PROPRIETARY NOTICE AND LIABILITY DISCLAIMER

About this Guide

This *Versa™ S 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 S, this guide describes system features, options, and setup programs.

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

■ Chapter 1 gives basic information like opening and closing the LCD panel, attaching the external diskette drive, connecting the AC adapter, and turning on the system.

This chapter also describes the Versa S keyboard, buttons, controls, and other features.

■ Chapter 2 offers ideas for using your Versa S in the office, at meetings, and on the road.

■ Chapter 3 focuses on using options, like PCMCIA cards, external printers, monitors, and keyboards.

■ Chapter 4 introduces the Versa S System Configuration Utility (SCU). This software lets you change the system date and time, set a password, and define many other system options.

■ Chapter 5 describes how to use power management options to conserve energy and save battery power.

■ Chapter 6 gives you a checklist to follow if you have problems with the Versa S. 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.

■ Appendix A lists system specifications.

■ Appendix B describes Advanced Power Management settings and the Communications Assistant.

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

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 S system, including the following.

■ The *Versa S Series Quick Setup* sheet shows you how to set up your system after you unpack it.

■ The *Versa S Battery User's 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 Versa S when you take it with you. The card is designed as quick portable reference to frequently used functions.

■ The *Versa Series PCMCIA Card User's Guide* contains information about optional PCMCIA cards, their installation, and use.

■ A Microsoft® Windows™ user's guide is a comprehensive source of information for using Windows.

■ The MS-DOS® user's guide provides information about the MS-DOS operating system that is pre-loaded on your Versa S.

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1 Getting to Know Your Versa S

The Versa™ S is a terrific tool that's so easy to take along that you'll soon find it indispensable. The Versa S gives you heavy-duty computing power in a lightweight package.

This versatile notebook computer weighs in under 5 pounds and puts everything you need from a computer at your fingertips. A SurePoint™ pointer replaces the traditional mouse and is part of the keyboard. Two easy-to-reach buttons replace the mouse selection buttons.

The keyboard itself is positioned towards the back of the system base. This ergonomic design gives you a palm rest for comfort. It also makes the Versa S easy to use when you're in a tight spot, like a narrow airplane seat.

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

WHAT'S IN THE BOX

Check the box when you unpack your Versa S. You should have the equipment and documents shown in the following figure. If anything is missing, contact your dealer.
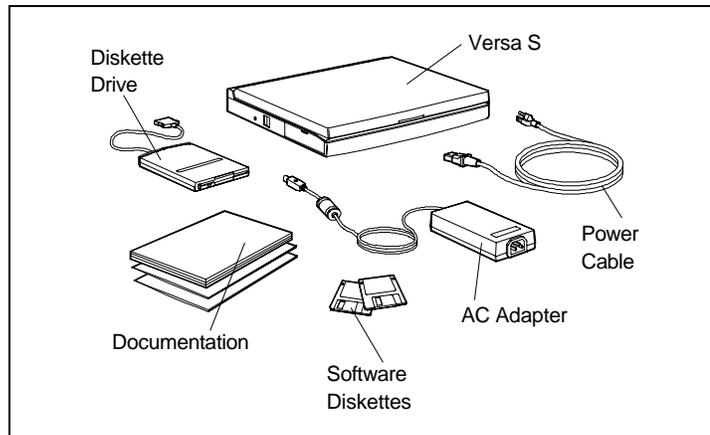
Carton contents

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

THE OUTSIDE OF THE UNIT

Versa S external features are shown and described next. You can see these 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 the port cover latch and swing the cover open.
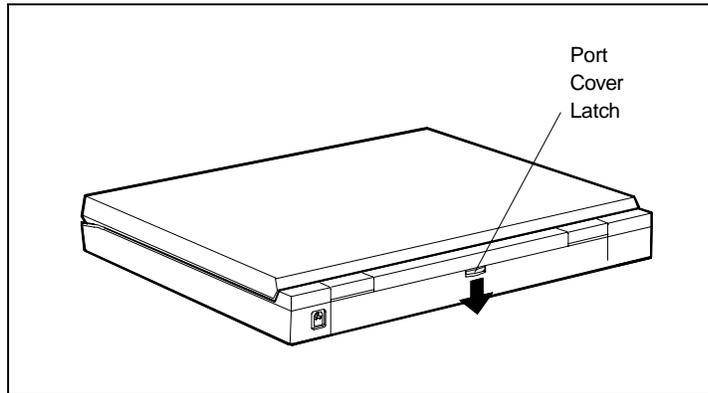
Opening the port cover

The following figure shows the ports on the back of the system.
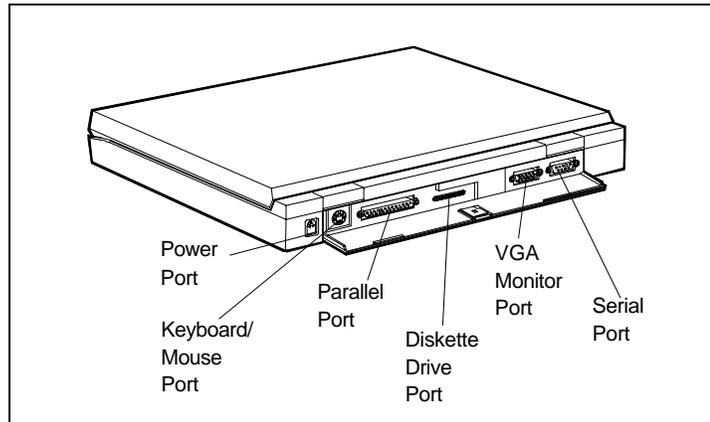
Ports on the back of the Versa S

■ Power port. Lets you plug in the AC adapter so you can run the Versa S on AC power.

■ Keyboard/Mouse port. Gives you the option of attaching a PS/2-style external keyboard or mouse to the system.

■ Parallel port. Provides a place to connect an external device, like a printer.

■ Diskette Drive port. Gives you a quick and easy connection for using the external diskette drive.

■ Monitor 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 S.

The following figure shows features on the side and front of the Versa S.
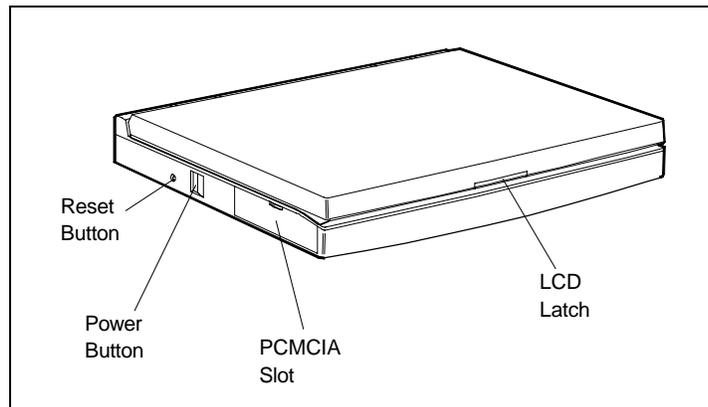
Side and front features

■ Reset button. Lets you restart your system without turning off power. (Only use this button if your system locks up and fails to respond to keystrokes.)

■ Power button. Lets you power on and power off your Versa S. Simply push in the button.

■ PCMCIA slots. Allows you to add optional PCMCIA cards to enhance your system. The protective cover keeps dust and foreign objects from getting into the unit.

■ LCD latch. Locks the LCD panel when the system is not in use. Also releases the LCD panel to let you use the system.

You can see the features shown in the following figure when you turn the system upside down.
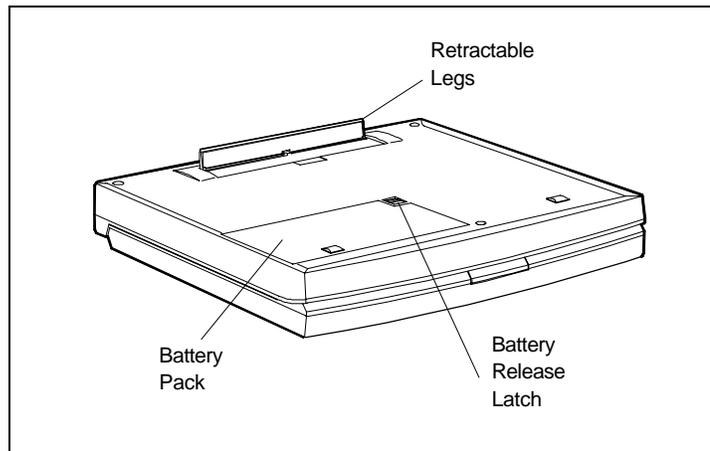
Bottom view

■ Retractable legs — let you adjust the angle at which the system sits on a flat surface.

■ Battery Release latch — secures and releases the battery pack.

■ Battery pack — provides battery power for running the Versa S.

AC Adapter Features

AC adapter features are shown in the following figure.
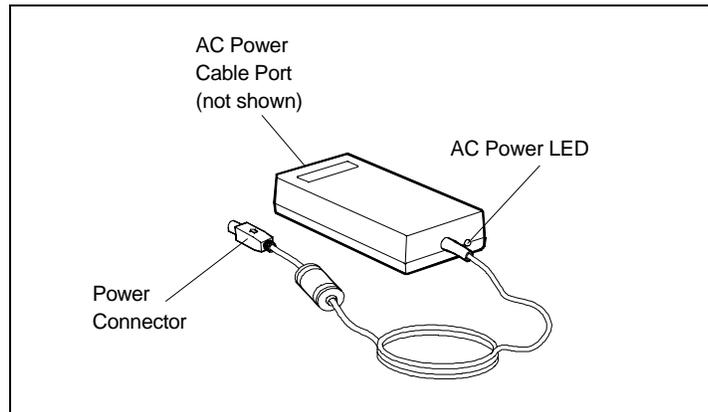
AC adapter features

■ The AC Power LED lights when you connect the AC power cable to the adapter and a wall outlet. The LED lights even if the adapter is not attached to the Versa S.

■ The Power Connector plugs into the power port on the Versa S.

■ The AC power cable port (not shown) lets you attach the AC power cable to the adapter.

Diskette Drive Features

Diskette drive features are shown in the following figure.
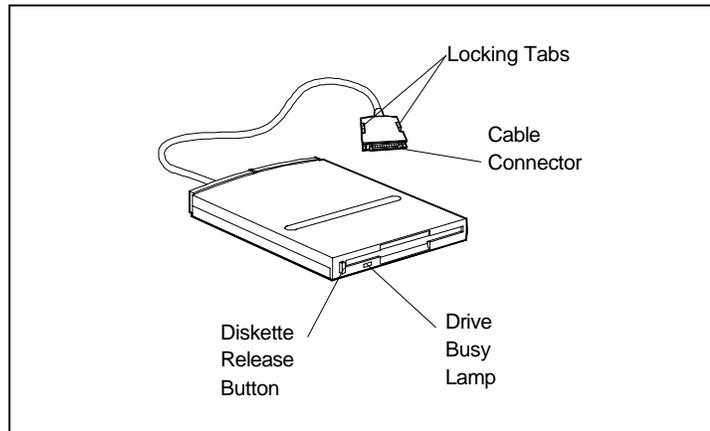
Diskette drive features

- The diskette drive cable connector plugs into a special port on the back of the system. It has two locking tabs that secure the connection.

- The diskette drive Disk Release button allows you to remove a diskette from the drive.

- The drive busy lamps lights when the diskette drive is accessed.

VERSA S SETUP

Follow the simple instructions in the next few sections to set up your Versa S system.

Opening the LCD Panel

Open the LCD panel on the Versa S notebook as follows.

1. Locate the LCD latch on the front of the Versa S.

2. Slide the latch up and raise the LCD panel.

3. Adjust the panel to a comfortable viewing angle of up to 180 degrees.

LCD
Latch
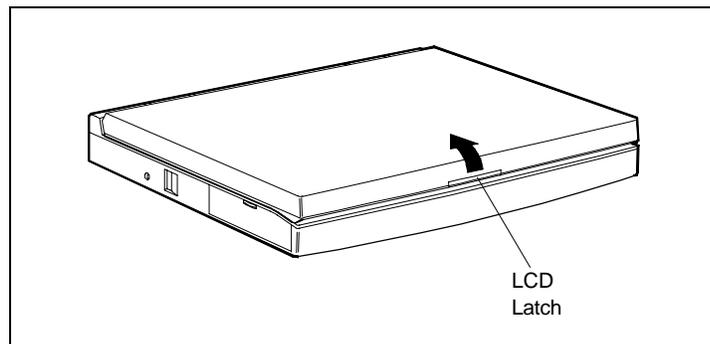
Opening the LCD panel

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

To use AC power, attach the AC adapter to your computer as follows.

