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First Printing —November 1994

Using this Guide

This *Versa™ P Series User's Guide* contains all the information you need to use your notebook computer. To help you get the most out of your Versa P, this guide describes system features, options, and setup programs.

Read the following chapters to find out more about your Versa P.

- Chapter 1 gives basic information like setting up the notebook computer, using function keys, and reading LCD status icons.

  Chapter 1 describes the Versa P buttons, controls, PCMCIA slots, and other features.

- Chapter 2 offers ideas for using your Versa P for multimedia presentations.

- Chapter 3 focuses on adding options, like PCMCIA cards. This chapter also describes how to connect external devices like printers, monitors, speakers, and keyboards.

- Chapter 4 describes the power-saving programs that come with your Versa P. It introduces options for conserving energy and saving battery power.

- Chapter 5 introduces you to the Versa P Auto Setup program. This software lets you change the system date and time, set a password, and define many other system options.

- Chapter 6 gives you a checklist to follow if you have problems with the Versa P. Solutions are also suggested.

- Chapter 7 provides telephone numbers for NEC help and information lines. This chapter guides you to locating the help you need for basic system service or upgrades.
- Chapter 8 provides switch setting information on SW1.
- Appendix A lists system specifications.
- Appendix B describes the NEC Communications Assistant.
- Appendix C gives information on using the BIOS Update utility.

Use this guide along with the software documentation that comes with your Versa P.

TEXT SETUP

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

- Cautions, notes, and tips have the following format:

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

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

> **TIPS:** Tips give helpful hints about getting the most out of your system.

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

RELATED DOCUMENTS

In addition to this guide, a number of other documents ship with your Versa P system, including:

Hardware Documents

- The *Versa P Quick Setup* shows you how to set up your system after you unpack it.
- The *Versa P Series Battery Guide* gives hints about extending the life of your battery pack and suggests energy conserving techniques.
- The *Versa Series Quick Reference Card* contains brief descriptions of function keys, LEDs, NEC help telephone numbers and troubleshooting tips. Tuck this card inside the notebook when you take it with you. The card is designed as a quick, portable reference to frequently-used functions.
- The *Versa Series PCMCIA User's Guide* contains information about optional PCMCIA cards, their installation, and use.

Software Documents

- *Microsoft Windows and MS-DOS 6 User's Guide* provides a comprehensive source of information for using Windows™ and MS-DOS®.

Contents

2 Using Your Versa P for Multimedia

3 Adding Options

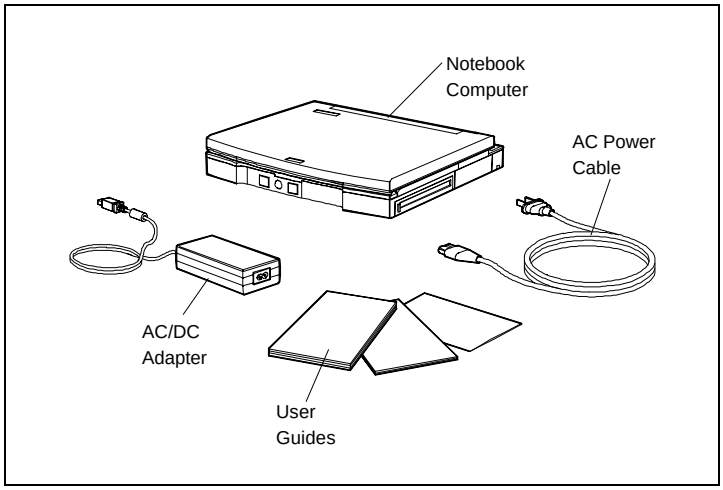
1 Getting to Know Your New Information Tool

Your Versa™ P is a terrific tool that's so easy to take along that you'll soon find it indispensable. It's easy to carry around with you and can be used for most of your information and communication needs.

This chapter describes the basic features, connectors, buttons, and controls on your Versa P notebook. It also describes how to connect the basic devices you need to use the system. Read it to familiarize yourself with the system.

WHAT'S IN THE BOX

Your Versa P comes with lots of features fully loaded on the system. All you have to do is open the packing box, unpack the notebook computer, the cables, and the *Quick Setup* sheet. Look for the following.



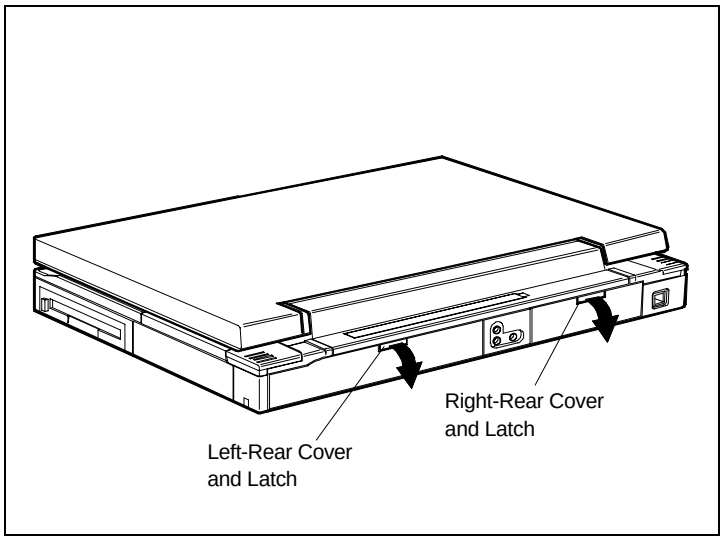
Box contents

When you first unpack your Versa P, follow the instructions on the *Quick Setup* sheet. They'll help you get your notebook up and running quickly. After setting up your system the first time, use the instructions found in this chapter.

THE OUTSIDE OF THE UNIT

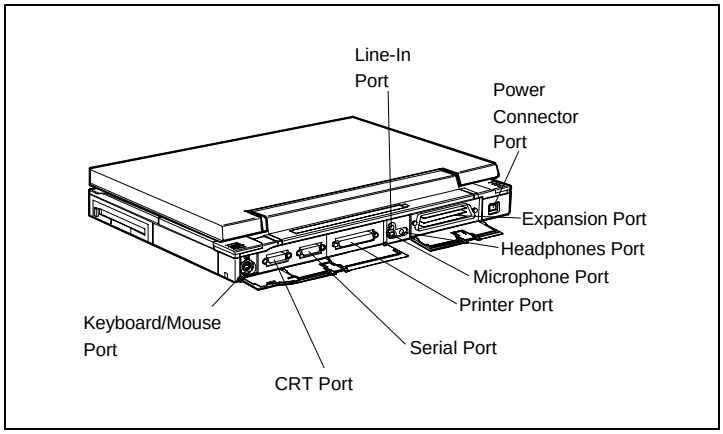
Look over the outside of the Versa P for the external ports, buttons, and features without opening the LCD panel.

Some of the ports on the back of the system are behind a protective cover. Use your fingernail to press down on the port cover latch and swing the cover open.



Opening the port covers

The following figure shows the ports on the back of the system.

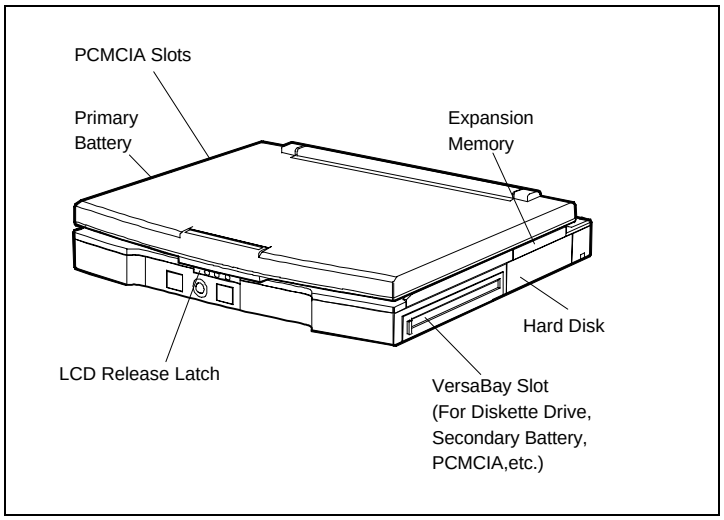


Rear ports

- Keyboard/Mouse port — gives you the option of attaching a PS/2-style external keyboard or mouse to the system. The system automatically determines whether a mouse or keyboard is attached.
- CRT port — allows you to attach a super VGA external monitor for use with your system.
- Serial port — lets you attach a serial device, like a serial printer, to your Versa P.
- Printer port — provides a place to connect an external device, like a printer.
- Microphone port — allows you to attach a microphone to the system.
- Headphones port — lets you attach stereo headphones for use with the system.

- Line-In port — lets you attach a line-level stereo or CD player to the Versa P.
- Expansion port — allows you to connect the Versa to the docking station or port replicator.
- Power connector port — lets you plug in the AC adapter so you can run the Versa P on AC power.

The following figure shows the features on the sides and front of the Versa P.



Side and front features

- Battery — provides battery power for running the Versa P.
- PCMCIA slots — allow you to add optional PCMCIA cards to enhance your system. The protective cover keeps dust and foreign objects from getting into the unit.
- LCD release latch — locks the LCD panel when the system is not in use. Also releases the LCD panel to let you use the system.

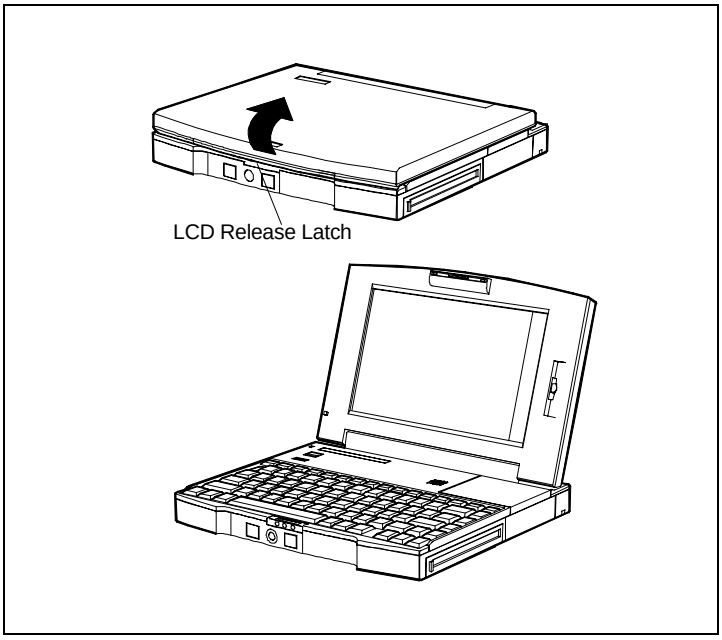
- Expansion memory — lets you expand system memory up to 40 MB.
- VersaBay slot — DoubleTime™ allows the diskette drive to be removed and replaced with a secondary battery or other VersaBay option. Currently available options include a PCMCIA Pak and a Video Pak.
- Diskette drive — lets you use diskettes with the system.
- Hard disk — this contains the system software to operate the Versa P.

VERSA P SETUP

Setting up your system is easy. Just follow these simple instructions.

Opening the LCD Panel

1. Locate and press the front latch to open the notebook.



Pressing the latch and opening the notebook

2. Position the LCD panel to a comfortable viewing angle. You can open the screen to an angle of 180 degrees.

> **NOTE:** Do not attempt to change LCD panels while system power is on.
>
> You can, however, reverse the panel so it faces the other way while system power is on but in Suspend mode.

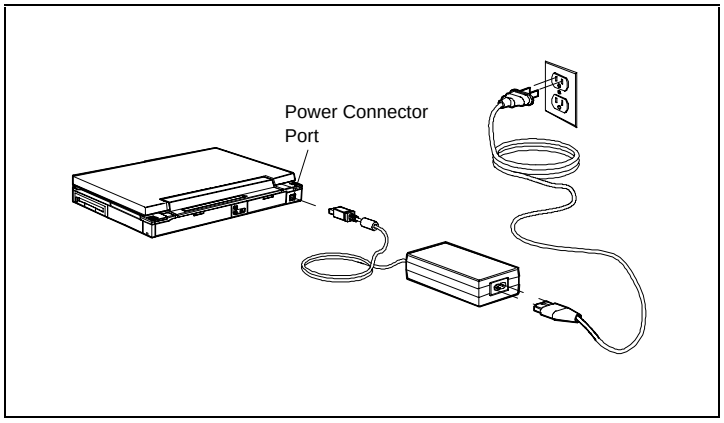
Closing the LCD Panel

To close the LCD panel, simply lower the panel over the keyboard. Press down until the latch catches to secure the LCD panel.

Connecting the AC Adapter

Connect the AC adapter to your computer as follows.

1. Insert the adapter's DC cable into the power connector port on the back of the system.



The power connector

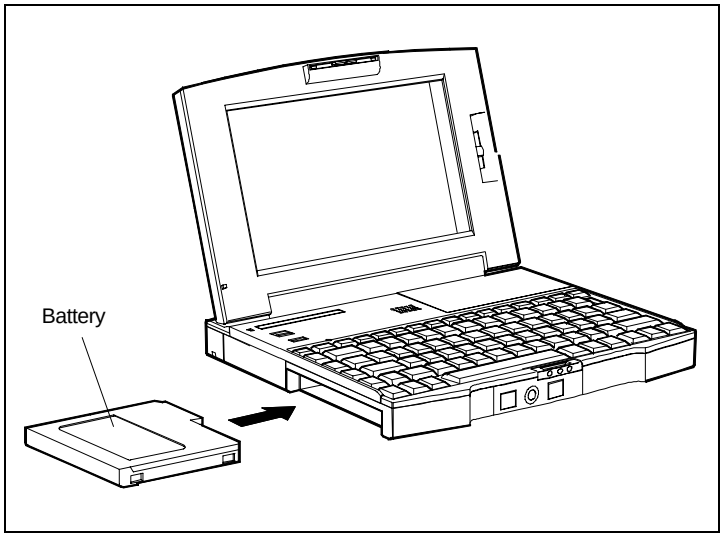
2. Insert the matching end of the AC power cable into the AC adapter.

> **CAUTION:** Only use the AC adapter model provided with your notebook.

3. Connect the other end of the AC power cable to a 100- to 240-volt wall outlet.

Installing a Battery

It is easy to install a battery in your notebook computer. Simply insert the battery completely into the battery compartment as shown in the figure.



Inserting the battery

Replacing a Battery

Follow these instructions to replace a primary battery installed in your notebook computer. The system does not have to be shut off if battery replacement requires less than five minutes.

1. Press the suspend button to suspend the system if in use. (Refer to “Buttons and Control” later in this chapter.)

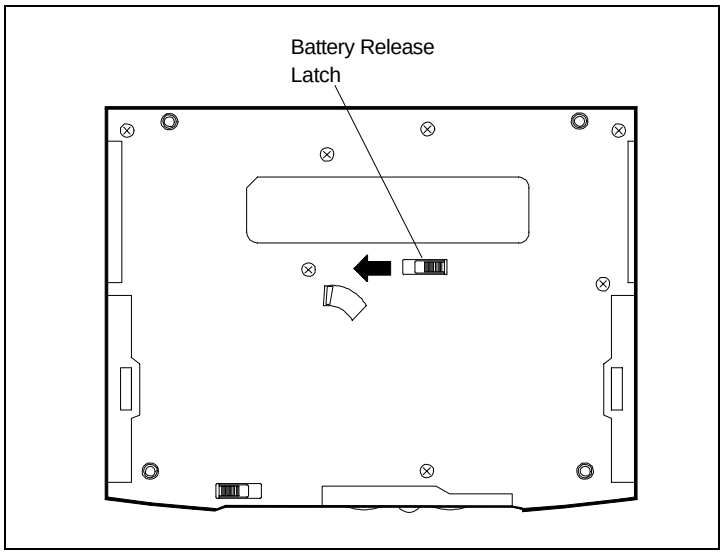
   If the system is attached to AC power, you need not put it in Suspend mode.

2. Close the LCD panel securely. Disconnect any external options you have connected.

3. Turn the Versa P upside down.

4. Locate the battery release latch on the bottom of the system and slide it sideways.

   The other latches are for removing and installing VersaBay options.



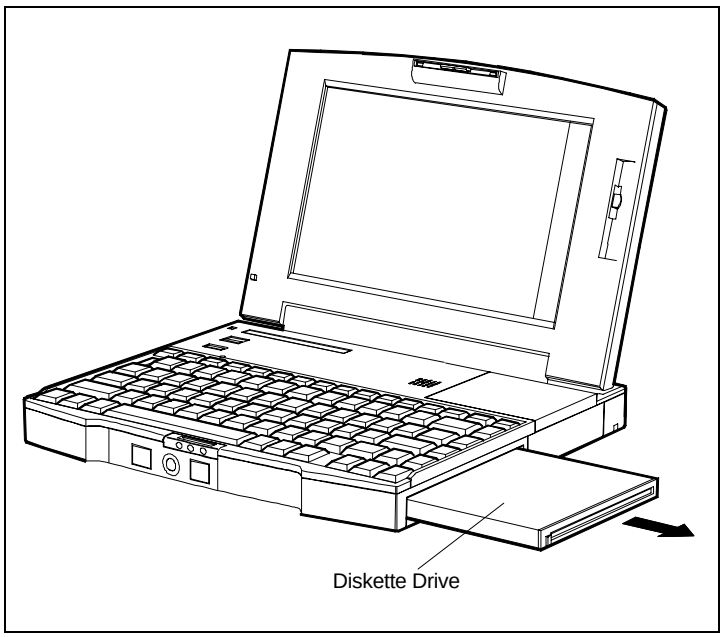
Locating the release latch

5. Pull the battery out of the system.
6. Slide the new battery into the system until the release latch clicks and locks the battery in place.
7. Turn the Versa P right side up and reconnect any external options you disconnected.
8. Resume the system or turn on power to continue operation.

