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# Using this Guide

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

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

- Chapter 1 gives basic information like setting up the notebook computer, using function keys, and reading LCD status icons.  
  
Chapter 1 describes the Versa V buttons, controls, PCMCIA slots, and other features.
- Chapter 2 offers ideas for using your Versa V in the office, at meetings, and on the road.
- Chapter 3 focuses on adding options, like PCMCIA cards. This chapter also describes how to connect external devices like printers, monitors, and keyboards.
- Chapter 4 describes the power-saving programs that come with your Versa V. It introduces options for conserving energy and saving battery power.
- Chapter 5 introduces you to the Versa V Auto Setup program. This software lets you change the system date and time, set a password, and define many other system options.
- Chapter 6 gives you a checklist to follow if you have problems with the Versa V. Solutions are also suggested.

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- 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 the NEC Communications Assistant.

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

## 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 V system, including:

### Hardware Documents

- The *Versa V Quick Setup* shows you how to set up your system after you unpack it.
- The *Versa Series 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 notebook when you take it with you. The card is designed as a quick, portable reference to frequently-used functions.
- The *Versa Series PCMCIA User's Guide* contains information about optional PCMCIA cards, their installation, and use.

### Software Documents

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

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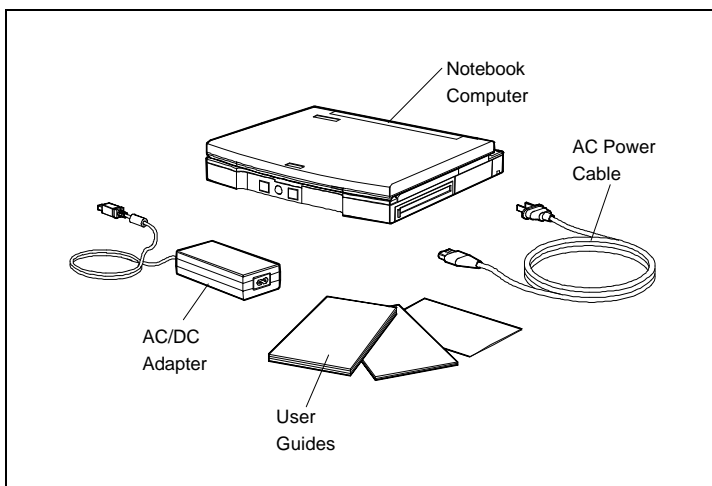
# 1

## Getting to Know Your New Information Tool

Your Versa V is a wonderfully useful tool that you'll soon find is indispensable. It's easy to carry around with you and can be used for most of your information and communication needs.

### WHAT'S IN THE BOX

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

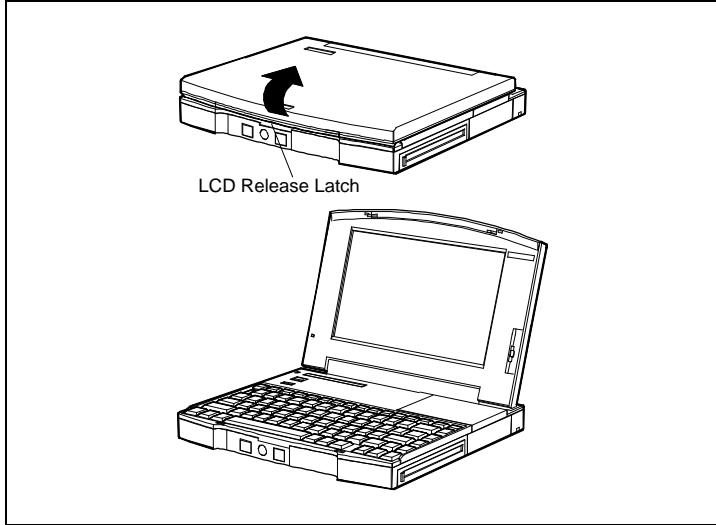


*Box contents*

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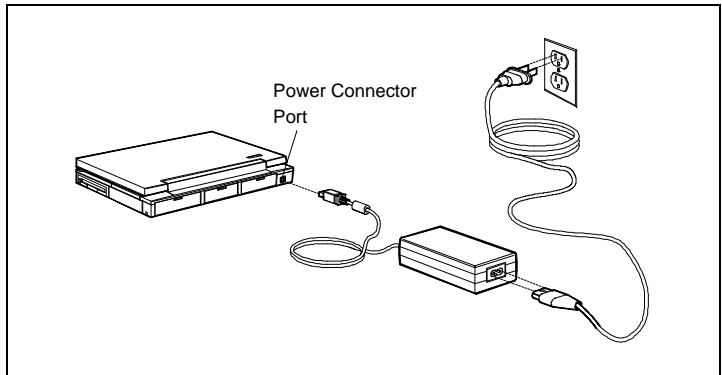
## SETTING IT UP

1. Remove the Versa V from the packing box and press the front latch to open the notebook.



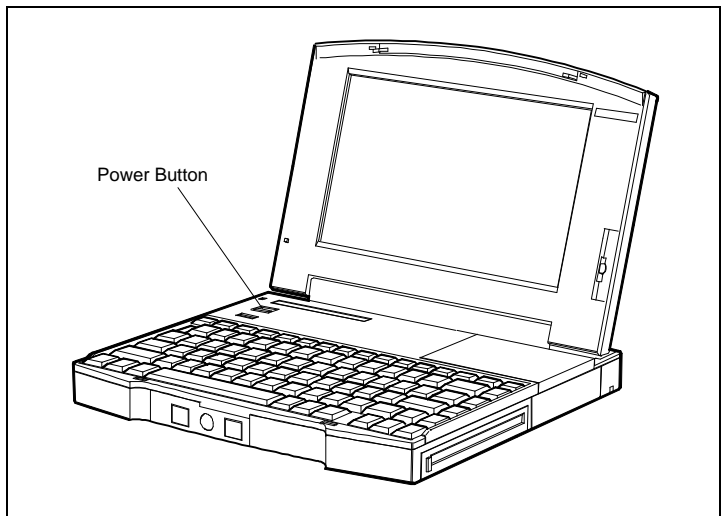
*Pressing the latch*

2. Plug in the Versa to an AC (alternating current) power source, using the cable and the AC adapter that came with your Versa V. Simply plug the AC adapter into the socket in the back of your system. Plug the cable into the AC adapter and the other end into a wall socket.



*The power connector*

3. Press the power button to start up the system. The power button is located on the top left of the unit.



*Pressing the power button*

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

---

## FEATURES

Here are some of the Versa V's features:

- LCD Panel
- Function Keys
- LCD Status Bar
- PCMCIA Slots
- Trackball
- Buttons and Controls
- Smart Power Switch
- Online Help.

### LCD Panel

Your Versa V comes with one of three types of LCD panel, a TFT color, DSTN color, or DSTN monochrome.

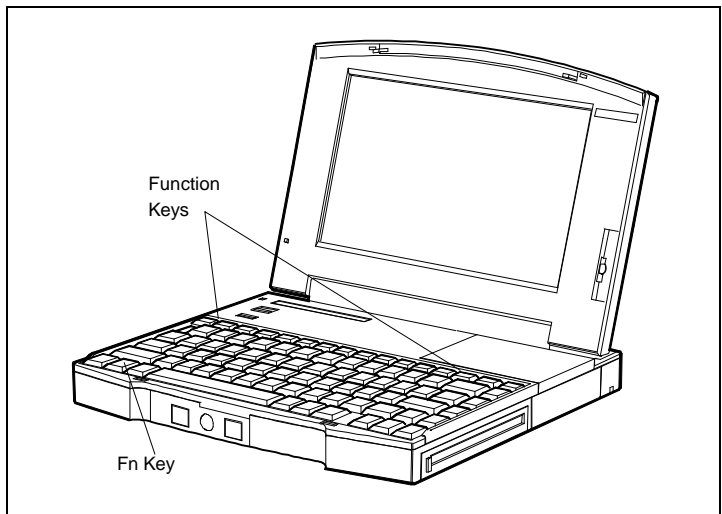
- The active-matrix thin-film transistor (TFT) color LCD has a resolution of 640 x 480 pixels, is backlit, and supports up to 256 colors. The TFT LCD provides a 9.5-inch display area, brilliant resolution, and an impressive array of colors.
- The Dualscan Super-Twisted Nematic (DSTN) color LCD uses cold cathode fluorescent tube (CCFT), is backlit, and supports up to 256 colors. The STN LCD provides a 9.5-inch display area, exceptional clarity, and color for the most demanding graphics.
- The monochrome LCD has a 640 x 480 pixel resolution and supports 64 shades of gray. The 9.5-inch screen uses the Dualscan Super-Twisted Nematic (DSTN) backlit technology for crisp clear images. (Not available in the U.S.)

---

**NOTE:** NEC LCD panels meet exacting manufacturing standards. Of the 921,600 elements involved in creating the display on your screen, NEC accepts no TFT 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.

## Function Keys

The function keys are located, as on most PCs, along the top of keyboard. The Fn (Function) key activates functions printed on keys having dual functions.



*Function keys*

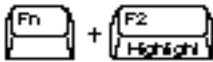
Some special functions are specific to the Versa V systems. These keys set specific parameters that are built into ROM (Read-Only Memory).

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## Key Combinations

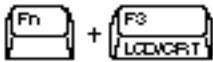
The key combinations for system-specific functions are as follows.

**Fn F1** Not used



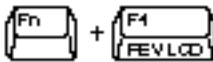
### Highlight

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



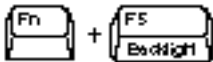
### LCD/CRT

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



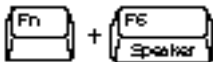
### Reverse LCD

Use to reverse the LCD screen image (monochrome only).



### Backlight

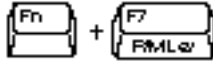
Use to adjust the screen brightness to standard or full as your environment requires.