1. Plug the AC adapter cable connector into the power port on the back of the system.

2. Connect one end of the power cable to the AC adapter.

3. Connect the other end to a properly grounded wall outlet.

   The LED on the AC adapter lights once the AC power cable is connected to the adapter and a wall outlet.
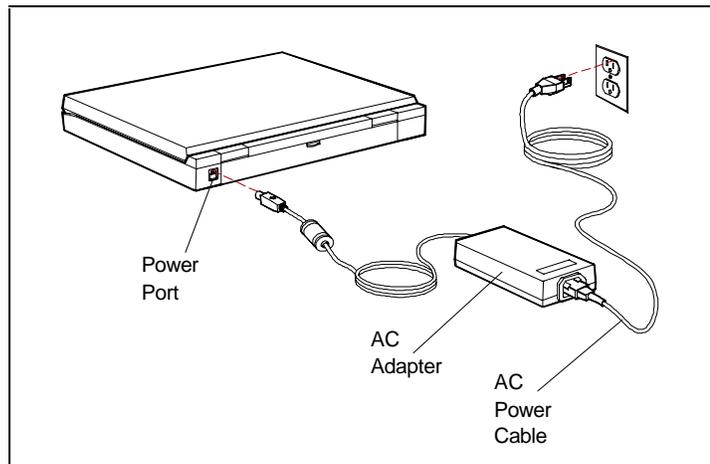
Attaching the AC adapter

NOTE: When the AC adapter is attached to the Versa S and a wall outlet, the Charge LED on the system lights. The LED remains lit until you press the power button and power on the system. To find out what the Charge LED means, see "LED Status Bar" later in this chapter.

Attaching the Diskette Drive

You can use your Versa S notebook with or without its external diskette drive attached. Attach the diskette drive as follows.

1. Turn off Versa S system power.

> **NOTE:** Some programs do not recognize the diskette drive unless the drive is attached when you start up the system.

2. Open the port cover on the back of the system and locate the diskette drive port.

3. Fit the drive cable connector over the port and press them together. They only fit one way.

Once the connector clicks into place, the attachment is secure.
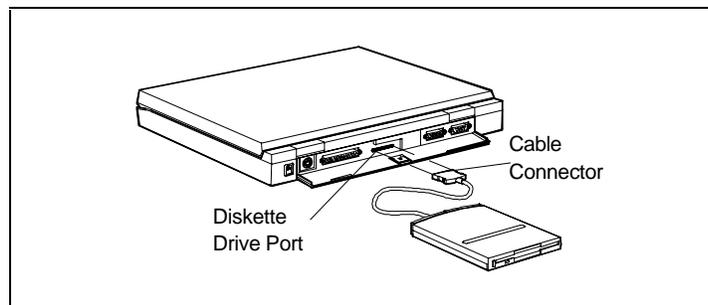
Connecting the diskette drive

4. Put the diskette drive in a convenient location next to the Versa S.

Disconnecting the Diskette Drive

Disconnect the diskette drive from the Versa S as follows.

1. Squeeze and hold the two locking tabs on the drive cable connector.

2. Pull the connector away from the system.
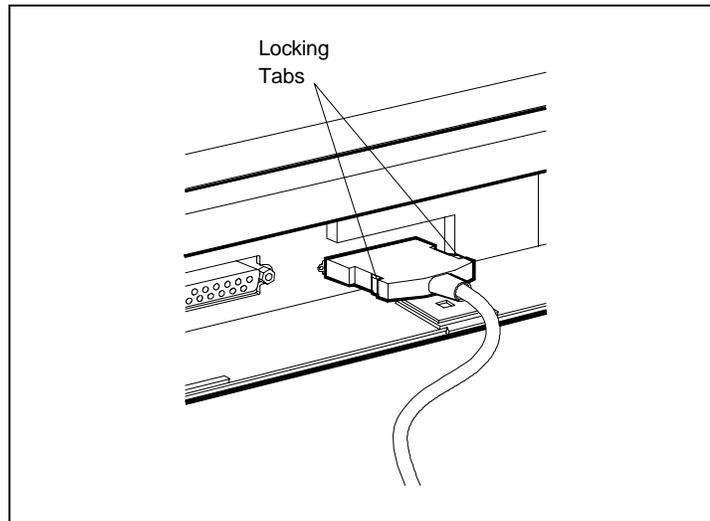
Locking tabs

Replacing a Battery Pack

Follow these instructions to replace a battery pack installed in your notebook computer.

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

2. Turn the Versa S upside down.

3. Locate the battery release latch on the bottom of the system and slide it back.
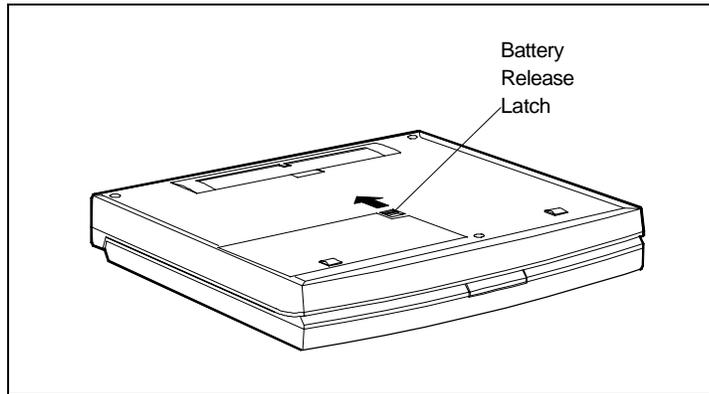
Locating the release latch

4. Lift up and remove the battery pack.

5. Locate the tabs on the end of the new battery pack. Fit the tabs into the grooves inside the compartment.
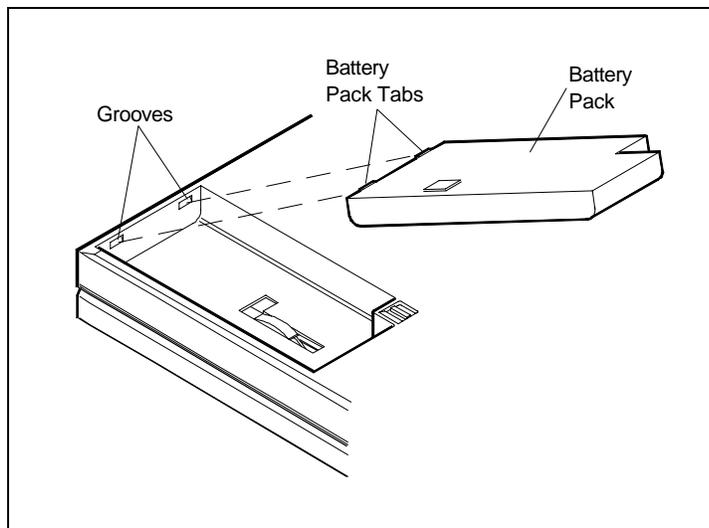
Locating the tabs and grooves

6. Lower the battery pack into the compartment. Press it down until the battery pack latch clicks and locks the battery in place.
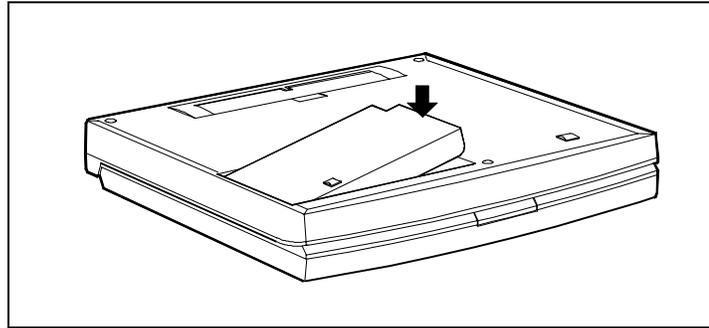
Inserting the battery pack

7. Turn the Versa S right side up and reconnect any external options you disconnected.

Turning On the Versa S

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 S. (See the *Versa S Series Battery Guide* for information about battery packs.)

If you just unpacked your Versa S, follow the instructions on the quick setup sheet. It describes how to remove the insulation sheet from the battery pack compartment.

■ For AC power, make sure the AC adapter is plugged into the Versa S and a wall outlet. (See "Connecting the AC Adapter" for information about attaching the AC adapter.)

2. Locate and press the power button.
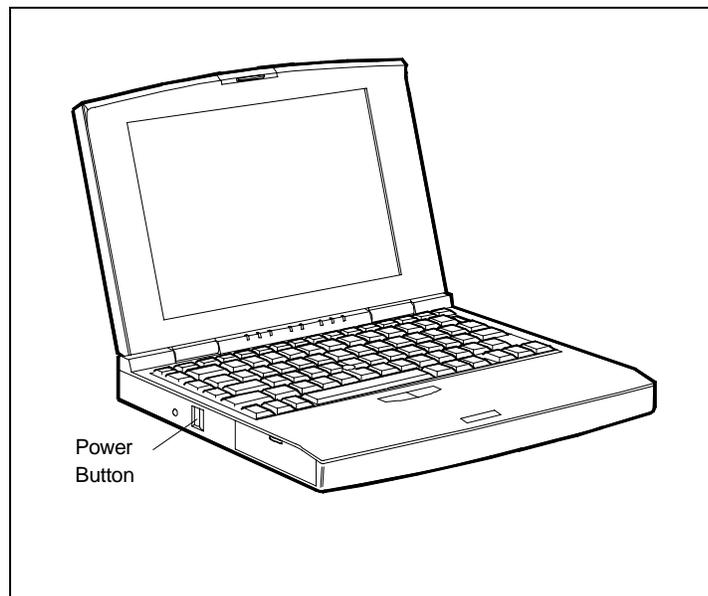
Power
Button

Power button

FEATURES

Versa S features include:

■ LCD Panel

■ Keyboard

■ LED Status Bar

■ Controls

■ Online Help.

These features are described next.

LCD Panel

Your Versa S comes with one of three different LCD panels. Each panel has its own unique features.

■ The active-matrix thin-film transistor (TFT) color LCD has a resolution of 640 x480 dots per inch, is backlit and supports up to 256 colors. The TFT LCD provides a 9.5-inch display area, brilliant resolution and an impressive array of colors.

■ The Dualscan Super-Twisted Nematic (DSTN) color LCD uses cold cathode fluorescent tube (CCFT), is backlit and supports up to 256 colors. The STN LCD provides a 9.5-inch display, exceptional clarity and color for the most demanding graphics.

■ The monochrome LCD has a 640 x 480 resolution and supports 64 shades of gray. The 9.4-inch screen uses the Dualscan Super-Twisted Nematic (DSTN) backlit tech-nology for crisp clear images.

> **NOTE:** NEC LCD panels meet exacting manufac-turing standards. Of the 921,600 elements involved in creating the display on your screen, NEC accepts no screen with more than 6 non-working elements. Although this may mean a pixel or two is non-functional, its impact on your display should prove minimal.

Keyboard

The Versa S keyboard is equipped with many features of its own. They include the following.

■ Function keys

■ Typewriter keys

■ SurePoint and Selection buttons

■ Embedded keypad
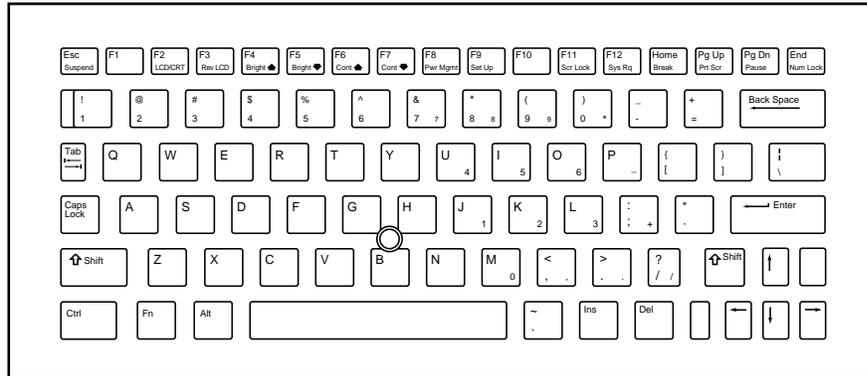
■ Control keys.