1

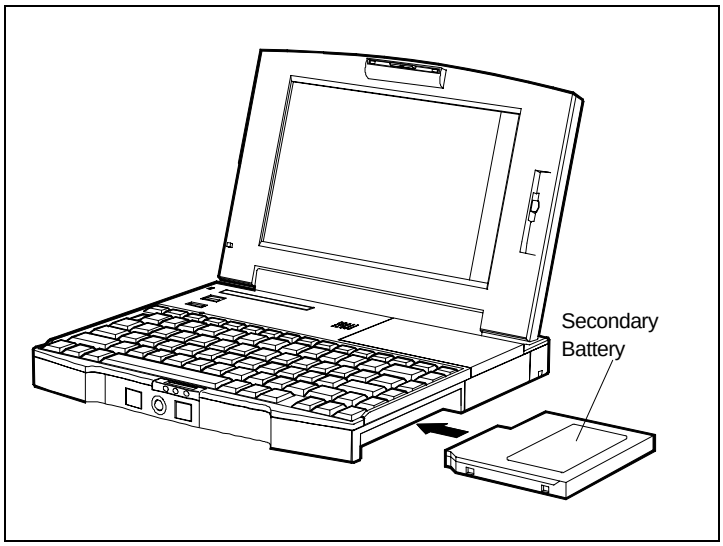
Replace the diskette drive with a secondary battery as follows.

1. Turn off the system power (if using battery power) or suspend.
2. Turn the Versa P upside down.
3. Slide the appropriate bottom release latch while pulling the diskette drive out of the compartment.



Removing the diskette drive

4. Insert the battery completely into the compartment.
5. Resume the system or turn on power to continue operation.



Inserting the secondary battery

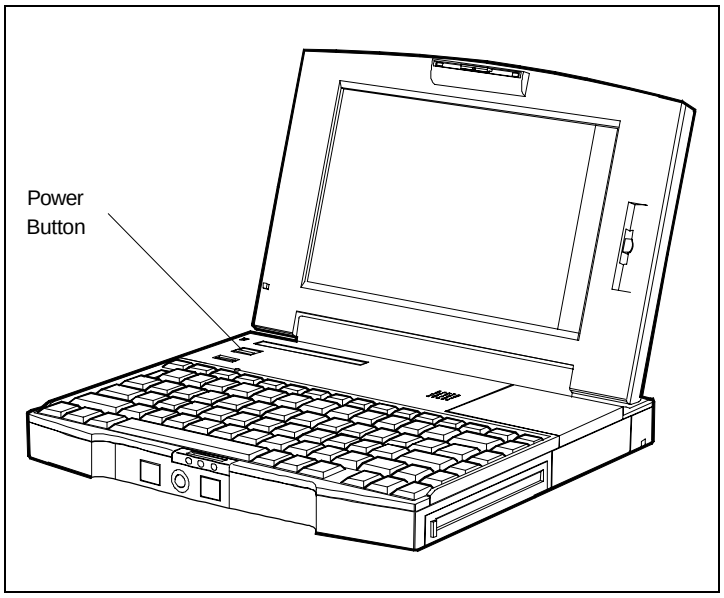
Turning on the Versa P

Prepare to power on your system as follows.

1. Check that your power source is connected.
   - For battery power, make sure a charged battery pack is installed in the Versa P. (See the previous section for information about installing a battery pack.)
   - For AC power, make sure the AC adapter is plugged into the Versa P and a wall outlet. (See "Connecting the AC Adapter" for information about attaching the AC adapter.)

2. Open the LCD panel, if it is not already open.

3. Locate the power button. Pull forward, momentarily hold, and then release the power button.



Pressing the power button

4. Adjust the brightness control using the button on the right of the LCD panel for a sharp, clear display.

You are now ready to familiarize yourself with your new Versa.

FEATURES

Here are some of the Versa P's features:

- LCD Panel
- Keyboard
- VersaTrack™ Ball
- Buttons and Controls
- Status Bar
- Microphone and Speaker
- PCMCIA Card Slots
- VersaBay
- Promotional Software
- Plug and Play
- Batteries
- Online Help.

These features are described next.

LCD Panel

Your Versa P comes with a TFT color LCD panel. The active-matrix thin-film transistor (TFT) color LCD comes in one of two resolutions: 640 x 480 pixels or 800 x 600 pixels.

The backlit TFT LCD provides a 9.5-inch display area, brilliant resolution, and an impressive array of colors.

> **NOTE:** NEC LCD panels meet exacting manufacturing standards. Of the 1,440,000 elements involved in creating the display on your screen, NEC accepts no TFT screen with more than six nonworking elements. Although this may mean a pixel or two is nonfunctional, its impact on your display should be minimal.

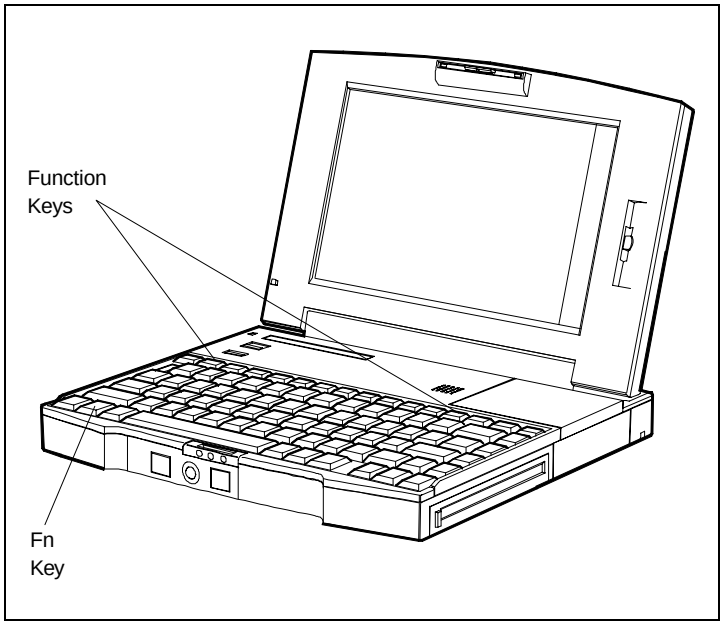
Keyboard

The Versa P keyboard is equipped with many features. They include the following:

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

Function Keys

The function keys are located along the top of keyboard. The Fn (Function) key activates functions printed in blue on keys having dual functions.

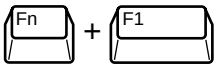


Function keys

Some special functions are specific to the Versa P systems. These keys set specific parameters that are built into ROM (Read-Only Memory).

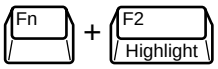
Key Combinations

The key combinations for system-specific functions are as follows.



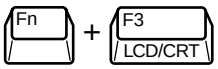
Right Control

Use to simulate pressing the right control key for support of IBM/SDLC connections.



Highlight

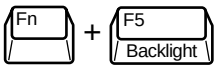
Use to set the color LCD contrast to standard or full highlight for DOS text mode.



LCD/CRT

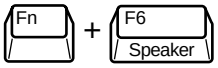
Use to toggle between LCD mode only, LCD and CRT modes simultaneously, and CRT only screen mode.

Fn F4 Not used



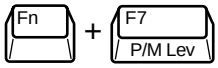
Backlight

Used to set the LCD backlight brightness to standard or full.



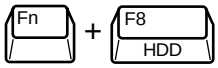
Speaker

Use to regulate the speaker volume. Press **Fn F6** to toggle from off to low, medium, or high. A beep sounds when the volume setting is changed.



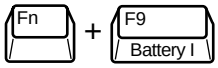
Power Management Levels

Use to set the power management level to off, custom, low, or high. Notice the changes in the faucet icons on the LCD panel as you toggle the key combination. This works only when power management is enabled.



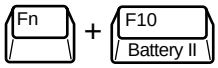
Hard Disk Drive Spin Up/Down

Use to spin the hard disk up or down. Spin down means that the motor that spins the disk within the hard disk drive shuts off to save power. Spin up means the disk motor turns on again. Pressing **Fn F8** bypasses any timeout. A beep sounds when the hard disk spins down or up.



Battery I Status

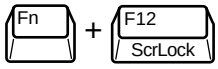
Use to reset the primary battery icon to four bars on the LCD status bar (▮▮▮▮) after the battery icon has shown an unknown state.



Battery II Status

Use to reset the secondary battery icon to four bars on the LCD status bar (▮▮▮▮) after the battery icon has shown an unknown state.

Fn F11 Not used.



Scroll Lock

Use of this key combination depends upon the software application you are using. Refer to the application user's guide.

Typewriter Keys

The typewriter keys (also called alphanumeric keys) are used almost exactly as on a typewriter. Those that behave differently do so when combined with control keys or function keys. They are noted in those descriptions.

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 or block, depending on the application. It indicates where the next text typed is inserted.

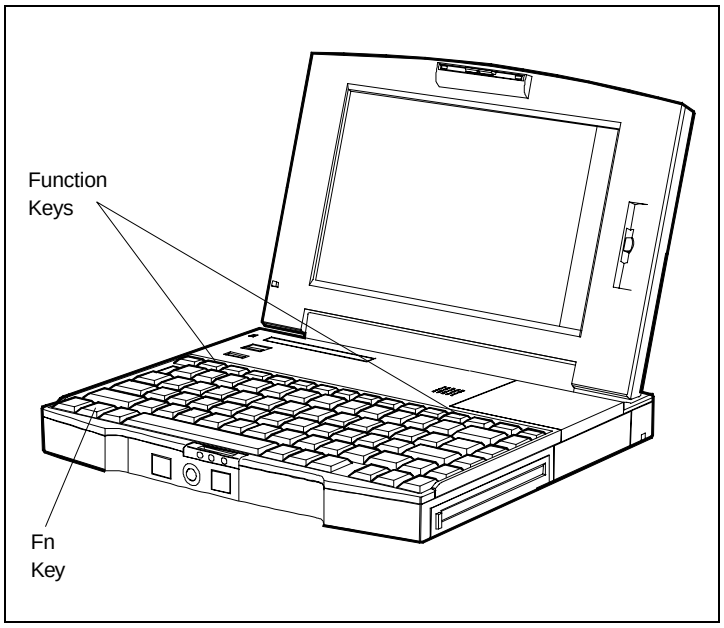
Numeric Keypad

Pressing Num Lock on the keyboard activates the numeric keypad when an external keyboard is not connected. The numeric keys are printed in blue. The keypad lets you type numbers and mathematical operands (+,-) as you would on a calculator. The keypad is ideal for entering long lists of numbers.

When Num Lock is activated, you will see the following icon on the LCD indicator panel.

1

When you press Num Lock again, the keys revert to their normal function as typewriter keys and the Num Lock icon disappears.



Numeric keypad

Control Keys

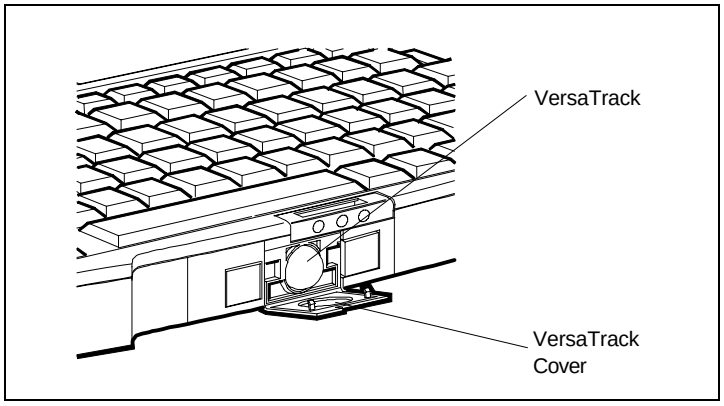
The Versa P keyboard provides a number of control keys. These include the following:

- **Ctrl**, **Alt**, **Fn**, and **Shift** are controls that are used in conjunction with other keys to change their functions. To use these control keys, press and hold the control key while pressing another key. For example, "press **Ctrl C**" means to hold down the **Ctrl** key and type the letter **c**. How the key combination works depends on the application you are running.
- **Num Lock** puts the system in the Num Lock mode and activates the embedded keypad. (See "Numeric Keypad" for details.)
- In some programs, **Scroll Lock** affects how the cursor controls work. Pressing a cursor control key scrolls the entire screen instead of moving the cursor. For example, pressing the up arrow once moves the entire screen up a line. The cursor stays where it was.
- **Ins** functions depend on the application currently running. In some programs, pressing **Ins** lets you toggle between inserting text at the current cursor location or typing over the text. Usually, the application provides some indication of the current mode.
- Function keys **F1** through **F12** are located at the top of the keyboard. The applications that you run determine how these keys function. See the documentation that comes with the applications.

VersaTrack™ Ball

The VersaTrack ball, located on the front of the Versa P, works as a mouse — you use it to control the movement of the pointer in Windows and any other application that supports a mouse. Use the Windows Control panel to set the speed of the pointer.

Click the left button to select a function and click the right button to cancel a function. Quickly pressing either button twice is double clicking. Rotating the ball with either button pressed is dragging.



VersaTrack ball

Cleaning the VersaTrack

Periodically, you need to clean the ball and the rollers inside the VersaTrack. Follow these steps.

1. If the system's power is on, turn off power. Remove any cable connected to the rear of the system.
2. Tip the system to easily pull and remove the VersaTrack cover and the ball.
3. Wash and dry the ball. Use isopropyl alcohol for best results.

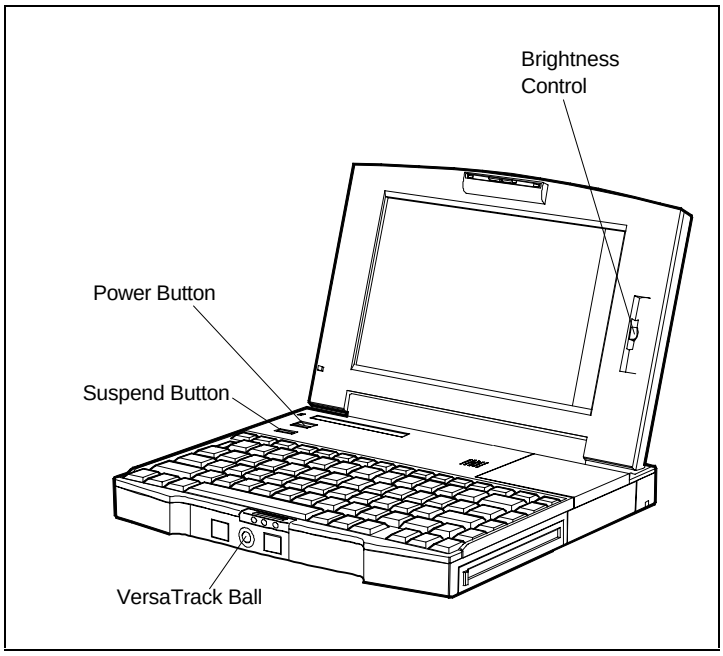
4. Use a lint-free applicator to carefully remove any dirt on the rollers.

> **NOTE:** Be careful when cleaning the rollers so that they don't become misaligned. If the rollers aren't aligned, you may experience sticking.

5. Place the ball into the opening, align the notch of the VersaTrack cover with the system, and push the cover to secure it into place.

Buttons and Controls

Versa P buttons and controls let you turn on your computer, use power-saving Suspend mode, and control the brightness and contrast of your screen. These controls are described next.



Buttons and controls

- Power Button — controls power to the system. Pull, momentarily hold, and then release the power button to turn the system on. Pull the power button again to turn the system off.

> **TIP:** After turning off the system, wait at least two seconds before turning the system back on. Turning the system off and on before allowing it to completely power down strains the system.

- Suspend Button — when undocked, lets you manually put the system in the Suspend mode while in a power-managed mode. Suspend mode retains the contents of memory (RAM), system status, and saves energy. To exit Suspend mode, press the suspend button again.

  Use Suspend mode when you need to be away from the system for a short time and you want to return to where you left off.

  To activate the Suspend mode, press the suspend button or use Auto Setup to set the system to enter Suspend mode automatically after a specified period of inactivity. A half moon icon appears on the LCD indicator panel when the system is in Suspend mode.

  To resume system operation, press the suspend button. System operation returns to where it stopped.

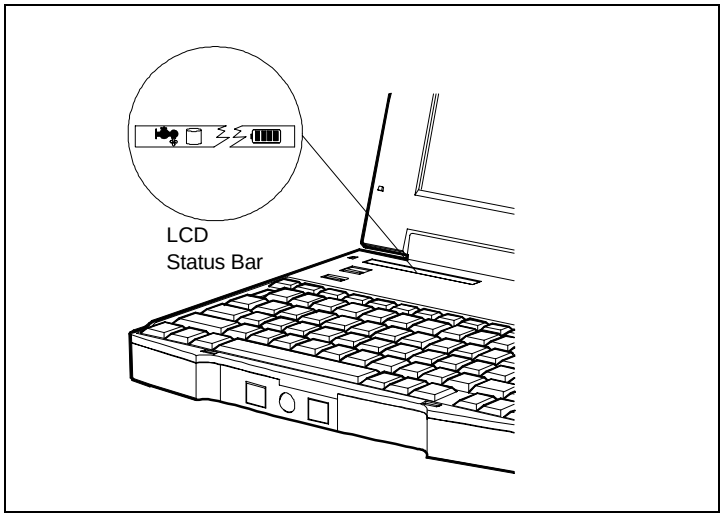
  The Versa has a Smart Power Switch that prevents you from accidentally turning off the system while in Suspend mode. (See “Understanding Power Management” for more information.)

- Brightness Control — increases or decreases the brightness of the LCD backlight. Slide the control up to increase the brightness or slide it down to decrease the brightness.

TIP: The degree of brightness affects the length of battery operation. A brighter adjustment uses more battery power. For longer battery life, decrease the brightness.

Status Bar

The Versa P has an LCD status indicator bar located above the keyboard. It shows status for the following system functions and components.



LCD status bar

Suspend

A half moon icon appears when the system is in Suspend (or Sleep) mode.

Power Management

Faucet icons indicate the level of power management being used.

Off

Indicates that power management is not enabled.

Low

Indicates that power management is set at low.

High

Indicates that high power management is set.

Custom

Indicates that custom power management features are set.

Hard Disk Drive Access

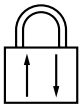
Indicates that the hard disk drive is being accessed.

Diskette Drive Access

Indicates that the diskette drive is being accessed.

Num Lock

Indicates that the numeric keypad lock function is enabled.



