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You can read the recommendations in the user guide, the technical guide or the installation guide for NEC VERSA 2200C. You'll find the answers to all your questions on the NEC VERSA 2200C in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual NEC VERSA 2200C
User guide NEC VERSA 2200C
Operating instructions NEC VERSA 2200C
Instructions for use NEC VERSA 2200C
Instruction manual NEC VERSA 2200C

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Manual abstract:

To allow for design and specification improvements, the information in this document is subject to change at any time, without notice. Reproduction of this document or portions thereof without prior written approval of NEC is prohibited. Versa is a U.S. registered trademark of NEC Corporation All other product, brand, or trade names used in this publication are trademarks or registered trademarks of their respective trademark owners. First Printing -- February 1996 Copyright 1996 NEC Technologies, Inc. 1414 Massachusetts Avenue Boxborough, MA 01719 All rights reserved Copyright 1996 NEC Corporation 7-1 Shiba 5-Chome, Minato-Ku Tokyo 108-01, Japan All rights reserved Using This Guide This Versa® 2200C Series User's Guide contains information on using your notebook computer. Read the following chapters to find out more about the system. s Chapter 1 introduces the computer, its features, and how to care for it. s Chapter 2 explains how to use the NEC Versa 2200C hardware.

s Chapter 3 describes the software that comes with your NEC Versa 2200C. s Chapter 4 discusses traveling with your NEC Versa 2200C. s Chapter 5 gives you a checklist to follow if you have problems with the NEC Versa 2200C. Common problems and their solutions are also included. s Chapter 6 provides a list of numbers for NEC customer support services.

! WARNING Prolonged or improper use of a computer workstation may pose a risk of serious injury. To reduce your risk of injury, set up and use your computer in the manner described in Appendix A, Setting Up a Healthy Work Environment. Using This Guide vii s Appendix A, Setting Up a Healthy Work Environment, contains guidelines to help you use your computer productively and safely. This appendix also instructs you on how to set up and use your computer to reduce your risk of developing nerve, muscle, or tendon disorders. s Appendix B, Specifications and Environment, provides system specifications and environment recommendations.

s Appendix C, Modem Commands, Codes, and Registers, lists commands, registers and for network communication use via the optional internal modem or a PC card modem. TEXT SETUP To make this guide as easy to use as possible, text is set up in the following ways. s Warnings, cautions, and notes have the following meanings: ! WARNING Warnings alert you to situations that could result in serious personal injury or loss of life. ! CAUTION Cautions indicate situations that can damage the system hardware or software. viii Using This Guide Notes give important information about the material being described.

NOTE TIP: Tips give helpful hints about getting the most out of your system. s Names of keys are printed as they appear on the key- board, for example, Ctrl, Alt, or Enter. s 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 system, including: s The NEC Versa 2200C Notebook Quick Setup shows you how to set up your system after you unpack it.

s The Versa 2200 Series Quick Reference Guide contains brief descriptions of function keys, LEDs, NEC Help telephone numbers and troubleshooting tips. Tuck this card inside the closed notebook when you take it with you. The card is designed as a quick, portable reference to frequently-used functions. Using This Guide ix Contents Using This Guide Text Setup

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5-inch color TFT (Thin Film Transistor) active-matrix display. Brightness Control You can adjust the screen backlight brightness with the control slide switch located on the side of the screen. Getting to Know Your NEC Versa 2200C 1-3 Switches The NEC Versa 2200C has the following switches: Reset -- This recessed switch resets the system if the NEC Versa does not respond to keyboard input or VersaGlide movement. This is an alternative to powering down the system and restarting it. (Use a non-metallic pointed object.

) Power -- Slide right to turn on; slide right again to turn off. Power Management -- Press the switch down to turn Power Management on; press again to turn it off. Suspend/Resume -- Press the switch down for Suspend mode; press again to resume active mode. 1-4 Getting to Know Your NEC Versa 2200C LEDs The NEC Versa 2200C has several LED lights to let you know what's happening on your system. Power Management -- Green when On; no color when Off; blinking green when the system is in Suspend mode. Battery/AC Power Status -- There are several light indicators. BATTERY STATUS AC Powered 50% to 100% charged 25% to 49% charged 10% to 24% charged 0% to 9% charged Charging Powered off LED Green Green Yellow Red Blinking Red Blinking Green No color Getting to Know Your NEC Versa 2200C 1-5 Attached an external CRT monitor to your NEC Versa 2200C. You can run both the LCD display and the external monitor simultaneously, or each alone. AC Power Jack -- Use the power jack to attach the NEC Versa 2200C to an AC power source such as the AC adapter or the optional car adapter. Getting to Know Your NEC Versa 2200C 1-9 Left Side The left side of your NEC Versa 2200C has two slots for PC cards and a hard disk drive compartment.