Versa S keyboard

Function Keys

The Versa S gives you twelve function keys, **F1** through **F12**. When used in conjunction with **Fn**, some of the function keys act as system control keys. (These are described under "Control Keys" later in this section.) Otherwise, function key performance depends on the application that you are using. See your software documentation for information about what the keys will do.

Typewriter Keys

The Versa S typewriter keys (also called alphanumeric keys) are used almost exactly as on a typewriter. Keys that behave differently do so when combined with control keys or functions keys. These keys are noted in the descriptions that follow.

SurePoint and Selection Buttons

A pointing device that mimics the functions of a mouse is located between the G, H, and B keys. It feels and looks something like a pencil eraser. To move the cursor on your screen in a specific direction, press against the SurePoint in that direction. The cursor moves where you direct it. It may take a little practice, but you'll soon find SurePoint easy to use.

The two selection buttons below the keyboard act like a left and right mouse button on a two-button mouse. Once you select an option with SurePoint, like an application to run, press the left mouse button. You can single, double, or triple click, depending on the application that is running.
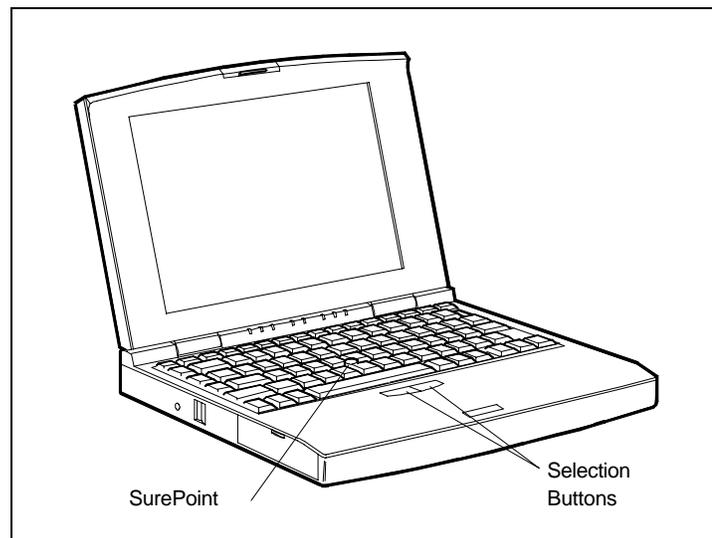
SurePoint and selection buttons

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. It indicates where the next text typed is inserted.

Embedded Keypad

Pressing **Fn** and **Num Lock** activates the embedded keypad and lights the Num Lock LED. The keypad lets you type numbers and mathematical operands (+, –) as you would on a calculator. The keypad is ideal for entering long lists of numbers.

When you press **Fn**-**Num Lock** again, the keys revert to their normal function as typewriter keys.
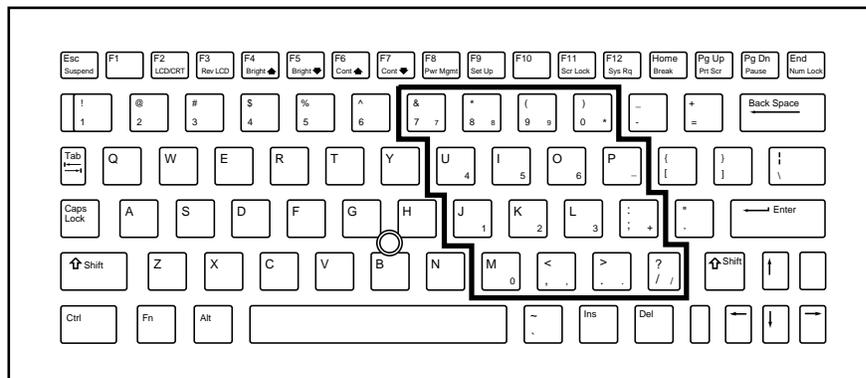
Embedded keypad

Control Keys

The Versa S keyboard provides a number of control keys, including:

■ **Ctrl**

■ **Fn**

■ **Alt**

■ **Ins**

■ **Del**

■ **Esc**

■ **Home**

■ **Pg Up**

■ **Pg Dn**

■ **End**

■ **Caps Lock**

■ **Shift**.

Ctrl, **Alt**, and **Fn** are used to change the functions of other keys. To use these control keys, press and hold the control key while pressing another key. For example, "press **Ctrl-D**" means to hold down the **Ctrl** key and type the letter **D**. How the key combination works depends on the applications you are running.

■ The **Ctrl-Alt-S** key combination is preprogrammed on your Versa S system.

Ctrl-Alt-S starts the System Configuration Utility setup program. Pressing this preprogrammed combination key lets you go directly to setup menus. See Chapter 4 for details about setup.

CAUTION: Save your data before calling the SCU program. Otherwise, you may loose your work. Exiting the setup program reboots your system.

■ Using **Fn** with some pre-defined keys provides various system controls, including the following:

— **Fn-Esc** (the Suspend button) puts the system in Suspend mode. This initiates power-saving features to conserve energy and battery power. See Chapter 5 for details about power management.

— **Fn-Home** (the Break key) stops whatever command is currently executing.

— **Fn-Pg Up** (the Print Screen key) sends the current screen to the assigned printer.

— **Fn-Pg Dn** (the Pause key) temporarily stops command execution.

— **Fn-End** (the Num Lock key) puts the system in Num Lock mode and activates the embedded keypad. (See "Embedded Keypad" for details.)

■ Function and **Fn** key combinations provide the following system controls:

— **Fn-F2** — toggles between three settings: LCD, CRT, and Both.

— **Fn-F3** — (Versa S/33M only). Toggles between normal and reverse text on the LCD screen. For example, if your screen shows white text on a black background, it changes to black text on white.

— **Fn-F4** — increases the display brightness.

— **Fn-F5** — decreases the display brightness.

NOTE: The degree of brightness affects the length of battery operation. Brighter adjustments use more battery power. For longer battery power, decrease the brightness.

— **Fn-F6** — (Versa S/33M, Versa S/33D only) increases the display contrast.

— **Fn-F7** — (Versa S/33M, Versa S/33D only) decreases the display contrast.

— **Fn-F8** — accesses Power Management setup.

— **Fn-F9** — accesses the SCU setup.

— **Fn-F11** — toggles Scroll Lock on and off. 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.

— **Fn-F12 —** acts as an interrupt key.

■ **Ins** lets you toggle between inserting text at the current cursor location or typing over the text. This function depends on the application currently running. Usually, the screen provides some indication of the current mode.

LED Status Bar

Eight Light Emitting Diodes (LEDs) light or blink to show the status of Versa S system components. LEDs indicate the following.
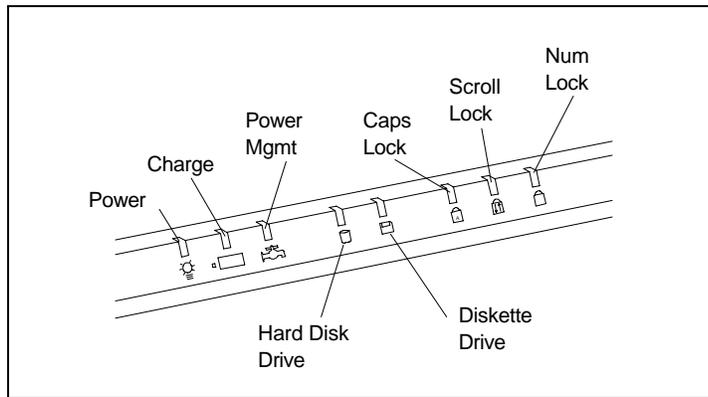
Status LEDs

- Power LED — lights yellow or green.

  — when yellow, the computer is running on battery power and battery power is sufficient.

  — when green, the computer is running on AC power.

  — when blinking yellow, the computer is running on battery power and battery power is low.

- Charge LED — lights orange.

  — when lit continuously, the battery is in the process of charging.

  — when blinking, the battery has malfunctioned.

  — when off, the installed battery is fully charged, or no battery is installed, and the AC adapter is not attached.

■ Power Management LED — lights green

  — when lit a steady green, Power Management features
    are enabled.

  — when off, Power Management features are disabled.

  — when blinking, the system is in Suspend mode.

■ Hard Disk Drive LED — lights green when the hard
  disk drive is being accessed. Avoid turning off the Versa
  S when this LED is lit.

■ Diskette Drive LED — lights green when a diskette in
  the diskette drive is being accessed.

> **CAUTION:** Avoid removing a diskette from the
> drive when the Diskette Drive LED is lit. Doing so
> can damage the diskette and the drive.

■ Caps Lock LED — lights green when the Caps Lock is
  in effect.

■ Scroll Lock LED — lights green when the Scroll Lock
  key is active.

■ Num Lock LED — lights green when Num Lock mode
  is in effect.

Controls

Versa S controls let you turn power on your computer,
power off your computer, or restart the system without
powering it off. These controls are described next.

■ The Power Button turns Versa S power on and off.

  Press in the button to turn power on; press the button
  again to turn power off. When power is on, the Power
  LED lights.

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

■ Reset button. Lets you restart your system without turning power off. Push in the Reset button using a pointed object like a straightened paper clip. Use this if your system locks up or fails to respond to keystrokes.

Online Help

The Versa S offers online help in case you have questions about the system. Access online help as follows.

1. From Windows Program Manager, click on the Versa Help icon.

2. Double click on the topic about which you have questions.

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

SYSTEM CARE

Because the Versa S is extremely portable, you are likely to move it around much more than a larger system. Be careful when moving the Versa S and its external components (the diskette drive and AC adapter).

Precautions

Adhere to the following precautions when using your Versa S and its diskette drive and AC adapter.

■ Avoid dropping or bumping the computer, the diskette drive, or the AC adapter.

■ Keep from stacking heavy objects on the computer, the diskette drive, or the AC adapter.

■ Avoid moving the Versa S during system operation, especially while the hard disk or diskette drive are being accessed.

■ When using the AC adapter, make sure the power source falls within the system's compatible range of 100–240 volts AC. Never use the AC adapter if the voltage falls outside of this range. (Watch for this when traveling to foreign countries.)

■ Turn computer power off before attaching or removing connectors.

■ Avoid using the computer, the diskette drive, or the AC adapter for extended periods in direct sunlight.

■ Keep from using the system in humid or dusty environments.

■ Avoid exposing the Versa S, diskette drive, or AC adapter to extreme changes in temperature and humidity.

■ When cleaning the system, use a soft cloth. Avoid wiping the display surface with abrasive material, including rough cloth.

■ Only use the AC adapter with the Versa S.

■ Do not try to open the AC adapter case. It is permanently sealed and cannot be repaired if damaged.

■ When attaching and detaching the AC adapter cable connector, hold the connector. Never pull or push the cable itself.

■ If you smell something burning, unplug the AC adapter, and turn off system power.

■ If the surface of the AC adapter becomes extremely hot, unplug the adapter and let it cool.

Storage Requirements

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

■ Maintain a storage temperature between –4°F and 140°F (–20°C and 60°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.

■ Diskette Drive — Use commercially available 3.5-inch wet-type cleaner disk to clean the diskette drive.

■ System Case — If the Versa S 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 S.

2 Using Your Versa S

The Versa S can make your daily life easier in a number of ways. Whether you're at home, in the office, or on the road, the Versa S will prove to be the best information tool you have.

This chapter describes ways to make the Versa S part of your day-to-day routine. You'll see how to use your notebook computer to accomplish those things you ordinarily do throughout your day:

■ Create

■ Organize

■ Communicate

■ Unwind and demonstrate.

IN THE OFFICE

Use your portable Versa S to save office space. Attach an external monitor, printer, and keyboard to the Versa S and free up the area used by a large desktop system.

The following scenarios suggest ways to use the Versa S in your office.

Organizing and Managing Your Work

Because your Versa S takes up less room than your desktop system, you'll have more space in which to organize your work. Add in/out bins, vertical file holders, or whatever space organization apparatus you need.

Time Management

The Versa S can help you manage and save time. Use the Windows calendar to track your appointment dates and times. Set the alarm to sound when it's time to go to meetings and appointments.

Because the Versa S can go wherever you go, there are many ways to redeem formerly idle time.

■ While waiting for meetings to start or during other lulls, use the Versa S to work on projects that you would normally leave in your office.