Scroll Lock

Indicates that the scroll lock function is enabled.

Caps Lock

Indicates that the all capital letter lock function is enabled.

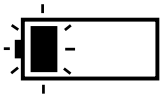
Battery

The left battery icon represents the primary battery and the right battery icon represents the secondary battery.

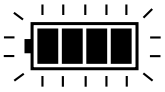
Bars within the battery icons represent the remaining battery charge when the system is in use:

- 4 bars indicate a 76-100% charge ▮▮▮▮
- 3 bars indicate a 51-75% charge ▮▮▮
- 2 bars indicate a 26-50% charge ▮▮
- 1 bar indicates a 0-25% charge. ▮

If two fully charged batteries are installed, eight bars contained in two battery icons appear in the display. Neither the bars nor icons blink.

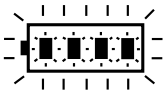


As battery power is consumed, the bars disappear. When one solid blinking bar remains, battery power is almost used up.



A blinking battery shell in the display indicates that the battery is charging. Four bars in a box represent one fully charged battery and eight bars in two boxes represent two fully charged batteries.

If only bars 1 and 3 appear, the battery status is unknown. This is caused when the battery is removed and reinserted, or when a newly charged battery is first inserted. To return to fully charged status, press **Fn F9** if you have one battery and **Fn F10** if you have two batteries installed to reset the battery icon. Be sure to do this only if you know the battery is fully charged. Four (or eight) bars should appear and the system should work normally.



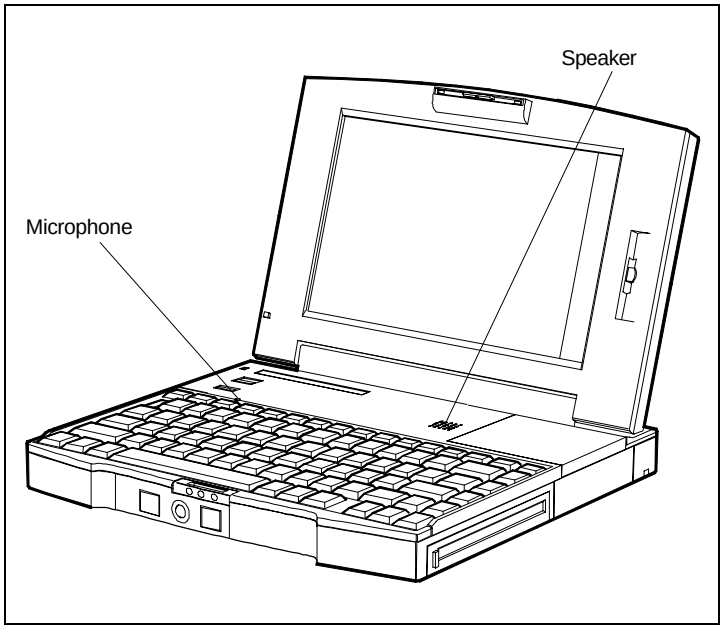
If all four bars *plus* the battery shell are blinking, the battery needs to be refreshed. To correct this condition, remove and reinsert the battery, then discharge the battery completely. Connect the AC adapter and fully charge the battery. (See the *Versa P Series Battery Guide*.)

Eight solid blinking bars indicate an abnormal battery status. The battery pack may not be installed correctly, or is defective.

Microphone and Speaker

The microphone and speaker are located above the keyboard.

- The internal microphone lets you record audio information in your system data files.
- The speaker allows you to hear previously recorded sound.



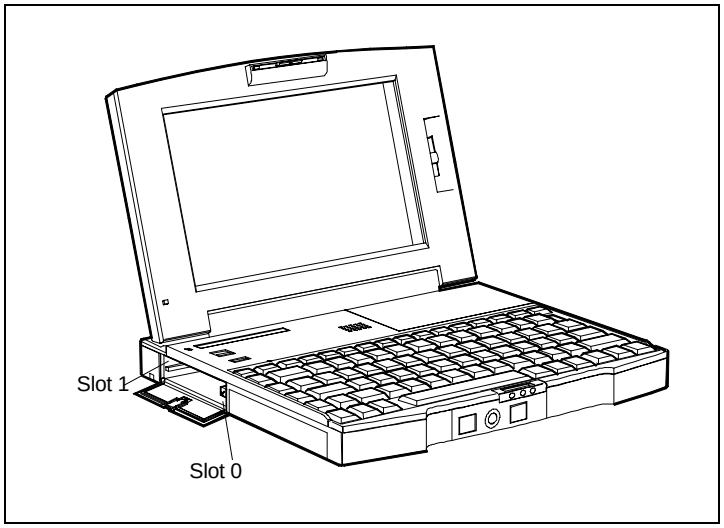
Microphone and speaker

PCMCIA Card Slots

Your Versa P has two PCMCIA card slots for attaching options such as fax/modems, Local Area Network (LAN), and extra hard disk storage.

Refer to the *Versa Series PCMCIA User's Guide* for information on card types.

The PCMCIA slots in your Versa P are located on the left side of the unit stacked one above the other. Slot 0 is in the lower position, Slot 1 is above it.



PCMCIA card slots

For more information on using PCMCIA cards with your Versa P, see the *Versa Series PCMCIA User's Guide*.

VersaBay

VersaBay is a general purpose expansion feature that gives you even more flexibility with your Versa P. Your Versa comes with a diskette drive installed in the VersaBay, but you can remove it and replace it with a secondary Smart Battery or the optional VersaBay PCMCIA module. VersaBay lets you increase your battery power time or double the number of PCMCIA card slots in your system.

Promotional Software

Your Versa P has some selective software bundled with it to give you a sampling of its capabilities. It includes an official airline guide (OAG) which is published monthly and provides current flight scheduling information. If you like the package, you can subscribe to it from the online service company. Look for information about how to subscribe in the software.

Plug and Play

Your Versa P system has a Plug and Play feature which allows you to add or remove an external mouse, keyboard, monitor, or diskette drive "live" while the system is in Suspend mode without damaging your system. When you resume Active mode, the Versa recognizes the option you added. (Refer to "Suspend Mode" in Chapter 3.)

> **CAUTION:** Do not add an external mouse, keyboard, or monitor while the Versa P is in Active mode. This could cause system damage. Press the Suspend/Resume button to place the Versa in Suspend mode *before* attaching or removing an option.

Plug and Play technology is a recent development that eliminates complicated setup procedures. With Plug and Play, there are no system resource or interrupt conflicts to resolve. Plug and Play automatically configures your system.

The Versa P supports hot insertion and removal of PCMCIA cards as well as warm insertion and removal of devices attached to the Versa P's external ports and devices attached to the Versa P port replicator ports such as PS/2-style keyboard, mouse, and monitors. *Hot* insertion means that the system is on and in Active mode while cards are added; *warm* insertion means the system is in Suspend mode while devices are added.

> **NOTE:** Many Plug and Play features require support from the operating system as well as the hardware.

Batteries

There are three battery types that come with the Versa P:

- Main battery
- Bridge battery
- CMOS battery.

Main Battery

The main battery is the removable nickel metal hydride (NiMH) battery pack that comes with your Versa P. With it you can run your system without AC power. The battery is easy to insert and remove.

Once you insert the battery pack, you can leave it inside the computer. You can install a second battery pack at the same time; it replaces the standard diskette drive on your Versa.

Removing and reinstalling the battery preserves the battery charge level.

To get the most out of battery operation, familiarize yourself with how to:

- use battery power
- check battery conditions on the LCD indicator panel
- recharge a battery pack
- install/replace a battery.

You can read all about each of these topics in the *Versa Series Battery Guide.*

Bridge Battery

The Versa P has an internal bridge battery that acts as a safety net. The bridge battery keeps the memory contents and system status when the system is in Suspend mode and the main battery pack is removed.

To swap a drained battery with a charged battery, you do not have to turn off system power if the system is in Suspend mode. The bridge battery retains the data you are currently working with while you replace the main battery.

> **TIP:** The bridge battery supplies power for up to five minutes while the system is in Suspend mode.

The bridge battery is easy to keep charged. You recharge the bridge battery whenever you plug in the AC adapter. It's a good idea to leave your Versa P plugged in for 24 hours at least once a month to ensure that your bridge battery is fully charged.

When you travel, the bridge battery uses up its reserve of power each time you change batteries. It's wise to plug in your Versa P using the AC adapter to recharge the bridge battery every few days, at least, while traveling.

If you replace the bridge battery, allow it 24 hours to fully charge.

CMOS Battery

There is a lithium battery that backs up the CMOS RAM. The CMOS battery is built into the system and retains the internal system information such as configuration, date, and time.

> **NOTE:** The CMOS battery lasts approximately two years. When the CMOS battery no longer retains information, contact NEC about CMOS battery replacement. (Refer to Chapter 7, "If You Need Help"*)*

Online Help

The Versa P has online help to assist you when you have questions about using the system. Access the online help as follows.

1. From Windows, look for the NEC Information program group.
2. Double click on the icon for the guide you need.
3. Click any topic about which you have questions.

The Versa P user's guide, battery guide, and PCMCIA guide are available on line. When you take your Versa P with you, there is no need to carry the manuals as well.

SYSTEM CARE

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

Precautions

Adhere to the following precautions when using your Versa P and AC adapter.

- Avoid dropping or bumping the computer or the AC adapter.
- Do not stack heavy objects on the computer.
- Avoid moving the Versa P during system operation, especially while the hard disk or diskette drive is being accessed.
- When using the AC adapter, make sure the power source falls within the system's compatible range of 100–120 or 224–240 volts AC. Never use the AC adapter if the voltage falls outside of this range. (Watch for this when traveling to foreign countries.)
- Turn computer power off before attaching or removing connectors.
- Avoid using the computer or AC adapter for extended periods in direct sunlight.
- Do not use the system in humid or dusty environments.
- Avoid exposing the Versa P or AC adapter to extreme changes in temperature or humidity. If it is unavoidable, allow your Versa to adjust to room temperature before using.
- When cleaning the system, use a soft, clean, dry cloth. Avoid wiping the display surface with abrasive material, including rough cloth.
- If the AC adapter becomes extremely hot, unplug the adapter and let it cool.

Storage Requirements

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

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

- 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 — If the Versa P case gets dirty, carefully wipe it with a slightly damp, almost dry cloth. Be extremely careful not to drip any moisture onto or into the Versa P.

> **CAUTION:** If the environmental temperature of the Versa suddenly rises (for example, when you move the system from a cold place to a warm place), vapor condenses inside the system. Turning on the system under this condition can cause damage to the internal components.
>
> Wait before turning the system on so that the internal temperature of the system can equalize with the warmer environment and any moisture can dry.

2 Using Your Versa P for Multimedia

The *P* in Versa P is for *performance, power, professional,* and *Pentium.* With its fast Pentium™ processor and enhanced audio and video capabilities, you can perform fantastic multimedia feats with your Versa P! This chapter describes the Versa P's multimedia features and how you can use them to create professional-quality, powerful presentations.

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

AUDIO

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

Recording

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

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

Line-In

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

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

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

Microphone

You can capture and record sounds through the internal microphone on the Versa P or through an external microphone that connects to the system through the microphone port. You can record voice-overs for narrations.

CD-ROM Input

You can record music and sound effects from a CD (compact disc) and store them on your hard disk. The audio signal from a CD-ROM reader, such as the NEC MultiSpin™, connects directly to your Versa P through the audio Line-In port. The CD-ROM can be connected through a parallel to SCSI port. The MultiSpin CD-ROM Reader is QuickTime compatible.

You can also connect a CD-ROM reader to your Versa P through a Versa Series Docking Station (I or II).

Mixing

With the proper application software, you can mix analog and digital sounds to produce an overall quality effect. You cut, copy, and paste portions of your soundtrack using an audio editing application. The Versa P provides a Sound Blaster Pro-compatible mixer map and an extended access mixer map. You can also mix the microphone volume.

Mixing allows you to blend digital and MIDI audio files to get the final, high-quality soundtrack you want.

Playing Back

You can listen to the playback of your recorded soundtrack through stereo headphones, the internal Versa P mono speaker, or external stereo speakers. You can play .WAV and MIDI files as well as CD audio.

The Versa P has Indeo™ Video technology playback of digital video files.

MIDI Files

MIDI (musical instrument digital interface) allows you to 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. Or, you can 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.

Using Headphones

The Versa P headphone port delivers sound at half a watt and you can control the volume. The stereo headphones plug in through the output jack located on the rear of the Versa P. You can adjust the volume with the audio software on the Versa P or, if your headphones have one, a built-in volume control.

Using Internal Speaker

The Versa P has a built-in mono speaker that is always available. The volume adjusts through the **FN F6** key combination or with the audio control software on the Versa P. Toggle the volume from speaker off to low to medium to high. The mono speaker is business audio quality.

Using External Stereo Speakers

For full sound impact, you can use a pair of stereo speakers that plug into the output jack located on the rear of the system.

VIDEO

The Versa P features a dazzling TFT 64K color high resolution display for sharp effective visuals right on the Versa or projected onto an external CRT monitor. The Versa P's super VGA TFT display has the industry's first high resolution of 800 x 600 pixels.

The Versa P supports drivers for Microsoft Video for Windows. This provides full-screen, full-motion playback and MIDI support.

Using Digital Video Files

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

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

Using Animation Files

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

Versa MediaDock

The Versa MediaDock will further enhance your multimedia system by providing additional audio ports, a CD-ROM drive, a power amplifier, speaker system, and external audio controls. You'll be able to adjust volume, bass, treble, and balance with the touch of your finger.

MULTIMEDIA APPLICATIONS

There is a growing number of multimedia applications available for PC users. These include graphics software, animation software, and authoring packages.

Graphics software enables you to capture, enhance, or draw still images.

With animation software, you can create realistic 3-D effects or 3-D titles.

The authoring packages enable you to pull together all the elements of your design into an exciting, interactive multimedia presentation.

3 Adding Options

You can add a number of options and connect a number of external devices to your Versa P system. This chapter describes procedures for adding the following options:

- PCMCIA cards
- Modems
- Expansion memory
- Hard disk
- External devices
  - Parallel devices, like parallel printers
  - Serial devices, like modems or serial printers
  - External keyboard
  - Mouse
  - Monitor
  - Stereo speakers
  - External microphone
- Docking station
- Port replicator
- External speakers/microphone.

The standard diskette drive may be removed and replaced by a VersaBay option. For installation information, see the documentation that comes with the option.

> **NOTE:** Some of the optional components may not be available outside the U.S. Contact an authorized NEC dealer for specific information.

PCMCIA CARDS

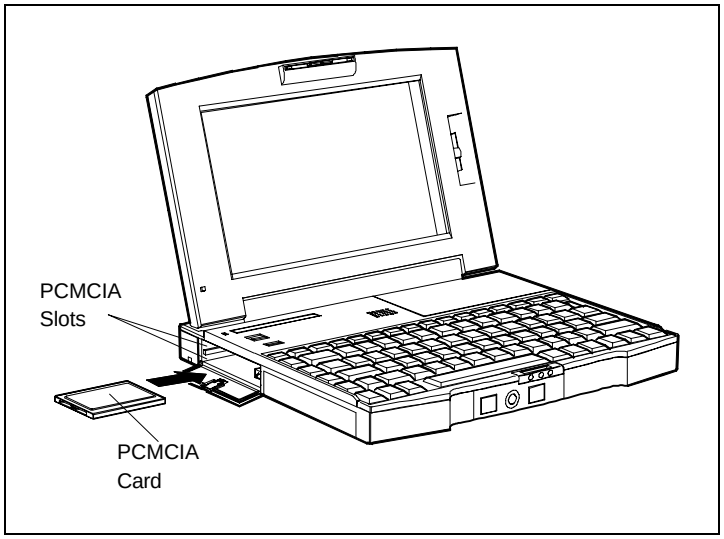
You can add various types of PCMCIA cards to your system. The Versa P system provides two PCMCIA slots for attaching options like a fax/modem, LAN card, additional memory, SCSI, and extra hard disk storage.

The Versa P can handle up to the following numbers of Type I, II, or III PCMCIA cards and card combinations.

- Up to two Type I cards
- Up to two Type II cards
- One each, Type I and Type II card
- One Type III card.

If you'd like to know more about PCMCIA cards and NEC Versa series computers, see the *Versa Series PCMCIA User's Guide*.

The PCMCIA slots are located on the left side of the system. The Versa's two slots are stacked one above the other. The primary slot (slot 0) is on the bottom and the secondary slot (slot 1) is on the top.



PCMCIA card slots

If you add the optional VersaBay PCMCIA module, you will have two additional PCMCIA slots.

Inserting and Removing Cards

Inserting and removing a PCMCIA card is simple. Open the slot cover and follow these steps.

1. Hold the card with the 68-pin connector pointing toward the slot.
2. Slide the card into either slot. A double beep sounds to let you know that it's fully inserted and recognized by the system. (If you have elected to turn off the sound on your Versa, the beeps do not sound.)
3. If you like, look for the CardView™ icon on the Windows Program Manager. It shows which slot contains a PCMCIA card and which slot is empty.
4. To remove the card, press the button on the side of the slot. A double beep again sounds and the card is ejected.

You can leave the card in the slot for storage even though it is disconnected from the system.

> **NOTE:** Cards draw power even when not in use. Be sure to eject cards when not in use. Check CardView; it should show an empty slot.

If you'd like to know more about PCMCIA cards and NEC Versa series computers, see the *Versa Series PCMCIA User's Guide*.

MODEMS

Using a modem and a phone line, you can communicate using your Versa P — send faxes and E-mails, access information services, transfer data.

Telephone Line Connections

Before you can connect the Versa P to a telephone line, you must install a PCMCIA modem into the system. The modem option comes with an adapter that provides a telephone cable jack.