### Speaker

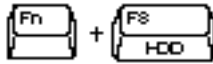
Use to regulate the speaker volume. Press **Fn F6** to toggle from off to low, medium, or high. A beep sounds when the volume setting is changed.





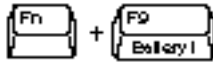
### **Power Management Levels**

Use to set the power management level to off, custom, low, or high. Notice the changes in the LCD panel as you toggle the key combination.



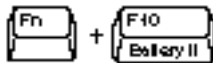
### **Hard Disk Drive Spin Up/Down**

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



### **Battery I**

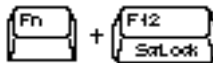
Use to reset the primary battery icon to four bars on the LCD status bar. (▣▣▣▣) Use when you have reinserted the primary battery.



### **Battery II**

Use to reset the secondary battery icon to four bars on the LCD status bar. (▣▣▣▣) Use when you have reinserted the secondary battery.

**Fn F11** Not used.



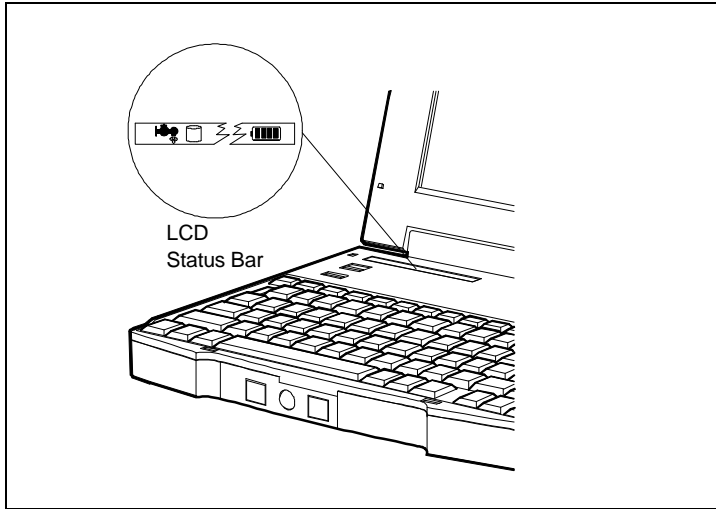
### **Scroll Lock**

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

---

## LCD Status Bar

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



*LCD status bar*



### **Suspend**

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

### **Power Management**

Faucet icons indicate the level of power management being used.



### **Off**

Indicates that power management is not enabled.



### **Low**

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Indicates that power management is set at low.



**High**

Indicates that high power management is set.



**Custom**

Indicates custom power management features are set.



**Hard Disk Drive Access**

Indicates the hard disk drive is being accessed.



**Diskette Drive Access**

Indicates the diskette drive is being accessed.



**Num Lock**

Indicates the numeric keypad lock function is enabled.



**Scroll Lock**

Indicates the scroll lock function is enabled.



### **Caps Lock**

Indicates the caps lock function is enabled.



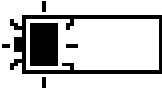
### **Battery**

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

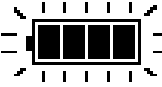
Bars within the battery icons represent the remaining battery charge when the system is in use:

- 4 bars indicate a 100% charge ☼☼☼☼
- 3 bars indicate a 75% charge ☼☼☼
- 2 bars indicate a 50% charge ☼☼
- 1 bar indicates a 25% charge. ☼

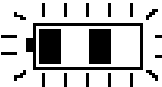
If two fully charged batteries are installed, 8 bars contained in 2 battery icons appear in the display. Neither the bars nor icons blink.



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



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



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

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

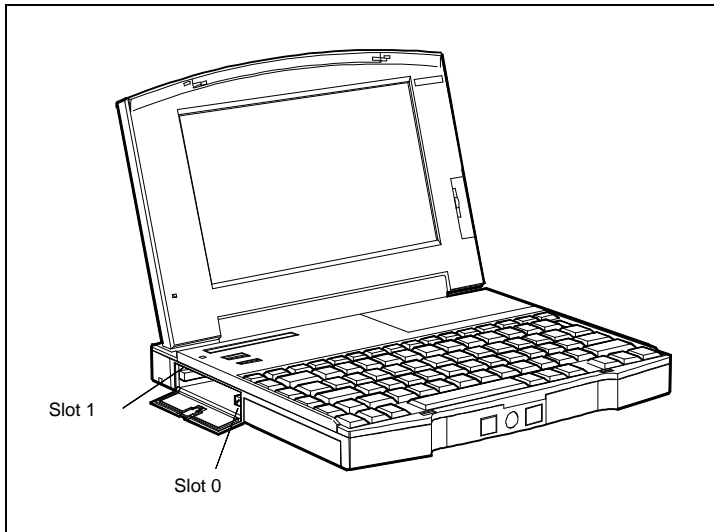
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## PCMCIA Cards

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

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

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



*PCMCIA card slots*

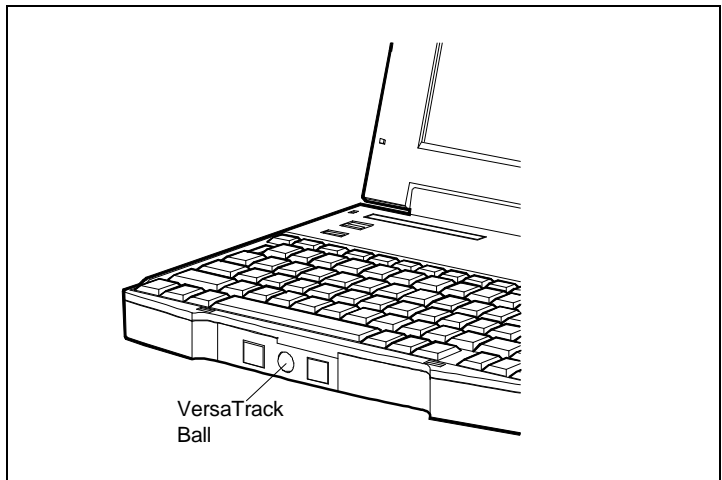
For more information on using PCMCIA cards with your Versa V, see the *Versa Series PCMCIA User's Guide*.

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## VersaTrack™ Ball

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

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



*VersaTrack ball*

### ***Cleaning the VersaTrack***

Periodically, dust and dirt builds up and you need to clean the roller inside the VersaTrack. Follow these steps.

1. Tip the system to easily pull and remove the VersaTrack cover and the ball.

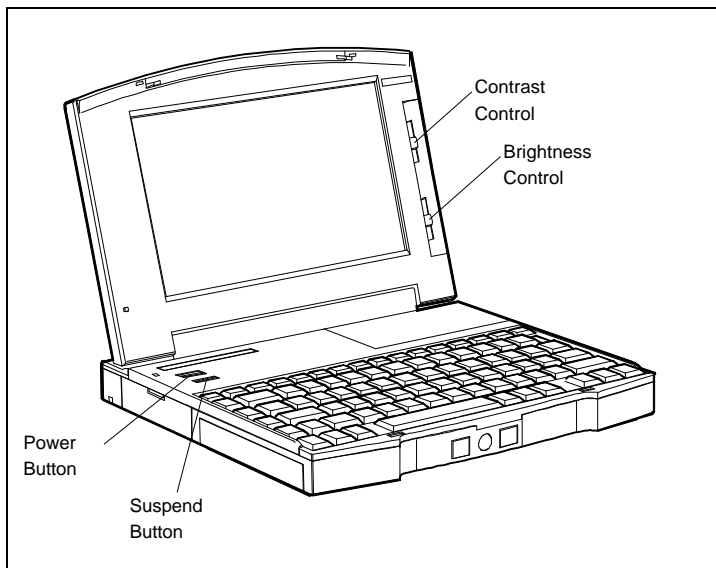
2. Use a lint-free applicator to carefully remove any dirt on the rollers.

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

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

## Buttons and Controls

The following figure shows the buttons and controls besides the VersaTrack that you use to run the Versa V. Descriptions of them follow.



*Buttons and controls*



- 
- **Power Button** — controls power on the system. Pull, momentarily hold, and then release the power button to turn the system on. Pull the power button again to turn the system off. When power is available, the LCD indicator panel shows the operational status of the system.

**TIP:** After turning off the system, wait 5 seconds before turning the system back on. Turning the system off and on before allowing it to completely power down strains the system.

- **Contrast Control** (only on DSTN panels) increases or decreases the contrast of the LCD backlight. Slide the control up to increase the contrast, down to decrease the contrast.
- **Brightness Control** — increases or decreases the brightness of the LCD backlight. Slide the control up to increase the brightness or slide it down to decrease the brightness.

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

- **Suspend Button** — lets you manually put the system in the Suspend mode of operation while using battery power. Suspend mode retains the contents of memory (RAM) and system status. Suspend mode saves battery power. To exit Suspend mode, press the suspend button again.

---

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

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

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

## **Smart Power Switch**

The Versa V has a Smart Power Switch feature that prevents you from accidentally turning off the system while it's in Suspend mode.

If your system is in Suspend mode and you want to override the Smart Power Switch and turn off the system, hold down the Suspend button and press the Power switch.

For more information about Suspend mode, using the suspend button, and the Smart Power Switch, see "Understanding Power Management."

## **Online Help**

The Versa V has online help to assist you when you have questions about using the system.

1. From Windows, look for the Versa Help program group.
2. Click on the icon for the guide you need.

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## Batteries

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

- Main battery
- Bridge battery
- CMOS battery.

### ***Main Battery***

The main battery is the removable NiMH battery pack that comes with your Versa V. With it you can run your system without a wall outlet. It's easy to install and remove.

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

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

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

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

---

## **Bridge Battery**

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

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

**TIP:** The bridge battery supplies power for up to 5 minutes while the system is in Suspend mode.

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

The bridge battery uses up its reserve of power each time you change batteries while traveling. It's a good idea to plug in your Versa V using the AC adapter to recharge the bridge battery every few days, at least.