■ Check your schedule and plan tasks using the Windows calendar or your favorite personal information management (PIM) application.

■ Instead of writing meeting notes to transfer to the system later on, take notes directly on the Versa S during meetings. Then, they are done and done only once.

Contact Management

Use the Versa S to manage your business contacts. With a PIM application, you can maintain an online address book.

If you have a modem, you can use Windows or your own communications software to autodial your contacts, send them faxes and files from your Versa, and keep them posted on the latest developments. (See your Windows documentation. Communications features are found under Terminals settings.)

Data Management

The Versa S lets you manage your business databases, such as inventory, sales calls, production runs, and much more. Just load your data management software and let the Versa S help you track it all.

Scanner

If you have a scanner with a SCSI connector and a SCSI PCMCIA card, you can scan important information and store it in your system. Scan business cards, meeting itineraries, or anything you need to call up and review quickly.

Security

For security, you can choose a system password to protect your Versa S from unauthorized use. You can also enter a password to keep anyone from making unwanted changes to your system's start-up settings.

Creating Presentations

You are giving a client presentation at the end of the week. To tailor your presentation, you create new slides that address your client's specific needs. Some of your slides are stored in files on your system; others are stored on a compact disc (CD).

Creating Slides and Charts

Use your favorite software (like Excel or Harvard Graphics) to create and update slides and charts in striking colors. (Run the spell-checker to avoid embarrassing typos!) Put your visuals in order for presentation and save them to the hard disk.

Using a CD-ROM

Install an optional SCSI PCMCIA in your Versa S for a SCSI interface to access a CD-ROM reader. Connect the CD-ROM to the card, power on your Versa S, and access the CD files and slides you want.

A CD-ROM also lets you create dynamic multimedia presentations that include sound and animation. Interspersed with charts and slides, you can keep your clients dynamically involved in your presentation.

Using Audio

Include sound in your presentation by connecting external speakers. Plug the speakers into an optional PCMCIA audio card.

Communicating from Your Office

Versa S gives you a wide range of communications possibilities. You can send e-mail messages, faxes, and files, or page someone using the Versa S. All you need is the Versa S, an optional modem, and the right software.

Modem

A modem lets you connect your Versa S to a telephone line. A PCMCIA modem, which is lightweight and convenient, slides easily into either PCMCIA slot on the side of your Versa S. (See Chapter 3.) A number of different modems can work with your Versa S. See the *Versa Series PCMCIA Guide* for a list of PCMCIA modems.

You can also connect an external modem to the COM port on the back of the Versa S.

Pager

Using VersaPage™, you can page the people with whom you need immediate contact. All you need is your Versa S, a paging modem installed in the PCMCIA slot, and the software.

Data Transfer

Use your modem and network software to transfer files via a local area network (LAN) to all concerned parties. Send data out for review, comments, or just to inform those who need to know.

E-Mail

If you have an e-mail address, you can communicate with the world. Send memos, access online databases, set up meetings, and explore the world along the information highway first-hand.

Unwinding with the Versa S

You can learn a lot just by playing with the Versa S.

■ Run your online tutorials to find out more about the software you installed on the system.

■ Practice using the SurePoint and selection buttons with one hand during a game of online Solitaire.

■ Communicate with your friends using a modem and a cellular phone.

■ Relax with online games like Solitaire, Minesweeper, or Golf.

■ Browse through your favorite online service for the latest news, business report, or information about your special interest.

IN MEETINGS

Today's business practices often mean long hours in meetings. Take your Versa S with you and try using it in some of the following ways.

Creating Agendas and Outlines

Create an instant agenda and print it with a portable printer for other meeting attendees.

Brainstorm ideas with your colleagues or design team and capture it all online.

Create an outline of important points raised and action items to be pursued. Print and distribute the outline at the end of the meeting.

Organizing Teams and Goals

Use your Versa S to organize project teams, set up goals, and define milestones. Coordinate team schedules and meetings and establish standards to follow. Print the information and distribute it to team members and attendees.

Communicating the Essentials

Use your Versa S to make effective presentations with the following accessories.

VGA Connector

Use the VGA port to attach a large-screen monitor or an overhead projector on which to make your presentations. Use the Versa S to present your color slides, graphs, and multimedia presentations from files on the hard disk or CD.

Wireless LAN

Use the Versa S to access files from the network. Your optional PCMCIA wireless communications card gives you the same capabilities that you'd have with your desktop PC.

Giving Demos

Let the Versa S introduce others to your software through online demonstrations. Then, let them play with the software on the Versa to get a real feel for it.

ON THE ROAD

Your Versa S is a natural traveling companion. Using a battery, you can use the computer anywhere you go. Plus, you can perform all the tasks you normally do at your office while on the road.

Creating Your Own Itinerary

Plan your presentations, organize your thoughts, keep track of your appointments on the way to business meetings.

As you travel, gather and record data you need — like sales call information, on-site observations, concerns, and new contacts. Speed data gathering even more through the use of bar code readers, digitized cameras, or scanners.

With the appropriate software, you can even make on-site sketches of layouts, floor plans, and traffic patterns.

On your way home, use the Versa S to write up your expense report.

Organizing on Your Trip

Organize your itinerary and incorporate last-minute changes as needed. Check flight plans using online services to ensure that your flights are on time.

Plan your meeting agenda on route.

Take notes on your way to the airport or while waiting for your flight.

Gather information on-site.

Communicating with Home

Use remote messaging on the Versa S to stay in touch with the home office.

Modem

Use a modem and fax software to fax your home office reports and give day-to-day trip updates.

Record point-of-sale transactions and transfer the data immediately back to your office through a telephone link.

Send e-mail to your staff.

Check flight information using online services.

Call the office using VersaConnect and your cellular phone.

Pagers

With VersaPage, a PCMCIA pager option, and your Versa S, you can send pages to reach fellow travelers or the home office. If you have a page receiver, you can also receive paging messages.

Global Positioning

With a global positioning system (GPS) PCMCIA device, you can identify exact locations. This comes in handy when managing a fleet of cars or trucks and needing to track the locations of drivers.

Unwinding on the Road

Wile away long travel hours or simply unwind with your Versa S.

■ Play your favorite online games, like Solitaire, Tetras, Chess.

■ Learn the finer points of your loaded software by doing the online tutorials.

■ Study a new language with instructional software.

■ Write a few letters.

■ Keep a daily log. (Be sure to note the good restaurants, in case you return to the area.)

BEFORE YOU GO

Consider the following when taking your Versa S on the road.

■ Make sure you have all the cables and accessories you need before leaving on your trip. See the checklist at the end of this chapter for suggestions.

■ If you run your system on battery power, maximize battery life by using power-saving features whenever possible.

■ Fully charge your battery pack before you leave.

■ Take the AC adapter along in case you have an electrical outlet handy. This saves battery power for when you really need it.

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

Checking Power Connections

With the right accessories, you can run your Versa S almost anywhere. Your system self-adjusts to various power sources. The United States, Canada, and most of Central and South America use 100-volt alternating current (AC). Most other countries use 220-volt AC. The Versa S adapts to voltages ranging from 100 to 260 volts.

Some countries have areas that use direct current (DC) as their main power source. A DC-to-AC converter is needed in those areas. This includes parts of Argentina, Brazil, India, Madeira, and South Africa.

To use your system overseas, you need an adapter plug and transformer. Five different plugs are available worldwide. You can buy these at electronics supply stores.

> **TIP:** When using a modem outside the U.S. and Canada, you may need an international telephone adapter (available at electronics supply stores).

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

Taking What You Need

The following lists can help you prepare for your trip with the Versa S. Look over the lists and use the suggestions that fit your situation.

When traveling with your Versa S system, take the following when appropriate.

■ Your external diskette drive and any diskettes that you might need.

■ A bootable diskette, in case your system fails to start for some reason. Bring along any application files that you might need on diskette.

■ Carry an optional battery pack, fully charged, for additional battery power.

■ Single-outlet surge protector.

■ 3-prong-to-2-prong or other appropriate AC plug adapter.

■ External VGA video cable for presentations and use with a desktop monitor.

■ An AC extension cord.

■ A long telephone extension cord and male-to-male coupler (for international travel).

■ Copy of proofs of purchase for your computer and other equipment (especially for international travel).

■ Customer support phone numbers for your software.

■ Office supplies (scissors, tape, stamps, paper clips).

■ The *Versa Series Quick Reference* card.

What to Do

Doing the following before you leave home can ease your travel experience.

■ Back up your Versa's hard disk.

■ Make sure you have a fully charged battery pack installed so you can quickly boot up for the airport security check.

■ Fully charge all your batteries.

■ Tape your business card to your Versa, AC adapter, batteries, and diskette drive.

3 Adding Options

You can add options and connect a number of external devices to your Versa S. Some upgrades, like adding memory or a larger hard disk drive, must be done by an authorized NEC dealer. Devices that you can connect are described in this chapter, including the following.

■ PCMCIA cards

■ External devices

— Parallel devices, like parallel printers

— Serial devices, like modems or serial printers

— Keyboard

— Mouse

— Monitor.

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

PCMCIA CARDS

Your Versa S has two PCMCIA card slots for attaching options like a fax/modem, Local Area Network (LAN) card, additional memory, and extra hard disk storage.

The Versa S 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.

See the *Versa Series PCMCIA User's Guide* for information about installing cards, card types, and their uses.

The PCMCIA slots are located on the left side of your Versa S. The slots are stacked one above the other and are accessed through the same opening. Slot 0 is the top slot; slot 1 is the bottom slot.
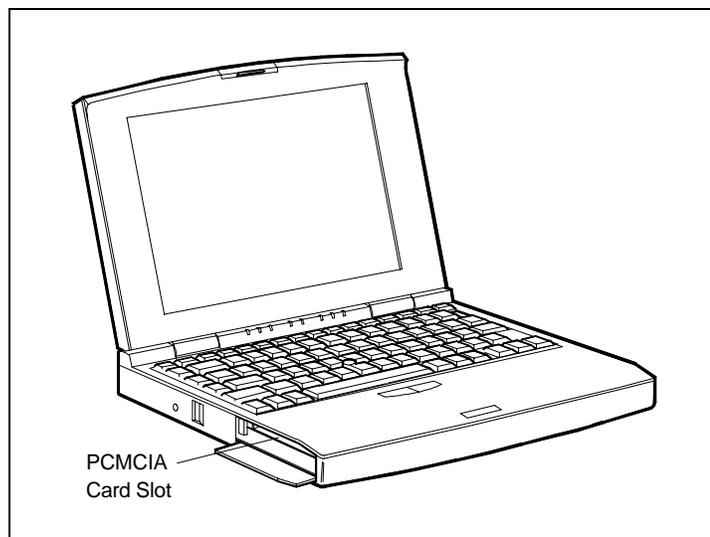
PCMCIA
Card Slot

PCMCIA card slots

Modem Card Connection

To connect a modem card to a telephone system, make sure you have a telephone cable with modular (RJ11) connectors on both ends. You can buy these cables and other accessories wherever telephones are sold.

> **NOTE:** PCMCIA modem connector adapters vary. See the guide that came with your modem card for specific setup information.

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

1. Install the PCMCIA modem card in one of the slots in your Versa S system. (See the PCMCIA user's guide for details about installation.)

