel, and network features.
- Inbox — lets you access the Microsoft fax and mail software as well as Microsoft network services.
- Recycle Bin — gives you a trash container in which to put unwanted files.
- The Internet — lets you access an Internet Connection Wizard to help you get set up for using the World Wide Web.
- The Microsoft Network — offers the option of signing on for the Microsoft online service that connects you to the Internet.
- My Briefcase — allows easy file transfer between the NEC Versa and another system.
- Online Services — gives you a choice of online services to set up and try out.
- Start — displays a pop-up menu with which to start programs and applications, opens documents, accesses system settings, accesses online help, and shut down your system.
- NEC Versa Help Center — gives you easy access to the online user's guide and customer service information.

-
- **NEC Customize** — installs NEC-designed desktop features, including custom wallpaper and the automatic running of McAfee AntiVirus software each time you boot.

GUIDE TO ONLINE HELP

The NEC Versa Help Center group contains online information about your NEC Versa, as follows.

- *User's Guide*

The online *User's Guide* provides an online version of this user's manual and contains general information on system usage.

- *Customer Support Guide*

The *Customer Support Guide* discusses the various levels of support NEC offers you, our customer. We provide information to help you become self-sufficient with your NEC Versa, but if you need help, we're there for you.



If you purchased your system outside of the United States or Canada, please contact your local NEC dealer for customer support information.

- *UltraCare[®] Guide*

The *UltraCare Guide* describes NEC's extended warranty program to help you protect your investment in an NEC Versa Series system.



If you purchased your system outside of the United States or Canada, please contact your local NEC dealer for customer support information.

■ *Versa Tools Catalog*

The *Versa Tools: Accessories and Solutions Catalog* describes the options that you can purchase to enhance and expand your NEC Versa capabilities.

THE SETUP UTILITY

NEC provides a setup utility, which makes your NEC Versa run more efficiently. This program is known as the Setup utility. The Setup utility automatically configures your NEC Versa 5000 each time you start it up. This utility is not accessible from Windows. Access Setup at power-on. Just press **F2** when the following prompt appears.

Press <F2> to enter SETUP

See Chapter 3, “Using Setup and Power Management,” for a discussion of the Setup utility. In addition, online help is available to assist you in changing settings.

OTHER SOFTWARE

Your NEC Versa 5000 comes with other programs that let you take full advantage of your system resources. The rest of this chapter discusses each program, including what it can do for you, how to get started, and how to use the program help.

LapLink

LapLink helps you stay in touch with your home office system or get in touch with other systems through the infrared port, a modem, network, or cable. Use LapLink to transfer files on a remote system, or exchange written information with another user on a remote system. LapLink even bridges the communication gap between Windows 3.11 and Windows 95 systems.

LapLink offers the following features:

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

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

How to Use LapLink

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

Start LapLink as follows:

-
1. In Windows 95, press **Start**, slide the cursor to Programs, and locate the LapLink for Windows95 folder. Highlight the LapLink for Windows95 line and press the VersaGlide selection button or tap the VersaGlide pad once.

If you do not have a port enabled, LapLink prompts you to enable one. Press **Yes** to do so and follow the on-screen instructions to configure the port.

2. Once your ports are configured, select your communication method by pressing the appropriate button. The buttons give you the following connection options.
 - Connect over cable
 - Connect over wireless
 - Connect over modem (if installed)
 - Connect over network
 - Connect over dial-up network

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

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

LapLink notifies the other system of the break in communication.

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

McAfee AntiVirus Software

The McAfee AntiVirus software is installed to scan your system for any virus infections. WebScan™ and VirusScan™ are two scanning software tools included on the NEC Versa 5000 Series system.

- WebScan software protects your system against virus infection from files attached to mail messages or from files you download from the Internet. WebScan is activated any time you download executable and Microsoft Word document files and scans mail through the Pegasus Mail system.

Set up the WebScan software on your NEC Versa 5000 computer using the easy-to-follow setup program.



Before using WebScan and connecting to the Internet, you must purchase and install or connect an optional modem to your NEC Versa computer. Make sure the modem is connected to a working analog phone line. If you are unsure what type of line you have, call your local telephone company.

It is strongly recommended that you install or connect the modem to your system prior to running the WebScan Setup program. Part of the Setup program recognizes modem information. If you run the Setup program without modem connected, you will have to manually enter the modem information the first time you use the online service.

-
- VirusScan detects, identifies and disinfects known Windows 95 computer viruses. It checks memory, the system and data areas of disks for infections. In most cases, it eliminates the virus and fully repairs infected programs or system areas to their original condition.

Pressing the NEC Customize button from the Windows desktop adds this to the Start Up group. The software then runs each time you boot into Windows.

CyberMedia First Aid 97

The CyberMedia First Aid 97 program checks your system and verifies that you have all the correct drivers and files for running applications or using your hardware.

If your system seems to be running at less than peak performance, double click on the First Aid icon to check system resources.

If you need to run First Aid 97, do so as follows:

1. From the Start menu, highlight CyberMedia First Aid 97, and select First Aid 97.
2. Press the Start button on the First Aid window.

For more information about First Aid, press the Advisor button.

ONLINE SERVICES

Your NEC Versa comes with the most popular online services available including Prodigy Internet, America Online, CompuServe, and AT&T WorldNet Signup. Prodigy can be found in its own folder and the other services are found in the Online Services program group on the desktop. To use the services, you need to install the software. Simply highlight and click on the installation icon and follow the on-screen instructions.

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



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

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

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

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

1. Connect your modem card or external modem to a phone line.

-
2. Press Start, move to the Programs group, slide to Online Services, and slide to the online service group that you want to install. Tap the VersaGlide touchpad once or click once.
 3. The setup screen for the selected online service appears. Follow the on-screen instructions to install the service on your NEC Versa.

A program group is created for your selected online service.
 4. To use the selected online service, follow the on-screen instructions to log onto the service.



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

Prodigy Internet

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

Install Prodigy Internet as follows:

1. Make sure your modem is connected to the NEC Versa and an analog telephone line.
2. From the NEC Versa Start menu, select Programs and open the Prodigy Internet submenu.
3. To set up Prodigy, highlight NetAssist for Prodigy Internet and left click or single tap on the touchpad.

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4. Follow the on-screen instructions to set up Prodigy. If you need help, open Prodigy Internet Help.

America Online

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



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

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

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

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

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

CompuServe

An installation program for CompuServe is part of your Windows 95 software.

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



You cannot download information from the NEC Bulletin Board via CompuServe. You must call the NEC Bulletin Board directly to download information.

If you are using your NEC Versa outside North America, there may not be any local access points for online services. It may require a long distance or international call.

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

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

AT&T WorldNet

One of the world's largest telephone service providers now offers Internet access. Click on AT&T WorldNet Signup in the Online Services group to install this software, learn more about it, and sign up with this service.

Microsoft Internet Explorer

The first time you use Microsoft Internet Explorer you must register your copy of the program and allow the system to detect your modem.



Connect your modem before setting up Microsoft Internet Explorer. If it is not connected, the process stops.

If you connect the modem and the system fails to detect it, open the Windows Control Panel, select the modem icon, and specify your modem type and port.

Microsoft NetMeeting

Microsoft NetMeeting provides real-time communication over the Internet or your local Intranet. NetMeeting is a conferencing tool that allows you to share files, participate in chat groups, collaborate with others in shared programs, and more!

Official Airline Guide (OAG)

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

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

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

1. Access OAG as follows.
 - Purchase and install a modem card into your NEC Versa. Make sure the card is connected to a working phone line.
 - Press **Start**, move the cursor to the Programs group and open the OAG FlightDisk group. In the group, highlight “OAG FlightDisk Worldwide Edition” and click the mouse.
2. The first time you open OAG, an agreement screen appears. Follow the on-screen instructions.
3. In the Trip Plan screen, fill in the fields with the trip information requested. Press **Enter** after making selections from the available drop-down lists.
4. To retrieve seat availability and price information, press the appropriate button.
5. Follow the on-screen instructions to register for a free trial of the OAG travel service.

3 Using Setup and Power Management

Your NEC Versa 5000 Series system comes with a system configuration program called Setup that allows you to view and set system parameters. The system also comes with a power management program that lets you conserve energy, save battery power, extend the life of your LCD backlight, and protect against data loss due to low battery power.

This chapter describes these NEC Versa 5000 features.

SETUP UTILITY

The NEC Versa 5000 Setup program lets you view and set system parameters. Setup also includes security features that protect your system from unauthorized use.

Use Setup to

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

How to Enter Setup

Access Setup immediately after you power on your NEC Versa 5000. Press **F2** when the following prompt appears:

Press <F2> to enter SETUP

The Setup screen appears and automatically displays current system settings.

How to Use Setup

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

- The Setup screen
- Using keys
- Checking and setting system parameters.

The Setup Screen

The Setup screen looks similar to the following. Descriptions of the screen follow the figure.

Phoenix BIOS NoteBIOS 4.0 Setup - Copyright 1985-97 Phoenix Technologies Ltd.					
Main	Advanced	Security	Power Savings	Ext	
System Time: [12:23:24] System Date: [07/25/1997] Diskette A: [1.44" MB, 3 1/2"] ▶ IDE Adapter 0 Master (C: 2161 Mb) ▶ IDE Adapter 1 Master (None) ▶ Boot Options ▶ Keyboard Touch Pad Setting [Enabled] Setup Message [Enabled] Zv Buffer [Disabled] ▶ Display Features ▶ System Information				Item Specific Help <Tab>, <Shift - Tab>, or <Enter> selects field	
F1 Help ESC Exit	↑↓ Select Item ←→ Select Item	-/+ Change Values Enter Select ▶ Sub-Menu	F9 Setup Defaults F10 Previous Values		

- Menu Bar
Six menu items offer individual screens where you may view and edit the system configuration settings.
- System Information
The left side of the screen. This area lists the current parameters and displays their settings.

-
- **Item-Specific Help**
The column on the right side of the screen. This area gives a brief description of what each selection controls.
 - **Controls menu**
The bottom of the screen describes what keys to use for selecting options and changing settings in Setup.

USING KEYS

The following table lists Setup keys and their functions.

Setup Key Functions

KEY	WHAT IT DOES
F1	Accesses the BIOS help program to answer any questions that you may have about using Setup.
Esc	Closes the current window or drop-down screen, de-activates the menu bar, or closes the Setup utility.
↑ ↓	Moves the cursor up or down among the parameters on a drop-down menu.
← →	Scrolls, left or right, along the menu bar and highlights the current menu selection.
-/+	Allows you to change values or toggle through the available settings for the highlighted parameter.
Enter	Opens the currently highlighted menu or parameter item. After highlighting a selection with the menu triangle next to it, press Enter to display the settings available for the option.
F9	Resets all system parameters on the current drop-down screen to their original default settings.
F10	Resets a field to its previous value.
Home/End	Moves to the first/last parameter of the currently open drop-down screen.
Tab	For some settings, moves the cursor between the subfields. For example, for Startup / Date and Time, Tab moves the cursor from day to month to year to hour to minute to second.

Checking/Setting System Parameters

See the following table for a list of parameters, their factory default settings, and alternate settings. As you set each parameter, the Item-Specific Help describes the feature that it controls.

To reset all system parameters to their factory default settings, select Default Values on the Exit screen.