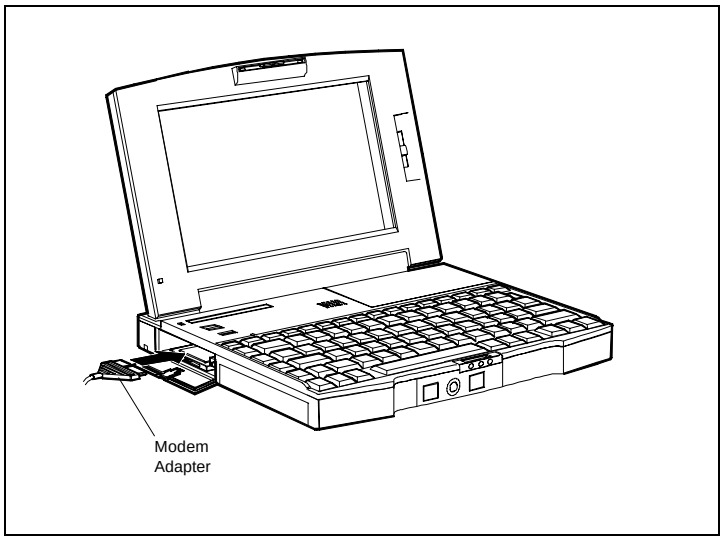
> **TIP:** PCMCIA modem connector adapters vary. Refer to your modem card's manual for specific setup procedures.

Connecting a Phone Cable

To connect the modem's telephone jack to a wall telephone outlet, use a telephone cable with a modular (RJ11) connector on both ends. You can buy telephone cables and any other necessary accessories in computer stores or wherever telephones are sold.

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

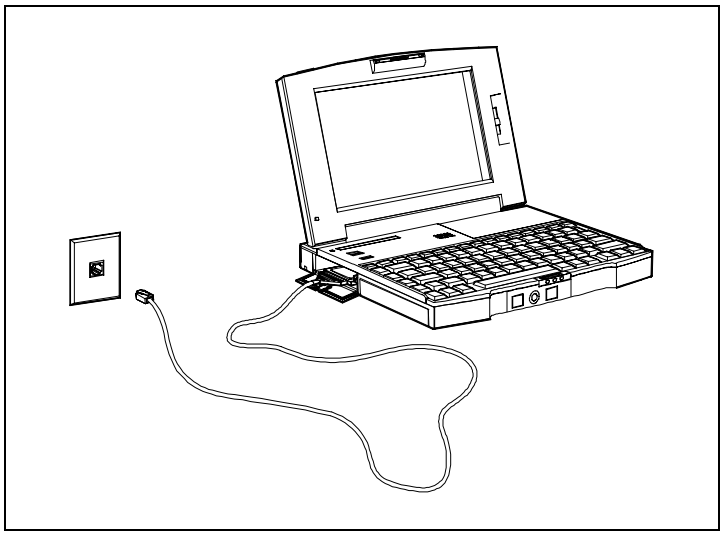
1. Insert the PCMCIA modem into one of the Versa's PCMCIA slots.
2. Connect the telephone cable adapter to the modem card.



Connecting the adapter

3. Connect one end of the modular telephone cable to the adapter's telephone jack.

4. 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).



Connecting to a telephone line

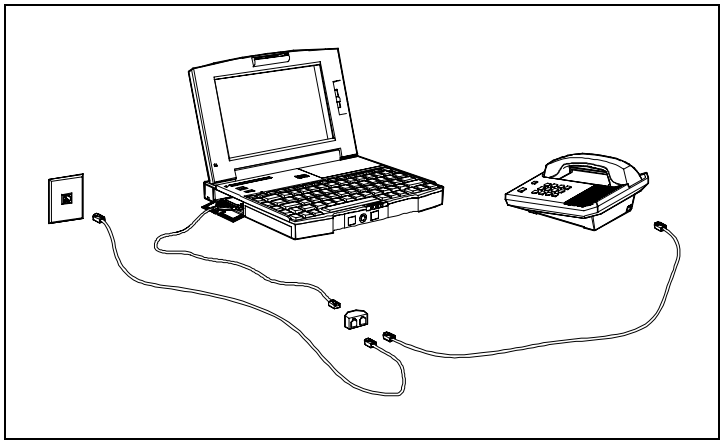
Connecting a Phone and a Versa P

To connect both your system and a telephone to the wall outlet, use a dual-RJ11 connector. Use the following procedure to attach a dual-RJ11 connector.

1. Insert the PCMCIA modem into one of the Versa P's PCMCIA slots.
2. Connect the modem's adapter to the PCMCIA modem.
3. Connect one end of a modular telephone cable to the adapter's telephone jack.
4. Connect the other end of the telephone cable to the single jack on the dual-RJ11 connector.

5. Unplug the telephone cable from the wall outlet. Connect the cable to one of the two available jacks of the dual-RJ11 connector and to the telephone.

6. Connect another telephone cable to the other available jack of the dual-RJ11 connector and to the wall outlet.



Using a dual-RJ11 connector

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

For more information on using the modem, see the guide that came with the modem.

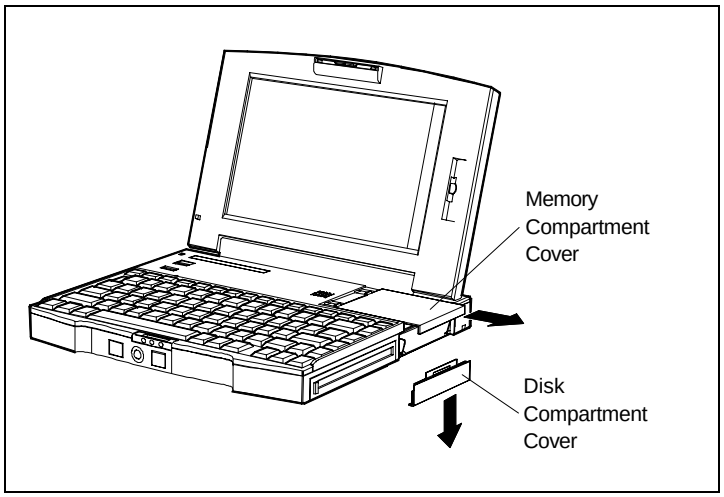
MEMORY EXPANSION

Your Versa P comes with 8 megabytes (MB) of random access memory (RAM). You can increase system memory to a maximum of 40 MB by installing install any of the following memory modules in the system.

- 4-MB memory card
- 8-MB memory card
- 12-MB memory card
- 16-MB memory card
- 32-MB memory card.

Use the following steps to install a memory card.

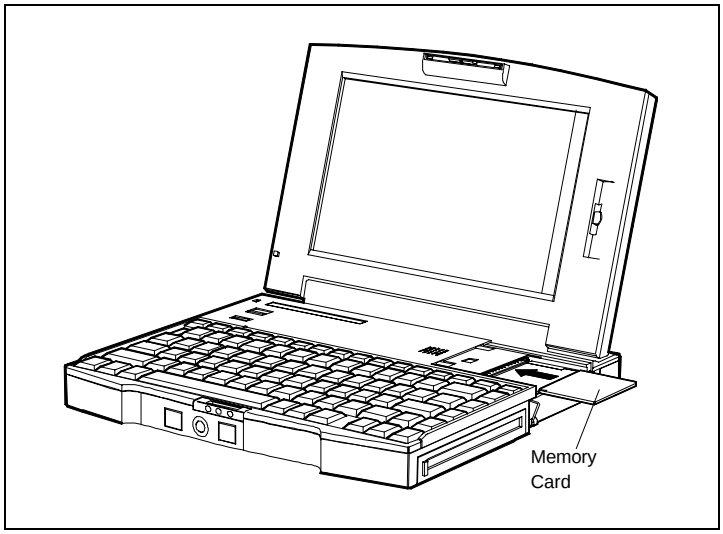
1. Make sure the system power is off.
2. Remove the memory compartment cover from the system by pressing down slightly and sliding it to the right. Lift the cover off the system. Remove the disk compartment cover by sliding it downward.



Removing covers

3. Install the memory card as follows.

   - Align the memory card connector with the connector in the system.
   - Insert the card connector by sliding it into the system connector. Press the card to make sure it is securely seated.



Inserting a memory card

4. Replace the disk compartment cover.
5. Replace the memory compartment cover.
6. Run Auto Setup to check the new configuration. Auto Setup should show a blinking arrow next to the extended memory field. The new value should reflect the increase in memory. (Refer to “Using Auto Setup” in this guide.)

3

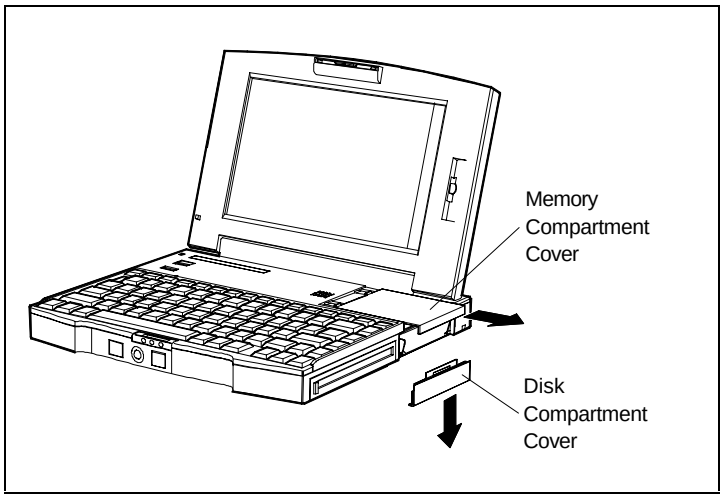
HARD DISK

You can increase the system's storage capacity by replacing the standard hard disk.

> **NOTE:** Before you replace your hard disk drive, be sure you have backed up or transferred your files.

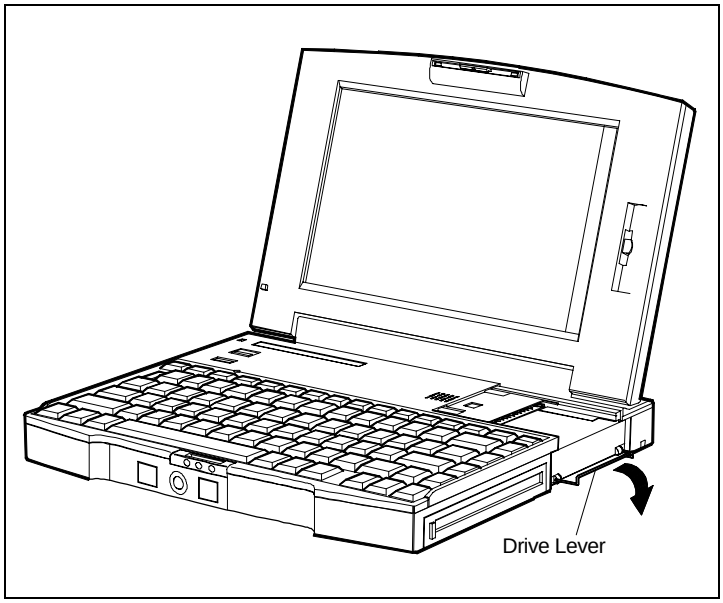
Use the following procedure to replace the hard disk.

1. Check that the Versa power is off.
2. Remove the memory compartment cover from the system by pressing down slightly and sliding it to the right. Lift the cover off the system. Remove the disk compartment cover by sliding it downward.



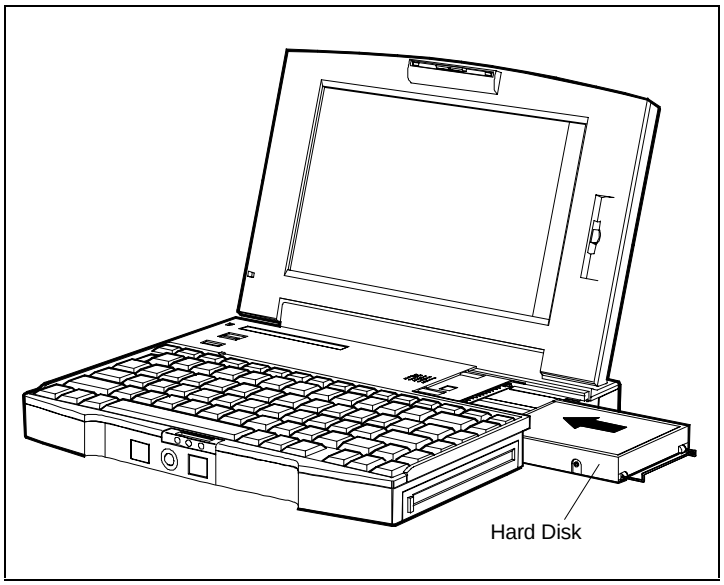
Compartment covers

3. Swing the drive lever down and pull the drive out of the compartment.



Drive lever

4. Insert the new drive by sliding it into the compartment. Swing the drive lever up and press firmly to make sure the drive is fully seated.



Installing a hard disk

5. Replace the disk compartment cover.
6. Replace the memory compartment cover.
7. Run Auto Setup to check the new configuration. Auto Setup should show the change with a blinking arrow next to the Hard Disk 1: parameter field.

EXTERNAL DEVICES

You can connect external devices like parallel and serial printers, a keyboard, monitor, or mouse to your Versa P.

> **TIP:** Be sure you have set up the external device correctly before connecting it to your system. Follow the setup instructions that came with the device.

Parallel Devices

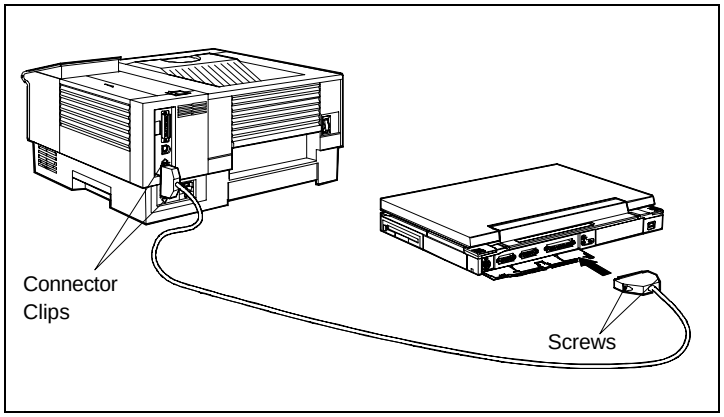
To install a parallel device, you need a cable with a male 25-pin connector for the system and, for most parallel printers, a Centronics®-compatible 36-pin connector.

> **NOTE:** Before you connect a printer, be sure you have installed the appropriate printer driver through the Windows Control Panel.

To connect a parallel device to your Versa P, do the following.

1. Check that both the Versa and device power are off.
2. Open the left-rear cover of the system and locate the printer port.
3. Align and connect the 25-pin printer cable connector to the parallel port on the system. (The parallel printer port is the fourth from the left.) 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 system and the device.

TIP: Check that the printer is on line before you try to print. See the instructions that came with your printer for printing information.

Serial Devices

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

> **NOTE:** Before you connect a printer, be sure you have installed the appropriate printer driver through the Windows Control Panel.

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

1. Check that both the Versa and the device power is off.
2. Open the left-rear port cover and locate the serial port.
3. Align and connect the 9-pin connector with the serial port on the system. Secure the connection with the screws provided.
4. Align and connect the other end of the cable to the appropriate port on the device. Secure the connections with the screws provided.
5. Connect the power cable to the device and a properly grounded wall outlet.
6. Turn on power to the system and the device.

> **NOTE:** Make sure your printer is on line before trying to print. See the printer guide for instructions.

> **NOTE:** You can also use the serial port to connect an external modem to your Versa P.

External Keyboard

You can add a full-size PS/2-style keyboard to your Versa P using the Plug and Play feature. You can still use the system keyboard while an external keyboard is connected.

> **NOTE:** You cannot attach an external keyboard and external mouse to the system at the same time; they share the same port.

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

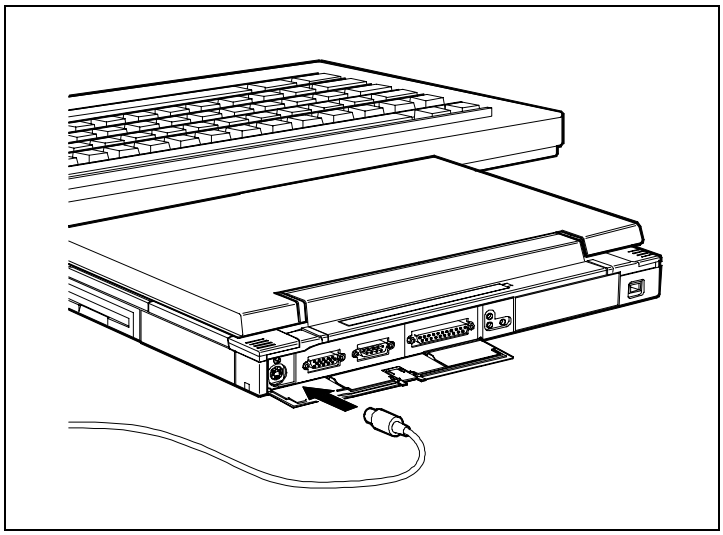
1. Press the Suspend button on the Versa. Check that the system is in Suspend mode.

> **CAUTION:** Make sure the Versa is in Suspend mode whenever you add or remove the keyboard. Doing so with the power on in Active mode may damage the keyboard controller chip.

2. Open the left-rear cover of the system.

3

3. Connect the keyboard cable connector to the keyboard port on the system. (The keyboard/mouse port is the first one.)



Connecting an external keyboard

4. Press the Suspend button again to resume Active mode.

The system will immediately recognize the keyboard.

After you connect an external keyboard, you can use both the built-in keyboard and external keyboard simultaneously.

> **NOTE:** For instructions on connecting an external keyboard to the docking station, see the user's guide that came with your docking station .

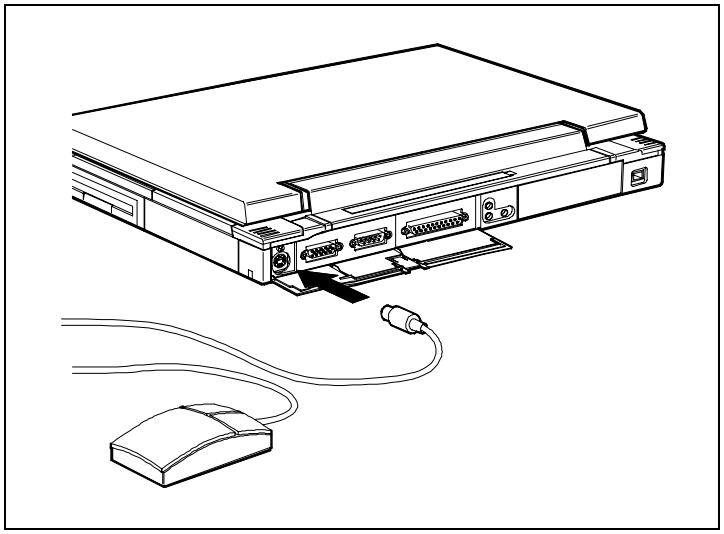
Mouse

You can add an external mouse to your Versa P to use in place of the VersaTrack ball for moving the pointer. Use the following procedure to connect a PS/2-style mouse to the system. The Plug and Play feature allows you to do this with the system powered on, but in Suspend mode.