PCMCIA
Card

PCMCIA
Card Slot
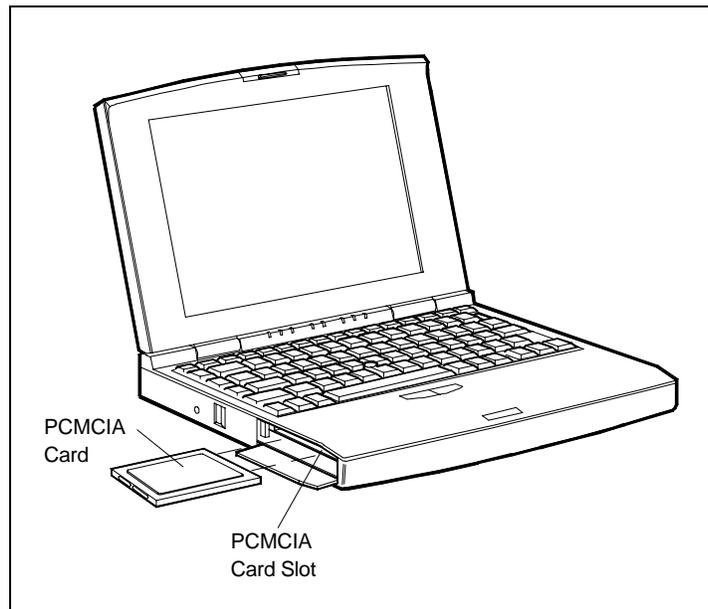
Installing the modem card

2. Connect the modem adapter to the modem card.
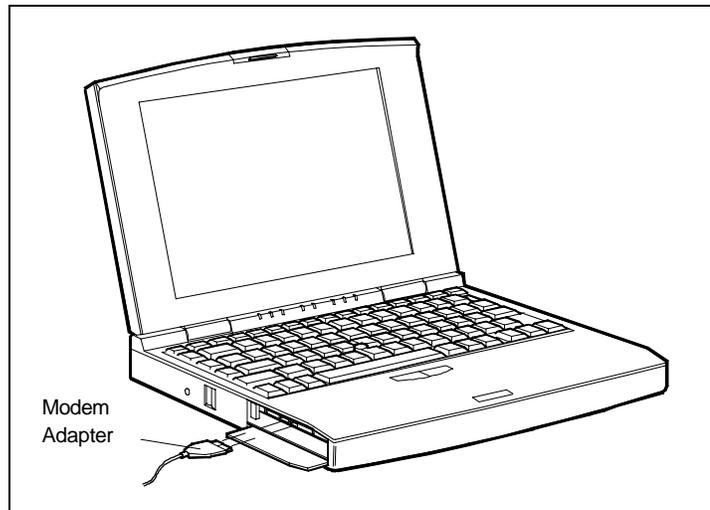
Modem
Adapter

Connecting the adapter

3. Plug one of the modular telephone cable connectors into the jack on the modem adapter.

4. Proceed as follows.

■ To connect your modem directly to a wall outlet, plug the other end of the phone cable into a telephone jack in the wall. (You may have to unplug a telephone to do so.)

Attaching the modem is complete.

■ To connect your modem and a telephone to the same wall jack, go to step 5. (To connect both your modem and a telephone, you need a dual-RJ11 connector.)
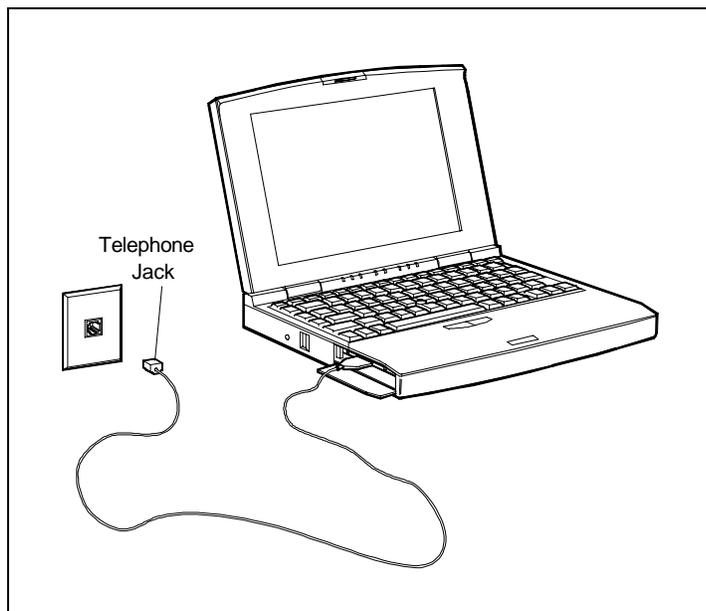
Telephone line connection

5. Plug the other end of the phone cable into the single jack on a dual-RJ11 connector.

6. Unplug the telephone cable from the wall. Plug the cable into one of the remaining jacks on the dual-RJ11 connector.

7. Connect another telephone cable to the second jack on the dual-RJ11 connector and to the wall jack.
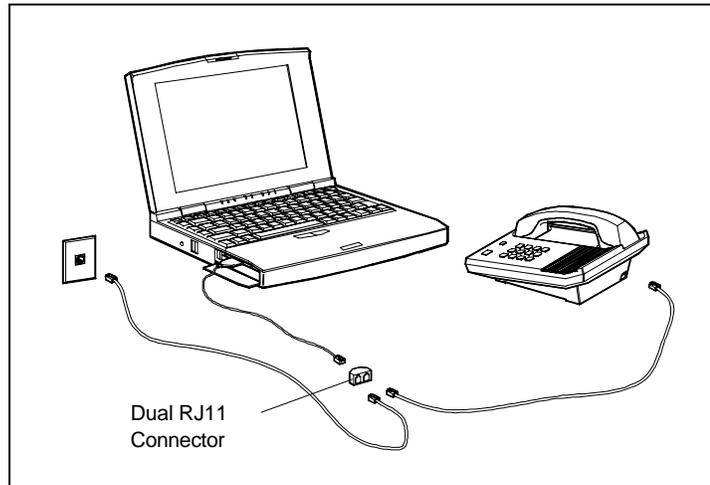
Dual telephone and modem connection

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

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

EXTERNAL DEVICES

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

Before connecting an external device, set it up using the instructions that come with the device.

Parallel Devices

To install a parallel device, like a parallel printer, you need a cable with a 25-pin male connector for the system. For most parallel printers, the other end of the cable should have a 36-pin Centronics®-compatible connector.

Follow these steps to attach a parallel device to the Versa S.

1. Open the port cover on the back of the Versa S and locate the parallel port.

2. Fit the 25-pin cable connector and the parallel port together and attach them. (They fit only one way.)

3. Secure the connection with the screws provided.

4. Align and connect the 36-pin connector to the correct port on the device. Lock the connector clips.

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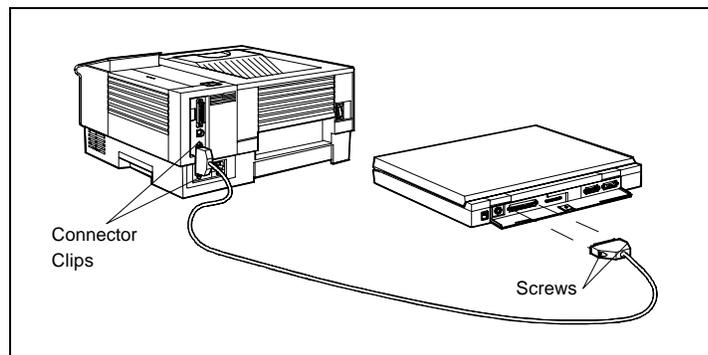
Connecting a parallel device

> **TIP:** Make sure your printer is online before trying to print. See the printer documentation for instructions.

Serial Devices

To install a serial device, like a printer or an external modem, you need a cable with a 9-pin female connector for the system.

Follow these steps to attach a serial device to your Versa S.

1. Check that power to both Versa S and the device is off.

2. Open the port cover on the back of the system and locate the serial port.

3. Fit the device cable connector over the serial port and attach them. Secure the connection with the screws provided.

4. Align and connect the 9-pin connector to the correct port on the serial device. Secure the connection with the screws provided.

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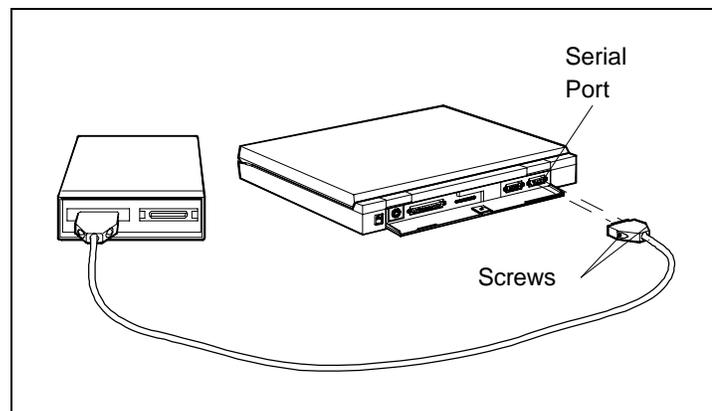
Attaching a serial device

> **TIP:** Make sure your external device is online before trying to use it. See the documentation that came with the device for instructions.

Keyboard

You can add a full-size external PS/2 style keyboard to your Versa S. While an external is connected, you can still use the system keyboard.

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

1. Turn off the Versa S. Do not leave it in Suspend or Standby mode.

> **CAUTION:** Make sure the Versa power is off whenever you attach or remove the keyboard. Failure to do so can damage the keyboard.

2. Open the cover on the back of the Versa S and locate the external keyboard port.

3. Align the keyboard cable connector with the port and plug it into the port.

When you turn on your system, it automatically recognizes the external keyboard.
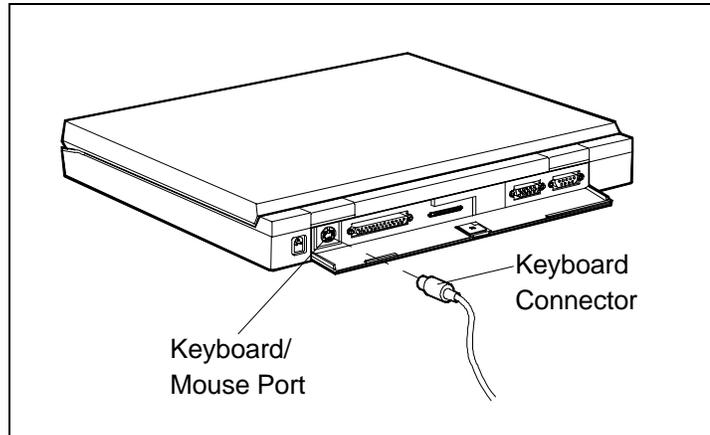
Attaching the external keyboard

NOTE: You cannot use the **Fn-Esc** or **Fn-F9** key combination from the external keyboard.

Mouse

You can connect an external mouse to your Versa S. The software needed to recognize the external mouse in Windows and DOS programs is already installed in your system.

Connect an external mouse to your Versa S as follows:

1. Turn off the Versa S. Do not leave it in Suspend or Standby mode.

> **NOTE:** Make sure the Versa power is off whenever you attach or remove the mouse. Otherwise, the system fails to recognize the mouse.

2. Open the port cover on the back of the Versa S and locate the external keyboard connector.

3. Align the mouse cable connector with the port and plug in the connector.
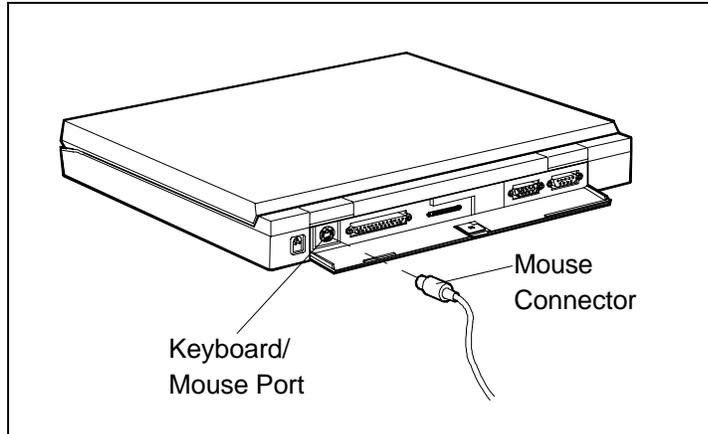
Connecting the mouse

4. Turn on your system and start the SCU.

5. Under the Standard menu, locate the Stick Pointer option and disable it. This disables SurePoint and lets you use the external mouse.

> **NOTE:** You cannot use SurePoint or its selection buttons when you attach an external mouse.

6. Save your changes when you exit SCU. The system automatically recognizes the external mouse.

Monitor

You can attach an external VGA or multi-frequency monitor to your Versa S.

Before attaching the external monitor, change the VGA setting through the SCU or through the **Fn-F2** function key. To use an external monitor, the VGA option should be either CRT or Both.

If your setting is LCD, the Versa S does not recognize or activate the external monitor. See Chapter 4 for details about using this SCU setup program.

> **NOTE:** You can switch display modes using **Fn-F2** to toggle between LCD, CRT, and Both.

To attach an external monitor you need a signal cable (usually provided with the monitor). One end of the cable must have a 15-pin male connector for the system.

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

1. Turn off the power to both the external monitor and the Versa S. Do not leave the notebook in Suspend mode.

> **NOTE:** The Versa S does not recognize the newly connected monitor if you leave the system in Suspend mode.