Setup Parameters

MENU AND PARAMETER	DEFAULT SETTING	OTHER SETTINGS AVAILABLE
Main		
System Time	HR:MIN:SEC	
System Date	MO/DAY/YEAR	
Diskette A	1.44 MB, 3 1/2"	None
IDE Adapter 0 Master Autotype Fixed Disk Type	C: 2161 Mb Press Enter [Auto] 2161 Mb	CD, None, 1 through 14, Rsrv, 16 through 39, User
Cylinders	4188	
Heads	16	
Sectors/Track	63	
Write Precomp	0	
Multi-Sector Transfers	16 Sectors	
LBA Mode Control	Enabled	Disabled, 2, 4, 8 Sectors
32 Bit I/O	Enabled	Disabled
Transfer Mode	Fast PIO 4	Disabled Standard Fast PIO 1 Fast PIO 2 Fast PIO 3

Setup Parameters (cont'd)

MENU AND PARAMETER	DEFAULT SETTING	OTHER SETTINGS AVAILABLE
Main (Continued)		
IDE Adapter 1 Master	None	
Autotype Fixed Disk	Press Enter	
Type	Auto	CD, None, 1 through 14, Rsrv, 16 through 39, User
Cylinders		
Heads		
Sectors/Track		
Write Precomp		
Multi-Sector Transfers	16 Sectors	
LBA Mode Control	Enabled	Disabled, 2, 4, 8 Sectors
32 Bit I/O	Enabled	Disabled
Transfer Mode	Standard	Disabled Fast PIO 1 Fast PIO 2 Fast PIO 3 Fast PIO 4
Boot Sequence		
POST Errors	Enabled	Disabled
Boot sequence	1. CD-ROM Drive 2. Diskette Drive 3. Hard Drive	
Floppy check	Enabled	Disabled
Summary screen	Enabled	Disabled
Keyboard		
Numlock	Off	On
Key Click	Disabled	Enabled
Keyboard auto-repeat rate	30/sec	26.7/sec, 21.8/sec, 18.5/sec, 13.3/sec, 10/sec,
Keyboard auto-repeat delay	1/2 sec	6/sec, 2/sec 3/4 sec, 1 sec, 1/4 sec

Setup Parameters (cont'd)

MENU AND PARAMETER	DEFAULT SETTING	OTHER SETTINGS AVAILABLE
Main (Continued)		
Touch Pad Setting	Enabled	Disable w/ PS/2 Mouse
Setup Message	Enabled	Disabled
USB Controller	Disabled	Enabled
Zv Buffer	Disabled	Enabled
Display Features		
Display Device	LCD	CRT; Simultaneous
Text Mode Expansion	Disable	Enable
Graphic Mode Expansion	Disable	Enable
System Information		
Phoenix Version	PxxxH	
OEM Version	Vxxx	
Keyboard Version	Hxxx	
Total Memory Size	xx MB	
CPU	Pentium with MMX [xxxMHz]	
Cache Ram	xxx Kb	
Multiple Drive Bay	FDD	CD-ROM LS-120
Parallel Port FDD	Enable	Disable
Battery Remaining	xxx%	
Keyboard	USA	Japanese, Europe
Advanced		
Integrated Peripherals		
COM/LPT setting	Auto	Manual
COM Port A	3F8, IRQ 4	Auto, Disabled 2F8, IRQ 3 3E8, IRQ 4 2E8, IRQ 3
COM Port B	2F8, IRQ 3	Auto, Disabled 3F8, IRQ 4 3E8, IRQ 4 2E8, IRQ 3
COM Port B Device	Fast IR	IrDA
Fast IR DMA CH	0	1, 3, None

Setup Parameters (cont'd)

MENU AND PARAMETER	DEFAULT SETTING	OTHER SETTINGS AVAILABLE
Advanced (Continued)		
LPT Port	378, IRQ 7	Auto, Disabled 378, IRQ 5 3BC, IRQ 7 278, IRQ 5
LPT Mode	ECP	Output Only Bi-Directional
ECP DMA CH*	None	0, 1, 3
Diskette controller	Enabled	Disabled
Local Bus IDE adapter	Enabled	Disabled
Audio Setting	Auto	Manual
Audio I/O Address	220	240, 260, 280, Disabled
Audio FM Address	388	390, 398, Disabled, 380
MIDI Port Address	330	Disabled, 300, 310, 320
Audio IRQ Number	5	7, 9, 10, 11, 12, None
Audio DMA Channel	1 3	0 1, 0 3, 1 0, 3 1, 3 0, None
Plug & Play O/S	Yes	No
Large Disk Access Mode	DOS	Other
Security		
Supervisor Password is	Disabled	Enabled
User Password is	Disabled	Enabled
Set Supervisor Password	Press Enter	Enter new password Re-enter new password
Set User Password	Press Enter	Enter new password Re-enter new password
Password on boot	Disabled	Enabled

*Available when COM Port B Device is set to IrDA.

Setup Parameters (cont'd)

MENU AND PARAMETER	DEFAULT SETTING	OTHER SETTINGS AVAILABLE
Power Savings		
Power Switch	On/Off	Suspend/Resume
Lid Switch	Suspend	Backlight Off
Low Battery Beep	Enabled	Disabled
Power Management	Battery Only	Always
Power Savings	Longest Life	Off, Customize, Maximum Performance
Idle Mode	On	Off
Standby Timeout	4 Minutes	1, 2, 6, 8, 12, 16 Minutes, Off
Auto Suspend Timeout	10 Minutes	5, 15, 20, 30 Minutes, Off
Hard Disk Timeout	2 Minutes	10, 15, 30, 45 Seconds 1, 4, 6, 8, 10, 15 Minutes Off
Video Timeout	2 Minutes	10, 15, 30, 45 Seconds 1, 4, 6, 8, 10, 15 Minutes, Off
CD-ROM Timeout	45 Seconds	10, 15, 30 Seconds 1, 2, 4, 6, 8, 10, 15, Minutes, Off
Suspend Mode	Suspend	Save To Disk
Wake up from suspend	Off	On
Resume Alarm Time	HR:MIN:SEC	
Exit		
Discard Changes & Exit		
Save Changes & Exit		
Get Default Values		
Load Previous Values		
Save Changes		

Main

Use the Main Setup screen to check or modify your basic system settings. Some fields are read-only fields that simply display current information.

- Time and Date — let you adjust your system date and time.
- Diskette A — displays the diskette drive type installed in your system.
- IDE Adapter 0 Master and IDE Adapter 1 Master — shows your current hard disk capacity. Submenus to these two fields let you specify another drive type, define multi-sector transfer rates, specify LBA mode control, enable or disable 32-bit I/O, and define transfer mode.
- Boot sequence — allows you to specify if POST error messages appear at boot up, what the boot sequence should be, and whether or not the system checks your diskette drive type. (Disabling the floppy check speeds up boot time.)
- Keyboard — lets you specify the country keyboard to use, define if NumLock is on or off at boot up, enable keyclick, and define auto-repeat and delay rates.
- Touchpad settings — allows you to disable the built in touchpad when attaching an external PS/2-style mouse.
- Display features — gives you the chance to define your display type, the text expansion mode, and the graphics expansion mode for better viewing.
- System information — displays information about your system, including the version of BIOS loaded, total RAM installed, CPU type, Cache RAM, parallel port status, and amount of battery charge remaining.

Advanced

Advanced lets you define specific input/output addresses, audio settings, and channel numbers. Only change the settings in this section if you are very familiar with the way that a system uses its resources. Making incorrect setting decision in this menu can cause your system to malfunction.



CAUTION

Setting incorrect values in the Advanced portion of the Setup utility can result in a system malfunction.

- **Integrated peripherals** — lets you disable, enable, or manually change COM port and LPT port address and mode. You can also define the audio I/O address, MIDI port address, audio IRQ number and DMA channel.
- **Plug & Play OS** — displays whether the operating system on your NEC Versa is plug-and-play operating system.
- **Large Disk Access Mode** — allows you to specify the large disk access mode to use.

Security

Your NEC Versa 5000 supports a password for system security. Using the Security screen, you can require that a password be entered at each startup or boot.

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



If Supervisor and User passwords are both implemented, the user level cannot access the diskette drive.

Once you set a password, you must enter it before your system will boot up. This feature allows only an authorized user to access your system, including the Setup program where you can set or change system parameters.

Set an initial password as follows.

1. Select Security from the menu bar.
2. Open the Set Supervisor Password screen by pressing **Enter**.
3. In the “Enter New Password” field, enter a password up to eight characters long. Press **Enter** on the keyboard.
4. Reenter your password as prompted for verification. Press **Enter** and write your password down and keep it in a secure place in case you forget it.

A dialog box notifies you that changes have been saved. Press **Enter** to continue. The “Supervisor Password is” field changes to Enabled. This password keeps anyone without the password from making changes in Setup.

5. Continue to the next field, Set User Password, to enter a user password. Enter the password twice.

A dialog box notifies you that changes have been saved. Press **Enter** to continue. The “User Password is” field changes to Enabled.

6. In the final field on the screen, enable the password on boot to prevent unauthorized access to the system. The user must then enter the User Password to gain access to the system.

Remove a previously set password as follows.

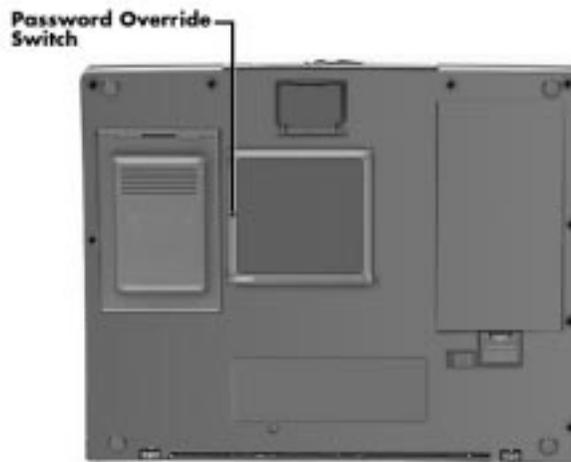
1. Enter Setup using the previously set password.
2. In the Security menu, highlight Set Supervisor Password and press **Enter**.

-
3. In each password field, press **Enter**. The dialog box stating that changes were saved appears. Press **Enter** again.

The password is no longer enabled.

If you forget your password, proceed as follows.

1. With system power on, carefully tilt the system on its side. Using a straightened paper clip or other pointed object, press in the Password Override Switch on the bottom of the system.



Password Override Switch

2. Reboot and enter Setup. You may receive a Checksum error message.
3. Go to the Exit screen and select Get Default Values.
4. Press **Enter**. A dialog box informs you that the default values have been loaded.

-
5. Press **Enter** to continue. Select Save Changes & Exit. Press **Enter** twice.

Power Savings

The Power Savings screen lets you balance system performance and energy conservation, for both battery and AC operation, using the following parameters.



Some operating systems have their own power management software which overrides the settings in Setup. In this case, be sure to set your desired power management settings accordingly in the operating system.

- Power Switch — lets you assign your Power button as either an on/off switch or a Suspend/Resume switch.
- Lid Switch — allows you to specify how the system reacts when the LCD panel is closed. You can choose between having the LCD panel backlight go off or having the system go into Suspend mode.
- Low Battery Beep — gives you the option of disabling the low battery warning beep.
- Power Management — specifies if power management is enabled at all times or only when using battery power.
- Power Savings — specifies the type of power management to enable. You can choose from the following:
 - Longest Life (default)
Sets power savings to a maximum and system performance to a minimum, by running the CPU at half speed all of the time.

-
- Maximum Performance
Sets system performance to a maximum and power savings to a minimum, by running the CPU at full speed all the time.
 - Customize
Lets you input your choice of performance and power saving parameters. See “Using Power Management,” later in this chapter, for details.
 - Off — lets you turn off power management completely.
 - Suspend Mode — lets you select the type of Suspend mode that your system uses. Suspend saves the current system state while remaining in a low power mode. Save to Disk saves the current system state to a special file and then shuts down the system.
 - Wake up from suspend — lets you enable your system to resume from suspend in the time specified by Resume Alarm Time.
 - Resume Alarm Time — lets you specify the time when the system awakes from Suspend mode.

Exit

Lets you save or not save parameter changes when you exit Setup, as follows:

- Discard Changes & Exit
Exits Setup, without saving changes.
- Save Changes & Exit
Saves changes and restarts the system, so parameter settings take effect immediately.
- Get Default Values
Restores all Parameter settings to their default settings. Default settings take effect on the next system startup.

- **Load Previous Values**

Reload all the parameter values from the previous Setup settings.

- **Save Changes**

Save all Setup changes.

USING POWER MANAGEMENT

Power Management in the NEC Versa 5000 lets you conserve energy, save battery power, extend the life of your LCD backlight, and protect against data loss due to low battery power.

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

Power Saving Modes

The NEC Versa 5000 has three different power consumption states. These include:

- **Active Mode** — All components are turned on and active.



Even in Active Mode, you can specify time-outs for the LCD panel, hard disk drive and CPU. See "Power Management Settings."

- **Standby Mode** — Eliminates unnecessary battery or AC power consumption. The LCD panel, Hard Disk Drive and CD-ROM reader all shut down, and the Keyboard Controller and CPU slow down, providing both privacy and power savings.