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

---

## CMOS Battery

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

**NOTE:** The CMOS battery lasts approximately three years. When the CMOS battery no longer retains information, contact NEC about CMOS battery replacement. Call 1-800-632-4525. (Refer to Chapter 7, “If You Need Help...”)

To install the new CMOS lithium battery, follow the steps in the *Versa Series Battery Guide*.

## Plug and Play

Your Versa V system has a Plug and Play feature which allows you to add or remove an external mouse, keyboard, or monitor “live” while the system is in Suspend mode without damaging your system. When you resume Active mode, the Versa recognizes the option you added. (Refer to “Suspend Mode” in Chapter 4.)

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

---

## SYSTEM CARE

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

- Periodically clean the outside and inside surface areas with a soft, clean, dry cloth.

You can remove fingerprints or stains with a cloth slightly dampened with a mild detergent. Never use a strong cleaner or solvent on any part of the computer.

For safety, unplug your system from an electrical outlet before cleaning.

If the LCD screen gets dirty, apply a household glass cleaner to a clean dry cloth or paper towel and wipe the screen. Do not spray cleaners directly on the screen. The cleaner could run down inside the unit.

- Keep food and liquids away from your computer.
- Avoid vibrations and shocks.
- Avoid environments with dust and smoke.
- Turn off the power button when you are not using the system.
- Close the screen securely before moving the system. Never lift or carry the computer by its screen.
- Keep the system cover closed when you are not using the computer.
- Close all system covers before you transport the Versa.
- Keep the battery pack charged. Whenever possible, leave the AC/DC adapter connected to your computer and wall outlet. The adapter continues to charge the battery when the computer is on or off.

- Periodically, fully discharge the battery.
- Do not expose the system to direct sunlight or high temperatures. For example, do not leave it in an enclosed car parked in the sun. Heat can raise the internal temperatures of the system and damage its components.
- Operate and store the system within the following temperature and humidity ranges.

### Temperature and Humidity Requirements

ENVIRONMENT	TEMPERATURE	RELATIVE HUMIDITY
Operation	41°F to 95°F (5°C to 35°C)	20% to 80% no condensation
Storage	-4°F to 104°F (-20°C to 40°C)	20% to 80% no condensation

**CAUTION:** If the environmental temperature of the Versa suddenly rises (for example, when you move the system from a cold place to a warm place), vapor condenses inside the system. Turning on the system under this condition can cause damage to the internal components.

Wait before turning the system on so that the internal temperature of the system can equalize with the warmer environment and any moisture can dry.

---

# 2 Using Your Versa V

There are any number of ways you can use your Versa V as you go through your daily life. Whether you are in the office, on the road, or in a meeting, your Versa can go with you and be an invaluable tool.

This chapter describes how you can use your Versa V to do all the things you do ordinarily throughout your day:

- Create
- Organize
- Communicate
- Unwind and demonstrate.



## IN THE OFFICE

Your portable Versa V can replace your large desktop system giving you more space in your office to spread out and work. Or, with a Docking Station or port replicator you can plug your Versa V right into your desktop interface and start using it immediately with your larger desktop monitor and keyboard.

The following scenarios suggest ways you can use the Versa V in your office.



---

## **Organizing and Managing Your Work**

Your Versa V takes up less space in the office than your desktop system. You can now better organize your space to suit your work habits.

### ***Managing Your Time***

Time management is now easier. The time you used to spend on time-consuming tasks such as transcribing meeting notes or writing appointments in your bound calendar, is now available to you. And, you can use the Versa V wherever you are.

- Meeting notes can now be transformed from an after-the-fact chore to a real-time task. You can bring your Versa V to the meeting with you and take notes in the meeting.
- You can also use the Versa V to do work that you normally leave behind in your office to fill “idle” time while you wait for the meeting to begin, and at other such lull times.
- Using your favorite personal information management (PIM) application, you can keep track of your schedule and plan tasks.

### ***Managing Your Contacts***

Use your Versa V to manage your business contacts. With a PIM software application, you can maintain an on-line address book. If you have communications software and a modem, you can autodial your contacts and send a fax directly from your Versa.

### ***Managing Data***

You can use your Versa to manage your business databases, such as inventory, sales calls, production runs, etc.

---

### ***Using a Scanner***

If you have a scanner with a SCSI connector and a PCMCIA SCSI card, you can scan in important information, even business cards!

### ***Keeping Secure***

For security purposes you may choose to lock up your hard disk which you can easily remove from your hard disk drive bay. You can also password protect your Versa through the Auto Setup program.

### ***Creating Presentations***

You have a client presentation to give at the end of the week. You can gather slides from previous presentations that have been stored in an information base on a CD-ROM disk. You can create additional slides to tailor the presentation to your client's particular needs.

### ***Creating Slides***

Use your favorite slide presentation software to create outstanding visuals.

### ***Using Audio***

If you have external speakers, you can include sound in your presentation. Plug the speakers into the PCMCIA audio card.

### ***Using CD-ROM***

You can access a CD ROM reader if you have a SCSI interface. With your Versa V connected to CD ROM reader, insert the CD ROM disk. Then retrieve the files you need.

CD-ROM can also enable you to create dynamic multimedia presentations that include sound and animation along with your bright, colorful still visuals.

---

## **Communicating from the Office**

You can send e-mail messages, faxes using an NEC PCMCIA modem, and even page someone from your office using the VersaPage™ paging facility. All it takes is your Versa V, a modem, and the appropriate software package(s).

### ***Using a Modem***

A modem allows you to connect your Versa to a telephone line. A PCMCIA modem, which is light and convenient, slides easily into either PCMCIA slot on the side of your Versa. (See Chapter 3.) There are a number of modems that can work with your Versa V. See the *Versa Series PCMCIA Guide* for an up-to-date list of modems.

### ***Using a Pager***

Using VersaPage, you can page the people you need immediate contact with. All you need is paging software and a paging modem that fits into your PCMCIA slot.

### ***Transferring Data***

You can transfer data from your Versa to your desktop computer, freeing up valuable space on your Versa.

### ***Sending E-Mail***

If you have an electronic mail (e-mail) network address, you can communicate with the world! You can send memos, access on-line databases, set up meetings, — the possibilities go on and on.

## **Unwinding with the Versa V**

We actually learn best when we play. Use your Versa to run on-line tutorials that teach you how to use software that you've installed on your Versa.

- Play with on-line games to relax you such as Solitaire, or others you have installed.

- 
- Communicate with friends using a modem and a cellular phone.
  - Browse through your favorite on-line service for the latest news, or information on a topic of special interest to you.



## **IN MEETINGS**

Business these days requires us to spend many hours in meetings. Take your Versa V to the meeting with you and try using it in some of the following ways.

### **Creating Instantly**

Create an instant agenda and print it with a portable printer for other Versa users at the meeting.

Brainstorm ideas with your colleagues or design team and capture it all on-line.

### **Organizing in Meetings**

Take meeting notes in real-time, saving valuable time and extra steps.

Show your team project lists, graphs, graphics to illustrate your arguments.

### **Communicating the Essentials**

Use your Versa for an effective presentation tool with the following accessories.

### ***Using a CRT Connector***

You can show your presentation on an overhead projector or a large-screen color monitor.

---

### **Using Wireless LAN**

You can access files anywhere on the network that you could access from your office desktop system.

### **Giving Demos**

You can demo your software, letting others “play” with it to get a feel for it.



### **ON THE ROAD**

You can do all the tasks you perform in your office while you are on the road using your Versa V.

### **Creating as You Travel**

You can plan your presentation, and organize your thoughts on the way to the business meeting.

You can gather and record data as you travel, for example, sales call information, site visit observations. Equipment like bar code readers, digitized cameras, scanners, can speed up the data-gathering process even more.

With the appropriate software, you can make sketches on-site of layouts, floor plans, etc.

You can write up your expense report on the way back from the trip.

---

## **Organizing Yourself**

Organize your itinerary, incorporating last-minute changes as necessary. Check flight plans using an on-line service to ensure your flights are on time.

Plan your meeting agenda enroute.

Take notes as you ride in a taxi or wait in an airport.

Gather information on site.

## **Communicating with Home**

There are lots of ways to use remote messaging to stay in touch with your office.

### ***Using a Modem***

Use a modem and fax software to fax your home office.

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

E-mail your staff.

Check flight information using an on-line information service.

Call your office using VersaConnect and your cellular phone.

### ***Using a Pager***

With VersaPage™ (available in the U.S. only), a PCMCIA pager option, you can send pages to reach fellow travelers or the home office. If you have a page receiver, you can also receive a paging message.

---

### ***Using Global Positioning***

With a global positioning system (GPS) PCMCIA device, you can identify your exact position. This comes in handy when you are managing a car or truck fleet and you want to track the location of drivers.

### **Unwinding on the Road**

Wile away long travel hours or simply unwind with the following activities using your Versa V “companion.”

- Play your favorite on-line games on your Versa V — Solitaire, or others you have installed.
- Take those on-line software tutorials you’ve been putting off. Learn the finer points of applications you use routinely.
- Learn a new language using a software tutorial.

### **What to Take**

The following are the things you should take with you when you travel with your Versa.

- Single-outlet surge protector
- Long telephone extension cord and male-to-male coupler
- AC adapter
- Copy of proof of purchase for computer and other equipment for customs
- *Versa Series Quick Reference* card
- Customer support phone numbers for your software
- AC extension cord

---

## Before You Leave

Here are some things to do before you leave home:

- Back up your Versa's hard disk
- Put your system into Suspend or Standby mode so you can quickly boot up at the airport security check
- Fully charge all your batteries.

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



---

# 3 Adding Options

You can add a number of options to your Versa V system. This chapter describes procedures for adding the following options:

- PCMCIA cards
- Modems
- Memory expansion
- Hard disk
- Printer
- External keyboard
- External mouse
- External monitor
- Docking station
- Port replicator.