1. Check that the Versa is in Suspend mode.

> **CAUTION:** Make sure the Versa is in Suspend mode or powered off whenever you add or remove a mouse. Doing so with the power on in Active mode may damage the system.

2. Open the left-rear cover of the system.
3. Connect the mouse cable connector to the keyboard/mouse port on the system. (The keyboard/mouse port is the first one.)



Connecting an external mouse

4. Press the Suspend button again to resume Active mode on the Versa.

> **NOTE:** Connecting an external mouse automatically disables the VersaTrack ball.

> **NOTE:** For instructions on connecting an external mouse to the docking station, see the user's guide that came with your docking station.

Monitor

You can add a standard external monitor to your Versa P using the Plug and Play feature. You need a display signal cable (usually provided with the monitor). One end of the cable must have a male 15-pin connector for the system. (See the back of the Versa P, behind the left-rear cover, for the monitor connector.)

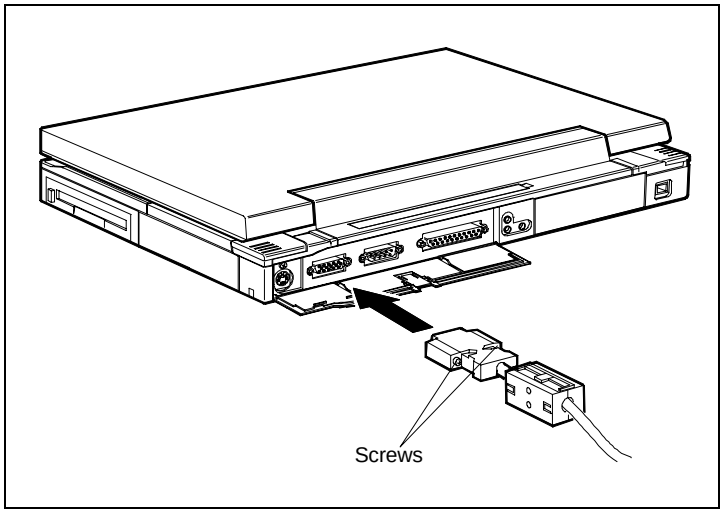
Follow these steps to connect an external monitor to your Versa P.

1. Check that the Versa is in Suspend mode or powered off and the monitor power switch is turned off.

> **NOTE:** The Versa must be in Suspend mode or powered off while the monitor is being connected. If power remains Active, the Versa won't recognize the new display type.

2. Open the left-rear cover of the system.

3. Attach the 15-pin cable connector to the monitor port on the system. (The monitor port is the second from the left.) Secure the cable connection with the screws provided.



Connecting a monitor

4. Connect the monitor power cable and plug it into a properly grounded wall outlet.

5. Follow any setup instructions in the monitor manual.

6. Turn on power to the monitor.

7. Press the Suspend button to resume Active mode or power on the Versa P.

See the section on Function Keys in Chapter 1 for information about using both the LCD and CRT monitor.

Stereo Speakers/Headphones

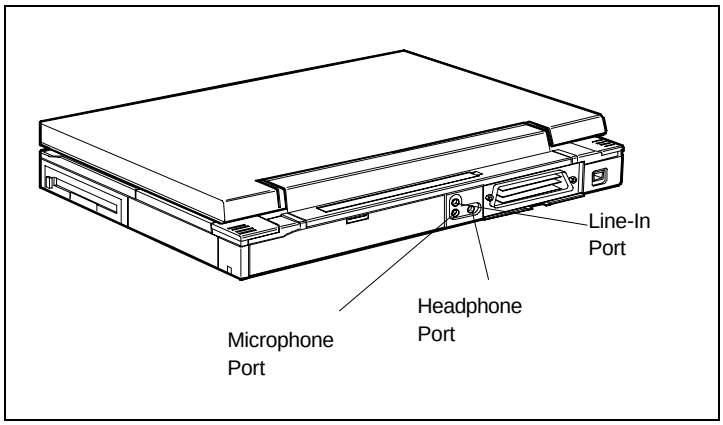
You can plug in stereo speakers or headphones through the Speaker/Headphone port on the rear of the Versa P. The port accepts a mini-type 1/8-inch stereo connector.

External Microphone

An external microphone plugs into the microphone (MIC) port on the rear of the Versa P. The port accepts a mini-type 1/8-inch connector.

Line-In Audio

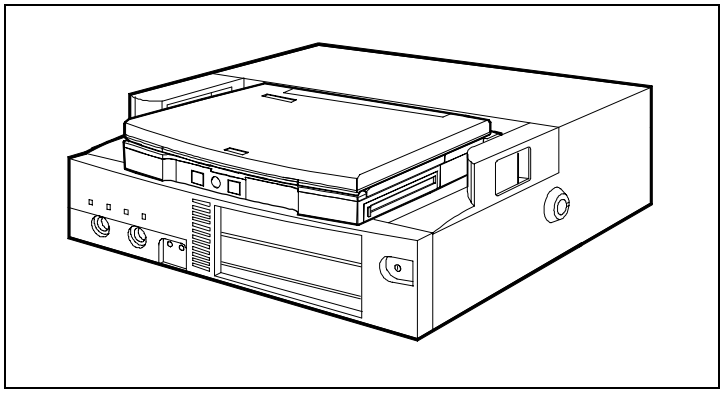
You can receive audio input from CD players, VCRs, and tape decks to your Versa P. The Line-In port is located on the rear of the system and accepts a mini-type 1/8-inch stereo connector.



Audio ports

DOCKING STATION

The Versa docking station is an option that lets you turn your portable computer into a desktop or a full-blown multimedia station. It features expansion bays and slots, and extra ports for connecting peripherals. See the *Versa Series Docking Station User's Guide* or the *Versa Series Docking Station II User's Guide* for instructions on connecting the docking station.



Versa docking station

Expansion Bays

The docking station provides an internal bay for a hard disk drive. Its three external bays let you install your choice of floppy diskette, CD-ROM, or tape drive.

Expansion Slots

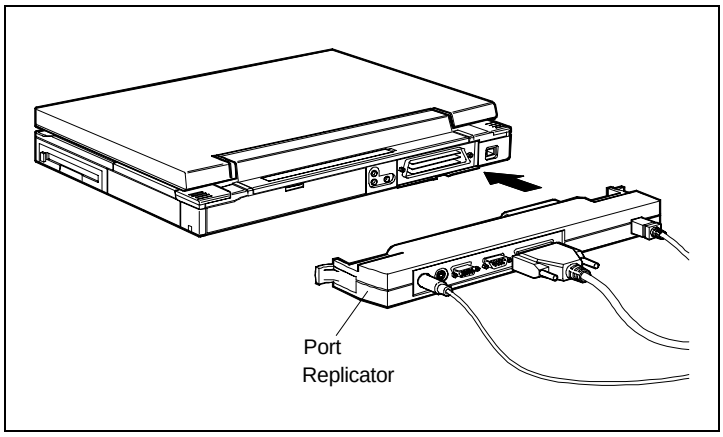
The docking station also features two ISA expansion slots for sound boards, LAN cards, CD-ROM controller boards, or video cards.

Ports

The docking station has a headphone/speaker, microphone, keyboard, and mouse port in addition to a VGA, serial, and parallel port. See the *Versa Series Docking Station User's Guide* on using these ports.

PORT REPLICATOR

The Versa port replicator option provides you with the convenience of a dock at your desk. without taking up a lot of space. With your Versa P securely attached to a port replicator, you can have one connection with all your peripheral resources — printer, local network, monitor, mouse, and keyboard — instead of five.



Versa port replicator

Ports

The port replicator provides the following connector ports:

- Enhanced parallel port
- Serial port
- VGA CRT monitor (supports up to 256 colors at 1024 x 768)
- PS/2-style mouse
- Keyboard/keypad.

The Versa P has a combined mouse/keyboard port. The port replicator allows you to have separate mouse and keyboard ports.

> **NOTE:** Access to the external headphone, microphone and line-in jacks is not possible with the replicator attached.

4 Understanding Power Management

WHAT IS POWER MANAGEMENT?

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

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

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

Default Settings

The system arrives set up with many power-saving features already enabled. See the following table.

Automatic Power-Saving Features

DEVICE	DEFAULT TIMEOUT	COMMENT
LCD backlight	2 minutes	Backlight is turned off after there is no keyboard or VersaTrack ball input for the specified timeout.
Hard disk	1 minute	Hard disk motor stops when hard disk is not accessed for specified timeout.
Suspend	10 minutes	System enters Suspend mode after total system inactivity.

You can change the timeout period for any of the devices using Auto Setup. See “Using Auto Setup” in this guide. The Microsoft Windows Power icon in the Control panel also allows you to change the timeout period for some of these devices.

Use the **Fn F7** key combination to set the power management level. The faucet icon changes when the power management setting changes. Low and high levels are preset. You can modify the custom level for your specific working environment using Auto Setup. Default values change depending on the type of power management you use.

Power-Saving Modes

The Versa P has three different power consumption states:

- Active mode
- Local Stand-by mode
- Suspend mode.

The system can switch automatically to Local Stand-by and Suspend modes. This eliminates unnecessary power consumption when you operate the system on battery power or AC.

Active Mode

Active mode is when the system is fully active — all components are turned on and active.

Local Stand-by Mode

Each major component of the system (the hard disk drive or the LCD) may be individually timed to turn off after a period of inactivity. This is known as Local Stand-by mode.

Some components (such as the LCD) that have “timed out” automatically reactivate, returning to Active mode when you move the VersaTrack, press a key, or when there is a communication through an I/O port.

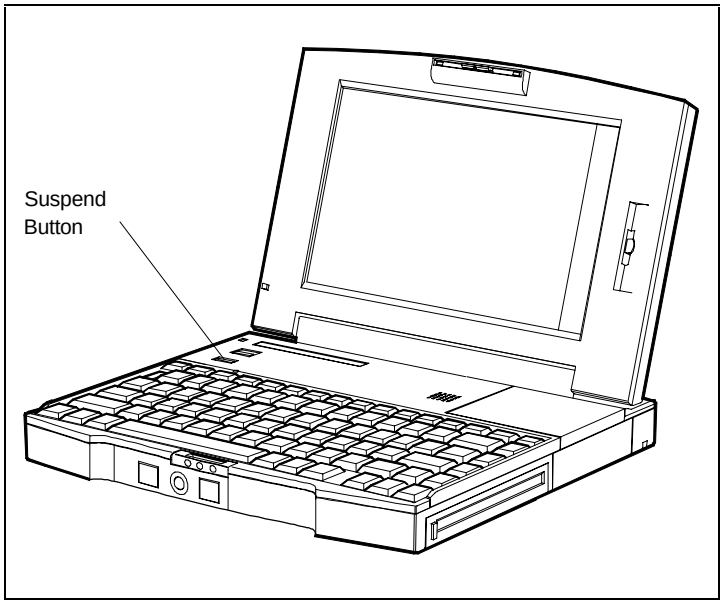
If the notebook has been shut, the LCD comes back on and the system returns to Active mode when it's reopened (unless it's in Suspend mode).

Suspend Mode

Suspend mode is a power-saving mode that shuts down all possible devices in the system while retaining data and system status.

The system resumes Active mode when you press the suspend button, if an optional serial port modem detects a ring, or if the system is set to resume at a certain time of day. (The system will *not* resume Active mode if a PCMCIA modem detects a ring.) Suspend mode lets you save power without first saving the working data.

Press the suspend button to enter Suspend mode when you need to be away from your system for a short period of time and want to return to where you left off.



Suspend button

You can toggle between Suspend mode and Active mode.

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

Resume Active mode by pressing the suspend button.

See "Using Auto Setup" in this guide for information on how to set system modes.

Smart Power Switch

The Smart Power Switch is an automatic feature that prevents you from accidentally powering off the Versa and losing your data while your system is in Suspend mode. The Smart Power Switch senses that the system is in Suspend mode and prevents you from directly powering off the system when you press the power switch.

To power off the system from Suspend mode:

1. Press the Suspend/Resume button to make the system active.
2. Press the Power button to shut it off.

PROLONGING BATTERY LIFE

Use the following guidelines to reduce power consumption and prolong battery life.

- Put the system in Suspend mode when you need to leave the system for a short time but plan to resume working. Suspend mode uses the least amount of battery power or AC power, if you are using AC. In Suspend mode, all operations stop temporarily.

  Suspend mode lets you stop working and return to where you left off.

- Turn off the system when you are finished using it.
- Close the Versa P notebook. When you close the notebook, the LCD panel sensor automatically shuts off the LCD.
- Use the **Fn F5** key combination or BACKLITE.EXE to toggle the LCD backlight between standard and full brightness.
- Adjust the LCD brightness control to the lowest setting that is comfortable for viewing.
- Use the automatic hard disk power-saving function. Set the timeout to power down the hard disk with Auto Setup.
- Use the **Fn F8** key combination to turn off the hard disk if you are not going to use it for awhile.

5 Using Auto Setup

Your Versa P comes with a hardware setup program called Auto Setup that allows you to view and set system parameters. Auto Setup also includes security features that protect your system from unauthorized use.

The system has two sets of internal settings: one mobile and one docked. The mobile settings are used when the system is not connected to the docking station. The docked settings are automatically used when the Versa P is connected to a docking station. The sample screen in this chapter shows a docked configuration. A mobile configuration might look slightly different.

With Auto Setup you can modify the active configuration.

This chapter describes Auto Setup and the system parameters you can set with it.

AUTO SETUP

You can access the Auto Setup program at power-on (you don't need a diskette). Auto Setup detects current system parameters automatically during the Power-On Self-Test (POST).

Use Auto Setup...

- to set the time and date.
- to check a hardware discrepancy when POST displays an error message and prompts you to run Auto Setup.

- to identify which parameter(s) changed. Auto Setup indicates specific hardware changes with blinking double carets (>>).
- to confirm that any optional memory you added was installed correctly.
- to customize your system.

How to Enter Auto Setup

When it is enabled (it comes that way from the factory), you can access Auto Setup at power-on, when the cursor changes to a block character (■).

The following sections describe how to enter Auto Setup.

With an Error at POST

If an Invalid Configuration message prompts you to "Press F1 to run Auto Setup" during POST, simply press **F1** at the prompt.

After you press F1, the system displays a message that it is collecting Auto Setup data. Then it displays an error message regarding changes found in the current parameter settings. Press **Enter** to check these settings.

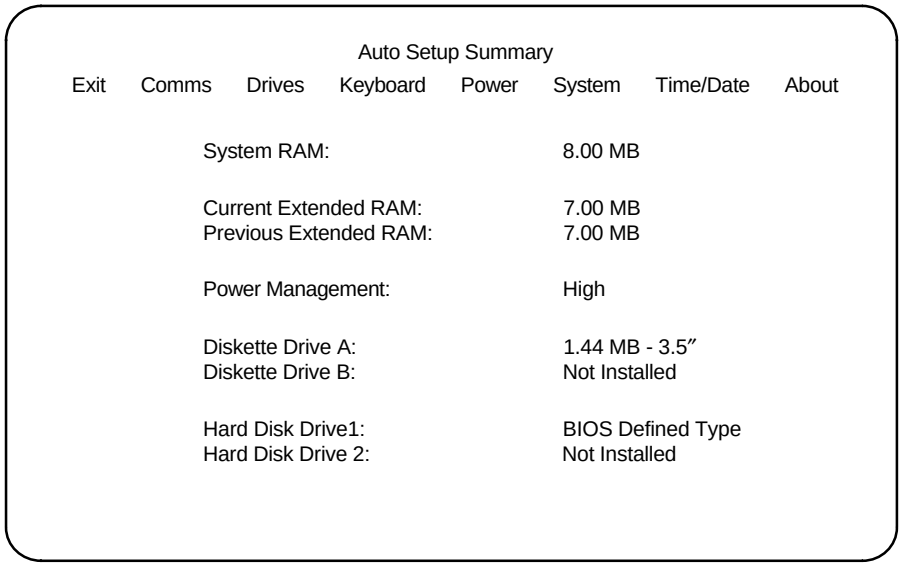
After you press Enter, Auto Setup displays windows that indicate the detected hardware changes. For information about using Auto Setup, see "How to Use Auto Setup."

With No Error at POST

To enter Auto Setup when no error message is displayed during POST, press **F1** after POST displays the memory test and while the cursor is a large block.

After you press F1, the system displays a message indicating that it is collecting Auto Setup data. After the message, the Auto Setup Summary screen appears. The summary screen displays the current hardware parameters of your computer.

See “How to Use Auto Setup” for information about using Auto Setup.



Auto Setup Summary screen

How to Use Auto Setup

The following sections describe the menu areas, keys, and procedures you use in Auto Setup for checking and changing system parameters.

Looking at the Screen

Auto Setup screens have three main areas of information:

- Menu bar — top line of the screen. This line contains user-selectable menu options.
- Parameter list — middle of the screen. This list provides current parameter information. Selecting a parameter from the list (using the menu bar) opens a pop-up window. That window may display another window with a list of selectable parameter settings.
- Key status line — bottom line of the screen. This line displays the keys that you can use to move the cursor or to select a particular function, such as saving parameters and exiting the menu.

Using Key Functions

The following table provides a quick reference to key functions that you can use in Auto Setup.