2. Slide the cover latch down and open the port cover on the back of the Versa S.

3. Locate the external monitor port.
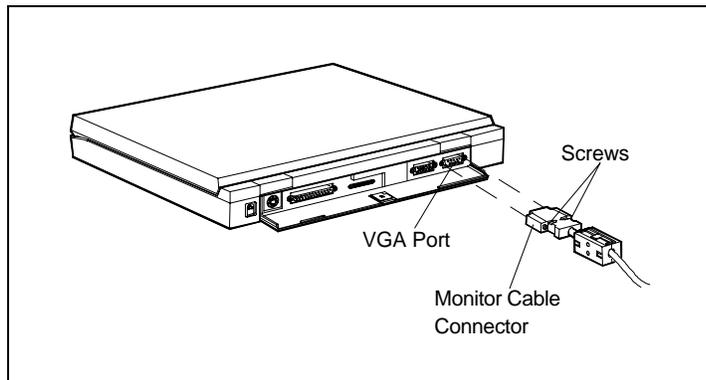
Locating the external monitor port

4. Align the 15-pin cable connector and the monitor port on the Versa S. Attach and secure the connection with the screws provided.

5. Plug the monitor power cable into a properly grounded wall outlet.

6. Turn on power to the monitor.

> **NOTE:** Whenever you use an external monitor with your Versa S, turn on the monitor first. Otherwise, the notebook does not recognize the external monitor type.

7. Turn on power to the Versa S.

4 Using the SCU

WHAT IS THE SCU?

Your computer has battery-backed memory (internal CMOS memory) where it stores information about your Versa S hardware and software even when power is off. Each time you start up the system, this information is read and used.

Whenever you change your hardware, the system changes how it sees itself. For example, if you install optional memory or upgrade your hard disk drive, a special program called the System Configuration Utility (SCU) tells the system about the change. In turn, the system lets you use the new option.

The System Configuration Utility also lets you check and modify how the information is set up in the computer memory. You can reset the date and time, change the CPU clock speed, set a password, and activate power management features.

This chapter describes how to use the SCU and the available menu and submenu options.

SCU ACCESS

Access the SCU from the DOS prompt. (Do not try to access the utility from Windows.) From the DOS prompt, press **Ctrl-Alt-S** to access the SCU. A screen similar to the following appears.

```
Standard   Preferences   VGA   Memory   PowerMgmt   Defaults   Exit
            SystemSoft SCU. Copyright 1983-1994 SystemSoft Corp.
              06/07/1994                          09:32:02

   Memory                             Peripherals
  Base Memory          640KB         COM Port A        COM1 (3F8h)
  Extended Memory     3072KB         Stick Pointer          Enable
  Shadow Memory        128KB         LPT Port Address   LPT1 (378h)
  Reserved Memory      256KB         Video Display      VGA Display
  Total Memory        4096KB         Boot Speed         Fast Clock
                                     Coprocessor              none

   Drives
  Diskette Drive A      1.44MB

                    Type   Cyls   Heads   SPT   LZONE   Precomp   Size
  Hard Disk         Auto

                 ESC to exit - F10 to save changes
```

SCU Main menu

The Main Menu is made up of the following areas:

■ A menu bar at the top of the screen lists the menus that you can select.

■ The next block shows information about the SCU software, the current date, and time.

■ The next three blocks show system settings.

 — The Memory block displays system memory information.

 — The Peripherals block shows settings for system peripherals.

 — The Drives block specifies the diskette drive and hard disk drive installed.

■ The bottom line of the screen shows what key functions are available at that screen level and what they do.

SCU USE

To make selections in the SCU menus and submenus, use the keyboard keys as follows:

1. Use the right and left cursor arrows to highlight your menu selection.

2. Press **Enter**.

3. In the submenu, use the up and down cursor arrows to highlight a suboption.

4. Press **Enter**. Suboptions give three ways to make selections, depending on the option:

■ Some options require that you enter information, as when setting the date or time.

■ Some options toggle between being enabled and disabled, as when selecting a start-up setting for Num Lock through the SCU. Press **Enter** to enable a highlighted option. A check appears next to the enabled option.

Press **Enter** to disable an enabled option. The option is disabled and the check disappears.

■ Some options display a list from which to choose as when selecting a typematic rate. Use the up and down arrows to highlight your choice and press **Enter**.

To return to the previous menu, press **Esc**.

Press **F10** to save your SCU changes to backup battery memory at any time while using the SCU.

SCU MENU OPTIONS

Descriptions of menu bar selections and options follow.

Standard

Use the options under Standard to view and modify the following settings.

Date

Set the date using the format *MM*/*DD*/*YYYY*. The initial setup date is 01/01/1993.

Time

Set the time using the format *HH:MM:SS*. The initial setup time is 00:00:00.

COM Port A

Set the Serial Port I/O Address for COM Port A. The following port assignments are offered as choices.

■ COM1 (3F8h) — default setting

■ COM2 (2F8h)

■ COM3 (3E8h)

■ COM4 (2E8h)

■ Disable

Stick Pointer (SurePoint)

Enables or disables the SurePoint pointer. Choices include the following.

■ Enable — default setting

■ Disable

LPT Port Address

Set the parallel port I/O address. The following ports and addresses are given as choices.

■ LPT1 (378h) — default setting

■ LPT2 (278h)

■ LPT3 (3BCh)

■ Disable

Diskette Drive

Set the diskette drive type for Drive A. The following selections are available. We recommend that you leave this setting as it is.

■ 1.44 MB — default setting

■ 720 KB

■ None

Hard Disk

Set the hard disk drive type for Drive C. Unless you replace the disk drive installed in the Versa S, we recommend that you leave this drive setting alone. Otherwise, see the documentation that comes with the new drive for disk drive setting information.

■ Standard

■ Custom

■ Auto — default setting

■ None

Video Display

Set the video display type. Choose from the following selections if you are connecting an external monitor. Otherwise, leave this setting as is.

■ VGA — default setting

■ CGA80 Column

■ CGA40 Column

■ Monochrome

Preferences

Options available under the Preferences menu are described next.

Quick Boot

Enable/disable the system to bypass the memory test when the self-test is performed at start-up.

The default setting is disabled.

Num Lock

Enable/disable Num Lock mode at system start-up. (The embedded keypad produces the assigned numbers rather than letters when enabled.) Regardless of this setting, you can enable and disable Num Lock mode using the Num Lock key.

The default setting is disabled.

Boot Speed

Set the initial CPU speed. When running on battery power, the slower speed can extend operating time. Choose from the following selections.

■ Fast Clock — default setting

■ Slow Clock

Typematic Rate

Set the speed at which a character repeats when a key is pressed and held. Choose from the following character per second (cps) values.

- 30 cps
- 20 cps
- 15 cps
- 10 cps — default setting
- 6 cps
- 2 cps

Typematic Delay

Set the delay time between the key press and starting the repeat action. Select from the following millisecond (ms) values.

- 250 ms
- 500 ms — default setting
- 750 ms
- 1000 ms

Boot Password

Set a password to prevent unauthorized system use. When a boot password is set, the system requires that the password be entered correctly before completing the boot cycle.

Enter a password as follows.

1. Highlight "Boot Password" and press **Enter**.

2. When prompted, type a password that is from 4 to 8 characters long and press **Enter**.

   The system asks you to re-enter the password.

3. Re-enter the password and press **Enter**.

When the password entry is verified, Boot Password is enabled. No one will be able to use the system without first entering the password.

If you forget your password, call the NEC Technical Support number listed in Chapter 6.

SCU Password

Set a password to access the SCU. When this option is enabled, no one can change system setup parameters without first entering the correct password. This option keeps other users from setting a boot password that could deny you access to the Versa S.

Set an SCU password as follows.

1. Highlight "SCU Password" and press **Enter**.

2. When prompted, type a password that is from 4 to 8 characters long and press **Enter**.

The system asks you to re-enter the password.

3. Re-enter the password and press **Enter**.

When the password entry is verified, SCU Password is enabled. No one will be able to use the SCU without first entering the SCU password.

If you forget your password, call the NEC Technical Support number listed in Chapter 6.

First Boot

Select the first drive to which the BIOS goes for operating system software at system startup. When you start the system, it looks to the drive defined here, then to the other drives or card for operating system software.

Choose from the following selections.

- Drive A — default setting
- PCMCIA Card
- Drive C

VGA

VGA submenu option is described next.

Display Mode

Select and activate the display mode. To use an external monitor with your notebook, keep the default setting.

Choose from the following selections.

- Both
- LCD — default setting
- CRT

Memory

Memory setup features let you enable and disable cache memory as described next.

Cache Enable

Cache memory is an area in RAM that holds some program data normally kept on the hard disk. Enabling this feature can speed up some application processing. However, other programs may not work with this enabled. Cache is enabled at the factory.

To disable cache memory, highlight the option and press **Enter**.

Power Mgmt

This menu lets you set up power management options to conserve energy and save battery power. For details about Power Management features and settings, see Chapter 5.

Defaults

Defaults lets you reset system parameters to their initial factory settings, which are called default values.

To set system parameters back to the default settings, highlight "Defaults." Press **Enter**. At the prompt, type **y** to return the system to its initial factory settings. Otherwise, type **n**.

Defaults set for the Standard menu are as follows:

■ Date — 01/01/1993 (default setting; does not change back to this once you set the date)

■ Time — 00:00:00 (default setting; does not change after back to this once you set the time)

■ COM Port A — COM1 (3F8h)

■ Stick Pointer — Enable (enables SurePoint)

■ LPT Port Address — LPT1 (378h)

■ Diskette Drive — 1.44 MB; diskette drive

■ Hard Disk — Auto

■ Video Display — VGA display

Defaults set for the Preferences menu are as follows.

■ Quick Boot — Disabled; performs memory test at start-up

■ Num Lock — Disabled; off at start-up

■ Boot Speed — High clock

■ Typematic Rate — 10 cps

■ Typematic Delay — 500 ms

■ Boot Password — Disabled

■ SCU Password — Disabled

■ First Boot — Drive A

The default setting in the VGA submenu is as follows.

■ Display Mode — LCD

The default setting in the Memory submenu is as follows.

■ Cache Enable — Enabled.

Exit

Highlight **Exit** and press **Enter** to exit the SCU. The system reboots when you exit the SCU, even if you made no changes to the settings.

■ If you made no changes, the following system message appears:

> ESC to exit now
>
> Any other key to continue

Press **Esc** to exit the utility. Press any other key to continue making SCU selections.

■ If you changed any of the SCU settings, the following screen message appears.

> Do you wish to save your changes?
>
> ESC to exit – Enter to save and exit
>
> Any other key to continue

— If you press **Esc**, the system saves no changes, exits the SCU, and reboots the system.

— If you press **Enter**, the system writes the new setup values to backup battery memory, exits the SCU, and reboots the system.

— If you press any other key, the system returns you to the SCU Main menu.

5 Utilizing Power Management

WHAT IS POWER MANAGEMENT?

Power Management is a set of power-saving features built into the Versa S. These features conserve energy, maximize the life of your battery pack and LCD backlight, and protect against data loss due to low battery power.

Power Management lets you direct your Versa S to go into Suspend mode automatically after a preset time of system inactivity. You can also put the system in Suspend mode manually through the Suspend key (**Fn-Esc**).

Suspend mode slows system devices (like the hard disk and CPU clock) or stops them and shuts off the LCD panel backlight.

To get the system running again, press any key on the keyboard or the Suspend button (**Fn-Esc**). The effect of power-saving modes on system operation is minimal. Once you exit a power-saving mode, your system is up and running in a fraction of a second.

You can use Power Management when running the system on either battery power or AC power.

Versa S has two programs that work together to provide power management capabilities.

■ the Power Management utility, which is accessed through the SCU and lets you set timeouts as well as other settings.

■ Advanced Power Management (APM), which provides the system with timeout and device defaults for various power management modes.

Power Management Access

Access Power Management setup in one of the following methods. (Do not try to access this utility from Windows.)

■ Use the function key combination **Fn-F8** to go directly into Power Management setup.

■ From the DOS prompt, press **Ctrl-Alt-S** to access the SCU Main menu. From the menu bar, highlight "Power Mgmt" and press **Enter**.