(There is also port cut-out on this side for the optional internal modem.) Left side PC Card Slots -- PCMCIA is a standard interface for peripheral devices like fax/modems, local area network (LAN) cards, storage cards, and pagers. A PC card is about the size and shape of a credit card and inserts into one of the two slots. Hard Disk Drive -- The NEC Versa 2200C hard disk drive is removable. You can exchange hard disks in the NEC Versa 2200C. 1-10 Getting to Know Your NEC Versa 2200C Right Side On the right side of the NEC Versa 2200C is a diskette drive and a compartment for the removable battery. Right side Diskette Drive -- You can save your files to diskette and install software from diskette using the diskette drive, called drive A. Battery -- On the front side is the removable Lithium Ion (Li-Ion) battery. Getting to Know Your NEC Versa 2200C 1-11 Underside Every inch of the NEC Versa 2200C has a purpose -- even the underside! Turn your system upside down. You'll see three compartments.

The small compartment is for expansion memory modules. Another compartment contains the Lithium Ion (Li-Ion) battery. There is also a compartment for an internal data/fax modem. Bottom of system There is a small compartment in the center of the underside that contains the CMOS battery. You should not attempt to remove this battery.

NOTE 1-12 Getting to Know Your NEC Versa 2200C SYSTEM CARE The NEC Versa 2200C is a durable, dependable system built for extensive use and travel. Follow these guidelines to maintain the condition and performance of your computer. Precautions Follow these precautions when using your NEC Versa 2200C and the AC adapter. s Avoid dropping or bumping the computer or the AC adapter. s Do not stack heavy objects on the computer. s Avoid moving the NEC Versa 2200C during system operation, especially while the hard disk or diskette drive is being accessed. s When using the AC adapter, make sure the power source falls within the system's compatible range of 100-240 volts AC. Never use the AC adapter if the voltage falls outside of this range. (Watch for this when traveling to foreign countries.) s Turn computer power off before attaching or removing non-plug and play devices. s Avoid using the computer or AC adapter for extended periods in direct sunlight. s Do not use the system in humid or dusty environments. s Avoid exposing the NEC Versa 2200C or AC adapter to extreme changes in temperature or humidity. If it is unavoidable, allow your NEC Versa to adjust to room temperature before using. s When cleaning the system, use a soft, clean, dry cloth.

Avoid wiping the display surface with abrasive material, including a rough cloth. Getting to Know Your NEC Versa 2200C 1-13 s The VersaGlide has a sealed surface that resists normal dust and moisture and should require nothing more than an occasional cleaning. To clean the VersaGlide, simply wipe it off with a clean cloth. For stubborn grime, use a lightly moistened (with water) cloth. Storage Requirements Store the computer and AC adapter in an environment that meets the following conditions: s Maintain storage temperatures between 4°F and 104°F (20°C and 40°C). s Keep the storage area free from vibration and magnetic fields. s Keep the system and its components away from organic solvents or corrosive gases. s Avoid leaving the system and its components in direct sunlight or near heat sources. Routine Cleaning Clean or dust your system as follows. s LCD screen -- Carefully wipe the LCD screen with a soft cloth or a screen wipe designed for that purpose.

Special screen wipes are available through your local computer dealer. s System plastic -- If the NEC Versa 2200C plastic case gets dirty, carefully wipe it with a slightly damp, almost dry cloth. Be extremely careful not to drip any moisture onto or into the NEC Versa 2200C. Never use harsh solutions or spray chemical cleaning products on the NEC Versa 2200C. 1-14 Getting to Know Your NEC Versa 2200C ! CAUTION Never use household cleaning solvents that contain caustic materials.