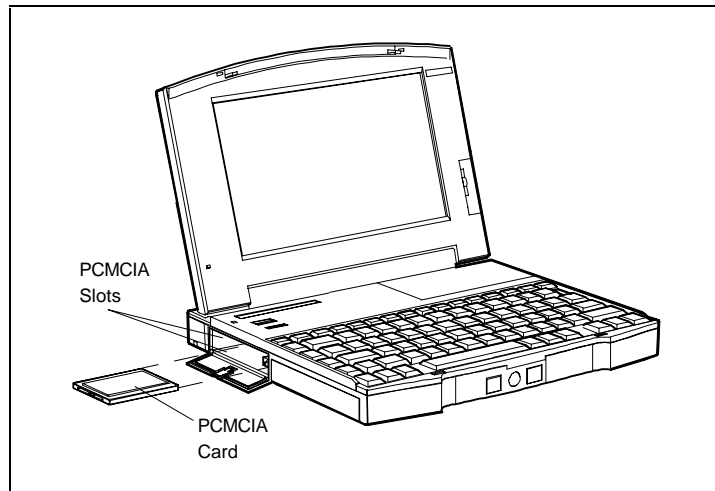
**NOTE:** Some of the optional components may not be available outside the U.S. Contact an authorized NEC dealer for specific information.

## PCMCIA CARDS

You can add various types of PCMCIA cards to your system. The Versa V system provides two PCMCIA slots in which different kinds of PCMCIA cards can be installed. Cards that are currently available include modem, network, memory, SCSI, and storage cards.

---

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



*PCMCIA slots*

### ***Inserting and Removing Cards***

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

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

- 
4. To remove the card, press the button on the side of the slot. A double beep again sounds and the card is ejected.

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

**NOTE:** Some cards draw power even when not in use. Be sure the card is disconnected. CardView should show an empty slot.

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

## MODEMS

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

### Telephone Line Connections

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

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

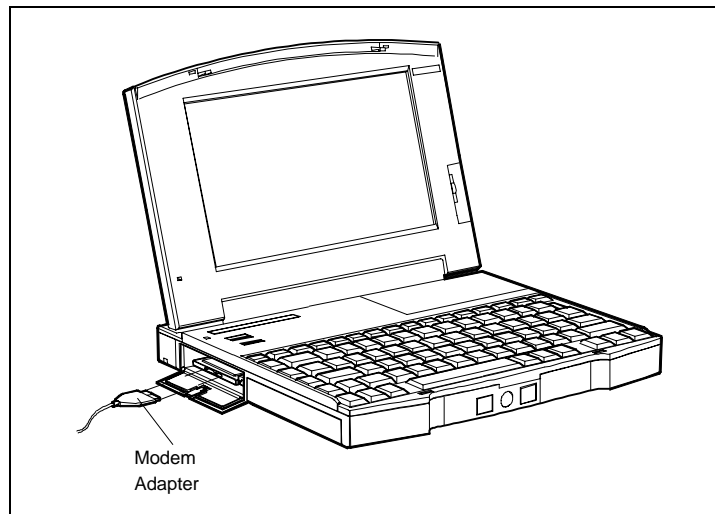
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### ***Connecting a Phone Cable Only***

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

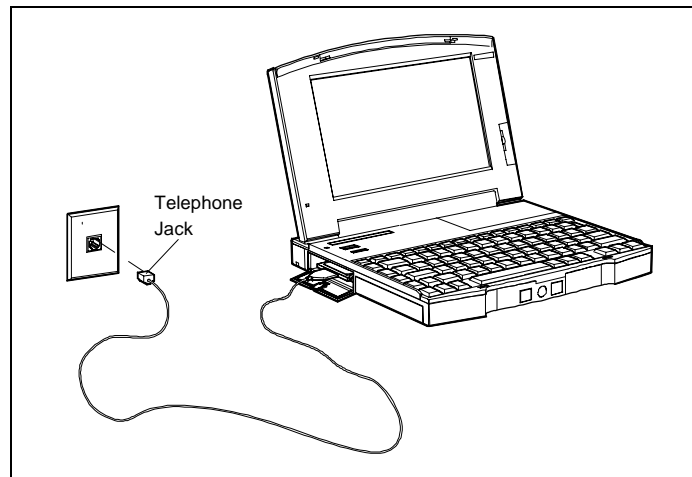
Follow these steps to connect your system to a phone line.

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



*Connecting the adapter*

3. Connect one end of the modular telephone cable to the adapter's telephone jack.
4. Connect the other end of the telephone cable to the wall outlet (you might have to unplug the telephone if it is plugged into the outlet).



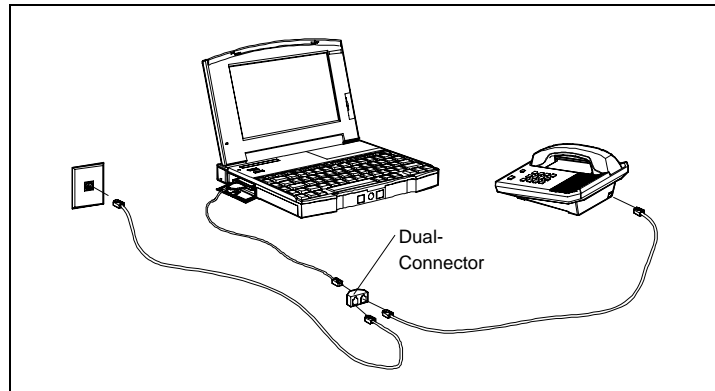
*Connecting to a telephone line*

### ***Connecting a Phone and a Versa V***

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

1. Insert the PCMCIA modem into one of the Versa V's PCMCIA slots.
2. Connect the modem's adapter to the PCMCIA modem.
3. Connect the one end of a modular telephone cable to the adapter's telephone jack.
4. Connect the other end of the telephone cable to the single jack on the dual-RJ11 connector.
5. Unplug the telephone cable from the wall outlet. Connect the cable to one of the two available jacks of the dual-RJ11 connector and to the telephone.

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



*Using a dual-RJ11 connector*

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

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

## **MEMORY EXPANSION**

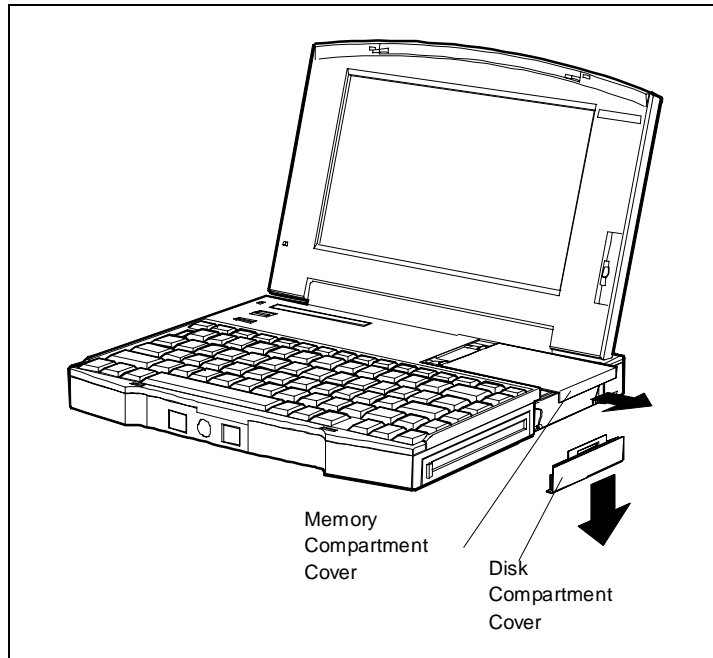
You can increase system memory by installing memory cards in the Versa V. You can install any of the following memory cards in the system.

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

---

Use the following steps to install a memory card.

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

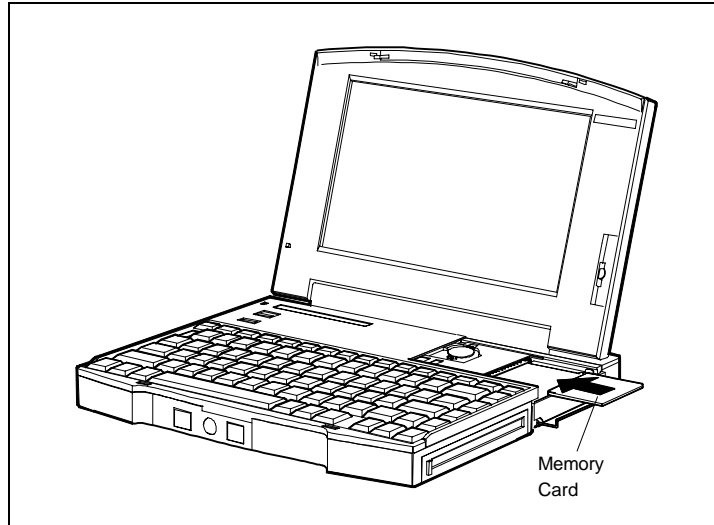


*Removing covers*

---

3. Install the memory card as follows.

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



*Inserting a memory card*

4. Replace the disk compartment cover.
5. Replace the memory compartment cover.
6. Run Auto Setup to check the new configuration.