A screen similar to the following appears.

```
 Controls      System     Device     Defaults     Exit
  ┌─── SystemSoft MAXIMIZER(TM) for 80486/86C268 Version 0.3(2305-02] ───┐
  │        Copyright 1990-1994 SystemSoft Corp. All Rights Reserved       │
  └──────────────────────────────────────────────────────────────────────┘
  ┌── Controls ─────────────────┐   ┌── System Options ─────────────┐
  │ Power Savings:       Always  │   │ CPU Idle:          Disable    │
  │ LCD Brightness Control:  Full│   │ Global Standby:    Disable    │
  │ Battery Low:      Warn Only  │   │ Auto Suspend:      Disable    │
  │ Alarm Resume:      Disable   │   │ Video Monitoring:  Disable    │
  │ Cover Switch:      Suspend   │   │                               │
  └──────────────────────────────┘   └───────────────────────────────┘
  ┌── Devices ─────────────────────────────────────────────────────────┐
  │ Video:         Always On                                            │
  │ Hard Disk:     Always On                                            │
  │                                                                     │
  └─────────────────────────────────────────────────────────────────────┘
              ESC to exit - F10 to save changes
```

Power Management menu

The Power Management menu is made up of the following areas:

■ A menu bar at the top of the screen lists the menus that you can select

■ The block that follows shows information about the utility.

■ The next three blocks show system power management settings.

— The Controls block displays settings specified under the Controls menu.

— The System Options block shows specifications made under the System Options menu.

— The Devices block specifies the state of Video and Hard Disk drive settings.

■ The bottom line of the screen displays the key functions available at that screen level and what they do.

Power Management Setup

The Power Management utility lets you set various power-saving features. Through it, you can

■ enable or disable Power Management.

■ set the system to go into Suspend mode automatically when you close the LCD panel.

■ specify time-outs for the CPU, LCD, and hard disk before going into Suspend mode.

■ stipulate many other power-saving features.

To make selections in Power Management setup, use the keyboard keys as follows:

1. Use the right and left cursor arrows to highlight your menu selection.

2. Press **Enter**.

3. In the submenu, use the up and down cursor arrows to highlight a suboption.

4. Press **Enter**. Suboptions give you two ways to make a selection:

   ■ Some options toggle between being enabled and disabled. Press **Enter** to enable a highlighted option. A check appears next to the enabled option.

   Press **Enter** to disable enabled options. The check disappears and the option is disabled.

   ■ Some options display a list from which to choose. Use the up and down arrows to highlight your choice and press **Enter**.

   To return to the previous menu, press **Esc**.

   Press **F10** to save your changes to backup battery memory at any time.

MENU OPTIONS

Descriptions of the menu bar selections and options follow.

Controls

Use the Controls menu to enable and disable the following features.

Power Savings

This option lets you specify when power saving features are enabled. Select from the following choices.

■ Always – enables Power Management when the system is running on either battery or AC power. (This is the initial setting that is set at the factory. Such settings are called defaults.)

■ Battery – enables Power Management when the system is running on battery power.

■ Disable – disables Power Management.

LCD Bright Ctrl

Specifies the initial brightness setting for the LCD panel. Select from the following choices.

■ Full — default setting when running on AC power

■ Standard — default setting when running on battery power

Battery Low

Enabling Battery Low lets you direct the system to enter Suspend mode when it detects low battery power. Highlight the option and press **Enter**. A check mark appears next to the option.

The default is "Warn Only." No check mark appears next to the Battery Low option when this setting is used.

Alarm Resume

When enabled, this option lets you direct the system to exit power-saving modes at a specified time. Once you enable the option, the system lets specify a time of day (for example, 08:30) to resume operation mode.

Highlight Alarm Resume and press **Enter.** Use the up and down arrows to enable and disable the option. Press **Enter**. A dialog box for entering the time appears. Use the up and down arrows to specify a time of day; up the right and left arrows to move between the hour and minute fields.

Cover Close Switch

This option directs the Versa S to do one of the following when the LCD panel is closed. It either turns off just the LCD panel or puts the entire system in Suspend mode.

■ LCD On/Off (turns off just the LCD panel)

■ Suspend — default setting (puts the Versa S into Suspend mode)

Beeper On/Off

This option enables and disables the system's internal speaker. The default setting is Enabled.

System

System options lets you specify how long the system is inactive before initiating power-saving features and going into Suspend mode.

System options let you make the following choices.

CPU Idle

Set how long the system is idle before slowing the rate of the CPU speed. Choices are as follows.

■   4 sec

■   8 sec

■ 16 sec

■ Disable — default setting

Global Standby

Specify how long the system is idle before entering Global Standby mode. Global Standby powers down the specified devices and slows the CPU clock speed.

- 1 Minute (Min)
- 2 Min
- 4 Min
- 6 Min
- 8 Min
- 12 Min
- 16 Min
- Disable — default setting

Auto Suspend

Define how long the system is inactive before automatically going into Suspend mode.

- 1 Min
- 5 Min
- 10 Min
- 20 Min
- 30 Min
- 40 Min
- 60 Min
- Disable — default setting

Video Monitoring

Specify whether Power Management monitors video activity as it relates to going into Suspend mode. Disabling video monitoring is useful for applications that have something happening on the screen constantly. For example, a changing clock on the screen can keep the system from initiating power saving features even though the system is not in use.

Enable and disable video monitoring by highlighting the option and pressing **Enter**. A check mark appears when the option is enabled. The default setting is disabled.

Device

The options under Device Setup specify how long a device is inactive before power-saving is activated.

Video

Specify how long the monitor waits for system inactivity before putting the LCD or CRT into Video Standby mode. The screen goes blank in Video Standby. This mode is most effective in LCD mode, because it turns off the panel backlight.

- ■ 1 Min
- ■ 2 Min
- ■ 4 Min
- ■ 6 Min
- ■ 8 Min
- ■ 12 Min
- ■ 16 Min
- ■ Always On — default setting

Hard Disk

Set how long the hard disk waits for access before going into Hard Disk Standby mode. Hard Disk Standby mode slows the hard disk drive speed.

- 1 Min
- 2 Min
- 4 Min
- 6 Min
- 8 Min
- 12 Min
- 16 Min
- Always On — default setting

Defaults

Highlight Defaults and press **Enter** to reset Power Management options to their default settings. At the prompt, type **y** to select the default parameters. Otherwise, type **n**.

Exit

Highlight Exit to exit the Power Management Utility screen.

- Press **Enter**. If you made changes, the system displays the following message.

  Do you wish to save your changes?

  ESC to exit – ENTER to save and exit

  Any other key to continue

- If you made no changes, the system displays the following message.

  ESC to exit now

  Any other key to continue.

Follow the instructions that are appropriate for your situation.

APM PROGRAM

The Advanced Power Management (APM) program provides four power management modes and some hardware settings.

■ APM Idle saves system power through the use of an Idle Detector. The Idle Detector monitors system hardware and puts the system into Suspend mode when the system is idle. (This mode does not work with some software packages.)

■ CPU Standby slows the CPU clock speed after a specified time of system inactivity.

■ Global Standby puts specified devices in Standby mode.

■ Auto Standby automatically puts the system in Suspend mode after a specified time-out. System components are either slowed or deactivated. (These include memory, the VGA controller, video memory and more.)

APM works together with the settings that you specify through the Power Management utility. You can disable the power management modes and change the timeout settings for each mode.

If you do not enable Power Management settings through the utility, the default APM settings remain enabled.

See Appendix B for default settings specified in APM for specific devices. Appendix B also details the status of devices in power management modes.

EXTENDING BATTERY LIFE

Use the following guidelines to reduce power consumption and maximize battery life. These guidelines work with AC power as well as battery power. (Some of these features must be set up through the Power Management utility. See the preceding sections in this chapter for details.)

■ Turn off the system when you are done using it.

■ Adjust the LCD brightness and contrast to the lowest settings that are comfortable for viewing.

■ Use the Power Management setup to shorten the time-outs set for powering down the system.

■ If you must leave your computer for a short time but plan to return soon, put the system in Suspend mode. Do so as follows:

— Press the Suspend button (**Fn-Esc**).

— Close the LCD panel to automatically put the system into Suspend mode. (Enable this option through Power Management.)

6 Solving Problems

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

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

If the screen is blank, the instructions don't help, or no error message appears, use the information in this chapter to determine and fix the problem. You can often solve problems that occur by yourself.

PROBLEM CHECKLIST

First. check the items in the following list. If these 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.

■ If using battery power, the battery pack is charged.

■ All cables are tightly connected.

■ The display setting is configured correctly.

■ The display brightness and contrast are adjusted properly.

■ System parameters are set correctly through the SCU for your hardware.

Troubleshooting

PROBLEM	WHAT TO DO
The system does not power on	If you are operating the system on battery power, check that the battery pack is correctly inserted.
	Check that the battery pack is charged.
	If you are using AC power, check that the electrical outlet in use is working.
The LCD screen is dark or blank	See if your system is in Suspend mode. The Power Mgmt LED blinks when the system is in Suspend mode. When enabled, power management turns off the LCD backlight. Press the Suspend button (**Fn-Esc**) or any key to exit Suspend mode.
	If running on battery power, check the battery. Make sure it has enough power to run the system. If not, attach the AC adapter and turn off the system to recharge the battery.
	Check the brightness and contrast controls for proper adjustment.
Battery power does not last long	Use power-saving modes to conserve battery power.
	Fully recharge the battery pack. If this does not help, use the Discharge utility to drain the battery. Then, recharge the battery pack. See your battery user's guide for details.
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 the SCU.

Troubleshooting

PROBLEM	WHAT TO DO
The Suspend button does not work	A disk drive might be busy. Wait until the disk drive is idle and try again.
You connected an external CRT but it does not work	Press **Ctrl-Alt-S** to access the SCU. Under VGA Setup, check that the Display Mode is set to **CRT** or **Both**. Or, use **Fn-F2** to toggle between display mode settings.

START-UP PROBLEMS

The system displays an invalid configuration error at power on when the following conditions exist.

■ The current configuration information does not match the configuration information stored in memory. This happens when an internal option is added.

■ The system loses configuration information stored in memory.

If either condition exists, the system displays an "invalid configuration information" message. You must go into the SCU. Check your last settings to see if they are still active or select Defaults to resolve settings problems quickly.

If an error message appears before the operating system starts, look up the message in the following table. Follow the instructions.

If you see other error messages, the hardware may need repair.

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

POST Error Messages

MESSAGE	WHAT TO DO
Diskette drive failure	The diskette drive does not work or is not properly connected.
	Check that the drive is securely connected and power is on.
	Press **Ctrl-Alt-S** to check the diskette drive parameters.
	If the problem persists, the drive might need repair.
Diskette read failure	Remove the diskette from the drive and try another diskette. If you cannot read from the next diskette, your drive might need repair.
No boot device available	Go into the SCU and check the hard disk type defined. Unless you had a different hard disk installed, the setting should be "Auto." Correct the setting.
Invalid configuration information — run SCU	Start the SCU, check the system parameters set, and correct them. Exit and save the parameters set.
	Connect the AC adapter to charge the internal backup battery. Restart the SCU and set the correct parameters.
Real time clock failure	Set the time and date using the SCU. Exit and save to update the parameters.
	Connect the AC adapter to charge the internal backup battery.
Time-of-day not set	Run SCU and set the time and date. Exit SCU and save to update the time and date.
Fixed disk configuration error.	Start the SCU. Make no changes. Exit and save to update the parameters. If a problem still exists, the hard disk might need repair.
Fixed disk failure	Start the SCU. Make no changes. Exit and save. If a problem still exists, the hard disk might need repair.

POST Error Messages

MESSAGE	WHAT TO DO
Fixed disk controller failure	Start the SCU. Exit and save to update the parameters.
	If problems continue, the hard disk controller might need repair.
Keyboard clock line failure	The keyboard might need repair.
Keyboard data line failure	The keyboard might need repair.
Keyboard controller failure	The keyboard might need repair.
Keyboard stuck key failure	A key is jammed. Remove any obstructions. If the error message remains, the keyboard might need professional cleaning or repair.

IF YOU NEED ASSISTANCE

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

If you still have a problem, call the NEC Technical Support Center (TSC), toll free, at 1-800-388-8888. Direct technical assistance is available Monday through Friday, between 8:30 a.m. and 8:00 p.m. Eastern Standard Time.

Your system comes with remote diagnostic software. If you purchased a modem to use with your system, a TSC technician may by able to diagnose the system remotely.