The use of these cleaners may cause cracking or discoloration of the plastic surface. s VersaGlide -- Wipe the pad surface with a clean cloth. For stubborn grime, use a lightly moistened (with water) cloth. ! CAUTION If the environmental temperature of the NEC Versa suddenly drops (for example, when you move the system from a warm place to a cold place), vapor condenses inside the system. Turning on the system under this condition can cause damage to the internal components.

Wait before turning the system on so that the internal temperature of the system can equalize with the cooler environment and any moisture can dry. Getting to Know Your NEC Versa 2200C 1-15 2 Learning to Use the Hardware Like any computer, the NEC Versa 2200C is made up of the hardware -- the physical unit and its components -- and the software -- the programs that run on the computer. This chapter discusses the hardware. The topics include: s Powering the system s Keyboard s NEC VersaGlide s Options and PC Card Expansion POWERING YOUR NEC VERSA Since the NEC Versa 2200C is a truly portable computer, you can use it practically anywhere with any one of a number of power sources, including: s the AC adapter connected to an electrical wall outlet (using AC power) s the battery pack s the optional DC adapter connected to a car cigarette lighter.



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AC Adapter Use the AC adapter that came with your NEC Versa 2200C to run your computer with AC (alternating current) power, or to recharge the battery pack. Use the AC adapter whenever a wall outlet is nearby. **Learning to Use the Hardware 2-1** Keep the adapter connected whenever possible. The AC adapter keeps the battery charged while you use the system and when the NEC Versa 2200C is powered off. Here's how you connect the AC adapter: 1. Connect the AC adapter to your NEC Versa 2200C.

Connecting the AC adapter 2. Connect the end of the power cable to the AC adapter. 3. Connect the other end of the power cable to a 100- or 240-volt wall outlet. **Battery Pack** The NEC Versa 2200C comes with a rechargeable Lithium Ion (Li-Ion) battery. With it, you can run your system without a wall outlet for up to four hours with Power Management or two hours without Power Management. It's easy to install and remove. 2-2 **Learning to Use the Hardware** You can keep track of the battery's status through the LED on the front of the system or with the battery gauge in Windows. Both let you know how much battery power you have left. When your battery power is getting low, you can replace the battery with a charged Li-Ion battery while your system is off or in Suspend mode or leave the original battery in the system and simply plug in your NEC Versa 2200C AC adapter into a wall outlet.

The battery recharges over a period of two hours while in the NEC Versa 2200C and the system is powered off. You can recharge the battery in six to seven hours while the system is on. Optionally, you can buy a battery charger to quickly charge your battery. See the online NEC Versa 2200C Options Catalog.

Removing the Battery Pack Use the following procedure to remove the battery pack.

1. Power off the NEC Versa 2200C and turn it over. 2. With the front of the system facing you, press on the battery compartment cover and slide it upward to remove it. 3.

Locate the battery release latch on the bottom of the system. Slide the latch in the direction of the arrow. The battery pack pops out slightly. 4. Gently pull out the battery pack. See the online NEC Versa 2200C InfoCenter Basics for a demonstration of this procedure. **Learning to Use the Hardware 2-3 ! WARNING** To prevent accidental battery ignition or explosion, adhere to the following: s s Keep the battery away from extreme heat. Keep metal objects away from the battery terminals to prevent causing a short circuit. Make sure the battery is properly installed in the battery bay. Read the precautions printed on the battery and in the online NEC Versa 2200C InfoCenter Basics.

s s **KEYBOARD** The NEC Versa 2200C keyboard is equipped with many features. They include the following. s Function keys s Cursor control keys s Typewriter keys s Numeric keypad s Control keys 2-4 **Learning to Use the Hardware Keyboard Function keys --** There are 12 function keys, F1 through F12. The Fn key activates key functions printed in blue on keys having dual functions. **Cursor Control keys --** Cursor control keys let you position the cursor on the screen where you want. On the screen, the cursor is a blinking underline or block, depending on the application. It indicates where the next text typed is inserted. **Typewriter keys --** The typewriter keys (also called alphanumeric keys) are used to enter text and characters. Those keys that have blue printing on them behave differently when combined with control keys or Fn keys. **Numeric Keypad --** Pressing Num Lock on the keyboard activates the numeric keypad (when an external keyboard is not connected).