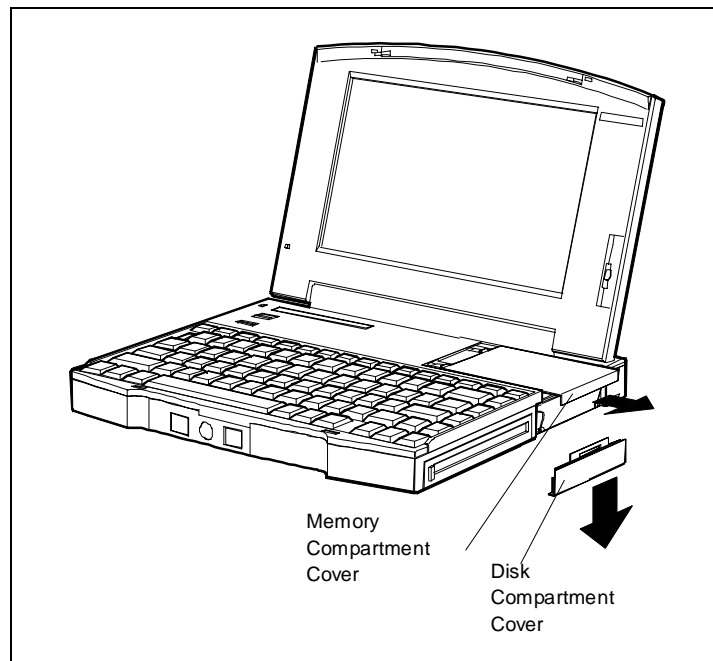
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## HARD DISK

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

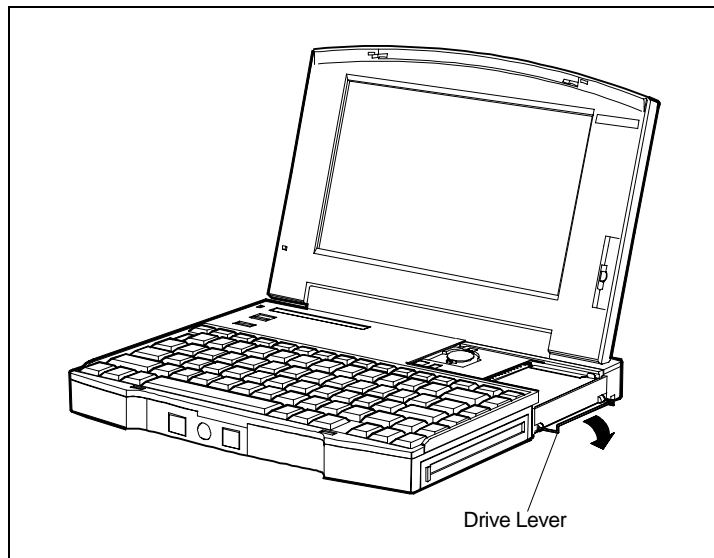
Use the following procedure to replace the hard disk.

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



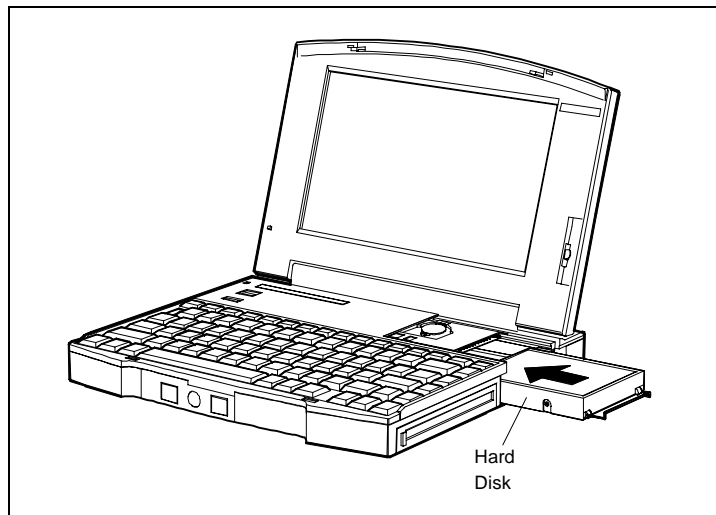
*Compartment covers*

- 
3. Swing the pull handle down and pull the drive out of the compartment.



*Drive lever*

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



*Installing a hard disk*

5. Replace the disk compartment cover.
6. Replace the memory compartment cover.
7. Run Auto Setup to check the new configuration.

---

## PRINTERS

You can install either a parallel printer or a serial printer to connect with your Versa V.

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

### Parallel Printer

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

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

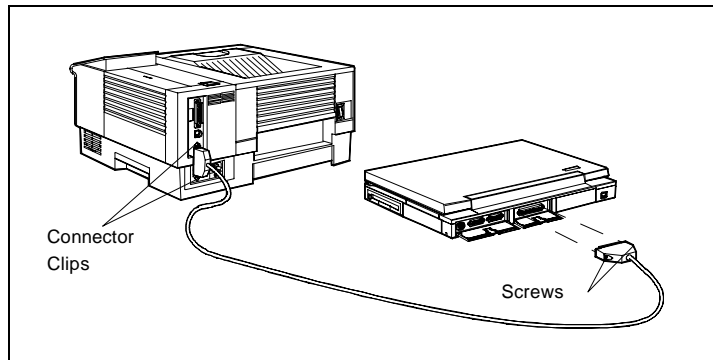
To connect a parallel printer to your Versa V, do the following.

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

---

5. Secure the printer cable as follows.

- Secure the system connection with the screws provided.
- Lock the connector to the printer with the connector clips.



*Connecting a parallel printer*

6. Connect the power cable to the printer.

7. Turn on power to the system and the printer.

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

---

## Serial Printer

To install a serial printer, you need a cable with a female 9-pin connector.

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

To connect a serial printer to your Versa V, do the following.

1. Check that both the Versa and the printer power is off.
2. Open the left-rear port cover.
3. Connect the printer cable connector to the printer port on the system. (The serial port is the third from the left.)
4. Attach the other end of the cable to the appropriate port on the printer.
5. Secure the connections with the screws provided.
6. Connect the power cable to the printer.
7. Turn on power to the system and the printer.

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

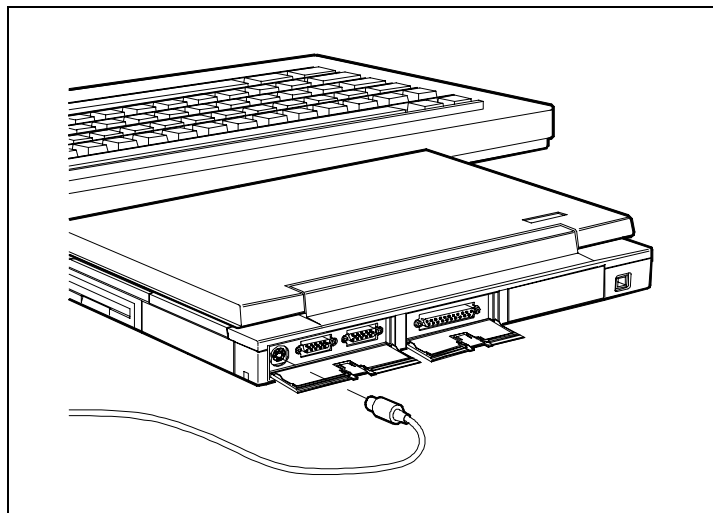
## EXTERNAL KEYBOARD

You can add a full-size external keyboard to your Versa V using the Plug and Play feature. To connect a PS/2-style keyboard to the system, do the following.

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

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

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



*Connecting an external keyboard*

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

The system will immediately recognize the keyboard.

---

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

**NOTE:** For instructions on connecting an external keyboard to the docking station, see the *Versa Series Docking Station User's Guide*.

## EXTERNAL MOUSE

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

**NOTE:** For instructions on connecting an external mouse to the docking station, see the *Versa Series Docking Station User's Guide*.

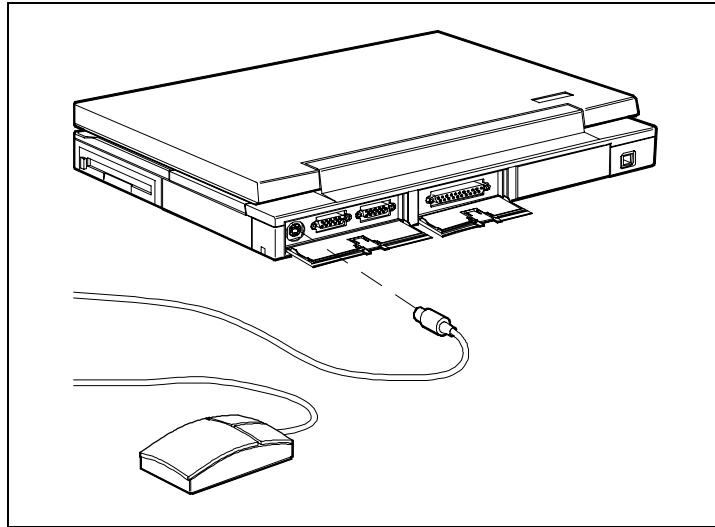
1. Check that the Versa is in Suspend mode.

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

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



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



*Connecting an external mouse*

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

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

---

## EXTERNAL MONITOR

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

**NOTE:** When you connect a monochrome VGA or super VGA monitor to the color Versa, the built-in color LCD displays in monochrome mode.

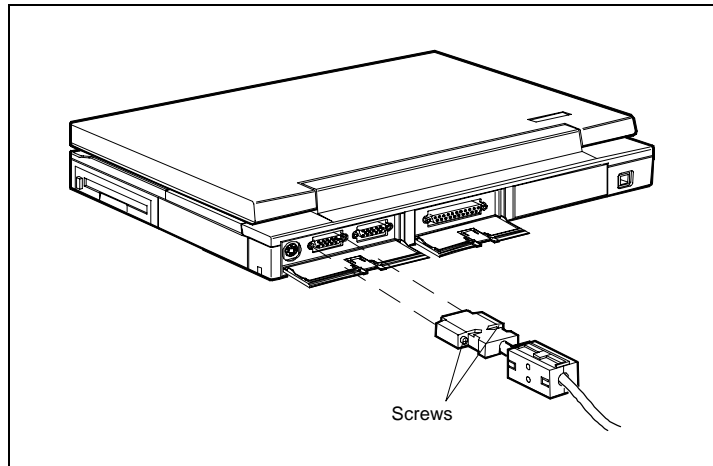
Follow these steps to connect an external monitor.