Auto Setup Quick Reference

KEY	WHAT IT DOES
Tab	Moves the cursor to another field in the menu. For example, pressing Tab moves the cursor up or down a list of current parameters.
Highlighted character	Selects the menu bar option or parameter with the highlighted letter.
Alt and ↓	Opens a window with a list of parameter settings.
↑ or ↓	Moves the cursor up or down a list of parameter settings.
Esc	Exits a parameter window without changing parameter settings.
C	Saves parameter changes and closes a parameter window. Also opens the Auto Setup Comms menu on the main screen.
Enter	Saves parameter changes and closes a parameter window.

Checking/Setting System Parameters

If it finds no error condition, Auto Setup starts at the summary screen. If there is an error condition, Auto Setup displays the discrepancy in the appropriate parameter window.

Use the following steps to view or change system parameters.

See "System Parameter Options" later in this chapter for a description of all parameter options and their settings.

1. If there is an error condition, go to step 2. Otherwise, select a parameter menu for the menu bar by pressing the highlighted character in the menu name.

   For example, to select "Drives," press **D**. A window appears with a parameter menu and the current setting for each parameter. Continue to step 3.

2. If you entered Auto Setup with an error condition, blinking double carets (>>) identify the changed parameter(s). You can do one of the following:

   - accept the change(s) by pressing **Enter** and return to the Auto Setup Summary screen. Continue to step 7.
   - check other settings for the changed parameter by continuing to the next step.

3. Position the cursor on the parameter that you wish to view by pressing **Tab** or the arrows.

4. View the parameter settings by simultaneously pressing **Alt** and the down arrow (↓).

   A window appears with a list of parameter settings.

5. Select a setting as follows.

   Press ↑ or ↓ to position your cursor on the parameter setting.

   Press **Enter** to select the new setting. Auto Setup records the change, exits the window, and returns you to the parameter window.

6. Repeat steps 3, 4, and 5 to set parameters in the same parameter menu.

   When you are through viewing and setting parameters within the parameter menu, press **Enter** or **C** to record any parameter changes, close the window, and return to the Auto Setup Summary screen.

   To return to the summary screen without saving changes, press **Esc**.

7. When you are through viewing or changing parameters, press **X** to select Exit in the menu bar. The screen displays a list of options.

8. Use ↓ to select "Exit and Save Changes" and press **Enter**. The screen displays a prompt requesting confirmation that you wish to exit.

9. Press **Enter** to confirm your selection. The system reboots with the saved changes.

SYSTEM PARAMETER OPTIONS

This section provides descriptions of the available parameter options in Auto Setup. Refer to the following table for a quick reference list of parameters and their factory default settings in the mobile mode.

You can select default nonvolatile memory (CMOS) settings as an option in Auto Setup if you have trouble setting specific parameters.

System Parameter Options

MENU/PARAMETER	DEFAULT SETTING
Comms	
Serial Port	3F8h–3FFh IRQ4
Parallel Port	378h-37Fh IRQ7 (LPT1)
Parallel Port Mode	Unidirectional
Drives	
Diskette Drive A	1.44 MB — 3.5”
Diskette Drive B	Not installed
Hard Disk Drive 1	Auto Detect
Hard Disk Drive 2	Not installed
IDE Hard Disk Drive Interface	Internal only/Enable
Diskette Boot	Enable
PCMCIA boot	Disable
Keyboard	
Typematic Rate	Normal
NumLock Boot Status	NumLock OFF
System Password	Disable
Keyboard Lock HotKey	Disable
Power	
Power Management	High
Power Management under AC	Disable
System Suspend Mode	Suspend/Resume
Backlight	Full
Highlight	Full
System Sound Power	Enable
PCMCIA Power	Enable
Suspend Warning Tone	Enable
Resume on Serial Port Ring	Disable
Resume on Time of Day	Disable
System	
Quick Boot	Disable
Setup Lock	Disable
Time/Date	
Time	HR:MIN:SEC
Date	MO/DAY/YEAR

Comms

The Comms option (**C**) lets you check or change settings for the parallel and serial ports.

The Comms menu lets you change the input/output (I/O) address for the parallel or serial port. Change the default address and interrupt level only if there is a conflict between optional board settings. Comms also allows you to set the mode of the parallel port.

> **NOTE:** Use the default settings whenever possible. Change these settings only if your system conditions require different settings.

For system security, you can disable a port entirely by selecting the "Disable" setting. This prevents unauthorized data transfer through the port.

Drives

The Drives option (**D**) lets you check or change parameters for your diskette drives and hard disk, including security features.

Unless you are connecting the Versa P to a docking station equipped with additional diskette drives or hard drives, you do not need to change Diskette Drive or Hard Disk Drive parameter settings. If you install another hard disk drive type, you need to enter Auto Setup to accept the new system configuration.

Drive options include the following:

- IDE Hard Disk Interface
  Allows you to select the internal IDE controller, the docking station's IDE controller if the system is docked, both internal controller and docking station, or to disable the interface completely.

- Diskette Boot
  When disabled, prevents boot-up from the diskette drive. When enabled, allows start-up from the diskette drive. If a diskette is not inserted in drive A or drive A isn't installed, the system defaults to drive C.

- PCMCIA Boot
  Enables system to boot up from bootable PCMCIA cards (flash cards). See the *Versa Series PCMCIA User's Guide*.

Keyboard

The Keyboard option (**K**) lets you check or change keyboard parameters and set password options. The following information describes the parameters.

- Typematic Rate
  The typematic rate is the speed at which a key repeats itself when you press the key. Use this parameter to change the rate to suit your typing speed.

- Numlock Boot Status
  This controls the Numlock key status at power-on. When set to "Numlock Off" (the default), this parameter disables the Numeric Keypad mode at power-on. Set this parameter to "Numlock On" to enable the Numeric Keypad mode at power-on.

- System Password
  You can use this parameter to enable and set a system password for system security. The system password protects your data by allowing your system to boot only after you enter a password. You are not prompted for a password until you set an initial password.

  Once you set a system password, you can enable the keyboard hotlock key.

  To set and use a system password, see "System Password" later in this chapter.

Power

The Power option (**P**) lets you select the level of power management, suspend mode, and suspend/resume options.

- Power Management
  The Versa P's ability to manage power can be set to high, low, custom, or turned off completely. A "High" setting provides maximum power saving. "Low" sets minimal savings and "Off" disables all power management timers. You can also customize the system's power management by selecting "Custom" and entering values for the following timeouts:
  - Automatic Suspend
  - Hard Disk Timer
  - LCD Panel Timer.
- Power Management under AC
  Normally, whenever AC power is connected to the Versa, power management is disabled. If you enable this option, the system uses the power management mode (high, custom, low, or off) you set using the Power Management option.

- Suspend Mode
  Suspend mode has a method of operation called Suspend/Resume that stores information in RAM and maintains RAM contents after shutting down all local devices.

- Backlight
  Use this option to set the backlight to either standard or full. Using the lower “standard” setting saves power.

- Highlight
  Use this option to set the character brightness to either standard or full. Using the lower “standard” setting saves power.

- System Sound Power
  This option allows you to turn off the speaker amplifier in order to save system power.

- PCMCIA Power
  This option allows you to turn off power to the PCMCIA slots in order to save system power. The slot’s power cannot be turned off if a card is installed in the slot.

- Suspend Warning Tone
  This option lets you enable or disable a warning tone when Suspend/Resume starts. It is best to keep this option enabled.

> **NOTE:** The system warning tone is disabled if System Sound Power is set to disabled.

System

The System option (**S**) lets you set the following system parameters.

- Quick Boot
- Setup Lock

The Quick Boot option removes certain tests from POST to reduce the time needed to boot the system.

The Setup Lock option is a security feature which, when set to disable, keeps unauthorized users from changing system parameters at power on.

> **NOTE:** To enable Auto Setup after disabling it, you must use the ENABLACU.EXE utility. At the MS-DOS prompt, type **enablacu**. Turn the system off and back on again. Press **F1** in enter Auto Setup.

Time/Date

Use this option (**T**) to set the current time and date. The settings remain in memory even after you turn off system power.

To set the time, enter the current hour, minute, and second in hh:mm:ss, 24-hour format. For example, type **13:30:00** for 1:30 p.m.

To set the date, enter the current day, month, and year in dd/mm/yyyy format.

> **TIP:** When setting the time and date, enter preceding zeroes. For example, to enter 9:20 a.m. and February 4, 1994, type 09:20:00 and 02/04/1994.

SECURITY OPTIONS

Your system supports a system password for system security.

System Password

The system password protects your data by allowing your system to boot only after you enter a password.

When a system password is set, you must enter the password before you can enter Auto Setup. This feature allows only an authorized user to change system parameters.

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

Use the following procedures to set and use your system password.

Setting an Initial System Password

Set an initial password as follows.

1. Select the Keyboard option (**K**) in Auto Setup.
2. Select "System Password" on the Keyboard settings menu.
3. Select "Enter and Enable."
4. At the prompt, enter a password up to seven characters long. Another window appears with a prompt to reenter your password for verification. Write your password down and keep it in a secure place in case you forget it.
5. Reenter your password. Auto Setup returns you to the Keyboard settings menu.
6. Save your changes and return to the initial summary screen.

7. Save the changes and exit Auto Setup.

> **NOTE:** Once you set a system password, you cannot edit or disable it in Auto Setup. If you want to change or remove it, see "Removing/Replacing a Password" in this chapter.

The next section tells you how to use your system password.

Using the System Password

After you set your password for the first time and reboot the Versa, a password prompt appears each time you power on your system. The password prompt is a key icon ( ).

The key icon appears after POST completes.

> **NOTE:** If a system password is set, you can't enter Auto Setup until you enter the password.

To use your password, boot the system by turning the power off and then on again. At the password prompt ( ), enter your password and press **Enter** to load your operating system or to enter Setup.

> **NOTE:** For security, the characters you enter do not appear on your screen. Enter your password carefully.

If you enter the password incorrectly, your system does not boot. You have three chances to enter the correct password. After the third unsuccessful attempt, you must power off your system and try again.

Removing/Replacing a Password

You can remove a password and you can replace a current password with a new one.

- To remove a password, at the password prompt type your current password and a slash in the following format:

  current password/

  Press **Enter**. Your password clears and you are no longer prompted to enter one when you power on the system.

- To replace your current password with a new one, at the password prompt type your current password, a slash, and your new password in the following format:

  current password/new password

  Press **Enter**. Your password changes to the new password. The next time you power on and enter the new password, the operating system loads.

> **NOTE:** Enter your new password carefully. If you make a mistake, you cannot change the password again without powering off and starting over.

Keyboard Lock Hotkey

The Keyboard Lock Hotkey option allows you to lock your keyboard for additional security when you are away from your Versa. This option works only if you have set a password in Auto Setup.

The Lock option appears on the Auto Setup screen only after you have enabled a password. At this point in Auto Setup, you can enable or disable lock.

Here is how you use keyboard hotlock once it's been enabled:

1. To lock your keyboard, press **Ctrl + Alt + Back Space.**
2. To unlock your keyboard, enter your password.

If you remove your password, your ability to lock the keyboard is also removed.

6 Problem Solving

The Versa P 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 later in this chapter.

Read through this chapter to familiarize yourself with what to do if you encounter a problem.

If the screen is blank, the instructions do not help, or an error message does not appear, use the information in this chapter to determine and fix the problem. The problem is often one you can solve yourself.

PROBLEM CHECKLIST

First check the items in the following list. If these items do not 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 you do not have the AC adapter connected, check that the battery pack is properly inserted and fully charged.

- System Configuration switch 1 may be in the up position (on). Move switch 1 down and retry flashing a BIOS.

Troubleshooting

PROBLEM	WHAT TO DO
The system does not power on	If you are operating the system with battery power, check that the battery pack is correctly inserted. Attach the AC adapter to recharge the battery. If you have the AC adapter attached, check that the electrical outlet you are using works.
LCD screen is dark and blank	Power-saving mode has shut off the backlight. Press any key, **Fn F5**, or use the suspend button. The built-in LCD may not be selected. Press **Fn F3** once or twice. Brightness control needs adjustment. Adjust the control. Power-saving mode has shut off the backlight. Press any key, **Fn F5**, or use the suspend button. The system entered Suspend mode due to low battery power. Plug in the AC adapter or replace the battery pack, then press the suspend button to resume operation.
Battery power does not last long	Use power-saving modes. Recharge the battery pack fully. If this doesn't work, use the Discharge utility (**dcharge**) or replace the battery pack, then press the suspend button to resume operation.
Information on the LCD screen is difficult to see	Adjust the brightness control.
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 Auto Setup.

Troubleshooting

PROBLEM	WHAT TO DO
The suspend button does not work	Power management is disabled in Auto Setup. A disk drive might be busy. Wait until the disk drive stops and try again. The docking station might be connected to the Versa. Some power management functions do not work when the docking station is connected.
System BIOS cannot be reprogrammed	System Configuration switch 1 may be in the up position (on). Move switch 1 down and retry flashing a BIOS.

START-UP PROBLEMS

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

- current configuration information does not match configuration information stored in Auto Setup, such as when an internal option is added.
- the system loses configuration information.
- the lithium battery for the CMOS is depleted.

If any of these conditions is true, the system displays an "invalid configuration information" message.

To continue start-up procedures, press **F1** and run Auto Setup to set current system parameters.

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

> **NOTE:** When the 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

MESSAGE	WHAT TO DO
Diskette drive *n* failure	Drive *n* does not work or is not properly connected. (*n* is 0 or 1. Drives 0 and 1 refer to drives A and B.) Check that drive *n* is securely connected and power is on. Press **F1** to start Auto Setup to check the diskette drive parameters. If there's still a problem, drive *n* might need repair.
Diskette read failure – press **F1** to run Auto Setup. Press any other key to retry boot	Remove the diskette from drive A and press **F1** to start the system from the hard disk. Or, insert a bootable disk in drive A and press **F1**.
Non-system disk or disk error; Replace and press any key when ready	Remove the diskette from drive A and press any key to start the system from the hard disk. Or, insert a bootable disk in drive A and press any key.
No boot device available – press **F1** to run Auto Setup	Press **F1** to start Auto Setup. Change the hard disk type to the correct setting. Exit and save Auto Setup.

POST Error Messages

MESSAGE	WHAT TO DO
Invalid configuration information – run Setup program	One or more system configuration parameters are not properly set. Start Auto Setup, set them correctly, and exit and save to update the parameters.
Real time clock failure	Set time and date using Auto Setup. Exit and save to update the parameters.
Time-of-day not set – run Setup program	Set the time and date using Auto Setup. Exit and save Setup to update the parameters.
Fixed disk configuration error	Start Auto Setup. Exit and save to update the parameters. Check to see if the hard disk connector is seated properly. If there is still a problem, the hard disk might need repair.
Fixed disk failure	Press **F1** to start Auto Setup. Exit and save to update the parameters. Check to see if the hard disk connector is seated properly. If there is still a problem, the hard disk might need repair.
Fixed disk controller failure	Press **F1** to start Auto Setup. Exit and save to update the parameters. Check to see if the hard disk connector is seated properly. The hard disk controller does not work and might need repair.
Keyboard clock line failure	Unplug external keyboard if attached. Have the keyboard repaired.
Keyboard data line failure	Unplug external keyboard if attached. Have the keyboard repaired.

POST Error Messages

MESSAGE	WHAT TO DO
Keyboard controller failure	Unplug external keyboard if attached and reboot the system. If it still fails, have the keyboard repaired. **NOTE:** *Repeated keystrokes during boot may produce an error message.*
Keyboard stuck key failure	A key is jammed. Remove any obstruction you find. You may have repeatedly pressed the **F1** key when trying to enter Auto Setup. If the error message remains, you may have to have the keyboard repaired.

IF YOU NEED ASSISTANCE

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

If you still have a problem, call the NEC Technical Support Center (TSC), toll free, at 1-800-632-4525. Direct technical assistance is available Monday through Friday, between 8:30 a.m. and 8:00 p.m. eastern time.

Your system is supplied with remote diagnostic software. If you bought a modem to use with your system, a TSC technician may be able to diagnose the system remotely.

Direct Technical Support

When TSC receives a call from you, a technician attempts to diagnose your problem over the telephone. The technician determines if your problem requires troubleshooting your system remotely with the Remote Support Session software that comes on your NEC Hardware Utilities diskette.

Remote Technical Support

With Remote Support Session, the technician can diagnose your system from a TSC computer. To use this utility, you must connect your modem to a telephone line. (See "Connecting Phone Lines" in Chapter 3.)

If the Remote Support Session software is required, the technician asks you for your phone number and helps you to prepare your system for remote support.

Follow these steps to prepare your system for remote support. You must have a modem installed in the system and connected to a telephone line.

1. With the system power off, insert the NEC Hardware Utilities diskette into the diskette drive.
2. Turn on the system power. A menu appears.
3. Type **2** to select "Remote Support Session." Your screen displays "Wait Dial-In Set" and a message indicating that the system is waiting for the remote dial-in.

> **TIP:** Do not touch your keyboard while waiting for the remote dial-in. You may interfere with the remote connection.

To cancel the remote dial-in, remove the diskette and simultaneously press **Ctrl-Alt-Del**.

Features

Remote Support Session has the following features:

- The remote screen (technician's screen) looks like your computer's screen.
- The technician can access data, run and control applications on your system, and print reports using the remote keyboard and mouse. Or the technician can simply observe your computer’s operations.
- You can simultaneously view what the technician sees on the remote screen.
- The technician can view your keystrokes and whatever appears on your screen.

7 If You Need Help

The NEC Customer Service & Support (CS&S) organization provides high quality technical service and support for all NEC products. CS&S offers many programs and options from which to choose to keep your NEC Versa P working at peak performance.

Warranty information and resources outlined in this chapter apply if you purchased your system in the United States or Canada. The 800 phone numbers noted in this chapter let you call NEC free of charge from locations in the U.S. and Canada. Other numbers noted in this chapter can be used by NEC users throughout the world to access technical information. (Local/international telephone charges apply to these calls.)

If you purchased your system outside of the United States or Canada, check with your local dealer and NEC subsidiary for details about warranty coverage and service.

These resources include:

- UltraCare® — industry-leading warranty service program for the Versa family
- A network of authorized service centers located throughout the U.S. and Canada
- NEC's own factory repair depots
- Automated self-help technical support services.