The keypad lets you type numbers and mathematical operands (+,) as you would on a calculator. The keypad is ideal for entering long lists of numbers. **Learning to Use the Hardware 2-5** When you press Num Lock again, the keys revert to their normal functions as typewriter keys. **Control keys --** Ctrl, Alt, Fn, Ins, and Shift are controls that are used in conjunction with other keys to change their functions. To use these control keys, press and hold the Ctrl key while pressing another key.

For example, "press Ctrl c" means to hold down the Ctrl key and type the letter c. How the key combination works depends on the applications you are running. **THE NEC VERSA GLIDE** The NEC VersaGlide is an easy way to control the screen pointer (cursor) with your finger. Simply move your finger across the NEC VersaGlide touchpad and the cursor follows. You select an object on the screen in either of two ways: s Double click the left button (this is the primary button) s Double tap your finger on the VersaGlide touchpad.

Try both ways and decide which you prefer. You can also reverse the primary (left) and secondary (right) buttons. For details on using the NEC VersaGlide, see the online NEC Versa 2200C InfoCenter Basics **Personalized Modes** The NEC VersaGlide has four personalized modes that make finding the cursor on your screen quick and easy. Press the key sequence you've defined in NEC Mouse Shortcuts, and the cursor jumps to the spot on the screen you have preselected. See the Windows 95 Settings, Control Panel, Mouse. (Or in Windows for Workgroups, see Settings, Control Panel, NEC VersaGlide.) 2-6 **Learning to Use the Hardware Pointer Size, Speed** You can change the size, color, and speed of the pointer controlled by the NEC VersaGlide. See the Windows Control Panel, NEC VersaGlide, Pointer and Motion if you have Windows for Workgroups. If you have Windows 95, see Settings, Control Panel, Mouse. **Ergonomics** Follow these basic ergonomic tips while working: s Use a light touch on the VersaGlide surface.

s Set up your NEC Versa 2200C with your keyboard and VersaGlide at a comfortable height. Keep your forearms parallel to the floor. Your wrists should be relaxed and straight. s While using the keyboard and VersaGlide, keep your shoulders and arms as relaxed as possible. s Take regular breaks from the computer to rest your eyes, and perform stretching exercises to relax your fingers, hand, wrists, forearms, and shoulders. See Appendix A, "Setting Up a Healthy Work Environment," for more information. **OPTIONS AND PC CARD EXPANSION** You can add a number of options and connect several external devices and PC cards to your NEC Versa 2200C. You can get details on how to obtain these options from the online NEC Versa 2200C Options Catalog. **Hard Disk** You can increase the system's storage capacity by replacing the standard hard disk, or you can have two hard drives for alternate usage (for example, one for office use and one for home use). Here is how to replace the hard disk: **Learning to Use the Hardware 2-7 1.**

Check that the NEC Versa 2200C power is off. 2. Open the hard disk compartment cover, swing the drive handle down, and pull the drive out of the compartment. 3. Swing the handle on the new drive down.

Install the drive, sliding it into the compartment.



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Press firmly to make sure the drive is fully inserted. Swing the drive handle up. 4. Close the disk compartment cover.

Turn on system power. 5. Press F1 to run Auto Setup to check the new configuration. Auto Setup recognizes the new drive if it's a different size from the first drive. Refer to "Auto Setup Utility" in Chapter 3 of this guide or to the online Advanced Topics for details on using Auto Setup. 2-8 Learning to Use the Hardware Memory Expansion Your NEC Versa 2200C comes standard with 8 megabytes (MB) of random access memory (RAM). You can increase system memory to a maximum of 40 MB by installing any one or combination of two of the following memory modules in the system. s 4-MB memory card 8-MB memory card s 16-MB memory card Use the following steps to install a memory card. 1. Make sure the system power is off.

2. Turn the NEC Versa 2200C upside down. 3. Remove the memory compartment cover from the system by releasing the small latch and lifting the cover off the system Removing cover Learning to Use the Hardware 2-9 4. Install the memory card as follows. s Align the memory card connector with the connectors in the system. (The card fits in either slot.) s Insert the card connector by sliding it into the system connector. Press the card to make sure it is securely seated. Inserting an optional memory card 5.

Replace the memory compartment cover. 6. Run Auto Setup to check the new configuration. Auto Setup should show a blinking arrow next to the extended memory field. The new value should reflect the increase in memory.