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

**NOTE:** The Versa power must be in Suspend mode while the monitor is being connected. If power remains Active, the Versa won't recognize the new display type, and Auto Setup can't switch the active screen from LCD to monitor.

2. Open the left-rear cover of the system.
3. Attach the 15-pin cable connector to the monitor port on the system. (The monitor port is the second from the left.)

- 
- Secure the cable connection with the screws provided on the 15-pin connector.



*Connecting a monitor*

- Connect the display power cable and plug it into a wall socket.
- Follow any setup instructions in the monitor manual.
- Turn on power to the monitor.
- Press the Suspend button to resume Active mode on the Versa.

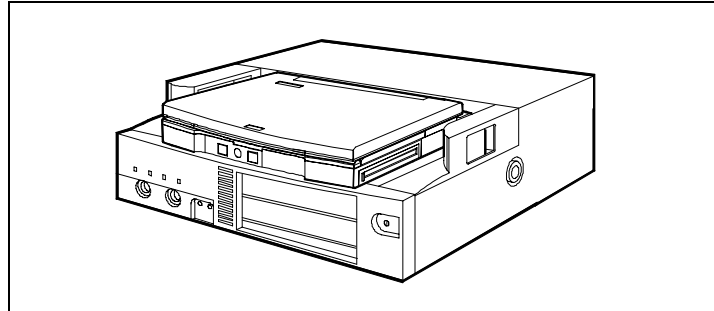
**TIP:** Each time you resume Active mode, be sure to power on the external monitor before you resume the Versa. Otherwise, the Versa won't recognize the new display type.

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

---

## DOCKING STATION

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



*Versa Docking Station*

### Expansion Bays

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

### Expansion Slots

The Docking Station also features two expansion slots for sound boards, LAN cards, CD-ROM controller boards, or video cards.

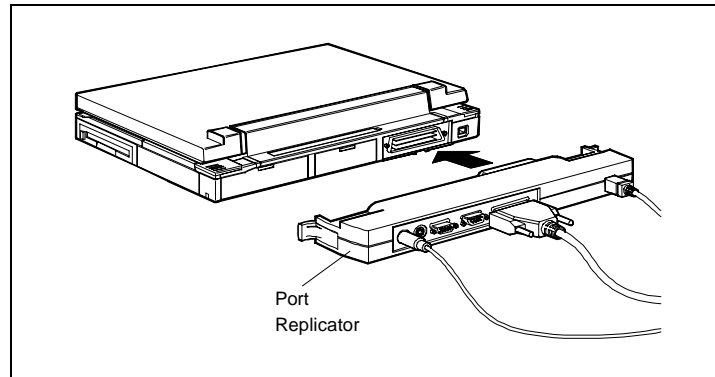
### Ports

The Docking Station has a headphone port and a microphone port in addition to the mouse and keyboard ports.

---

## PORT REPLICATOR

The Versa Port Replicator option provides you with the convenience of a single-touch dock at your desk. With your Versa V securely attached to a Port Replicator, you can have one connection with all your peripheral resources — printer, local network, monitor, mouse, and keyboard — instead of five.



*Versa Port Replicator*

## Ports

The Versa Port Replicator provides the following connector ports:

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

The Versa V has a combined mouse/keyboard port. The Versa Port Replicator allows you to have separate mouse and keyboard ports.

---

# 4 Understanding Power Management

## WHAT IS POWER MANAGEMENT?

Power Management is a set of features in the Versa V that conserve battery power, maximize the life of your battery pack and LCD backlight, and provide protection against data loss due to low battery power.

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

Some people like to keep power management enabled, even when using AC power to ensure privacy. Other people find that having the Versa drop into Suspend mode frequently is a nuisance. Adapt a style that fits your work habits.

## Default Settings

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

**Automatic Power-Saving Features**

DEVICE	DEFAULT TIMEOUT	COMMENT
LCD backlight	2 min.	Backlight is turned off after there is no keyboard or trackball input for the specified timeout.
Hard disk	1 min.	Hard disk motor stops when hard disk is not accessed for specified timeout.
Serial port	4 sec.	The serial port times out after the specified time of system inactivity.
Suspend	10 min.	System enters Suspend mode.

---

You can change the timeout period for any of the devices using Auto Setup. See “Using Auto Setup” in this guide.

Use the **Fn F7** key combination to set the power management level. Low and High are preset. You can modify the third level, Custom, for your specific working environment using Auto Setup. Default values change depending on the type of power management you use.

## **Power-Saving Modes**

The Versa V has three different power consumption states:

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

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

### ***Active Mode***

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

### ***Local Stand-by Mode***

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

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

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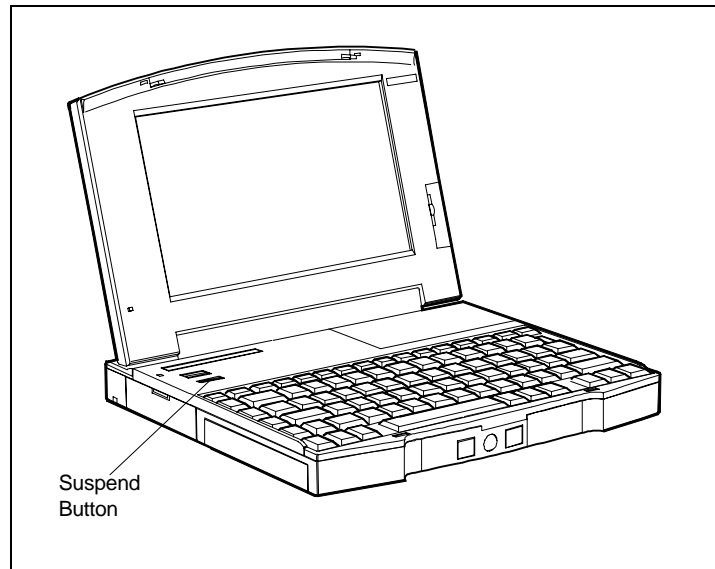
If the notebook has been shut, the LCD comes back on and the system returns to Active mode when it's reopened.

### ***Suspend Mode***

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

The system resumes Active mode when you press the suspend button or if an optional serial port modem detects a ring. The system will *not* resume Active mode if a PCMCIA modem detects a ring.

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



*Suspend button*

You can toggle between Suspend mode and Active mode.



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### **Smart Power Switch**

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

To power off the system from Suspend mode

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

### **Automatic Suspend Mode Initiation**

You can set your system to enter Suspend mode automatically after a specified number of minutes of system inactivity.

You specify how long system is inactive before the system enters Suspend mode. System activity includes any keyboard, trackball, or finger touch, diskette or hard disk drive access, PCMCIA modem, network, or LAN card, serial, or printer port communications.

Resume Active mode by pressing the suspend button.

See Chapter 5 in this guide for information on how to set system modes.

### **Power Management With a Docking Station**

When the optional Versa Docking Station is connected, power management is turned off, although the LCD still shuts off after the timeout. See the *Versa Docking Station User's Guide* for more information on docking stations.

---

## PROLONGING BATTERY LIFE

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

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

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

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

---

# 5 Using Auto Setup

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

The system has two sets of internal settings: one mobile and one docked. The mobile settings are used when the system is on the move, away from a Docking Station. The docked settings are used when the Versa V is connected to a Docking Station. The sample screens in this chapter show both kinds of setting configurations.

With Auto Setup you can modify the active configuration.

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

## AUTO SETUP

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

Use Auto Setup

- to set the time and date.
- to check a hardware discrepancy when POST displays an error message and prompts you to run Auto Setup.
- to identify which parameter(s) changed. Auto Setup indicates specific hardware changes with blinking double carets (>>).

- 
- to confirm that any optional memory you added is installed correctly.
  - to customize your system.

## How to Enter Auto Setup

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

The following sections describe how to enter Auto Setup no matter what the message at POST.

### ***With an Error at POST***

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

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

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

### ***With No Error at POST***

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

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

---

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

Auto Setup Summary						
Exit	Comms	Drives	Keyboard	Power System	Time/Date	about
		System RAM:		4.00 MB		
		Current Extended RAM:		3.00 MB		
		Previous Extended RAM:		3.00 MB		
		Power Management:		High		
		Diskette Drive A:		1.44 MB - 3.5"		
		Diskette Drive B:		Not Installed		
		Hard Disk Drive1:		BIOS Defined Type 18*		
		Hard Disk Drive 2:		Not Installed		

*Auto Setup Summary screen*

## How to Use Auto Setup

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

### ***Looking at the Screen***

Auto Setup screens have three main areas of information:

- **Menu bar** — top line of the screen. This line contains user-selectable menu options.

---

\*220 MB hard drive is type 18.

340 MB hard drive is type 20.

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

### **Using Key Functions**

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

**Auto Setup Quick Reference**

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

---

## ***Checking/Setting System Parameters***

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

Use the following steps to view or change system parameters.

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

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

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

2. If you entered Auto Setup with an error condition, blinking double carets (>>) identify the changed parameter(s). You can do one of the following:
  - accept the change(s) by pressing **Enter** and return to the Auto Setup Summary screen. Continue to step 7.
  - check other settings for the changed parameter by continuing to the next step.
3. Position the cursor on the parameter that you wish to view by pressing **Tab** or the arrows.
4. View the parameter settings by simultaneously pressing **Alt** and the down arrow (↓).

A window appears with a list of parameter settings.

- 
5. Select a setting as follows.

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

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

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

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

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

7. When you are through viewing or changing parameters, press **X** to select Exit in the menu bar. The screen displays a list of options.
8. Use **↓** to select “Exit and Save Changes” and press **Enter**. The screen displays a prompt requesting confirmation that you wish to exit.
9. Press **Enter** to confirm your selection. The system reboots with the saved changes.