To end Standby mode, press any key and return to Active mode.

-
- Suspend Mode — Shuts down every system component, except those that preserve unsaved data in memory, or system status and PC cards if so configured.

To end Suspend mode and return to Active mode, press the Power button beneath the LCD panel and resume the system.

You can set your system to enter Standby or Suspend modes automatically after a specified number of minutes of system inactivity. System activity includes keyboard, VersaGlide, diskette or hard disk drive access, PC card modem, network, or LAN card, serial, or printer port communications.

Power Management Settings

The system arrives set up with many power-saving features already enabled. You can change the timeout period for these devices in Setup, under the “Power Savings” menu, with the “Power Savings” set to Customize. The following table lists the default settings for “Longest Life” mode, the default setting.

Automatic Power-Saving Features

DEVICE	DEFAULT TIMEOUT	COMMENT
Idle Mode	On	Idle mode slows down the CPU during brief periods when the system is not busy.
Standby Timeout	4 minutes	Specifies how long the system is in Idle mode before entering Standby mode. Standby turns off various system devices including the screen.
Auto Suspend Timeout	10 minutes	This setting specifies how long the system remains in Standby mode before entering Suspend.
Hard Disk Timeout	2 minutes	Stops the hard disk motor when the hard disk is not accessed for the specified timeout.
Video Timeout	45 seconds	Shuts off video screen after the timeout specified elapses.
CD-ROM Timeout	2 minutes	Specifies how long the CD-ROM reader remains inactive before being turned off.



In Windows 95 systems, power management settings under Windows override the settings established in Setup.

4 Using Your NEC Versa

The more you use your NEC Versa 5000 Series system, the more proficient you will become at everything — from using function keys to setting up presentations.

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

- the LCD panel
- the support feet to adjust the angle of the system for greater comfort
- the keyboard and VersaGlide
- the UltraSlim VersaBay
- the 20X CD-ROM reader
- the PC card slots
- the Infrared (IR) port.

This chapter also details how to change the hard disk drive, expand memory, and attach external devices.

LCD

The LCD panel on your NEC Versa 5000 Series system is fully adjustable to provide a comfortable viewing angle. To adjust the viewing angle, gently push the LCD panel into position.

To adjust the LCD panel's brightness, press **Fn-F5** to cycle through several different brightness levels.

SUPPORT FEET

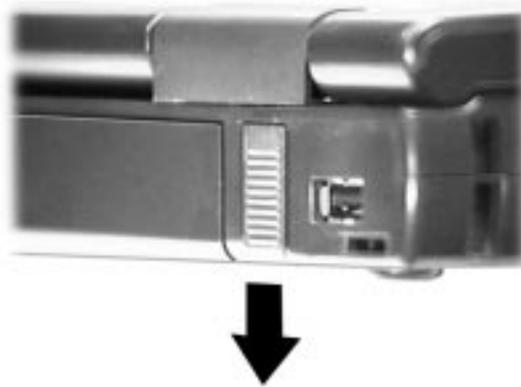
Use the support feet to change the angle of the system for greater comfort during operation. Do so as follows:

1. With the LCD panel closed, locate the support feet on the back of the unit.



Locating the support feet

2. Lift the back of the unit slightly. Slide both support feet down. The feet pop away from the system slightly.



Opening the support foot

-
3. Pull the feet away from the system slightly and rotate them back until they lock into place.



Securing the support foot

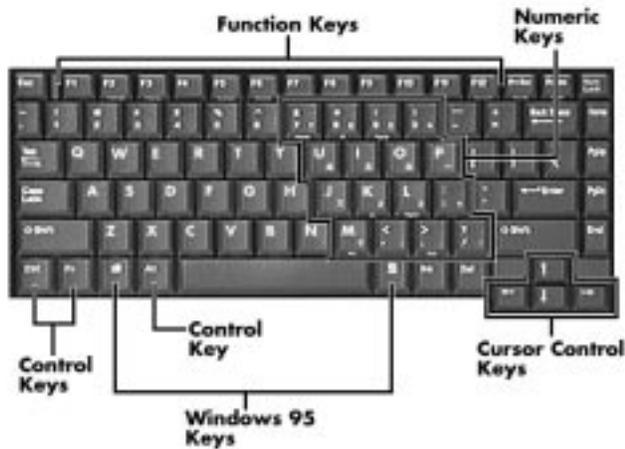
4. Lower the back of the system back onto the table or surface where you are using it.

KEYBOARD

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

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

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



Keyboard

Function Keys

A number of function keys (**F1** through **F12**, **Esc**, **Num Lock**) are included in the NEC Versa keyboard. These keys work together with the **Fn** key to activate special functions. Keys that are pre-programmed with dual functions are identified by a blue icon or phrase depicting the function.

Function keys **F1** through **F12** are application-driven. See the specific application's user guide for information about how each function key works within the application you are using.

- Function key combinations — the following function key combinations are pre-programmed for the NEC Versa.

Fn-Esc — initiates Suspend mode.

Fn-Power Button — initiates a Suspend to Disk.

Fn-F2 — toggles character highlighting on and off (DOS display only).

Fn-F3 — toggles the display between three video modes, LCD, CRT, or simultaneous display on both.

Fn-F5 — adjusts the LCD panel brightness.

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

Fn-F7 — toggles between various power management levels (Off, Custom, Highest Performance, and Longest Life.)

Fn-F12 — sets Scroll Lock on or off.

NumLock — toggles Num Lock on and off activating and deactivating the embedded numeric keypad.

Fn-LeftCtrl — simulates the right **Ctrl** key.

- Other key combinations — the following key combinations are available with some applications:

Fn-Prt Scr — sends a system request (SysReq) used in some terminal emulation applications.

Fn-Pause — sends a break (Break) command in some applications.

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

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

— Floating Window key – displays the Start menu.

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



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

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

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

To use the numeric keypad, press **NumLock**. When you press **NumLock** again, the keys revert to their normal functions as typewriter keys.

Holding the **Fn** key down while pressing cursor control keys on the numeric keypad makes the keys function as control keys.

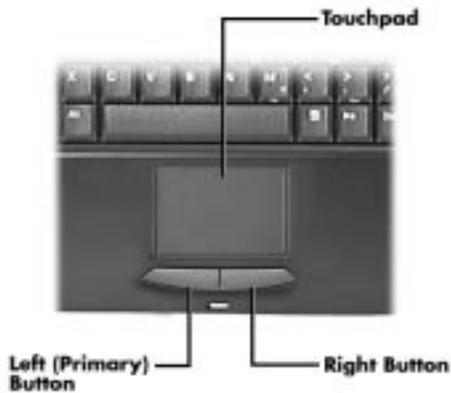
- Control keys — **Ctrl**, **Alt**, **Fn**, and **Shift** are controls used in conjunction with other keys to change their functions. To use control keys, press and hold the control key while pressing another key. For example, “press **Ctrl c**” means to hold down the **Ctrl** key and type the letter **c**. How the key combination works depends on the applications you are running.

NEC VersaGlide

The NEC VersaGlide is an easy way to control the cursor with your finger. Lightly glide your finger across the NEC VersaGlide and the cursor follows. You can select items in one of two ways:

- Tap your finger on the VersaGlide.
- Click the left, or primary button.

A double tap on the VersaGlide is the equivalent to a double click on the left or primary button.



VersaGlide features

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



If you install another mouse driver over the shipping default, the tap capability may be lost.

Making VersaGlide Adjustments

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

Use the online help button for details about configuring your VersaGlide.

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

1. Select Start, Settings, Control Panel.
2. From the Control Panel, highlight and double tap (or double click) on the Mouse icon. A Mouse Properties screen appears.
3. Along the top of the Mouse Properties screen, tabs represent the primary functions available.
 - Buttons – lets you select or change which button is the Primary or Secondary button. Also lets you modify the speed required when double clicking selection buttons.
 - Pointers – lets you change the pointer scheme and define which symbols you want to use for various Windows tasks.
 - Motion – lets you adjust the pointer speed and specify a short or long pointer trail.
 - General – lets you change or update mouse drivers.
4. Click OK or Cancel to accept or cancel the adjustments you make.

VersaGlide Tips

Follow these basic ergonomic tips while working:

- Use a light touch on the VersaGlide surface.
- Set up the NEC Versa with your keyboard and VersaGlide at a comfortable height. Keep your forearms parallel to the floor. Your wrists should be relaxed and straight.

-
- While using the keyboard and VersaGlide, keep your shoulders and arms as relaxed as possible.
 - Take regular breaks from the computer to rest your eyes. Perform stretching exercises to relax your fingers, hands, wrists, forearms, and shoulders.

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

UltraSlim VersaBay USE

The NEC Versa 5000 comes with an UltraSlim VersaBay that lets you install the diskette drive, LS-120 drive, 20X CD-ROM reader, or Weight Saver pack in your system. Insert the Weight Saver pack into the VersaBay to decrease system weight. This is especially handy when you are traveling with your notebook computer!

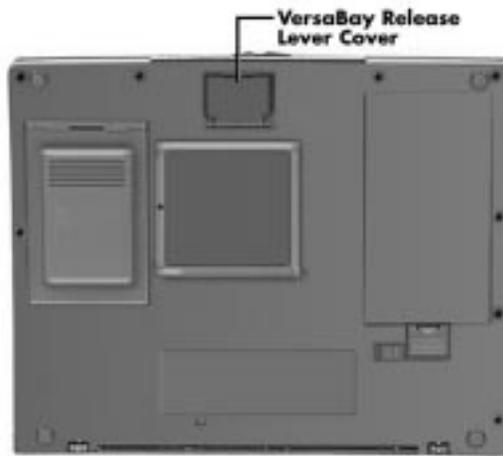
Removing and installing devices in the VersaBay is easy. Follow these simple steps.

1. Make sure that any peripheral devices are disconnected from the system and that the LCD panel is closed and latched.



The Change DriveBay utility that is part of the Start menu puts your system into Suspend mode allowing you to change the option in the bay without shutting down your system completely.

2. Turn the system over and locate the VersaBay Release Lever cover.



Locating the Release Lever cover

3. Open the cover. Opening the cover puts your system into a Suspend state, if it is currently powered on.



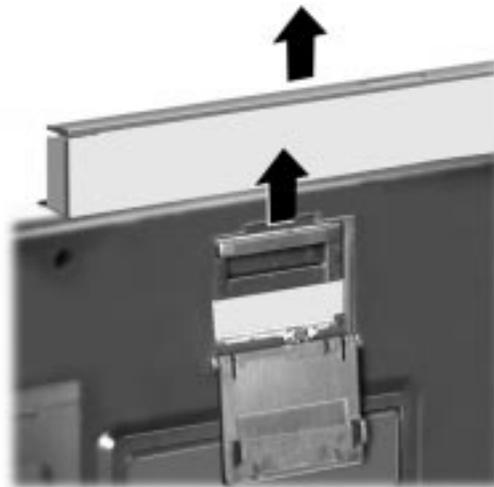
Opening the cover

-
4. Press the Release Lever toward the front of the system. Be sure that your fingers are not in front of the device that you are trying to remove.



Pressing the Release Lever

5. Pull the device installed in the VersaBay away from the system and remove it.



Removing the device

-
6. Install your next device. Close the cover that protects the Release Lever.



Make sure you close the cover. The system will not power on if the cover is open.

7. Press the Power button to resume the system from Suspend mode.

20X CD-ROM READER

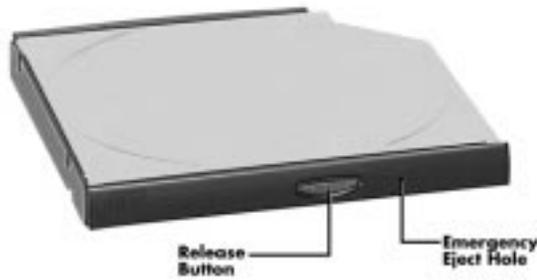
The NEC Versa 5000 comes with a 20X CD-ROM reader that features the latest in CD-ROM technology. The CD-ROM reader is assigned to drive letter E:. (The next letter available depends on the size of your hard disk drive.)



The CD-ROM reader is a Class 1 Laser product.