(Refer to "Using Auto Setup" in the online Advanced Topics.) If it does not verify, make sure the memory card is properly seated in the slot. 2-10 Learning to Use the Hardware External Monitor You can add a standard external monitor to your NEC Versa 2200C. You need a display signal cable (usually provided with the monitor). One end of the cable must have a 15-pin connector for the system.

(See the back of the NEC Versa 2200C, behind the right-rear cover, for the monitor connector.) Follow these steps to connect an external monitor to your NEC Versa 2200C. 1. Check that the NEC Versa 2200C is in Suspend mode or powered off and the monitor power switch is turned off. The NEC Versa 2200C must be in Suspend mode or powered off while the monitor is being connected. 2. Open the right-rear cover of the system. 3. Attach the 15-pin cable connector to the video port on NOTE the system. (The video port is the second from the right.

) Secure the cable connection with the screws provided. Learning to Use the Hardware 2-11 2 Learning to Use the Hardware 2-11 Connecting a monitor 4. Connect the monitor power cable and plug it into a properly grounded wall outlet. 5. Follow any setup instructions in the monitor manual. 6. Turn on power to the monitor. 7. Press the Suspend button to resume Active mode or power on the NEC Versa 2200C. Toggle the Fn + F3 function key combination to select both the LCD and CRT monitor, CRT monitor only, or LCD only.

2-12 Learning to Use the Hardware Printers You can attach a printer with either a parallel or a serial connector. A parallel printer connector has 25 pins; a serial connector has 9 pins. Parallel Devices To install a parallel device (such as a printer, CD-ROM reader, or tape drive), you need a cable with a male 25-pin connector for the system and, for most parallel printers, a Centronics® compatible 36-pin connector. When you connect a printer, be sure you install the appropriate device driver through the Control Panel. See the online Windows QuickStart Guide or Using Windows 95 for instructions on installing the device.

NOTE To connect a parallel device to your NEC Versa 2200C, do the following. 1. Check that both the NEC Versa 2200C and device power are off. 2. Open the left-rear cover of the system and locate the parallel port.

(The parallel port is the third from the left.) 3. Align and connect the 25-pin printer cable connector to the parallel port on the system. Secure the cable with the screws provided. Learning to Use the Hardware 2-13 Connecting a parallel device 4. Align and connect the other end of the cable to the parallel port on the device. Lock the connector clips. 5. Connect the power cable to the device and a properly grounded wall outlet. 6.

Turn on power to the system and then to the device. Check that the device is online before you try to use it. See the instructions that came with your device for further information. NOTE 2-14 Learning to Use the Hardware Serial Devices To install a serial device such as a printer or an external modem, you need a cable with a female 9-pin connector. When you connect a printer, be sure you install the appropriate printer driver through the Windows Control Panel. See the online Windows QuickStart Guide or Using Windows 95 for instructions on using the Control Panel. NOTE Follow these steps to connect a serial device to your NEC Versa 2200C. 1. Check that both the NEC Versa 2200C and the device power are off. 2.

Open the left-rear port cover and locate the serial port, (second from left). 3. Align and connect the 9-pin connector with the serial port on the system. Secure the connection with the screws provided. 4.

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

Turn on power to the system and then to the device. NOTE Make sure your device is online before trying to use it. See the device guide for instructions.

Learning to Use the Hardware 2-15 External Keyboard You can add a full-size PS/2-style keyboard to your NEC Versa 2200C using the Plug and Play feature. You cannot use the system keyboard while an external keyboard is connected. However, when you press the numlock key combination (Fn+NumLock), the numeric keypad on the external keyboard only is enabled. If you want to attach both an external keyboard and a PS/2style external mouse at the same time, use the optional NEC Y-adaptor. See the online NEC Versa 2200C Options Catalog. Follow these steps to connect an external keyboard to your system. 1.

Check that the NEC Versa 2200C is in Suspend mode or powered off. ! CAUTION Make sure the NEC Versa 2200C is in Suspend mode whenever you add or remove a keyboard. Doing so with the power on in Active mode may damage either the keyboard controller chip or the keyboard. 2. Connect the keyboard cable connector to the keyboard port on the system. (The keyboard/mouse port is the first one on the left rear of the system.) 2-16 Learning to Use the Hardware Connecting an external keyboard 3. 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 only the external keyboard.