Direct Technical Support

When TSC receives your call, a technician attempts to diagnose your problem over the phone. 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

Remote Support Session allows the technician to diagnose your system from a TSC computer. To use this utility, you must have an optional external modem or PCMCIA modem card connected to your system and a telephone line.

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

Follow these steps to prepare your system for remote support. A modem must be 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.

NOTE: Do not touch your keyboard while waiting for the remote dial-in.

To cancel the remote dial-in, remove the diskette and 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.

7 If You Need Help

The NEC Customer Service & Support (CS&S) organization is dedicated to providing 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 S operating at peak performance.

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 S is backed by a 3-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 S is covered — no matter what the problem — by the NEC warranty.

If you are enrolled in UltraCare, your Versa S 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 S 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 S 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 on 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 S warranty.

Without UltraCare, your Versa S is covered by NEC's standard limited 3-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, 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 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.

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. It 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 net-work 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 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 1-800-388-8888, Monday through Friday, between 8:30 AM and 8:00 PM, Eastern Standard Time (EST).

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 1-800-388-8888, 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 1-800-388-8888.

A Specifications

The following specifications are standard except where noted.

System Processor

- Versa S/33M, Versa S/33D, Versa S/33C — Intel SL Enhanced 486SX-33

- Versa S/50C — Intel SL Enhanced 486DX2-50

Random Access Memory (RAM)

Standard size: 4 MB

Expandable up to 12 MB total using 4 MB or 8 MB upgrade module (dealer upgrade only)

Read-Only Memory (ROM)

128 KB, flashable, (includes System, Power Manager, and Video BIOS)

Cache Memory

8 KB internal

Video Dynamic RAM (DRAM)

Standard Memory — 512 KB

Calendar Clock

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

Input/Output (I/O) Facilities

Integrated industry-standard interfaces

- Serial — 1 port, 9-pin D-sub, RS-232C

- Parallel — 1 port, 25-pin, EPP specification

- VGA — 1 port, 15-pin S-sub

- External Keyboard/Mouse (combined) — 1 port, PS/2, 6-pin MiniDin

Integrated, non-standard

- Diskette Drive — 1 port, 26-pin

PCMCIA Card Slots

Two slots for two Type 1/Type 2 PCMCIA cards or one Type 3 PCMCIA card

Display Interface

- Controller — VGA integrated on the system board, 15-pin D-Shell connector (auto monitor detect for external monitors)

- Video Modes
    - 640 by 480 pixels, 16 colors at 60 Hz (LCD and CRT)
    - 640 by 480 pixels, 256 colors at 60 Hz (LCD and CRT)
    - 800 by 600 pixels, 16 colors at 60 Hz (CRT)
    - 800 by 600 pixels, 256 colors at 60 Hz (CRT)
    - 1025 by 768 pixels, 256 colors at 60 Hz (CRT)

Monochrome LCD

- Technology — Dualscan Super-Twisted Nematic (DSTN), backlit monochrome LCD

- Resolution — 640 x 480

- Black and white — 64 shades of gray

- Dot pitch — 0.3 mm

- Viewing area — 9.4-inch screen

Color LCDs

- Technology

  — Thin-film transistor (TFT), backlit color LCD, 4096 colors

  — Dualscan Super-Twisted Nematic (DSTN), cold cathode fluorescent tube (CCFT), backlit color LCD, 256 colors

- Resolution — 640 x 480
- Colors — up to 256 supported
- Dot Pitch — 0.3 mm
- Viewing Area — 9.5-inch screen

Keyboard

Built-in 80-key with standard QWERTY-key layout

- Function keys — 12 keys
- Control keys — Ctrl, Alt, Shift, Fn, Num Lock, Ins, Scroll Lock, Del, Home, End, Pg Up, Pg Dn
- Cursor Control keys — 4 keys; arrow keys arranged in inverted T layout
- Numeric keypad — embedded

SurePoint

PS/2 style pointer integrated in keypad with 2 selection switches

Diskette Drive

External, standard, 1.44 MB

- Size — 3.5 inch
- Capacity — 1.44 MB
- Access time (average) — 94 ms
- Data transfer rate — 500 kbps
- Interleave — 1:1

Hard Disk Drive

- Internal 2.5-inch, 209-MB or 260-MB drive (dealer upgrades available)
- Controller — IDE controller integrated on hard disk

LEDs

Light Emitting Diodes (LEDs) — 8 for system status (Power, Charge, Power Mgmt, Hard Disk Drive, Diskette Drive, Caps Lock, Scroll Lock, Num Lock)

Power

- AC Adapter — Input Voltage: 100 to 240 volts (V) AC, 50/60 Hz, 1.5 A, auto-sensing
- DC/DC adapter — on board
- Battery Pack — 12 V, 1400 mAH
  - Battery life under typical operating conditions
    - Versa S/33M: approximately 2.5 hours
    - Versa S/33D: approximately 2 hours
    - Versa S/33C, Versa S/50C: approximately 1.5 hours
  - Recharging time: approximately 1 hour
- Bridge battery — preserves memory contents and system status for up to 5 minutes under Suspend mode.

Dimensions

System Unit

■ Width — 10.86 in. (276 mm)

■ Depth — 8.36 in. (212 mm)

■ Height

— Versa S/33M: 1.42 in. (36 mm)

— Versa S/33D: 1.54 in. (39 mm)

— Versa S/33C, Versa S/50C: 1.65 in. (42 mm)

Diskette Drive

■ Width — 4.61 in. (117 mm)

■ Depth — .5.18 in. (132 mm)

■ Height — .75 in. (19 mm)

AC Adapter

■ Width — 2.68 in. (68.02 mm)

■ Depth — 5 in. (127 mm)

■ Height — 1 in. (25.4 mm)

Weight

■ Versa S/33M — approximately 3.9 lb (1.76 kg)

■ Versa S/33D — approximately 4.5 lb (2.04 kg)

■ Versa S/33C and Versa S/50C — approximately
4.8 lb (2.17 kg)

Recommended Environment

Operating

- Temperature: 41°F to 95°F (5°C to 35°C)

- Humidity: 20 to 80% non-condensing

- Vibration: 5 to 150 Hz, 0.25 G, XYZ 3 directions

Storage

- Temperature: –4°F to xx°F (–20°C to 60°C)

- Humidity: 10% to 80% non-condensing

- Vibration: 5 to 150 Hz, 1 G, XYZ 3 directions

Warranty

3-year limited

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 1-800-388-8888. Pricing depends on the product and your location.

B Other Utilities

This appendix describes the settings and defaults specified in the Advanced Power Management (APM) program. The appendix also describes the NEC Communications Assistant provided with the Versa S.

APM

Advanced Power Management settings are already specified in your system. When you enable power management through the SCU, the system retrieves the settings specified in APM and initiates them after the defined timeouts. If you change these settings, either through DOS or Windows, the new settings are initiated. (See your Microsoft Windows and MS-DOS user documentation for details.)

APM has the following features and settings.

Features

APM conserves power consumed by the entire system. It accomplishes this through the following features.

- Hardware power management offers features that slow or stop devices after specified timeouts, including:
    — clock stretching
    — quiet bus
    — modular clocking
    — initiating device standby modes.

■ Four levels of system power management, including:

— APM Idle

— CPU Standby

— Global Standby

— Auto Suspend.

■ A true Suspend/Resume mode that can be accessed from both DOS and Windows applications. (Described in Chapter 5, Utilizing Power Management.)

The status of various system devices during Auto Suspend, CPU Standby, Global Standby, and Suspend modes is listed in the section "Device Status" (later in this appendix).

Hardware

Specific hardware power management includes the following.

■ Clock stretching. APM reduces the CPU speed without adding a wait states when a 0.5-cycle wait state is needed in case of DRAM access.

■ Quiet bus. APM inhibits all signals in the AT Bus except the AT bus cycle. This function saves energy by reducing the number of unnecessary charges and discharges.

■ Modular clocking. APM slows the CPU clock speed when the CPU is not used. When enabled, modular clocking reduces CPU power consumption to as low as 3.2 MHz.

■ Power-saving devices. APM puts devices that have power-saving features into Standby mode when they are not active.

System

System power management features act as follows.

■ APM Idle. APM uses an Idle Detector to sense system inactivity. (The detector does not work with some applications.)

■ CPU Standby. When enabled, APM slows the CPU clock speed to 3.125 MHz if no system activity is detected for the specified timeout. Once system activity is detected, the CPU clock speed returns to normal.

> **NOTE:** System activity includes floppy disk and hard disk access, keyboard activity, COM port and LPT port input/output.

■ Global Standby. When enabled, global standby puts all specified devices into Standby mode and slows the CPU clock speed to 3.125 MHz after the specified timeouts. Once system activity is detected, the system returns to normal operation mode.

■ Auto Suspend. When enabled, Auto Suspend puts the system into Suspend mode after the specified timeout elapses.

Device Status

The following table shows the status of system devices in Auto Suspend mode.

Status of Devices in Auto Suspend Mode

DEVICE	STATUS
Pico Power Chip Set	Suspend
Main/Expansion Memory	Slow refresh
Peripheral Controller	Active
32-KHz Oscillator	Active
Keyboard Controller	Standby
VGA Controller	Standby
Video Memory	Slow Refresh
Power SW Circuit	Active

NOTE: Suspend/Resume does not work with operating systems that employ protected modes (such as OS/2 and UNIX). To use a protected-mode operating system, disable power saving.

The following table shows the status of devices when the system is in the listed power-saving mode.

Status of Devices in Power Saving Modes

DEVICE	CPU STANDBY	GLOBAL STANDBY	SUSPEND
CPU	8 MHz	8 MHz	Off
Evergreen/PINE	On	On	Suspend Mode
Peripheral Controller	On	On	Suspend Mode
FDC37C665	On	On	Off
Main Memory	Normal	Normal	Slow Refresh
ROM	On	On	Off
80C51SL	Idle	Idle	Suspend Mode
Internal Keyboard	Active	Active	Any-Key Resume
External Keyboard	Active	Active	Off
Cirrus VGA	On	Standby	Slow Refresh
LCD (Display and Backlight)	On	Off	Off
SurePoint	On	On	Off
PS/2-Style Mouse	On	On	Off
Diskette Drive	On	Standby	Off
Hard Disk	On	Standby	Off
Serial Port Buffer	On	On	Off

NEC COMMUNICATIONS ASSISTANT

The NEC Communications Assistant provides technical help on various topics when communications problems occur. This online file offers useful troubleshooting information and an indexed list of trouble areas. Communications Assistant covers a range of telecommunications areas including:

■ telephone types

■ file transfers

■ faxing

■ connections

■ paging.

You can find the NEC Communications Assistant icon in the Versa Help group in Windows. Use the "always-on-top" feature while you are using a communications package for faxing or file transfers. This keeps the file close at hand in case you need it.

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Glossary

A **applications programs**

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

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.

B **base RAM**

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

BIOS

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

bit

Binary digit. The smallest unit of computer data.

bits per second

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

board

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

boot

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

bus

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

byte

Group of eight contiguous bits.

C **clock**

Electronic timer used to synchronize computer operations.

CMOS

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

cold boot

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

crt

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

cursor

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

D **diskette**

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

diskette drive

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

DSTN

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

E **enhanced VGA**

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

extended RAM

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

F **function key**

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

H **hard disk**

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

hardware

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

hertz

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

hot key

Combination of two or three keys (such as **Ctrl-Alt-D**) that you press simultaneously for a particular function.

I   **input/output**

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

IDE

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

interface

A connection that enables two devices to communicate.

interrupt

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

K   **kilobyte**

(KB) 1024 bytes.

L   **LAN**

Local Area Network.

LCD

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

load

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

M megabyte

(MB) 1,048,576 bytes.

memory

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

menu

A video display of programs or options.

microprocessor

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

mode

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

modem

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

N nonvolatile memory

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

O operating system
Set of programs that manage the overall operation of the computer.

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

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

parallel interface
Interface that communicates eight bits at a time.

parallel printer
A printer with a parallel interface.

parameter
A characteristic of a device or system.

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

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

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

pixels

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

port

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

processor

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

prompt

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

R **RAM**

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

read

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

ROM

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

reset

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

resolution

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

RS-232C

Standard interface for serial devices.

S **scanner**

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

serial interface

An interface that communicates information one bit at a time.

serial printer

A printer with a serial interface.

software

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

system board

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

T **TFT**

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

V VGA

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

volatile memory

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

W warm boot

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

write

To record or store information to a storage device.