## SYSTEM PARAMETER OPTIONS

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

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



---

## System Parameter Options

MENU/PARAMETER	DEFAULT SETTING
Comms	
Serial Port	3F8h-3FFh/IRQ4 (COM)
Parallel Port	378h-37Fh/IRQ7 (LPT1)
Parallel Port Mode	Unidirectional
Drives	
Diskette Drive A	Internal 1.44 MB — 3.5"
Diskette Drive B	Not installed
Hard Disk Drive 1	BIOS defined
Hard Disk Drive 2	Not installed
IDE Hard Disk Drive Interface	Internal only
Diskette Boot	Enable
Keyboard	
Typematic Rate	Normal
NumLock Status	NumLock Off
System Password	Disable
Keyboard Lock Hot Keys	Disable
Power	
Power Management	High
Power Management under AC	Disable
Slow CPU Speed When Idle	Enable
Backlight	Full
Highlight	Full
Suspend Warning Tone	Enable
Resume on Serial Port Ring	Disable
Resume on Time of Day	Disable
System	
Quick Boot	Disable
Setup Lock	Disable
Time/Date	
Time	—
Date	—

---

## Comms

The Comms option (**Alt-C**) lets you check or change settings for the following system communication ports:

- Serial port
- Parallel port.

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

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

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

## Drives

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

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

---

Drive options include the following:

- **IDE Hard Disk Interface**  
Allows you to select the internal IDE controller, the docking station's IDE controller if the system is docked, or to disable the interface completely.
- **Diskette Boot**  
Lets you specify from which drive you would like the system to boot. When disabled, prevents boot-up from the diskette drive. When enabled, allows start-up from the diskette drive. If a diskette is not inserted in drive A or drive A isn't installed, the system defaults to drive C.

## Keyboard

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

- **Typematic Rate**  
The typematic rate is the speed at which a key repeats itself when you press the key. Use this parameter to change the rate to suit your typing speed.
- **Numlock Boot Status**  
This controls the Numlock key status at power-on. When set to "Numlock Off" (the default), this parameter disables the Numeric Keypad mode at power-on. Set this parameter to "Numlock On" to enable the Numeric Keypad mode at power-on.
- **System Password**  
You can use this parameter to enable and set a system password for system security. The system password protects your data by allowing your system to boot only after you enter a password. You are not prompted for a password until you set an initial password.

Once you set a system password, you can enable the keyboard lock hot keys.

---

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

■ **Keyboard Lock Hot Keys**

This parameter offers a security feature after you set a system password.

After you select a hot key sequence, you can lock your keyboard, mouse, or trackball at any time, using any operating system, by executing the hot key sequence. Your keyboard, mouse, or trackball remain locked until you enter the system password.

For information about selecting and using keyboard lock hot keys, see “Keyboard Lock Hot Keys.”

**NOTE:** Select your hot keys carefully to prevent locking your keyboard unintentionally. See “Keyboard Lock Hot Keys” for guidelines on choosing hot keys.

## Power

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

■ **Power Management**

The Versa V’s ability to manage power can be set to high, low, or turned off completely. A “High” setting provides maximum power saving. “Low” sets minimal savings and “Off” disables all power management timers. You can also customize the system’s power management by entering values for the following timeouts:

- Automatic Suspend
- Hard Disk Timer

- 
- Serial Timer
  - LCD Panel Timer.

- **Power Management under AC**

Normally, whenever AC power is connected to the Versa, power management is disabled. If you enable this option, the system uses the power management mode (high, custom, low, or off) you set using the Power Management option.

- **Suspend Mode**

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

- **Slow CPU Speed**

This option automatically slows the CPU speed when the system is idle.

- **BackLight**

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

- **HighLight**

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

- **Suspend Warning Tone**

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

---

## System

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

- Quick Boot
- Setup Lock

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

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

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

## Time/Date

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

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

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

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

---

## SECURITY OPTIONS

Your system supports the following options for system security:

- system password
- keyboard lock hot keys.

### System Password

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

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

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

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

#### *Setting an Initial System Password*

Set an initial password as follows.


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

- 
6. Save your changes and return to the initial summary screen.
  7. Save the changes and exit Auto Setup.

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


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

### ***Using the System Password***

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

The key icon appears after POST completes.

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

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

**NOTE:** For security, the characters you enter do not appear on your screen. Enter your password carefully. The password is case sensitive, which means uppercase and lowercase letters are seen as distinct.



---

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

### ***Removing/Replacing a Password***

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

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

*current password/*

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

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

*current password/new password*

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

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

---

## Keyboard Lock Hot Keys

This feature lets you use a key sequence to lock your keyboard. This key sequence (up to three keys) can be used at any time or while in any application program. You must have a system password to use this feature. (See “Setting an Initial Password”.)

### ***Valid Keys***

The following are valid hot keys:

- All keys on the typewriter key area of your keyboard including
  - Ctrl, Alt, Caps, Lock, Tab, left Shift, right Shift, Enter, and Backspace
  - “Lowercase” keys
  - punctuation, brackets, and slashes
  - numbers 0 through 9 (excluding the numeric keypad)
- Esc key
- all function keys (F1 through F12).

### ***Invalid Keys***

The following keys are invalid hot keys:

- Numeric keypad keys
- Arrow keys
- “Uppercase” keys
- Print Screen, Scroll Lock, and Pause keys
- Insert, Delete, Home, End, Page Up, and Page Down keys.

Before you select a key sequence, review the guidelines in the next section.

---

### **Selecting Hot Keys**

It is extremely important to choose your hot keys within the parameters described in this section. To prevent locking your keyboard unintentionally, select your hot-key sequence as follows:

- Use a different key sequence than your system password.
- Avoid key sequences that are used by your operating system and commonly used applications.
- Avoid key sequences that contain all alphanumeric characters.

Use non-printable keys such as the Ctrl key or Function keys to start your key sequence. This helps eliminate accidental lockout by the use of commonly typed character sequences.

For example, if you select “ste” as your hot keys, your keyboard locks every time you type “system.”

- Avoid a one-key sequence.

### **Setting Your Hot Keys**

Use the following procedure to set your hot keys.

1. If you don't have a system password, set one (see “Setting an Initial System Password”).
2. Select “Keyboard” (**Ctrl-K**) from the menu bar.
3. Select “Keyboard Lock Hot Keys” on the Keyboard Settings menu.
4. Select “Enable and Disable.” A window opens with a prompt to enter up to three keys.

- 
5. Type up to a three-key sequence (see “Selecting Hot Keys”).

When you are through entering your hot keys, press **End** to save them.

6. Save the changes and exit Auto Setup.

### ***Using Your Hot Keys***

To use your keyboard lock hot keys, simply type them when you want to lock your keyboard. The first two keystrokes appear on your screen, if they are printable keys. The third keystroke does not appear.

To unlock your keyboard, enter your system password.

If you have a problem with the keyboard lock hot keys, disable them or set new hot keys using “Keyboard Lock Hot Keys” from the Auto Setup Keyboard menu. You must first disable the system password and reboot the system.

---

# 6 Problem Solving

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

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

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

## PROBLEM CHECKLIST

First check the items in the following list. If these items do not help, see the table that follows the list.

- Power is on to the computer.
- The electrical outlet to which your AC adapter is connected is working. Test the outlet by plugging in a lamp or other electrical device.
- All cables are tightly connected.
- The display setting is configured correctly.
- The display's brightness and contrast controls are adjusted properly.

- If you do not have the AC adapter connected, check that the battery pack is properly inserted and fully charged.
- System parameters are set correctly through Auto Setup for your hardware configuration.

### Troubleshooting

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

---

## Troubleshooting

PROBLEM	WHAT TO DO
An optional component does not work	Make sure the component is securely installed or connected. Verify that the system parameter for the I/O port configuration is set correctly in Auto Setup.
The suspend button does not work	A disk drive might be busy. Wait until the disk drive stops and try again.  The docking station might be connected to the Versa. Some power management functions do not work when the docking station is connected.
System BIOS cannot be reprogrammed	System Configuration switch 1 may be in the up position. Move switch 1 down and retry flashing a BIOS.  The docking station might be connected to the Versa. You cannot reprogram System BIOS when the docking station is connected.

## START-UP PROBLEMS

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

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

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

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

---

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

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

### POST Error Messages

MESSAGE	WHAT TO DO
Diskette drive <i>n</i> failure	<p>Drive <i>n</i> does not work or is not properly connected. (<i>n</i> is 0 or 1. Drives 0 and 1 refer to drives A and B.)</p> <p>Check that drive <i>n</i> is securely connected and power is on.</p> <p>Press <b>F1</b> to start Auto Setup to check the diskette drive parameters.</p> <p>If there's still a problem, drive <i>n</i> might need repair.</p> <p>Diskette read failure — Remove the diskette from drive A and press <b>F1</b> to run Auto Setup. Press any other key to retry boot, or start the system from the hard disk.</p> <p>Or, insert a bootable disk in drive A and press <b>F1</b>.</p>
No boot device available — press <b>F1</b> to run Auto Setup	<p>Press <b>F1</b> to start Auto Setup. Change the hard disk type to the correct setting. Exit and save Auto Setup.</p>
Invalid configuration information — run Setup program	<p>One or more system configuration parameters are not properly set. Start Auto Setup, set them correctly, and exit and save to update the parameters.</p> <p>Replace the CMOS lithium battery.</p>



---

## POST Error Messages

MESSAGE	WHAT TO DO
Real time clock failure	Set time and date using Auto Setup. Exit and save to update the parameters.  Replace the internal CMOS lithium battery.
Time-of-day not set — Run Setup program	Set the time and date using Auto Setup. Exit and save Setup to update the parameters.
Fixed disk configuration error	Start Auto Setup. Exit and save to update the parameters. Check to see if the hard disk connector is seated properly. If there is still a problem, the hard disk might need repair.
Fixed disk failure	Press <b>F1</b> to start Auto Setup. Exit and save to update the parameters. Check to see if the hard disk connector is seated properly. If there is still a problem, the hard disk might need repair.
Fixed disk controller failure	Press <b>F1</b> to start Auto Setup. Exit and save to update the parameters.  Check to see if the hard disk connector is seated properly.  The hard disk controller does not work and might need repair.
Keyboard clock line failure	Have the keyboard repaired.
Keyboard data line failure	Have the keyboard repaired.
Keyboard controller failure	Have the keyboard repaired.