Use the CD-ROM reader to load and start programs from a compact disc (CD). You can also use the CD-ROM reader to play your audio CDs (see “Playing Audio CDs” in this chapter). The 20X CD-ROM reader is compatible with Kodak Multi-session Photo CDs™ and industry data and audio CDs.

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



CD-ROM reader features

CD-ROM reader features include the following:

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

To remove a CD, insert the end of a paper clip into the eject hole, and push in until you hear a click. Now you can manually open the drawer and remove the CD.

CD Loading

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



The CD-ROM reader ships with a shipping restraint installed. Remove the restraint by lifting on the edge near the center hole. Do not insert a CD with the restraint installed.

-
1. Press the Release button and pull the CD tray out of the reader bay.



Pressing the Release button

2. Put your CD, printed side up, into the circular impression in the tray.
3. Push the CD tray in until it clicks shut.



Some CDs vibrate when playing. This does not affect the way that the CD-ROM reader functions.

Using Bootable CDs

To use a bootable CD in your system, you may need to go into Setup and change the boot sequence. Make the CD-ROM drive the first boot device. (See Chapter 3, “Using Setup and Power Management,” for details about entering Setup and changing system settings.)

Using Audio CDs

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

1. Insert the audio CD into the CD-ROM reader tray.
2. Push the CD tray in until it clicks shut. If configured in the Windows 95 Device Manager, the software automatically detects the audio CD and begins playing.

If automatic play is not set up on your system, use the CD player located under Accessories in the MultiMedia directory.

Playing Entertainment CDs

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

1. Press the Release button to open the CD tray. Insert a CD into the tray. Push the CD tray in until it clicks shut.
2. Follow the installation instructions that come with your CD title. For example, you must enter the drive letter assigned to the CD-ROM reader.
3. Exit the installation utility. Select **Yes** to save your settings.
4. Click on the game icon created when you ran the CD title's installation utility. You are now ready to play!

Playing Movie CDs

Use the following steps to play a movie CD on your system.

1. Insert your video CD into the CD-ROM reader and close the tray.

-
2. From the Start menu, select Programs, Mediamatics Software MPEG, and Video CD Player. Single click the Video CD Player selection.

The Mediamatics remote control screen appears.

3. Double click on the CD drive letter and the movie starts.

CD Care

When handling CDs, keep the following guidelines in mind.

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



CAUTION

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

PC CARDS

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

Type II Cards

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

Type II Extended Cards

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

Type III Cards

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

Communication Cards

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

- Network Cards
- Fax/Modem Cards

You can insert a fax/modem in either slot.

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

PC Card Modems

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

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

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

Storage Cards

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

Interface Cards

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

Other Cards

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

- Global Positioning System (GPS) – to enable the tracking of remote units (for example, delivery trucks)
- Paging – for receiving remote paging messages

-
- Serial – for adding an extra serial communications port
 - Multimedia – for combining animation and sound
 - Audio – to enable the use of sound.

PC Card Slots

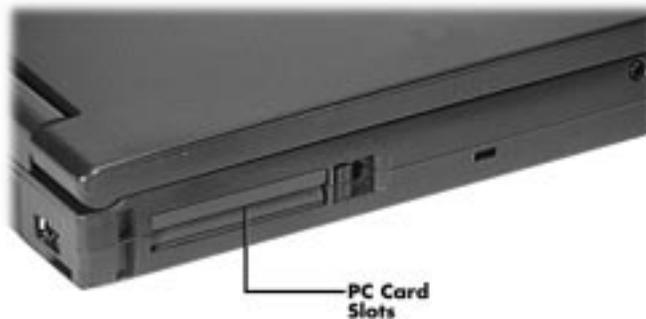
Your NEC Versa has two Cardbus slots for inserting two PC or Cardbus cards. The slots support two Type II cards or one Type III PC card.

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

Inserting a PC Card

To insert a PC card, follow these steps.

1. Locate the PC card slot on your system.



Locating the PC card slot



Only the top slot supports Zoomed Video.

Before installing or using Zoomed Video, enable the feature in the Setup utility. When Zoomed Video is enabled, some Network PC cards do not function correctly if inserted in the top slot.

2. Align the card so that the 68-pin connector points towards the slot.



Inserting a PC card

3. Slide the card into either slot. If you plan to use two cards at the same time, slide that card into the top slot and the second into the bottom slot.

These two slots support two Type II cards or one Type III card.



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

A low tone followed by a high tone lets you know that the card is fully inserted and recognized. (If you turn off the system sound, no sound is emitted.)

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

4. When you insert a PC card, the release button pops out. Pivot the release button towards the front of the system and fit it into the recessed area next to the slot.

Removing a Card

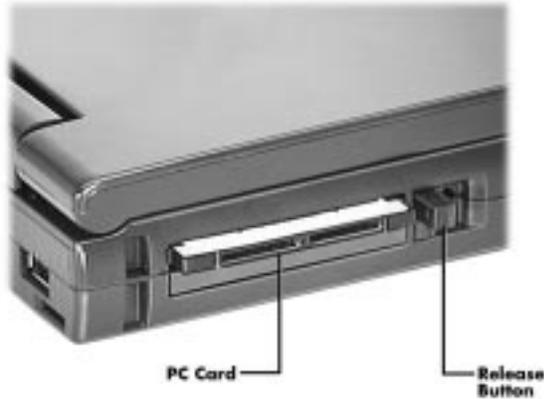
Remove PC cards from Windows 95 system as follows.



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

1. From the screen, select “My Computer,” then “Control Panel.”
2. Double click on 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 that card are closed, services for that card are shut down, and a message appears telling you that it is safe to remove the card.
 4. Pivot the PC card release button out of the recessed space next to the PC card slot.



Removing a PC card

5. Press the Release button and pull the card out of the slot.

IR PORT

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

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

For the infrared technology to work, follow these guidelines:

- position the NEC Versa no more than three feet away from the IR peripheral device you are using
- keep the computer and the device IR ports aligned.

The LapLink software that ships with your NEC Versa system provides ways for you to use the IR port. Read the instructions in Chapter 2 under “How to Use LapLink” for steps on using the software with the IR port.

INCREASING SYSTEM STORAGE AND MEMORY

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

Hard Disk

You can increase the system’s storage capacity by replacing the standard hard disk drive with a drive that offers greater storage capacity.

Removing and Installing a Hard Disk Drive

Make sure your NEC Versa is powered off, all external options are disconnected, and the LCD panel is closed. Then proceed as follows to replace the hard disk drive.

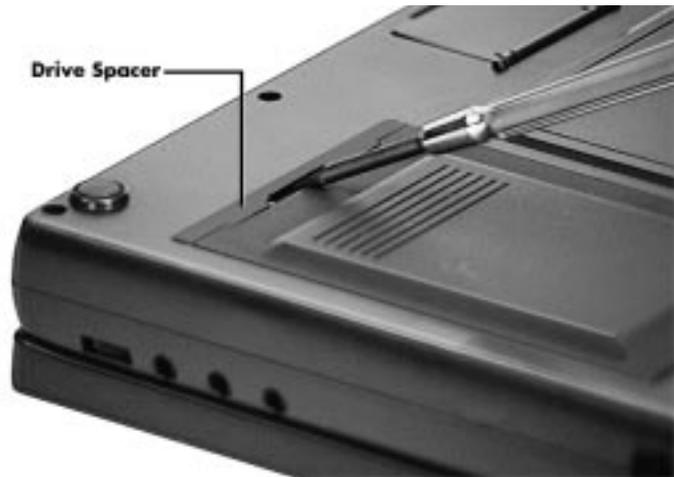


The NEC Versa must be powered off while the hard drive is being removed and installed.

1. Verify that all peripheral devices and cables are disconnected from your system. Check that the LCD panel is closed and latched. Make sure the system is powered off.

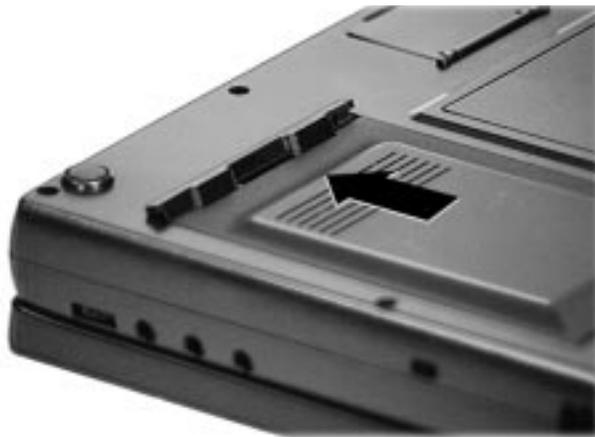
4 **Setting Up Your Computer**

-
2. Turn the NEC Versa over.
 3. Insert the tip of a flat-head screwdriver or the edge of a coin into the groove and gently pry the drive spacer up.



Releasing the spacer

4. Press down on the other end of the hard disk. Slide the drive towards the spacer to disconnect the drive from the connector.



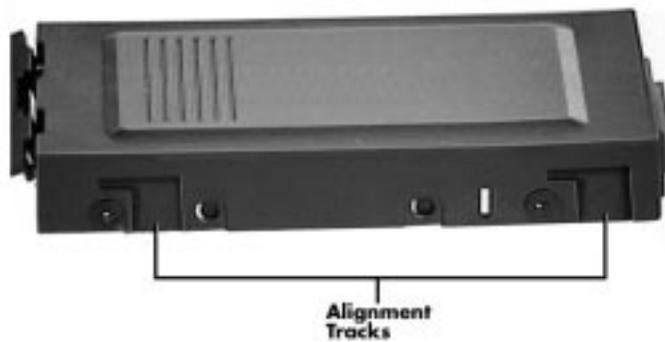
Sliding the drive towards the spacer

-
5. Once you disconnect the drive connector from the system, lift the drive up by the drive spacer and lift it out of the bay.



Removing the hard drive

6. Locate the alignment tracks on the side of the hard disk drive being installed.



Alignment tracks

-
7. Align the tracks over the tabs inside the hard drive bay and lower the drive into the bay.



Lowering the drive into the bay

8. Slide the drive towards the back of the system until the drive and system connection is secure.
9. Press down on the drive spacer until it clicks into position.

Installing Memory Modules

Your NEC Versa comes standard with 16 or 32 megabytes (MB) of Extended Data Out (EDO) memory. The amount of memory is model dependent. This new technology gives your system higher performance.

You can increase system memory to a maximum of 144 MB. If your system comes standard with 16 MB of RAM, you can install two optional 32-MB SO-DIMMs in the system. If your system comes standard with 32-MB of RAM, you can remove the 16-MB module installed and install two optional 64-MB modules to reach the maximum of 144 MB.

The following module capacities are available:

- 16-MB memory module
- 32-MB memory module
- 64-MB memory module.

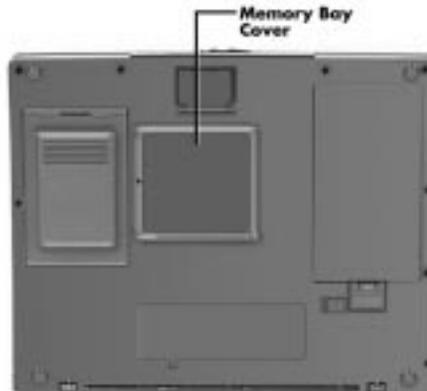
Only use single-bank SO-DIMMs in your system.



If you expand system memory to 48-MB or more, you must run the PHDisk utility to ensure that you have enough Save to Disk space reserved. Instructions follow the module installation procedure.

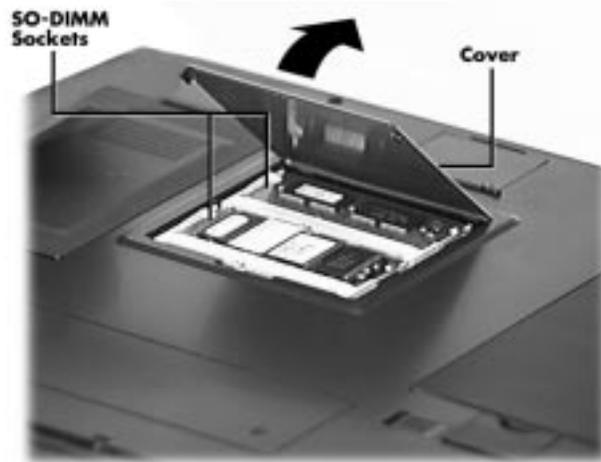
Install SO-DIMMs as follows.