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The built-in system keyboard will become disabled. For instructions on connecting an external keyboard to either the NEC Versa MediaDock 2000 or the MiniDock 2000, see the user's guide that came with your specific docking station. NOTE Learning to Use the Hardware 2-17 Mouse You can add an external mouse to your NEC Versa 2200C to use in place of the NEC VersaGlide for moving the pointer. Use the following procedure to connect a PS/2-style mouse to the system. 1.

Check that the NEC Versa 2200C is powered off. ! CAUTION Make sure the NEC Versa 2200C is powered off whenever you add or remove a mouse. Doing so with the power on may damage either the system or the mouse. 2. Connect the mouse cable connector to the key-board/mouse port on the system. (The keyboard/mouse port is the first one on the left.) Connecting an external mouse 2-18 Learning to Use the Hardware 3. Power on the NEC Versa 2200C again. For instructions on connecting an external mouse to either the NEC Versa MediaDock 2000 or MiniDock 2000, see the user's guide that came with your specific docking station. NOTE Internal Modem The NEC Versa 2200C comes ready for you to install an internal modem to send and receive faxes, cruise the Internet, and download information. A modem converts data so it can be transmitted over phone lines and then converts it back again so you can read it on your computer. You can purchase a 14.4 kbps fax/modem board as an option for your NEC Versa 2200C. NOTE Your NEC Versa 2200C does not have an internal modem, but you can purchase one as an option. Or you can use a PC card modem.

See the online NEC Versa 2200C Options Catalog for both options. Your NEC Versa 2200C comes with several online service gateways -- all the basic software you need to communicate with the outside world. Use the following procedure to connect a phone line to the NEC Versa 2200C. 1. Unplug the telephone cable from the telephone. Learning to Use the Hardware 2-19 2. If you have an internal modem, plug the telephone cable into the modem connector on the NEC Versa 2200C. If you have an NEC Versa 2200C without an internal modem, plug the phone cable into the PC card which is inserted in a PCMCIA slot. Connecting to the optional internal modem You are now ready to use your communication software to run an online service, or download the latest NEC Bulletin Board Services information. PCMCIA (PC Card) You can easily install and interchange peripheral devices, such as modems, SCSI, sound, LAN cards, and storage cards in your NEC Versa 2200C.

The NEC Versa 2200C series notebook computers have software that automatically allocates system resources when you install or remove a PC card using PCMCIA technology. Refer to the user's guide that came with your PC card for any special information. 2-20 Learning to Use the Hardware To insert a PC card, open the slot cover and follow these steps. 1. Align the card so the 68-pin connector points toward the slot.

2. Slide the card into either slot. A low, then high tone lets you know that it's fully inserted and recognized. (If you turned off the sound on the Versa, the tones do not sound.) Other two-tone sequences such as high, then low tones indicate the card is inserted, but the type is unknown.

Inserting a PC card 3. If your system is running Windows for Workgroups, look for the CardWizard™ icon in the Windows Program Manager. It shows which slot contains a PC card and which is empty. (You can get the same information if you're running Windows 95 through Settings, Control Panel, and the PC Card icon.) Learning to Use the Hardware 2-21 4. To remove the card, press the button on the side of the slot. You'll hear another double tone. (In Windows 95, double click on the PC card icon on the task bar. Select the PC card to be removed, and click on Stop. When you get a prompt, click OK, then press the button on the side of the slot and remove the card.

) NEC Versa MediaDock 2000 The NEC Versa 2200C expansion options give you one touch connection to external peripherals or a full-blown multimedia station. The MediaDock 2000 provides CD-ROM capability and a stereo sound system. See the NEC Versa MediaDock 2000 User's Guide for instructions on connecting the docking station. NEC Versa 2200C docked with a MediaDock 2000 2-22 Learning to Use the Hardware NEC Versa MiniDock 2000 The NEC Versa MiniDock 2000 option provides you with the convenience of a dock at your desk without taking up a lot of space. With your NEC Versa 2200C securely attached to the MiniDock, you can have one connection with all your peripheral resources -- printer, local area network, monitor, mouse, and keyboard -- instead of five separate connections. The NEC MiniDock 2000 also provides two additional PCMCIA slots. NEC Versa 2200C docked with a MiniDock 2000 Learning to Use the Hardware 2-23 3 About the Software This chapter introduces you to the software that comes with the NEC Versa 2200C, including: s Windows 95 or Windows for Workgroups s MS-DOS® s Online Help s NEC Utilities WINDOWS INTRODUCTION Your NEC Versa 2200C gives you the option of loading either Windows 95 or Windows for Workgroups to use on your system. Both Microsoft operating systems provide a means of running applications, navigating through your file structure, and using your notebook computer. Each operating system offers its own look and means of operation.