NEC products carry some of the industry's leading warranties. Your Versa P is backed by a three-year limited warranty. NEC warrants its products to be free from defects in material and workmanship and agrees to repair or replace any part of the products that proves defective under the warranty terms and conditions.

This means that anywhere in the U.S. or Canada, your Versa P is covered — no matter what the problem — by the NEC warranty.

If you are enrolled in UltraCare, your Versa P is covered anywhere in the U.S. and Canada, and in 26 other countries.

For more information on what components your warranty does and does not cover, review the *Limited Warranty Statement.* The statement is packed with the Versa P product registration materials.

The warranty covers only NECTECH-supplied components. Service required as a result of third-party components is not covered under this warranty.

Repair service and technical support for the Versa P can be obtained from any of the following sources:

- UltraCare
- Your reseller
- Directly from NEC.

UltraCare SUPPORT

UltraCare is NEC's warranty service program for the Versa Series. UltraCare eliminates the hassles involved in getting your Versa repaired, if needed.

UltraCare offers the following benefits at no charge for the first year:

- Coverage in the U.S., Canada, and 26 other countries.
- Toll-free number 24 hours a day, 7 days a week in the U.S. and Canada.
- Free overnight courier pick up and return.
- Repair service within one business day (U.S. and Canada) or two business days (internationally).
- Virus detection and customer notification.
- Option to extend UltraCare coverage.

To enroll in UltraCare, complete the warranty registration program hotloaded on your hard drive and return the registration either by mail or fax. UltraCare coverage is free for the first year. For coverage after the first year, you can purchase UltraCare for the second and third years of your Versa P warranty.

Without UltraCare, your Versa P is covered by NEC's standard limited three-year warranty. Warranty repair service is provided by your local authorized reseller or NEC's factory repair depot.

When you enroll in UltraCare, NEC sends you a package of registration materials within 30 days. The materials include a registration decal to attach to your system, a special toll-free number for UltraCare customers only, and details about using the program.

SUPPORT FROM THE NEC RESELLER

Your NEC reseller is prepared to provide technical and service support. The reseller should have a thorough understanding of how your NEC product is set up and operates.

NEC resellers receive special training and are equipped to resolve most hardware and software questions that you may have. Nearly all resellers have trained technicians on their staff to make most repairs in a timely manner.

Depending on your needs, the reseller can provide support via telephone, fax, E-mail, electronic bulletin board, or in person. If you feel that the reseller made every effort to solve the problem but was unable to do so, contact NEC directly for support.

SUPPORT FROM NEC

NEC is ready to support you in operating and maintaining your NEC system. If you need support, NEC suggests that you use the following services in the order presented.

1. NEC FastFacts: An automated electronic service that offers the latest technical information about all of our products.
2. NEC Bulletin Board Service: An electronic bulletin board service that provides facilities for downloading BIOS updates, print utilities, drivers and more. (This service requires that you use a modem with your system.)
3. NEC Technical Support: Toll-free support for help in diagnosing and resolving technical hardware problems. You can telephone or E-mail your question over the Internet network.
4. NEC Customer Service Response Center: An organization that provides help with hardware service and repair, warranty issues, and customer service problems.

NEC FastFacts

FastFacts is the NEC Technologies' automated response system that provides free technical information whenever you need it, 24 hours a day, 7 days a week. Simply call FastFacts from a touch-tone phone. Listen to the instructions and order the documents you need or a list of available documents and catalogs.

Placing an order takes only minutes and the information goes directly to your fax machine.

Reach FastFacts by dialing:

- 1-800-366-0476 (U.S. and Canada)
- 1-708-860-9500 x2621 (International).

FastFacts contains the following information:

- Product brochures
- Technical information bulletins, including:
  - Installation procedures
  - Quick reference guides
  - Troubleshooting information.

NEC Bulletin Board System

The NEC Electronic Bulletin Board System (BBS) is available to all customers free of charge. If you dial us directly at (508) 635-4706, your only expense is the cost of the phone call. The BBS is also accessible through CompuServe for customers who are already members. The CompuServe password is "GO NECTECH."

The BBS provides the most up-to-date service tips, drivers, BIOS updates and is available 24 hours a day, 7 days a week. You have access to information developed by our technical support team to ensure superior operation of your NEC system.

What is the BBS?

The BBS is a remote database containing files devoted to enhancing the maintenance and functionality of NEC's products. It is a non-commercial system and its services are organized into straightforward menus that include:

- A Message Menu containing an interactive e-mail network that lets you leave messages for members of the NEC support staff and correspond with other BBS members.
- A Bulletin Menu that contains online help, important NEC Technologies' phone numbers, and a selection of useful files and utilities available for downloading. These files include:
  - BIOS update files
  - Driver files for CD-ROMs, video boards, and printers
  - Replacement set-up disks.
- A Door Menu that makes it possible to run external programs online.

How Do You Use the BBS?

To access the BBS, you need a computer, modem, and communications software. The communications software allows you to transfer files (download or upload) through the modem to and from a remote system.

If the phone you are using with your modem has call-waiting, disable it while using the modem. The beep that signals another call can be interpreted by the system as a break signal and result in a disconnect. To disable the call waiting feature on your telephone, press ***70**.

To contact the BBS, dial (508) 635-4706. The first time you access the BBS, you must supply your name, address, and telephone number to create your password. For security purposes, you are also asked for personal information that only you would know. The next time you log in, you only need to give your name and password to access the system.

BBS communication parameters are as follows:

- Baud rate — 2400 to 9600 bps
- Parity — none
- Data bits — 8
- Stop bits — 1.

NEC Technical Support

NEC offers a free technical support service to use if you have a technical problem that cannot be resolved by your dealer. NEC's technical support can help you with questions about software and hardware compatibility, operating system software issues, and using the products.

Call 1-800-632-4525, Monday through Friday, between 8:30 a.m. and 8:00 p.m. Eastern Standard Time (EST).

E-mail/Fax Technical Support Services

The NEC Technical Support Center offers technical support by E-mail over the Internet network. This service is available to anyone with a technical question about NEC Technologies, Inc. products.

The Internet address is:

tech-support@TSC Admin@NECTECH

If it is more convenient for you to fax in a question, use the following Technical Support Center fax number:

(508) 635-4666

Note the following guidelines to use the E-mail or fax support service:

- Include one of the following words in the subject field so that someone with expertise on that subject can respond:
  - Monitor
  - Printer
  - CD
  - Desktop (for desktop or minitower systems)
  - Notebook.
- Provide as much specific information about your question for a quick and accurate response.
- If you are sending your question by fax, be sure to include your fax number with your question for a response.

You will receive a response to all questions sent by Internet or fax within one business day.

NEC Customer Service Response Center

If the need arises, the NEC Customer Service Response Center (CSRC) can help you with alternatives for servicing and repairing your NEC product. The CSRC also provides general information, handles call routing, and resolves any warranty issues and customer complaints.

Call the CSRC at 1-800-632-4525, Monday through Friday, between 8:30 a.m. and 8:00 p.m., EST.

The NEC service and repair network includes the following:

- 250 premier level TotalService Preferred servicers
- 1350 NEC Authorized Service Centers (NASC)
- Mail-in to an NEC repair depot (for warranty and out-of-warranty products).

MAIL-IN SERVICE

NEC provides an optional mail-in repair service in circumstances that preclude the use of UltraCare, a local authorized dealer, or if the warranty has expired. You can mail your NEC product to one of four repair depots located across the U.S. and Canada. Arrange for mail-in service through the CSRC at 1-800-632-4525.

MAINTENANCE CONTRACTS

Maintenance contracts are available for servicing products after their warranties expire. The contract continues the same high-quality service available during the warranty period. (See the section on UltraCare earlier in this chapter for information about NEC's industry-leading warranty service program.)

You can buy maintenance contracts through NEC's Service Telemarketing Department. Call 1-800-632-4525. Pricing depends on the product and your location.

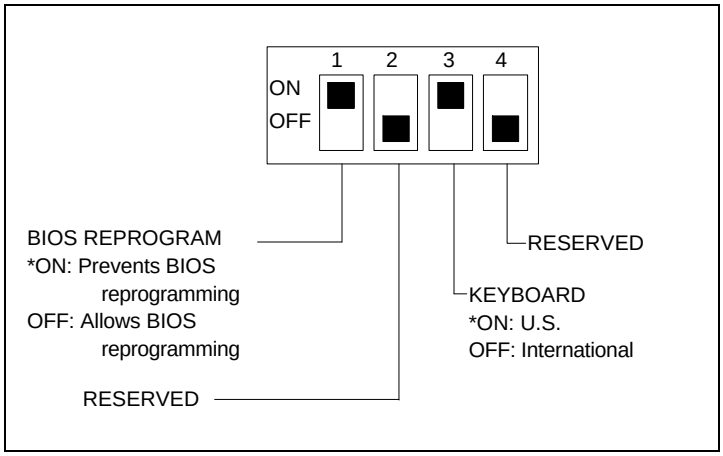
8 Setting Switch Functions

This chapter provides switch setting information that you might need to configure your system for a particular application or system requirement.

The switches that configure your system are the System Configuration switches, a block of four switches on the system beneath the memory compartment cover. If you want to modify the system BIOS, you must change one of the System Configuration switch settings.

The following figure shows the factory settings and functions of the System Configuration switches.

Check the switch settings for your particular requirements. If you need to change the settings, use the procedure that follows the figure.



Switch settings

To change System Configuration switch settings, follow these steps.

> **WARNING:** The system power must be off before changing a switch setting.

1. Turn off the system.
2. Remove the memory compartment cover.
3. Locate the switches.
4. Change the appropriate switch setting using a pointed instrument, such as a ballpoint pen.

   Check that the setting is correct.
5. Replace the memory compartment cover.

A Specifications

The following specifications are standard except where noted.

System Processor

Intel Pentium P54C-75 MHz

Random Access Memory (RAM)

Standard size — 8-MB high-speed (interleaved access)

Optional — expandable in 4-MB, 8-MB, 12-MB, 16-MB, 32-MB increments

Video RAM — 1 MB

Cache RAM — L1: 16-KB primary
(8-KB code, 8-KB data)
L2: 256-KB secondary

Read-only Memory (ROM)

256-KB

Calendar Clock

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

Input/Output (I/O) Facilities

Integrated industry-standard interfaces

- Parallel — 1 port, 25-pin D-sub
- Serial — 1 port, 9-pin D-sub
- VGA CRT — 1 port, 15-pin high-density D-sub
- Microphone In — 1 port, 3-pin mini-jack

- Stereo Headphone — 1 port, 3-pin mini-jack
- Line-In Port — 1 port, 3-pin mini-jack
- External Keyboard/External Mouse — 1 port, 6-pin MiniDin; exclusionsary use
- Expansion — 1 port, 198-pin providing ISA bus, VGA CRT signal, external keyboard signal, PS/2 mouse signal, power supply bus Sound signal

Card Slots

Two slots for two Type I/Type II PCMCIA cards or one Type III PCMCIA card

Display

LCD — Thin-film transistor (TFT) CCFT backlit color

- Resolution — 640 x 480 pixels
- Dot Pitch — 0.3 mm
- Colors — 4,096 (64K colors on external CRT with video subsystem)

Super VGA

- Color — 4, 096 (256 colors out of 227,000 colors on external CRT with video subsystem)
- Resolution — 800 x 600 pixels

Viewing Area — 192 mm by 144 mm (7.56 in. by 5.67 in.) (9.5 in diagonal)

Aspect Ratio — 4:3 (or true CRT aspect ratio)

Keyboard

Built-in, 83 keys with standard QWERTY-key layout, 79 keys for International

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

Diskette Drive

Standard 1.44-MB drive

- Size — 3.5 inch
- Capacity — 720 KB or 1.44 MB
- Access Time (average) —94 ms
- Transfer Rate — 500k bps
- Interleave 1:1

Hard Disk Drive

Internal 2.5-inch, 340-MB, 540-MB, or 810-MB drive

Power

AC Adapter

- Input Voltage — 100 to 240 volts (V) AC, 50 or 60 Hz, 1.2-0.6 A
- Output Voltage — 13 V DC, 0/1.7/2.8 A
  13 V DC, 4.1/2.4/0 A

Battery Pack

- Output Voltage — 7.2 V DC
- Capacity — 3,800 mAH
- Battery Life — Approximately 2 or 3 hours, depending on model, under typical operating conditions.
- Recharging Time
  - — Approximately 1.6 hours when the system is off
  - — Approximately 2.7 hours when the system is on
- Bridge Battery
  - — Fully charged, backs up memory contents and system status for up to 30 minutes under Suspend mode, but battery change time is under 5 minutes.
- CMOS Battery
  - — Lasts approximately 2 years

Dimensions

System Unit

- Width — 11.69 in. (297 mm)
- Depth — 9.51 in. (241.5 mm)
- Height — 2.1 in. (53 mm), 2.2 in. (56 mm)

Battery Pack

- Width — 4.2 in. (108 mm)
- Depth — 4.5 in. (114.5 mm)
- Height — 0.85 in. (21.8 mm)

Weight

System — 6.95 lb (3.15 kg), 7.1 lb (3.2 kg)

Battery Pack — 1.16 lb (527.6 g)

Recommended Environment

Operation

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

Storage

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

B NEC Communications Assistant

The NEC Communications Assistant file provides technical assistance on various topics when communications problems occur. It's an online interactive file that offers useful troubleshooting information and an indexed list of trouble areas. Communications Assistance covers a range of telecommunications areas such as:

- telephone types
- file transfer
- faxing
- connections
- paging.

You can find the NEC Communications Assistant icon in the Versa Help program group in Windows. Use the always-on-top feature while you are using a communications package for faxing or file transfer. This keeps it handy for when you need it.

C Using the BIOS Update Utility

The BIOS Update Utility (BUU) allows you to update the ROM BIOS version of your system, *should it ever become necessary*. This feature allows the ROM BIOS chip in your system to be "flashed" with a new BIOS code through software, rather than requiring you to manually replace the chip.

To perform a BIOS update, you need a BIOS Update Diskette (BUD). The BUD, which contains the latest version of the BIOS code, can be obtained through NEC Technologies, Inc. or through the NEC Bulletin Board System (BBS)* . You need to use a modem to download the utility from the NEC BBS.

> **NOTE:** It takes about 25 minutes to download the BIOS Update Utility from the NEC BBS. If you prefer, you can request a BIOS Update Diskette by mail from NEC Technologies, Inc. NEC will ship you the diskette with one business day turnaround from the time your request is received. Call NEC Technical Support at 1-800-632-4525.

To download the BUU to a diskette, see "Receiving the BUU" later in this appendix.

*The NEC BBS is available in the U.S. only.

The BIOS Update utility identifies and saves the currently installed BIOS version before installing the new version. This permits the old version to be restored, if desired, after the new BIOS has been installed. If you have more than one system, each should have its own BIOS Update diskette.

In order to use the BIOS Update utility, your system configuration must include:

- 640 KB of base memory
- Supported ROM BIOS version
- System Configuration switch SW1–1 (switch is located under the memory compartment cover) set to OFF on the system (BIOS reprogramming is allowed with the AC power on.).

The BIOS Update utility operates through a simple menu and is quick and easy to use. Even though the utility is easy to use, there are some things you need to be aware of before updating your BIOS. If a conflict or problem arises during the update, the utility displays a warning message informing you of the situation.

Before attempting to update the BIOS, make sure your system configuration meets the utility's requirements. If these requirements are not met, the appropriate message is displayed. For example, the messages include the following references to the requirements:

- system does not have 640 KB of RAM
- nonsupported BIOS version
- programming voltage (VPP) not enabled.

If your system meets the requirements, you are ready to boot the utility diskette.

CAUTION: Never swap BIOS Update diskettes between systems.

Make sure the diskette is not write protected. If you attempt to use a diskette that has updated another system, a message warns that you may not be able to restore the system's original BIOS.

If you are updating more than one system, use the MS-DOS DISKCOPY command to make a copy of the original diskette for each system before using the diskette.

Once the BIOS updating starts, it is very important to let the operation complete. This may take several minutes. Disturbing the system in any way during the procedure may severely damage your system. A warning message appears during the update process.

During the update, the system indicates the progress with an occasional single tone. If the procedure ends successfully, the system sounds an OK tone and stops. An OK tone consists of three long tones followed by a long-short-long tone sequence.

If an error occurs, the system sounds a warning or error tone. You must turn the system off to stop the tone. The warning tone is an alternating high-low tone. This indicates that the new BIOS could not be installed for some reason. When this happens, the utility attempts to restore the system's original BIOS. Your system should operate. Because the attempted update failed, a problem exists and service may be needed.

The error tone is three short tones, three long tones, then three short tones again. This tone indicates that the new BIOS could not be installed and that the old BIOS could not be restored. Your system requires service.

The following sections contain the information you need to load and use the utility.

RECEIVING THE BUU

If you obtained a BUD from NEC, continue to the next section, "Start-Up." Otherwise, use the following procedure to download the latest version of the BIOS Update utility to a diskette. This procedure assumes you are using an optional modem.

The filename that you enter to download the BIOS Update diskette looks similar to Lxxx0*n*B3.EXE.

"L" and the three numbers "xxx" following L specify a laptop file for a particular system.

The "*n*" is the number that specifies the revision number of the BIOS. For example, "0" downloads the BIOS version that ships with your system; a "1" downloads a BIOS Update diskette with a revision level of 1.

"B3" creates a 3-1/2-inch BIOS Update diskette.

> **NOTE:** The BBS screens contain information that you might want to read at some later time. The following procedure steps you through downloading as simply as possible.

1. From the Windows Program Manager, select "Accessories" and double click on "Terminal."
2. From the settings menu, select "Communications" and check that the settings match the BBS parameters.

   The BBS parameters are as follows.

   - Baud rate: 2400 to 9600 bps
   - Parity: none
   - Data bits: 8
   - Stop bits: 1

3. Log onto the BBS by dialing (508) 635-4706.

4. Press **Enter** twice.

5. Enter your first name, last name, and password when prompted. Press **Enter** after each.

6. Follow the screen prompts until the NECTECH Main Menu is displayed. The prompts require that you do the following .
   - Press **S** and then press **Enter**.
   - Press **S** and then press **Enter**.
   - Press **Enter** three times.