1. Make sure the system is powered off, the AC adapter cable is disconnected, and that no peripheral devices are attached to the system.
2. Turn the system upside down and locate the memory bay cover.



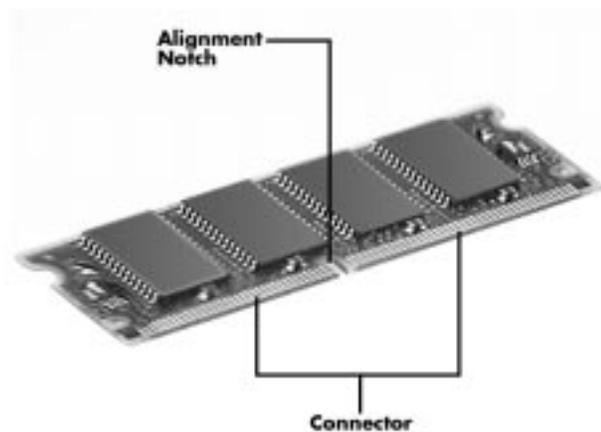
Locating the cover

-
3. Locate and open the memory bay cover.



Opening the memory bay cover

4. Locate the SO-DIMM sockets.
5. Locate the alignment notch and the connector on the memory module.



SO-DIMM features

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

(Repeat these steps for the second SO-DIMM. If you need to remove a memory module, see the next section “Removing a Memory Module.”)



Inserting SO-DIMMs

8. Replace the memory bay cover.

When you power on the system, the Power On Self-Test should properly detect and test the added memory. (If the memory is not detected, it may not be installed properly.)

Running PHDisk

If you increased system memory to 48-MB or more, you must run the PHDisk utility to ensure that you have enough file space reserved for the Save to Disk feature.

Do so as follows:

1. Reboot your system in MS-DOS mode.
2. Change to the root directory by typing **cd** and pressing **Enter**.
3. At the C: prompt, type the following and press **Enter**.

phdisk /create /file

A screen message lets you know that the system will be reset to allow the BIOS to recognize the change. Press any key to continue.

When your system restarts and boots into Windows, it is ready to use.

Removing a Memory Module

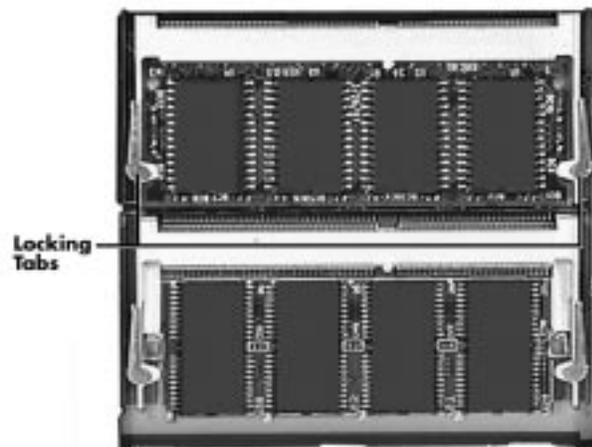
Remove installed SO-DIMMs as follows.

1. Make sure the system is powered off, the AC adapter and cable are disconnected, and that no peripheral devices are attached.
2. Turn the system upside down.
3. Locate and open the memory bay cover.



Opening the memory bay cover

4. Locate the installed SO-DIMM.
5. Locate the locking tabs on the sides of the memory module.



Locating the locking tabs

-
6. Press the locking tabs away from the sides of the module until the module pops up. Then, gently remove the SO-DIMM.
 7. Replace the memory bay cover.

Reviewing the Memory Map

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

Memory Map

MEMORY SPACE	SIZE	FUNCTION
0000000h-009FFFFh	640 KB	DOS Applications & Optional Memory Space Gap
00A0000h-00B7FFFh	96 KB	Video (VGA) Graphics Memory
00B8000h-00BFFFFh	32 KB	Text Mode Memory (SMM Space)
00C0000h-00C7FFFh	32 KB	Video (VGA) BIOS
00C8000h-00D7FFFh	128 KB	PCMCIA Window and USB (Extended Memory or Upper Memory Block)
00D8000h-00DFFFFh	32 KB	Boot Block Code CMOS Save Area
00E0000h-00FFFFFFh	64 KB	System BIOS ROM
To -00FFFFFFh	16 MB	Total Base Memory
To -08FFFFFFh	144 MB	Total Expansion Memory

INSTALLING OPTIONS

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

- External keyboard/mouse
- Serial devices
- Parallel devices
- External monitor
- External diskette drive
- External USB devices
- Audio devices.

In addition, NEC offers the NEC PortBar 5000 which was developed to work specifically with your NEC Versa.

See the following sections for steps on attaching options.

External Keyboard or Mouse

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

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

You can also connect both an external keyboard and mouse using the optional Y-adapter. See the online *Versa Tools Catalog* for details about ordering the Y-adapter.

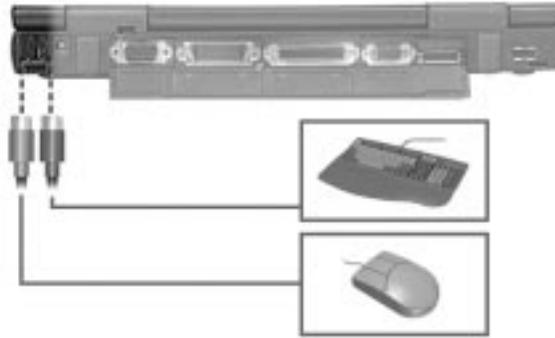
Follow these steps to connect an external keyboard or mouse to your system.

1. The NEC Versa 5000 supports either Power on or off for connecting a keyboard or mouse.

 **CAUTION**

Make sure the NEC Versa is powered off whenever you add or remove the keyboard or external mouse. Doing so while in Operation mode can cause the system to malfunction.

2. Connect the keyboard or mouse cable connector to the PS/2 port on the system.



Connecting an external keyboard or mouse

3. Power on the NEC Versa to resume operation if you turned the Power off. The system immediately recognizes the keyboard or mouse.

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.

Serial Devices

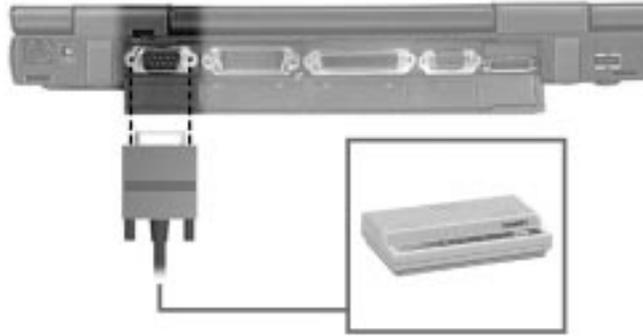
To install a serial device such as a printer or an external modem, you need a cable with a female 9-pin connector.



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

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

1. Check that both the NEC Versa and the device power are off.
2. Open the port cover on the back of the system and locate the serial port.
3. Align and connect the 9-pin connector with the serial port on the system. Secure the connection with the screws provided.



Connecting a serial device

4. Align and connect the other end of the cable to the appropriate port on the device. Secure the connections with the screws provided.
5. Connect the power cable to the device and a properly grounded wall outlet.
6. Turn on power to the device and then to the system.



Make sure your printer is online before trying to print. See the printer guide for instructions.

Parallel Devices

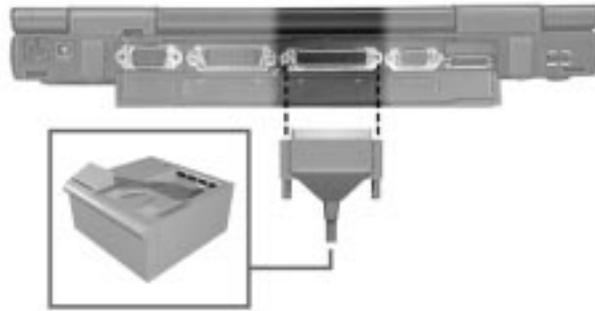
To install a parallel device, such as a printer, you need a cable with a male 25-pin connector for the system and, for some parallel printers, a Centronics[®]-compatible 36-pin connector.



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

Connect a parallel device to your NEC Versa as follows.

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



Connecting a parallel device

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



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

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.

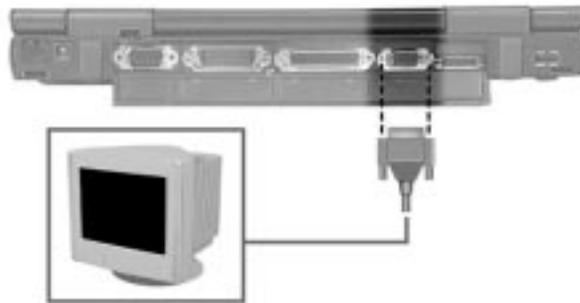
Follow these steps to connect an external monitor to your NEC Versa.

1. Check that the NEC Versa is powered off and the monitor Power switch is turned off.



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

2. Open the port cover on the back of the system.
3. Attach the 15-pin cable connector to the monitor port on the system. Secure the cable connection with the screws provided.



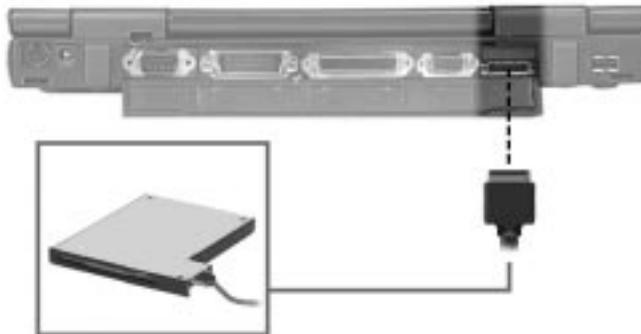
Connecting a monitor

4. Connect the monitor power cable and plug it into a properly grounded wall outlet.
5. Follow any setup instructions in the guide that came with the monitor.
6. Turn on power to the monitor.
7. Power on the NEC Versa.
8. Use the **Fn-F3** to toggle through video settings.

External Diskette Drive Connection

Your system came with an external diskette drive cable that allows you to connect the diskette drive to your system without using the VersaBay. Connect the diskette drive as follows:

1. Locate the external diskette drive cable that came with your system.
2. Connect one end of the cable to the port on the back of the system.
3. Connect the other end to the diskette drive.



Connecting the external diskette drive cable

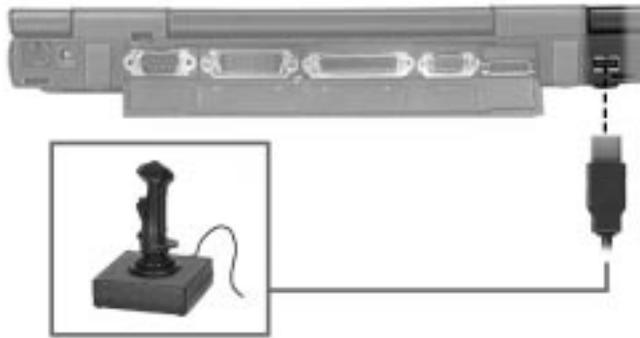
To remove the cable from either the drive or the system, press the Release button on the top of the cable connector.

External USB Devices

The NEC Versa 5000 lets you take advantage of the latest USB technology. Connect an external USB device to your system as follows.

1. Locate the USB port on the back of the system.

-
2. Plug in the USB device.



Connecting a USB device



Currently, USB activity is not recognized by the power management system in your notebook computer. As a result, USB devices such as an external keyboard, mouse, or joystick do not prevent the system from entering a power management state. When the system resumes, the NEC Versa may become unstable.

We recommend that you disable power management when using a USB device. See Chapter 3, "Using Setup and Power Management" for details.

Audio Devices

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

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

1. Locate the audio port that you want to use.

-
2. Plug the jack into the port on the left of the system.
 3. Rotate the volume control dial for volume control.



Audio ports



If you use external speakers and experience sound distortion or feedback, lower the volume.