Both Windows 95 and Windows for Workgroups use a graphical interface to make the operating systems easy to use.

@@@Every application in Windows is assigned an icon. @@@@These programs are known as utilities. @@@Save the diskettes in case you need software to reload. @@The gauge shows you the percentage of power left in your LiIon battery. NEC Backup This utility allows you to back up to diskette the entire contents of your system.

You'll need a large number of diskettes for this. This utility is used on Windows for Workgroups only. PHDisk This utility creates a file on the hard disk that is large enough to contain all the software in memory. Its default size is approximately 16-MB. You will need to update this utility only if you upgrade the amount of memory to more than 16-MB in your NEC Versa 2200C.

This utility must be run in DOS. (It will not run on a compressed drive.) Auto Setup Utility Auto Setup automatically configures your NEC Versa 2200C each time you start it up. This utility also lets you change your system start-up settings. About the Software 3-7 Using Auto Setup Use Auto Setup as follows: 1. Reboot your system. When the screen displays the blinking block at boot-up, press F1. 2. When the Auto Setup Summary screen is displayed, enter the highlighted letter in the menu bar that represents the category you want. For example, type D to open the Disk Drive Settings window.

3. Use the up and down arrows to move between selections displayed on the screen.



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Press Alt + the arrow keys to display setting options. 4. Follow the instructions at the bottom of the screen to make selections, change values, and exit. Be sure to keep track of any password you enter. If you set a system password, a key icon appears at bootup. You must enter the password to access the system. To change the password, enter the password followed by a forward slash (/) and a new password. To remove the password, enter the password followed by a forward slash (/).

NOTE Refer to the online Advanced Topics for details on Auto Setup. 3-8 About the Software 4 Traveling with Your NEC Versa 2200C The NEC Versa 2200C makes a natural traveling companion. Using a battery, you can use the computer anywhere you go. Here is some information you might find helpful when taking the NEC Versa on the road. s Carry an extra charged battery pack for additional battery power.

s Check that you have everything you need before you leave on a trip. Be sure you have all the necessary cables and accessories. (See the checklist at the end of this chapter.) s If you run your system with battery power, maximize battery life by using power-saving features whenever possible. s Take the AC adapter in case you have an electrical outlet handy.

This saves battery power for when you really need it. s Carry any application or data files on diskette that you might need. *TIP:* Speed the trip through airport security by carrying a charged system. Inspectors want to see the screen display a message. The boot message is usually sufficient. If your system is fully charged, the inspection only takes a minute or so. Otherwise, be prepared to attach the AC adapter and power cable. If you don't have these, the inspection might include a disassembly of the system. Traveling with Your NEC Versa 2200C 4-1 POWER CONNECTIONS With the right accessories, you can run your NEC Versa 2200C almost anywhere! Your system self-adjusts to various power sources. The United States, Canada, and most of Central and South America use 110-volt alternating current (AC).

Most other countries of the world use 220-volt AC. The NEC Versa 2200C adapts to voltages ranging from 100 to 240 volts. There are a few countries with areas that use direct current (DC) as their main power source. You need a DC-to-AC converter in particular areas of Argentina, Brazil, India, Madeira, and South Africa. To use your system overseas, you need an adapter plug and transformer. There are five different plugs available worldwide. You can buy these at an electronics supply store. *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 Chapter 2, "Learning to Use the Hardware" and Appendix C, "Modem Commands, Codes, and Registers" in this guide. *CHECKLISTS* The following checklists can help you prepare for your trip with your NEC Versa 2200C. Look them over and use what fits your situation. 4-2 Traveling with Your NEC Versa 2200C What to Take The following are what you should take with you when you travel with your NEC Versa 2200C.