---

### POST Error Messages

MESSAGE	WHAT TO DO
Keyboard stuck key failure	<p>A key is jammed. Remove any obstruction you find.</p> <p>You may have repeatedly pressed the <b>F1</b> key when trying to enter Auto Setup.</p> <p>If the error message remains, you may have to have the keyboard repaired.</p>

### IF YOU NEED ASSISTANCE

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

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

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

### Direct Technical Support

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

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## Remote Technical Support

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

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

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

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

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

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

---

## **Features**

Remote Support Session has the following features:

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

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# 7

## If You Need Help

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

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

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

These resources include:

- UltraCare<sup>®</sup> — 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.

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NEC products carry some of the industry's leading warranties. Your Versa V 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 V is covered — no matter what the problem — by the NEC warranty.

If you are enrolled in UltraCare, your Versa V 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 V 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 V can be obtained from any of the following sources:

- UltraCare
- Your reseller
- Directly from NEC.

## **UltraCare SUPPORT**

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

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

- Coverage in the U.S., Canada, and 26 other countries.

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

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

Without UltraCare, your Versa V 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.

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

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



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Reach FastFacts by dialing:

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

FastFacts contains the following information:

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

### **NEC Bulletin Board System**

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

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

#### ***What is the BBS?***

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

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

### ***How Do You Use the BBS?***

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

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

To 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.

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BBS communication parameters are as follows:

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

### **NEC Technical Support**

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

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

### **NEC Customer Service Response Center**

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

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

The NEC service and repair network includes the following:

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

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## **MAIL-IN SERVICE**

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

## **MAINTENANCE CONTRACTS**

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

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

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# A Specifications

The following specifications are standard except where noted.

## **System Processor**

Intel SL Enhanced i486DX2-50MHz

Intel SL Enhanced i486DX4-75MHz

## **Random Access Memory (RAM)**

Standard size — 4 MB high-speed

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

Video RAM — 1 MB

Cache RAM — 8 KB

## **Read-Only Memory (ROM)**

256 KB

## **Calendar Clock**

Year/month/day/hour/minute/second maintained by lithium CMOS battery

## **Display**

Color Models

Thin-film transistor (TFT), cold cathode fluorescent tube (CCFT) backlit LCD

■ Color — 4096 colors out of 256,000 colors

■ CRT — 256 colors out of 262,144 colors

- 
- Interface — Super VGA
  - Resolution — 640 x 480 pixel display
  - Dot Pitch — 0.30 mm by 0.30 mm (0.012 in. by 0.012 in.)
  - Viewing Area — 192 mm by 144 mm (7.56 in. by 5.67 in.)
  - Aspect Ratio — 4:3 (or true CRT aspect ratio)

Dual scan STN (Super Twist Nematic), cathode fluorescent (CFL) backlit LCD

- Color — 4096 colors out of 256,000 colors
- CRT — 256 colors out of 262,144 colors
- Interface — Super VGA
- Resolution — 640 x 480 pixel display
- Dot Pitch — 0.30 mm by 0.30 mm (0.012 in. by 0.012 in.)
- Viewing Area — 192 mm by 144 mm (7.56 in. by 5.67 in.)
- Aspect Ratio — 4:3 (or true CRT aspect ratio)

Monochrome Models

Super-twisted nematic (STN), cold cathode fluorescent tube (CCFT) backlit LCD

- Black and White — 64 shades of gray
- Interface — Super VGA
- Resolution — 640 x 480 pixel display
- Dot Pitch — 0.30 mm by 0.30 mm (0.012 in. by 0.012 in.)
- Viewing Area — 192 mm by 144 mm (7.56 in. by 5.67 in.)
- Aspect Ratio — 4:3 (or true CRT aspect ratio)

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## Pointing Device

Built-in track ball, PS/2 mouse interface port

## Keyboard

Built-in, 83 keys with standard QWERTY-key layout, 79 keys for U.K. and Germany

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

## Speaker

Software volume control — control with **Fn F6** function key combination

## Input/Output (I/O) Facilities

Five integrated interfaces

- Parallel — 25-pin enhanced parallel port
- Serial — RS-232C port, supports asynchronous communication up to 9600 bps, 9-pin connector
- CRT — supports VGA CRTs; supports enhanced VGA for some applications (Energy Star, Plug and Play, etc.)
- Mouse/Keyboard — supports PS/2-type mouse or PS/2-type keyboard
- Expansion — connects the docking station or port replicator

---

## Diskette Drive

Standard 44-MB Drive

- Size — 1.35 inch
- Capacity — 720 KB or 1.44 MB
- Access Time (average) — 94 ms
- Transfer Rate — 500k bps (with 1.44-MB diskettes)
- Interleave 1:1

## Hard Disk Drive

Internal 2.5-inch, 250-MB, 340-MB, or 540-MB

## PCMCIA Slots

Two standard peripheral interface slots.

- Output Voltage — 5 volts, 650mA or 3.3 volts, 400mA
- Capacity — 2 Type II cards or 1 Type III card

## Power

AC/DC Adapter

- Input Voltage — 100 to 240 volts (V) AC, 50 or 60 Hz, 1.0-0.5 A
- Output Voltage — system off: 11.5 V DC, 1.7/2.8 A  
— system on: 13.5 V DC, 1.5 A

Battery Pack

- Output Voltage — 7.2 V DC
- Capacity — 3,800 mAh
- Battery Life — Approximately 2.1 hours (TFT color), 2.3 hours (DSTN color) under typical operating conditions; 3.0 hours (DSTN monochrome).
- Recharging Time
  - Approximately 1.5 hours when the system is off
  - Approximately 2.6 hours when the system is on



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### Bridge Battery

- Backs up memory contents and system status for up to 5 minutes under Suspend mode
- Output voltage — 6 volts
- Capacity — 50 mAh

### Lithium Battery

- Powers the CMOS that retains configuration, date, and time
- Output voltage — 3 volts
- Capacity — 280 mAh

## Dimensions

### System Unit with TFT Color Screen

- Width — 11.69 in. (297 mm)
- Depth — 9.61 in. (244 mm)
- Height — 2.1 in. (53 mm)

### System Unit with DSTN Color Screen

- Width — 11.69 in. (297 mm)
- Depth — 9.61 in. (244 mm)
- Height — 2.2 in. (55 mm)

### System Unit DSTN Monochrome Screen

- Width — 11.69 in. (297 mm)
- Depth — 9.61 in. (244 mm)
- Height — 2.1 in. (53 mm)

---

#### Battery Pack

- Width — 4.2 in. (108 mm)
- Depth — 4.5 in. (114.5 mm)
- Height — 0.76 in. (19.5 mm)

#### AC Adapter

- Width — 4.68 in. (120 mm)
- Depth — 2.73 in. (70 mm)
- Height — 1.37 in. (35 mm)

### Weight

#### Color Models

- DSTN — 6.6 lb. (2.9 kg)
- TFT — 6.9 lb. (3.1 kg)

Monochrome DSTN Model — 6 lb. (2.7 kg)

Battery Pack — 1.16 lb. (540 g)

AC Adapter — 1 lb. (500 g)

### Recommended Environment

#### Operation

- Temperature — 41°F to 95°F (5°C to 35°C)
- Relative Humidity — 20% to 80% (No condensation)

#### Storage

- Temperature — -4°F to 104°F (-20°C to 40°C)
- Relative Humidity — 20% to 80% (No condensation)

---

# **B** NEC Communications Assistant

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

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

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

---

# 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.

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# Glossary

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

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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.

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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.

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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.

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

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

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

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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.

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**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.

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## **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.

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**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.

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**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.

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## **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.



## BATTERY REPLACEMENT

A lithium battery in your computer maintains system configuration information. In the event that the battery fails to maintain system configuration information, NEC recommends that you replace the battery. See the *Versa Battery Guide* for battery replacement information.

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

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

## BATTERY DISPOSAL

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

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

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

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

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

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

**(For United States Use Only)**

**FEDERAL COMMUNICATIONS COMMISSION  
RADIO FREQUENCY INTERFERENCE STATEMENT**

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

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

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from the one to which the receiver is connected.

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

**FCC Modem Connection Requirements**

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

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

The telephone company may make changes in its technical operations and procedures. If such changes affect the compatibility or use of the modem, the telephone company is required to give adequate notice of the changes. You will be advised of your right to file a complaint with the FCC.

If the telephone company requires information on what equipment is connected to their lines, inform them of:

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

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

### **Modem Service Requirements**

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

Phone: 1-800-632-4525

## **(For Canadian Use Only)**

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

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

### **Canadian Department of Communications Modem Connection Requirements**

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

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

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

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

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

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

## BATTERY REPLACEMENT

A lithium battery in your computer maintains system configuration information. In the event that the battery fails to maintain system configuration information, NEC recommends that you replace the battery. See Chapter 9 for battery replacement information.

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

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

## BATTERY DISPOSAL

Do not place used batteries in your regular trash.

The nickel-cadmium or nickel metal-hydride batteries must be collected, recycled, or disposed of in an environmentally-approved manner.

The incineration, landfilling, or mixing of batteries with the municipal solid waste stream is **prohibited by law** in most areas.

Return batteries to a federal or state approved battery recycler. This may be where you purchased the battery or a local seller of automotive batteries. In MINNESOTA, call 1-800-225-PRBA if further disposal information is required.

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