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

NEC PortBar 5000

The NEC PortBar™ 5000 duplicates the ports found on the back of your NEC Versa 5000 Series system. Plus, the PortBar adds an Ethernet 10/BaseT connector and a 15-pin MIDI/game port connector. Keep the NEC PortBar 5000 in your office connected to peripherals while you take your NEC Versa on the road.

PortBar Ports

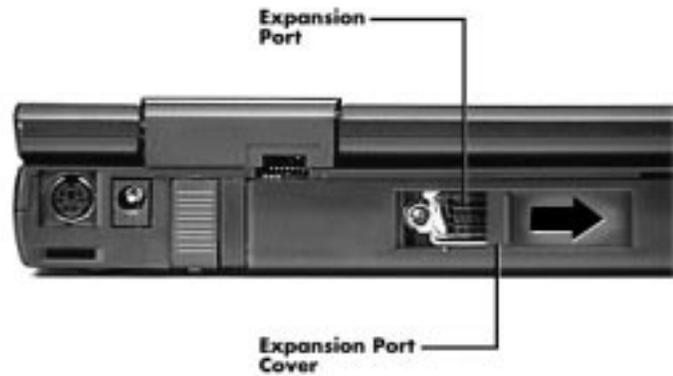
The ports on the PortBar are described next.

- External Keyboard Port — Connects to a 6-pin standard PS/2-style keyboard.
- External Mouse Port — Connects to a 6-pin standard PS/2-style mouse.
- External CRT (VGA) Port — Connects an external VGA/SVGA monitor to your notebook computer.
- Parallel Port — Connects a printer to your notebook computer.
- MIDI/Game Port — Connects a joystick or MIDI device to your notebook computer.
- Serial Port — Connects a serial device to your notebook computer, such as an external modem or mouse.
- USB Port — Connects a USB device or chain of USB devices to your system.
- External FDD Connector Port — Connects to the external cable that attaches to the diskette drive.
- 10BaseT Ethernet Connector — Lets you connect to a network for network access.
- AC Adapter Port — Connects to the AC adapter for AC power operation and battery recharging.

Attaching the PortBar 5000

Follow these steps to attach the PortBar to your NEC Versa 5000:

1. The battery power may be in the on mode, put the support feet back into their closed position on the back of the NEC Versa.
2. Slide open the expansion port cover.



Sliding the expansion port cover open

3. *With the back of the system facing you, fit the tabs on the right side of the PortBar into the ports on the right side of the system.*
4. *Rotate the other side of the PortBar to the left and attach the tabs on the left side of the PortBar to the left side of the system. Press until the PortBar tabs and NEC Versa ports click into place.*



CAUTION

Make sure you connect the right side of the PortBar first, as instructed. Trying to attach the PortBar straight onto the back of the NEC Versa can damage the unit.

Disconnecting the PortBar

Disconnect the PortBar from your NEC Versa as follows:

1. *Facing the back of the system, press down on the release button on the top left side of the PortBar.*

-
2. Pull the end of the release lever away from the system. This breaks the connection and releases the left side of the PortBar from the NEC Versa. (The unit clicks slightly when the connection is broken.)
 3. Pivot the PortBar away from the system and disconnect the tabs from the ports on the right side. Separate the NEC Versa 5000 from the PortBar.



For details, see the sheet that comes with the NEC PortBar 5000.

5 Using Multimedia

With its fast Pentium MMX processor and enhanced audio and video capabilities, you can perform fantastic multimedia feats with your NEC Versa 5000! This section describes the NEC Versa 5000's multimedia features and how you can use them to create high-quality, powerful presentations.

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

AUDIO

The NEC Versa 5000 provides entertainment-quality sound through stereo speakers. It handles MIDI files, digital audio files, and analog audio sources. This means the NEC Versa 5000 recognizes .WAV, .MID, and .AVI files. The system is 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.



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

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

1. From the Start menu, locate the Sound Recorder by sliding the cursor over Programs, Accessories, Multimedia, and the Sound Recorder line. Release your finger from the VersaGlide to open the recorder. (You may have to press the left selector button on the VersaGlide.)
2. Use the VersaGlide to press the Record button on the screen.
3. Speak into the microphone to create a sound file.
4. When you finish recording, press the Stop button (the button with a black square or rectangle).



Be careful when recording; audio files can become quite large.

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

Line-In

Analog signals come in through the NEC Versa 5000's Line-In port. The analog signals are converted into digital bits and bytes (digitized) through a converter known as an ADC (analog-to-digital converter). The resulting digital sound bytes can be stored, edited, processed, and transferred. You can record ambient sound effects, specific sound effects, or music to enhance a presentation.

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

Line-In accepts analog signals from external devices such as a tape deck, a stereo CD-player, or a stereo tuner. The Line-In port has a mini-type connector. You may need an adapter to connect your input device to the NEC Versa 5000 through Line-In.



Using Line-In does not disable the internal speakers.

Microphone

You can capture and record sounds through the internal microphone on the NEC Versa 5000. You can record voice-overs for narrations, reminders, or special instructions.

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

Playing Back

You can play back your recorded soundtrack through stereo headphones, the internal NEC Versa 5000 stereo speakers, or external stereo speakers. You can play .WAV and MIDI files as well as CD audio. Adjust the volume through the dial on the left side of the NEC Versa 5000 or the software. Locate the software controls as follows:

1. From Start, select Programs, then the Accessories group, and Multimedia.
2. Highlight Volume Control and left click.

Play audio from files or audio devices as follows. (This example shows how to use the Media player option in Accessories. You can also play audio by opening a file through the Sound Recorder and pressing the Play button.)

3. From Start, go to Programs, Accessories, Multimedia, and open the Media Player.
4. 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.
5. Once your file is open or your source specified, press the Play button.
6. Press the square Stop button to stop playing the audio.



It is recommended that the volume be adjusted to the mid point with the software. Then use the volume control wheel or the controls on the external speakers to adjust the volume.

Using Headphones

The NEC Versa headphone port delivers sound at half a watt. Stereo headphones plug in through the headphone jack located on the left side of the NEC Versa. Use the audio software that comes on your system or the volume control wheel to adjust the volume.

Using the Built-In Speakers

The NEC Versa 5000 has built-in stereo speakers. The built-in speakers are disabled if headphones are connected. Use the audio software that comes on your system or the volume control wheel to adjust the volume.

Using External Stereo Speakers

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

MIDI Files

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

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

VIDEO

The NEC Versa 5000 features a color display for sharp effective visuals right on the system or projected onto an external CRT monitor.

Access the Mediamatics Arcade MPEG player as follows:

1. Press Start, Programs, and open the Mediamatics Software MPEG group.
2. Highlight “Arcade Media Player” and left click.
3. From the Device menu, select the type of movie that are planning to play. Press the Play button.

To play a movie from CD, proceed as follows:

1. Press Start, Programs, and open the Mediamatics Software MPEG group.
2. Highlight “Video CD Player” and double click.
3. Double click on the CD drive letter and your movie will start playing.

Use the Mediamatics remote control to stop, rewind, restart the movie.

Using Animation Files

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

MULTIMEDIA APPLICATIONS

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

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

6 Traveling with Your NEC Versa

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

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

POWER CONNECTIONS

With the right accessories, you can run your NEC Versa 5000 Series system almost anywhere! Your system self-adjusts to various power sources. The United States, Canada, and most of Central and South America use 120-volt alternating current (AC). Most other countries of the world use 240-volt AC. The NEC Versa adapts to voltages ranging from 100 to 240 volts.

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

CHECKLISTS

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

What to Take

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

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

Preparing Your NEC Versa for Travel

Here is what you should do before you leave home:



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.
- Be prepared 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.
- Install the Weight Saver pack in the VersaBay to decrease system weight while you travel.

7 Solving Problems

Once in a while you may encounter a problem with your NEC Versa 5000. If the screen is blank, the instructions don't help, or no error message appears, use the information here to determine and fix the problem. You still may be able to solve the problem yourself!

PROBLEM CHECKLIST

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

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

Troubleshooting

PROBLEM

WHAT TO DO

The system does not power on.

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

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

Check that the VersaBay Release Lever cover is securely closed.

LCD screen is dark and blank.

LCD power-saving mode, or Standby Mode has shut off the backlight. Press any keyboard key.

The display may have been toggled to an external monitor. Press **Fn-F3** to switch the LCD back on.

Screen brightness needs adjustment. Press **Fn-F5** to adjust the brightness.

The system entered Suspend mode due to preset time-out. Press the Power button and resume operation.

The system entered Suspend mode due to low battery power. Plug in the AC, press the Power button, and resume operation.

Battery power does not last long.

Use power-saving modes. Fully discharge the battery and then recharge it.

Information on the LCD screen is difficult to see.

Adjust the brightness using **Fn-F5**.

An optional component does not work.

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

START-UP PROBLEMS

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

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

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

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

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



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 5000 has a built-in checking program that automatically tests its components when you turn the system power on. This diagnostic test is called the Power-On Self-Test (POST). If the system finds a problem during the POST, the system displays an error message. If this happens, follow the instructions in the POST error message table.

POST Error Messages

MESSAGE	WHAT TO DO
Diskette drive A error or Diskette drive B error	<p>The diskette drive does not work or is not properly connected.</p> <p>Check that the drive is securely connected and power is on.</p> <p>Run the Setup utility to check the diskette drive parameters.</p> <p>If problem persists, the drive might need repair.</p>
Incorrect drive A type - run Setup	Run the Setup utility to check the diskette drive parameters.
Incorrect drive B type - run Setup	Run the Setup utility to check the diskette drive parameters.
Diskette read failure	Remove the diskette from the drive and try another diskette. If you cannot read from the next diskette, your drive might need repair.
Fixed Disk x Failure or Fixed Disk Controller Failure	<p>Check that the hard disk drive is installed properly.</p> <p>Run Setup to ensure that the fixed-disk type is correctly defined.</p>
System CMOS checksum bad. Run Setup.	<p>Start the Setup utility, check the system parameters set, and correct them. Exit and save the parameters set.</p> <p>Connect the AC adapter to charge the internal backup battery. Restart the Setup utility and set the correct parameters.</p>
Extended RAM failed at offset: <i>nnnn</i>	<p>Run Setup to check extended RAM parameters.</p> <p>Verify that the SO-DIMMs are installed properly and seated securely.</p>
Failing Bits: <i>nnnn</i>	The hex number <i>nnnn</i> is a map of the bits at the RAM address that failed the memory test. Call your authorized NECCSD service representative.
Keyboard controller error	The keyboard controller failed. The keyboard or controller may need to be replaced. Call your authorized NECCSD service representative.

POST Error Messages (cont'd)

MESSAGE	WHAT TO DO
Keyboard error	The keyboard is not working. Call your authorized NECCSD service representative.
Keyboard locked - Unlock key switch	Unlock the system to proceed.
Monitor type does not match CMOS - Run SETUP	The monitor type in Setup is incorrectly defined. Run Setup and fix the monitor type.
Operating system not found	The operating system cannot be found on either drive A or C. Enter Setup and see if the hard disk drive and drive A are properly defined. In Setup, check that the boot device sequence is set properly. To boot from a CD, check that the CD-ROM reader is specified as the first boot device.
Parity Check 1 <i>nnnn</i> Parity Check 2 <i>nnnn</i>	A parity error was found in the system bus (check 1) or in the I/O Bus (check 2). Call your authorized NECCSD service representative.
Press <F1> to resume, <F2> to Setup	This message appears after a recoverable error message occurs. Press F1 to start the boot process; F2 to enter Setup to change settings.
Previous boot incomplete - Default configuration used.	This message appears if the system fails the previous power-on self-test. The system loads the defaults and offers to run Setup. Run Setup and verify that the system parameters are set correctly. If the message persists, call your authorized service representative.
Real time clock error	The real-time clock failed the BIOS test. The board may need repair. Call your authorized service representative.
Shadow RAM Failed at offset: <i>nnnn</i>	Shadow RAM failed at offset <i>nnnn</i> of the 64KB block where the error was detected. Call your authorized service representative.