7. At the NECTECH Main Menu, press **F** and **Enter** for the File menu.

8. Press **L** and press **Enter** to list the filenames.

   Find the filename for your computer and the current revision number (*n*).

9. Return to the File menu. Press **D** and **Enter** for download.

10. Type the filename for the BIOS Update diskette that you wish to download and press **Enter**.

11. Press **Enter** twice.

12. Select your default protocol (xmodem works in most cases).

13. The BBS displays a prompt that it is ready to send the file. Execute your software's download or transfer procedure to download the file.

    For example, if you are using the Windows Terminal mode, select Transfers from the Windows Terminal menu bar. From the drop down menu, select the type of file you want to receive on your system. For instance, select “Receive Binary file.”

    In the next menu, type **a:** to store the file on diskette drive A.

14. After the download has successfully completed, log off the BBS.

15. If you have not copied the download to your Versa P hard disk, do so now. Insert a blank diskette in the drive and execute the downloaded file.

    For example, if you downloaded LxxxnB3.EXE (where *n* is the BIOS revision level), type the following:

    LxxxnB3.EXE

This procedure creates a new BIOS Update diskette that you can use to update your BIOS.

START-UP

Use the following steps to load the BIOS Update utility and to display the Main Menu.

1. Turn off the power to the system unit. Be sure the AC adapter is connected to the back of the system and a wall outlet.

> **NOTE:** The BIOS update only works with a cold boot.

2. Insert the BIOS Update diskette into drive A.

3. Turn on the power to the system unit. The system boots and automatically loads the utility. A message similar to the following appears:

   FLASH ROM EQUIPPED

4. Press **Enter** to continue.

   The utility checks the currently installed BIOS version and the diskette's BIOS versions. If the BIOS can be updated, the Main Menu appears. If there is a problem, the appropriate message is displayed.

MENU FUNCTIONS

Use the Main Menu to update your BIOS version; other menu functions are optional.

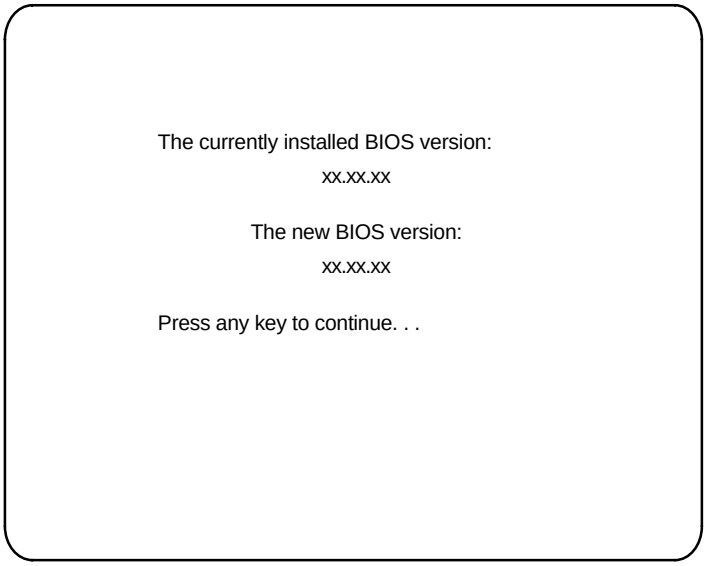
To select a menu function, use the arrow keys to highlight the function and press **Enter**. If you need help, press **F1** for additional information.

Information

This option provides important information about the BIOS Update utility. Read this information before proceeding with the utility.

Display BIOS Version

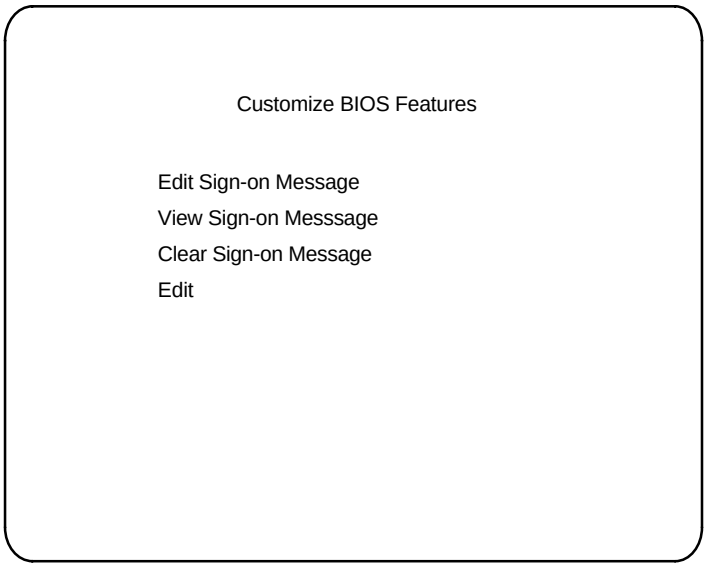
Use this option to display the currently installed BIOS version and the version of the new replacement BIOS. A message similar to the one below appears.



NOTE: The original BIOS version level is included if the utility has been run previously.

CUSTOMIZE BIOS

This allows you to install custom BIOS options. This customization takes place when you install the new BIOS. When selected, a message similar to the one following appears.

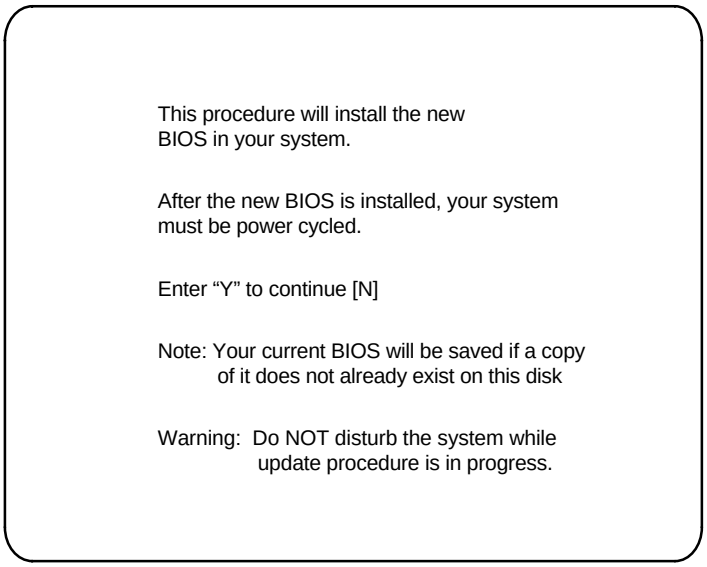


The edit option allows you to create or change a custom sign-on message. This sign-on message can be up to 40 characters and is displayed every time the system boots. View shows the sign-on message, if any, to be installed into the new BIOS. The clear function erases the custom sign-on message. Exit returns you to the Main Menu.

Install New BIOS

This menu option first saves the system's original BIOS to the diskette and then installs the new BIOS. Be sure to choose the Customize BIOS feature, if desired, before selecting this option. After the installation is completed, it resets the system to enable the new BIOS.

When you select this function, a message similar to the following one appears.



Press **Y**, then press **Enter**. After a brief pause, a message similar to the following is displayed.

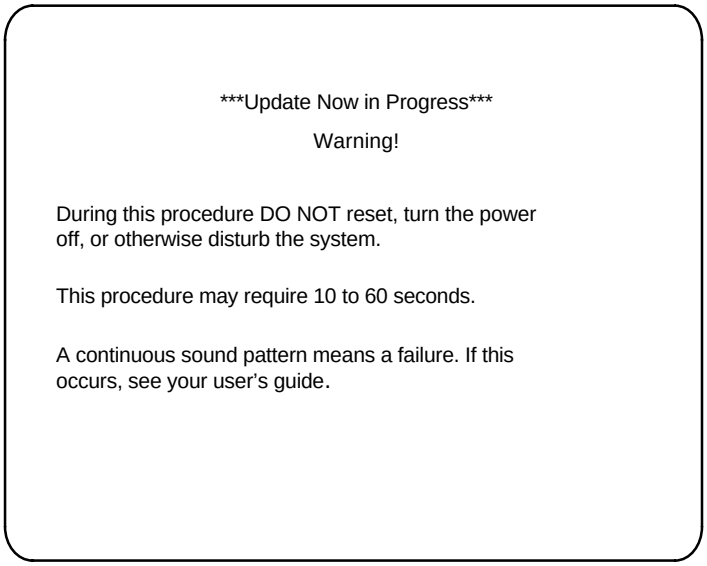
```
Saving data files, please wait...
```

Then,

```
Please remove any diskette in drive A:

Press any key to continue...
```

The following warning appears after you press any key.

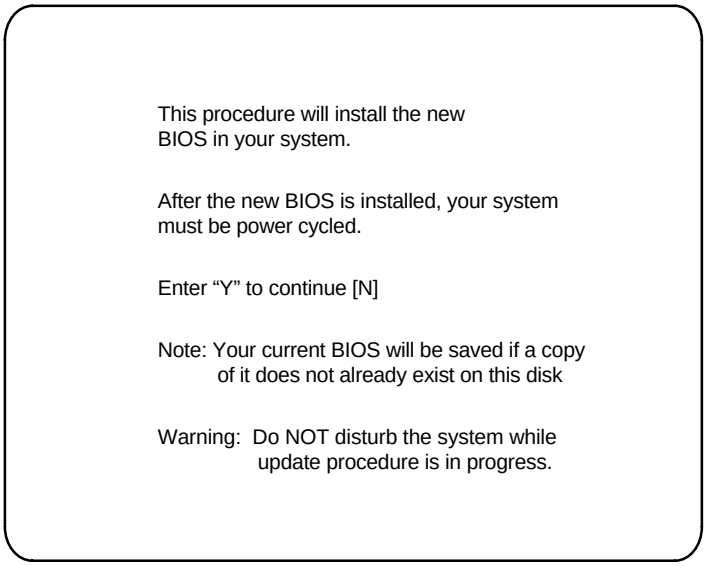


The utility updates the BIOS and resets the system to make the new version operational.

To reuse the utility, you must power the system off and back on again with the BIOS Update diskette inserted in drive A.

Restore Original BIOS

Use this option to restore your previous BIOS from the update diskette. If your system BIOS has not been updated, this function does nothing. A message indicates the new BIOS must be installed before the original BIOS can be restored. Selecting this function displays a message similar to the following one.

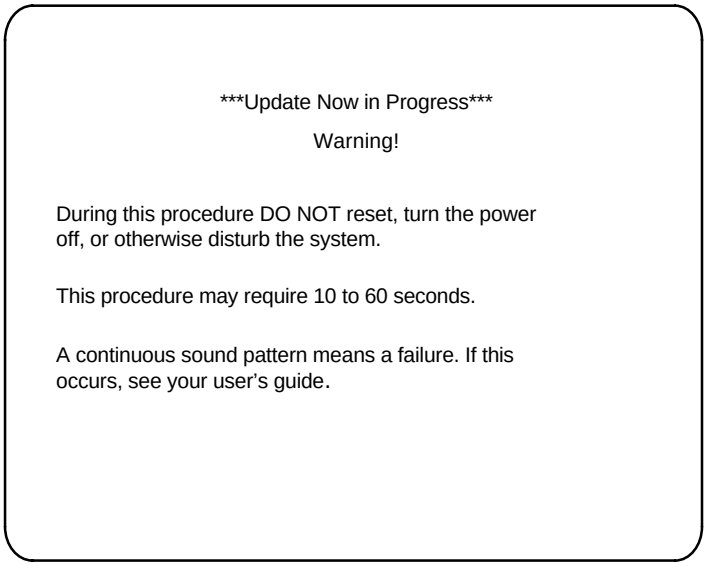


Press **Y**, then press **Enter**. After a brief pause, a message similar to the following one appears.

Please remove any diskette in drive A:

Press any key to continue...

The following warning appears after you press any key.



The utility restores the previous BIOS and resets the system to make the previous version operational.

To reuse the utility, you must power the system off and back on again with the BIOS Update diskette inserted in drive A.

Exit

This option will exit the utility and reset the system. Press **Enter** to exit the utility. If you press **Esc**, a message similar to the following appears.

Return to the Main Menu

Exit this utility

Select the appropriate option.

In high-security environments where you do not want the BIOS to be easily updated, simply disable the BIOS reprogramming. This prevents any modification of the BIOS. You can prevent BIOS reprogramming with System Configuration switch SW1–1.

Errors and Messages

The following list describes the possible error and warning messages you might receive when using the BIOS Update utility.

- An error indicating that the system does not contain a Flash ROM. The utility cannot be used. Be sure that you powered off the system before loading the BIOS Update utility. Run Auto Setup to check that your system configuration settings are correct. Or, switch one may not be turned off. Or, the system was warm booted instead of cold booted. If you still have a problem, contact technical support or your NEC dealer for update information.
- A message informing you that the system's version of BIOS cannot be updated by the diskette because it is not a supported revision. The utility cannot be used. Or, switch one may not be turned off. Or, the system was warm booted instead of cold booted. Contact technical support or your NEC dealer for update information.

- An error indicating that the system's BIOS reprogramming is not enabled or possibly that no Flash ROM is installed. The utility cannot be used. Or, the system was warm booted instead of cold booted. Be sure that System Configuration switch SW1–1 is set to the OFF (enable) position. Contact technical support or your NEC dealer for update information.
- A message indicating that the update is in progress. You should not disturb the system in any way while this screen appears. The system resets after the update completes. (Make sure you cold booted on AC power.)
- An error noting that your system does not have enough RAM available. Make sure you booted the system from the BIOS Update diskette.
- A message stating that the diskette you are about to use has already been used. You may not be able to restore the previously installed BIOS if you proceed with the update. This condition is acceptable if you maintain a separate copy of the utility diskette for each system.
- An error indicating that you are attempting to restore the original BIOS before installing the new BIOS. You must first install the new BIOS.

Glossary

A

AC Adapter

A device that connects a Versa portable computer and an AC wall outlet to provide AC power for running the system or 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 operating system and application programs.

BIOS

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

bit
Binary digit. The smallest unit of computer data.

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

board
Printed circuit board. Board onto which computer components are soldered and thin wires are printed to connect the components.

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

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

byte
Group of eight contiguous bits.

C

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
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 lithium battery that preserves clock/calendar data and system configuration parameters stored in CMOS.

cold boot

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

crt

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

cursor

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

D

default

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

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.

digital audio

Recorded sounds such as speech and sound effects. These are played back by the sound card'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.

DSTN

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

E

enhanced VGA

A video interface that offers more colors or higher resolution than VGA.

extended RAM

The area of RAM above the first megabyte of memory in the system available for enhancing system performance.

F

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 (such as **Ctrl-Alt-D**) that you press simultaneously for a particular function.

I

input/output

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

IDE

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

interface

A connection that enables two devices to communicate.

interrupt

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

K

kilobyte

(KB) 1024 bytes.

L

LAN

Local Area Network.

LCD

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

load

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

M

megabyte

(MB) 1,048,576 bytes.

memory

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

menu

A video display of programs or options.

microprocessor

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

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.

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.

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.

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

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

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

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

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

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

R

RAM

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

read

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

ROM

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

reset

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

resolution

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

RS-232C

Standard interface for serial devices. 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.

software

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

system board

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

T

TFT

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

V

VGA

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

volatile memory

Storage media that loses its data when system power is turned off. Standard memory and memory that you add to the Versa are volatile memory. See nonvolatile memory.

W

warm boot

Process of resetting the computer without turning off the power through keyboard input (pressing **Ctrl**, **Alt**, and **Del** keys simultaneously) or the reset button. The system returns to an initial or arbitrarily selected condition.

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.

(For United States Use Only)

FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE STATEMENT

WARNING: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

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

Use a shielded and properly grounded I/O cable to ensure compliance of this unit to the specified limits of the rules.

FCC Modem Connection Requirements

The Federal Communications Commission (FCC) has established Rules that permit this device to be directly connected to the telephone network. Standardized jacks are used for these connections. This equipment should not be used on party lines or coin lines.

If the modem is malfunctioning, it may also be harming the telephone network. Disconnect the modem until the source of the problem is determined and repairs are made. If this is not done, the telephone company may temporarily disconnect service.

The telephone company may make changes in its technical operations and procedures. If such changes affect the compatibility or use of the modem, the telephone company is required to give adequate notice of the changes. You will be advised of your right to file a complaint with the FCC.
If the telephone company requires information on what equipment is connected to their lines, inform them of:

- The telephone number to which this unit is connected
- The ringer equivalence number (see the modem label)
- The USOC jack required.
- The FCC Registration number (see the modem label).

The ringer equivalence (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of the RENs of all devices on any one line should not exceed five (5). If too many devices are attached, they may not ring properly.

Modem Service Requirements

If the modem malfunctions, all repairs should be performed by NEC Technologies or an NEC Authorized Service Center. It is the responsibility of users requiring service to report the need for service to NEC Technologies or to an NEC Authorized Service Center.

Phone: 1-800-632-4525

(For Canadian Use Only)

This equipment is a Class B digital apparatus which complies with the Radio Interference Regulations, C.R.C., c.1374.

Cet appareil numérique de la classe B est conforme àu Règlement sur le brouillage radioélectrique, C.R.C., ch.1374.

Canadian Department of Communications Modem Connection Requirements

NOTE: The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

WARNING: Users should not attempt to make such connections themselves, but should contact the appropriate inspection authority or electrician.

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers of all the devices does not exceed 100.

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. See *the Versa P Battery Guide* for battery replacement information.

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

ATTENTION: Il y a danger d'explosion s'il y a replacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type recommandé par le constructeur. Mettre au rébut les batteries usagées conformément aux instructions du fabricant.

BATTERY DISPOSAL

Your bridge battery (not your main battery) is made of nickel-cadium (Nicad). the Nicad bridge battery must be collected, recycled, or disposed of in an environmentally-approved manner.

The incineration, landfilling, or mixing of Nicad batteries with the municipal solid wasted stream is prohited by law in most areas.

Return Nicad batteries to a federal or state-approved recycler.

Your main battery, made of nickel metal-hybrided (NiMH), and your CMOS lithium battery are not recyclable.

This may be where you purchased the battery or a local seller of automotive batteries. In MINNESOTA, call 1-800-225-PRBA if you need further disposal information.

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