POST Error Messages (cont'd)

MESSAGE	WHAT TO DO
System battery is dead - Replace and run Setup	The CMOS clock battery indicator shows that the CMOS battery is dead. Call your authorized service representative to have the battery replaced.
System Cache error - Cache disabled RAM	RAM cache failed the BIOS test and disabled the cache. Call your authorized service representative.
System RAM failed at offset: <i>nnnn</i>	System RAM failed at offset <i>nnnn</i> of the 64KB block where the error was detected. Call your authorized service representative
System timer error	The timer test failed. The system board may need repair. Call your authorized service representative.

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 Appendix C, "Information Services," for details about contacting NECCSD.



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

UPDATING THE SYSTEM BIOS

If you receive a BIOS Update diskette from NECCSD, simply insert the diskette in the drive and then cold boot your system. Follow the on-screen instructions.

When the BIOS update finishes, the system powers down automatically. Remove the diskette from the drive and restart your system.

If you receive an error message that tells you to press <F1> or <F2>, press F2 to enter Setup. Go to the Exit menu and set the defaults. Save your changes and exit. When you restart your system, it should power up without further error messages.

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.



CAUTION

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

You can use the Product Recovery CD to do the following:

- Full Restore — Formats your hard drive and then performs a full restore procedure. This option removes all data and applications from your system.
- Selective Installation — Allows you to selectively reinstall drivers, applications, and utilities without reformatting your hard disk.

Full Restore

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

Full restore *erases* the hard disk *completely* before reinstalling the files.

 **CAUTION**

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

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

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

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

You have the option of accepting or rejecting the agreement. If you reject the agreement, the recovery program exits.

4. In the Recovery Mode screen, use the cursor arrows or VersaGlide touchpad to select the type of full recovery procedure to use.



CAUTION

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

The choices are as follows:

- **Automatic Recovery** — 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.
- **Custom Recovery** — lets you preserve your existing hard disk drive partition structure and format only the active partition without affecting the non-active partition. This procedure is interactive and requires that you respond to system prompts.

A series of dialog boxes and screens let you know the progress of the recovery.



CAUTION

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

5. Follow the on-screen instructions to complete the full recovery. When prompted, remove the CD from the reader and press OK to exit the utility.

-
6. At the R:\TOOLS prompt, press the Power button to power off the system. Press the Power button again to power on.

The system reboots and Windows reconfigures the system. When the configuration finishes, an MS-DOS “Custom Setup is now complete” screen appears.

7. Reboot your system. (You can use the Power button, press **Ctrl-Alt-Del**, or press the Hardware Reset Switch to reboot.) The Windows Setup screen appears. Follow the on-screen instructions to set up Windows.

You are required to reenter your Microsoft Windows license number.

Selective Installation

If a driver, application, or utility becomes unusable, use the product Recovery CD to restore the selected file(s) as follows:

1. Boot your system into Windows.
2. Insert the Product Recovery CD into the CD-ROM reader.
 - If your system is set to automatically start CDs that are inserted, a License Agreement window appears. Go to the next step.
 - If your CD did not start automatically, double click on the My Computer icon. Then double-click on the CD-ROM reader icon.

A License Agreement window appears.

3. Read the License Agreement and press the Agree button to continue. (If you press the Do Not Agree button, the utility window closes.)

The Selective Installation Utility window opens and is comprised of three sections:

- Installation type — located in the top right-hand corner of the window, this section lets you specify what you are installing — drivers, applications, or utilities.
- Selection area — located on the left-hand side of the window, this area lists the available selections for the installation type and lets you highlight the items to install.
- Description — located just below the Selection list, this window gives a brief description of the highlighted selection.

Buttons on the main window provide the following options:

- Information — when this button is active, pressing the button usually displays a file containing information about the highlighted selection or instructions on installing the selection. We recommend that you access the information provided before proceeding with installation.
- Setup — pressing the Setup button either displays an information file with setup instructions or begins the setup procedure.
- About — provides copyright and revision information related to the Selective Install Utility.
- Exit — lets you exit the utility.

A Setting Up a Healthy Work Environment

WARNING

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

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

MAKING YOUR COMPUTER WORK FOR YOU

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

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

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

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

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



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.

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- 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 30 centimeters (cm) and no further away than 70 cm from your eyes. The optimal distance is between 35 and 45 cm.

-
- Rest your eyes periodically by focusing on an object at least 50 cm 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.



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

The following specifications are standard except where noted.

System Processor

NEC Versa

5060 and 5060X — Intel Pentium-166 Mhz MMX

5080 and 5080X — Intel Pentium-233 Mhz MMX

Architecture

32-bit Peripheral Component Interconnect (PCI)

Random Access Memory (RAM)

- Standard Main Memory
 - NEC Versa 5060 and 5080 – 16-MB EDO (On PCB Board)
 - NEC Versa 5060X and 5080X – 32-MB EDO (16-MB on PCB Board, 16-MB installed in slot)
- Optional Expansion — 2 SO-DIMM slots. Expandable in 16-MB, 32-MB or 64-MB increments. Maximum 144 MB total.
- Video RAM — 2 MB
- Cache RAM
 - Level 1: 32 KB (internal to processor)
 - Level 2: 256 KB (5060 and 5060X)
512 KB (5080 and 5080X)

Read-Only Memory (ROM)

256 KB, Flash ROM

Calendar Clock

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

Input/Output (I/O) Ports

Integrated industry-standard interfaces

- Parallel — 1 port, 25-pin D-sub (supports ECP and bidirectional modes)
- Serial — 1 port, 9-pin D-sub, 16550A compatible, UART
- Infrared — 1 port, IrDA-1 compatible (SIR/MIR/FIR)
- VGA — 1 port, 15-pin external analog
- External Keyboard or External Mouse — 1 port, PS/2, 6-pin MiniDin
- Expansion — 1 port, 120-pin for optional PortBar 5000
- Stereo Headphones — 1 port, .5 watts per channel
- Stereo Line-In — 1 port
- Microphone — 1 port
- USB — 1 port, 4 pin
- External Diskette Drive — 1 port for the external connection of the diskette drive
- DC In — 1 port, for AC adapter cable

Main Battery Pack

- Lithium Ion (Li-Ion) — 8 cells
- Output voltage — 14.4 volts (V)
- Capacity — 2400mAH

-
- Battery Life (depends on the system model, power management features enabled, and programs running)
 - from 1.5 – 1.75 hours with power management off
 - from 2 – 3 hours with power management on
 - Recharging time — approximately 4 hours

Bridge Battery

- Nickel Metal Hydride (NiMH)
- 3.6 V, 70 mAH

Speakers

2 stereo speakers, 36.2 mm x 16.2 mm, located on the right and left ends of the base unit just below the LCD panel

Card Slots

- Two 32-bit card slots for one or two Type I or Type II PC cards or one Type III PC card
- 5 V or 3.3 V interface
- Zoomed Video support in upper slot (card slot A)
- CardBus support in both slots

LCD Display

- NEC Versa 5060 and 5080 — 12.1-inch backlit Super VGA (SVGA) Thin Film Transistor (TFT) color display panel
- NEC Versa 5060X and 5080X — 13.3-inch backlit Extended Graphics Array (XGA) Thin Film Transistor (TFT) color display panel
- Resolution
 - NEC Versa 5060 and 5080 – 800 x 600 pixels
 - NEC Versa 5060X and 5080X – 1024 x 768 pixels

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- Dot Pitch
 - NEC Versa 5060 and 5080 – 0.3075 x 0.3075
 - NEC Versa 5060X and 5080X – 0.264 x 0.264
 - Colors — 65,536

Keyboard

Membrane-type, 85 keys

- Cursor Control keys — 4 keys; arrow keys arranged in inverted T layout
- Numeric keypad — embedded
- Function keys — 12 keys
- Fn key — used with function keys in Setup and Keyboard locking functions
- Stroke — 3 mm

Diskette Drive

Standard 1.44-MB drive

- Size — 3.5 inch
- Capacity — 720 KB/1.44 MB

Hard Disk Drive

- NEC Versa 5060 — Internal 2.5-inch, IDE
 - 1.6 GB formatted capacity
 - Average seek time: 13 ms read, 14 ms write
 - Track-to-track seek rate: 4 ms
 - Data transfer rate (host-buffer): 16.6 MB/s max.
 - Media data rate (disk-buffer): 5.1 – 8.3 MB/s
 - Revolutions per minute: 4000

-
- NEC Versa 5060X and 5080 — Internal 2.5-inch, IDE
 - 2.1 GB formatted capacity
 - Average access time: 12 ms read
 - Track-to-track seek rate: 3 ms
 - Data transfer rate (host-buffer): 16.6 MB/s max.
 - Media data rate (disk-buffer): 6.1 – 9.3 MB/s
 - Revolutions per minute: 4000
 - NEC Versa 5060X and 5080X— Internal 2.5-inch, IDE
 - 3.2 GB formatted capacity
 - Average access time: 12 ms
 - Track-to-track seek rate: 3 ms
 - Data transfer rate (host-buffer): 16.6 MB/s max.
 - Media data rate (disk-buffer): 6.0 – 9.1 MB/s
 - Revolutions per minute: 4000

20X Speed CD-ROM Reader

5.25-inch, 12.7 mm, CD-ROM Reader

- Data Capacity — 748 MB
- Data Transfer Rate — 2100 KB/sec
- Access Time — 150 ms, typical
- Memory Buffer — 128 KB
- Photo CD Compatibility — Multi-session Photo CD

AC Adapter

- Input — 100 to 240 volts (V) AC, 50/60 Hz
- Output — 19 V, 2.6 A

Dimensions

System

- Width — 12 in. (300 mm)
- Depth — 9.7 in. (243 mm)
- Height — 1.5 in. (38.1 mm)

Weight

- NEC Versa 5060 and 5080 — 5.10 lb (2.31 kg)
- NEC Versa 5060X and 5080X — 5.50 lb (2.49 kg)

Recommended Environment

Operation

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

Storage

- Temperature — -20°C to 60°C (-4°F to 140°F)
- Relative Humidity — 10% to 80% (Noncondensing)

Interrupt Controllers

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

IRQ Settings

CHANNEL	DEVICE
IRQ00	System Timer
IRQ01	Keyboard
IRQ02	Second Interrupt Controller
IRQ03	COM2 (internal IR port)
IRQ04	COM1 (internal serial port)
IRQ05	Sound Chip, MIDI (default)
IRQ06	Floppy Disk Drive Controller
IRQ07	LPT1 Default (internal printer port)
IRQ08	Real Time Clock
IRQ09	USB
IRQ10	Not Used
IRQ11	CardBus controller
IRQ12	Internal Glide Pointer or External PS/2 Mouse
IRQ13	Co-Processor
IRQ14	Primary IDE (Hard Disk Drive)
IRQ15	Secondary IDE (CD-ROM)

DMA Settings

CHANNEL	DEVICE
DMA00	FIR
DMA01	Sound Chip (default)
DMA02	Floppy Disk Drive Controller
DMA03	Sound Chip
DMA04	Cascade from DMA Controller

C NECCSD Information Services

NECCSD makes it easy for you to get information and help when you need it. We offer a variety of services, including a 24-hour technical support line. This appendix describes these services, including:

- NECCSD Diskette Fulfillment Center
- NECCSD Customer Service and Technical Support Center (U.S. customers only)
- NECCSD Customer Assistance Center
- NECCSD FaxFlashSM Service
- NECCSD Bulletin Board Service
- NECCSD on America Online[®] Service
- NECCSD on CompuServe[®] Online Service
- E-mail to NECCSD Customer Service and Technical Support Center through a commercial online service or Internet
- Fax Service to NECCSD Technical Support Services
- NECCSD Web and FTP sites.



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

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

Not only do these services provide general information about your 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.

HOW TO REACH US

Check the descriptions that follow for service hours and any special instructions you might need to reach us.

NECCSD Diskette Fulfillment Center

(800) 842-6446

NECCSD 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.

NECCSD Customer Service and Technical Support Center (TSC)

(800) 632-4525

Fax: (978) 635-4100

NECCSD also offers direct technical support through its Technical Support Center (TSC). NECCSD technical support is for U.S. and Canadian customers only. International customers should contact the local NEC office or their dealers.

Direct assistance is available 24 hours a day, 7 days a week. Call the NECCSD Technical Support Center, 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.
- Preinstalled software — toll-free phone support for 90 days from the time of your first call to the NECCSD Technical Support Center.

For software support *after* the initial 90 days or hardware support after the warranty period, the charges are per incident. You can charge these fees to either a MasterCard or VISA credit card.

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

Outside the U.S., please contact your local NEC office or their dealers.

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

NECCSD Customer Assistance Center

NECCSD offers Customer Service for extended warranties, and contract information.

Direct assistance is available 24 hours a day, 7 days a week. Call the NECCSD Customer Assistance Center, toll free, at **1-888-632-9128** (U.S. and Canada only).

NECCSD FaxFlash Service

U.S. and Canada: (888) 329-0088

International: (978) 635-6090

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

Using FaxFlash

FaxFlash 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 follow the voice prompts to order the information you want. FaxFlash automatically faxes the information to you.

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

- Catalog 1, Telephone Directory and information about Online Services.

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- Catalog 3, Product specifications, warranty policy, UltraCare guidelines, and sales information.
 - Catalog 5, Pro Serva and Express 5800 Server Systems technical support information.
 - Catalog 6, NEC Ready Systems technical support information.
 - Catalog 7, PowerMate Systems technical support information.
 - Catalog 8, NEC Portable Systems (including Versa Notebooks and MobilePro Handheld Personal Computers) technical support information.

Technical support information includes BBS and FTP file listings, Illustrated Parts Breakdowns (IPB), part numbers, Frequently Asked Questions (FAQ) lists, and other documents specific to each product.

Ordering Information

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, if you already know the number.
2. From your touch-tone telephone, enter 888-329-0088 (U.S. and Canada only).

For international use, enter the international long-distance access number, the U.S. country code, and the U.S. telephone number (978-635-6090).

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.

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 requested is automatically sent to your fax machine. 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.

NECCSD Bulletin Board System (BBS)

(978) 635-4706

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

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

The BBS can also be accessed through the CompuServe online service. However, you cannot download files from CompuServe.

Logging On

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.



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 1** for the desktop 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 downloaded from the BBS automatically format your diskette. Formatting destroys any data on the diskette. Before you download files from the BBS, check that you do not have information on the diskette that you need.

Logging Off

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**.

NECCSD on CompuServe

CompuServe Keyword GO NECTECH

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



You cannot download information from the NECCSD Bulletin Board from CompuServe. You must call the NECCSD Bulletin Board directly using the procedure described earlier in this chapter.

Using CompuServe

Use the following steps to access CompuServe and NECCSD online information services.

1. Log on to CompuServe.
2. At the opening screen, click the **Go** button, then type **NECTECH** at the prompt, and click **OK**.
3. At the NEC menu, double-click one of the following topics, then follow the prompts:
 - NEC Bulletin Board
 - Information About This Service
 - Access NEC Bulletin Board
 - Access CompuServe Information Services
 - Exit.

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

NECCSD on America Online

America Online Keyword NEC

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

Using America Online

Use the following steps to access America Online and NECCSD online information services.

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

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

NECCSD on the Internet

Internet Address **tech-support@neccsd.com**

If you have a modem, you can access the NECCSD Home Page on the Internet World Wide Web. You can do this through a commercial online service or through your Internet account. The NECCSD Home Page contains general information about NECCSD products.

You can also use the Internet to access the NECCSD FTP (file transfer protocol) site to download various files (video drivers, printer drivers, BIOS updates). The files are essentially the same files as on the NECCSD Bulletin Board Service.

NECCSD WWW and FTP Sites

To access the World-Wide-Web NECCSD Home Page, enter the following Internet Uniform Resource Locator (URL) through your service:

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

To access the NECCSD 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.

NECCSD E-Mail and Fax

Worldwide Web Address:

www.nec-computers.com

The NECCSD Technical Support Center 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 NECCSD Technical Support Center 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
- Notebook
- Servers.

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.

WARRANTY AND NON-WARRANTY REPAIR SERVICE

Before you call for repair service, see the problem checklist in Chapter 7 to determine if you can solve the problem yourself, within your company, or through your NEC authorized dealer.

Direct assistance is available 24 hours a day, 7 days a week. Call the Technical Support Center (TSC) at 1-800-632-4525 for the following support:

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

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

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

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

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



Free technical specifications, troubleshooting tips and other helpful information for out-of-warranty products are available through NECCSD FaxFlash Service at 888-329-0088 by requesting catalog number three.

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

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

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 1024 by 768 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.

Index

A

- AC adapter, 1-14, 6-1, 6-2, 6-3
- Active mode, 3-15
- Adjusting
 - LCD brightness, 4-1
 - support feet, 4-2
- Air vents, 1-10
- Ambient sound effects, 5-3
- America Online, 2-11, C-10
- Arrange your equipment, A-3
- AT&T WorldNet, 2-13
- Audio
 - .WAV files, 5-1
 - AVI files, 5-1
 - MIDI files, 5-1

B

- Battery charging time, 1-24
- Battery life, 1-22
- Battery pack, 1-14, 6-1
 - handling, 1-21
 - installation, 1-17
 - precautions, 1-23
 - release latch, 1-13
 - when to change, 1-17
- Battery warning, 1-21
- Bridge battery, 1-25
- Bulletin board service, C-6

C

- Calendar clock, B-2
- CD-ROM reader
 - CD care, 4-16
 - features, 4-13
 - specifications, B-5
 - using audio CDs, 4-15
 - using entertainment CDs, 4-15
 - using movie CDs, 4-15
- Cleaning your NEC Versa, 1-29
- CMOS battery, 1-25
- CompuServe, 2-12, C-9
- Connecting the AC adapter, 1-15
- Control keys, 4-6
- Cursor Control keys, 4-5
- CyberMedia First Aid 97, 2-8

D

- Diskette drive specifications, B-4
- Diskette Fulfillment Center, C-2
- Drives
 - CD-ROM, 1-7
 - Diskette, 1-8
 - SuperDisk, 1-8

E

- E-mail support, C-12
- Emergency Reset Switch, 1-12
- Entering setup, 3-1
- Expansion port, 1-9
- Extending battery life, 1-22
- External audio options, 4-41

External Diskette Drive
connector, 1-10

F

Fax support, C-12
FaxFlash, C-4
First Aid 97, 2-8
Function key combinations, 4-4

H

Hard disk drive, 1-14
Headphone port, 1-11
Healthy work environment, A-1

I

Increasing hard disk space, 4-23
Information services, C-1
 America Online, 2-11, C-10
 CompuServe, C-9
 E-mail support, C-12
 fax support, C-12
 Internet, C-11
 NECCSD bulletin board
 service (BBS), C-6
 NECCSD ftp site, C-11
 NECCSD technical support, C-3
 NECCSD World Wide Web
 home page, C-11
 World Wide Web, C-11
Infrared (IR) port, 4-22
Input/output facilities, B-2
Installing a battery pack, 1-17
Installing options, 4-33
 external diskette drive, 4-40
 external keyboard, 4-33
 external monitor, 4-38
 external mouse, 4-33
 external USB devices, 4-40

parallel device, 4-37
printer, 4-35
serial device, 4-35

Internal batteries, 1-24
Internet, C-11
Interrupt controllers, B-6

K

Keyboard, 1-7, 4-3
 control keys, 4-3
 cursor control keys, 4-3
 function keys, 4-3
 numeric keypad, 4-3
 typewriter keys, 4-3
Keyboard specifications, B-4

L

LapLink, 2-5, 4-23
LCD Panel
 SVGA, 1-3
 TFT, 1-3
 XGA, 1-3
LCD specifications, B-3

LEDs

Battery/Charging Status, 1-5
Caps Lock, 1-7
CD-ROM reader, 1-7
diskette drive, 1-7
Num Lock, 1-7
Power, 1-6
Scroll Lock, 1-7
Line-In, 5-3
Low battery power, 1-17

M

Main power source
 DC power, 6-2

-
- Making VersaGlide
 - adjustments, 4-7
 - McAfee antivirus, 2-7
 - VirusScan, 2-8
 - WebScan, 2-7
 - Memory expansion slots, 1-13
 - Memory Map, 4-32
 - Memory module
 - installing, 4-27
 - removing, 4-30
 - Microsoft Internet Explorer, 2-13
 - MIDI files, 5-5
 - Monitor port, 1-9
 - Multimedia
 - microphone, 5-3
 - recording sounds, 5-1
 - using animation files, 5-6
 - using external speakers, 5-4
 - using headphones, 5-5
 - N**
 - NEC Versa 5000 Series system
 - specifications, B-1
 - NECCSD
 - bulletin board service, C-6
 - on CompuServe, C-9
 - FaxFlash, C-4
 - technical support services, C-3
 - NetMeeting, 2-14
 - Non-warranty Service, C-12
 - Numeric keys, 4-6
 - O**
 - OAG, 2-14
 - Official Airline Guide, 2-14
 - Online help, 2-3
 - Online Services, 2-8
 - America Online, 2-11
 - AT&T WorldNet, 2-13
 - CompuServe, 2-12
 - Microsoft Internet Explorer, 2-13
 - NetMeeting, 2-14
 - OAG, 2-14
 - Prodigy Internet, 2-10
 - Operating environment, B-6
 - Operating system, 2-2
 - P**
 - Parallel port, 1-10
 - Password, 3-10
 - forgotten, 3-12
 - override switch, 1-13, 3-12
 - removal, 3-11
 - setting, 3-11
 - PC card slots, 4-19
 - PC cards, 4-16
 - inserting a card, 4-19
 - interface cards, 4-18
 - other types, 4-18
 - removing (in Windows 95), 4-21
 - storage cards, 4-18
 - Pentium microprocessor, 1-2
 - PHDisk utility, 4-27, 4-29
 - PortBar 5000, 4-42
 - port descriptions, 4-43
 - Ports, 1-9
 - POST error messages, 7-4
 - Power
 - customize, 3-14
 - longest battery life, 3-13
 - maximum performance, 3-14
 - Power button, 1-5

-
- Power connections, 6-1
 - Power management
 - Active mode, 3-15
 - customize, 3-14
 - default settings, 3-16
 - How to use, 3-15
 - power saving modes, 3-15
 - Standby mode, 3-15
 - Suspend mode, 3-16
 - Power sources, 1-14
 - Power-saving modes
 - Standby, 3-15
 - Suspend, 3-16
 - Preparing for travel, 6-3
 - Printer, 4-35
 - Problem checklist, 7-1
 - Prodigy Internet, 2-10
 - Product Recovery CD, 7-7
 - full restore, 7-7
 - selective installation, 7-10
 - R**
 - Removing a password, 3-11
 - S**
 - Security, 3-10
 - Serial port, 1-10
 - Setting a password, 3-11
 - Setting system parameters, 3-4
 - power, 3-13
 - Setting up DOS mode games, D-1
 - Setup key functions, 3-3
 - Setup main screen, 3-2
 - Setup utility, 2-4, 3-1
 - Setup utility screens
 - Advanced, 3-10
 - Exit, 3-14
 - Main, 3-9
 - Power Savings, 3-13
 - Security, 3-10
 - Side features, 1-10
 - SO-DIMMs, 4-27, 4-30
 - Sound, record and playback, 5-1
 - Sound Blaster Pro, 5-1
 - Start-up problems, 7-3
 - Storage requirements, 1-28
 - Support phone numbers, 6-3, 6-4
 - Support feet, 4-2
 - Suspend mode, 3-16
 - System care, 1-26
 - System dimensions, B-5
 - System features
 - back, 1-9
 - bottom, 1-12
 - front, 1-3
 - side, 1-10
 - System parameters, 3-4
 - System precautions, 1-26
 - System RAM, B-1
 - System software, 2-1
 - System weight, B-6
 - T**
 - Technical support, C-3
 - Traveling with your system, 6-1
 - 20X CD-ROM reader, 4-12
 - Typewriter keys, 4-6
 - U**
 - Updating the system BIOS, 7-6
 - USB port, 1-10
 - Using the LCD panel, 4-1
 - Using the NEC VersaGlide, 4-6
 - Using the Product Recovery CD, 7-7
 - V**
 - Volume control dial, 1-11

W

Warranty Service, C-12

Windows 95, 2-2

BATTERY REPLACEMENT

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

WARNING

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

ATTENTION

Il y a danger d'explosion s'il y a 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 and CMOS clock battery are made of Lithium Ion (Li-Ion). 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.