s At least two fully charged batteries s Single-outlet surge protector s Long telephone extension cord with RJ-11 plugs s Appropriate AC plug adapter s Copy of proof of purchase for computer and other equipment for customs check s Customer support phone numbers for your software s NEC Versa 2200C Series Quick Reference s A modem for networking (either an optional internal 14.4kbps modem or a PC card modem.) s AC extension cord. Things to Do Here is what you should do before you leave home: s Back up your NEC Versa 2200C's hard disk. s Put your system into Suspend or Standby mode so you can quickly boot up at the airport security check.

s Fully charge all your batteries. s Tape your business card to your NEC Versa 2200C, AC adapter, and batteries. Traveling with Your NEC Versa 2200C 4-3 5 Solving Problems Once in a while you may encounter a problem with your NEC Versa 2200C. The NEC InfoCenter has Questions and Answers that might be helpful to you. If the screen is blank, the instructions don't help, or no error message appears, use the information here to determine and fix the problem. You still may be able to solve the problem yourself! *PROBLEM CHECKLIST* First check the items in the following list. If these items don't help, see the table that follows the list. s Power is on to the computer. s The electrical outlet to which your AC adapter is connected is working. Test the outlet by plugging in a lamp or other electrical device.

s All cables are tightly connected. s The display setting is configured correctly. s The display's brightness control is adjusted properly. s If using battery power, check that the battery pack is properly inserted and fully charged. s If using the optional internal modem, check that it is properly inserted. Solving Problems 5-1 Troubleshooting *PROBLEM* The system does not power on *WHAT TO DO* If you are operating the system with battery power, check that the battery pack is correctly inserted. Attach the AC adapter to recharge the battery. If you have the AC adapter attached, check that the electrical outlet you are using works. LCD screen is dark and blank Power-saving mode may have shut off the backlight. Press any key, Fn+F5, or use the suspend button. The built-in LCD may not be selected. Press Fn+F3 once or twice. Brightness control may need adjustment. Adjust the control. The system entered Suspend mode due to low battery power.

Press the suspend button to resume operation. If the system does not resume, plug in the AC adapter or replace the battery pack, and try pressing the suspend button again. Battery power does not last long Information on the LCD screen is difficult to see An optional component does not work Use power-saving modes. Adjust the brightness control. 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. 5-2 Solving Problems Troubleshooting *PROBLEM* The power management button does not work *WHAT TO DO* Check that Power management isn't set to off on the Preference toolbar. Power management may be disabled in Auto Setup. A disk drive might be busy. Wait until the disk drive stops and try again. The docking station might be connected to the NEC Versa 2200C. Some power management functions do not work 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: s current configuration information doesn't match configuration information stored in Auto Setup, such as when an internal option is added or changed. s the system loses configuration information. If either of these conditions is true, the system displays an "invalid configuration information" message.



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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. Solving Problems 5-3 When the NEC Versa 2200C detects an error related to display devices, it cannot display on either the LCD or a CRT. The system warns you with a beep. NOTE POST Error Messages The NEC Versa 2200C has a built-in checking program that automatically tests its components when you turn the system power on. This diagnostic test is called the PowerOn Self-Test (POST). If the system finds a problem during the POST, the system displays an error message. If this happens, follow the instructions in the POST error message table.

POST Error Messages MESSAGE Diskette drive A failure WHAT TO DO Drive A does not work or the diskette is not properly inserted. Drive A is the diskette drive. Press F1 to start Auto Setup to check the diskette drive parameters. If there's still a problem, drive A might need repair. Diskette read failure press F1 to run Auto Setup.

Press any other key to retry boot Remove the diskette from drive A and press F1 to enter Auto Setup to confirm that the diskette drive is configured properly or press any other key to start the system from the hard disk. Or, insert a bootable disk in drive A and press any key to start the system from the diskette. Non-system disk or disk error; replace and press any key when ready Remove the diskette from drive A and press any key to start the system from the hard disk. Or, insert a bootable diskette in drive A and press any key. 5-4 Solving Problems POST Error Messages MESSAGE No boot device available press F1 to run Auto Setup WHAT TO DO Press F1 to start Auto Setup.

Change the hard disk type to the correct setting. Exit and save Auto Setup. Or, check to see that the hard disk is properly installed. Invalid configuration information run Setup program One or more system configuration parameters are not properly set. Press F1 to start Auto Setup, set them correctly, exit, and save to update the parameters. Set time and date using Auto Setup. Exit and save to update the parameters. Set the time and date using Auto Setup. Exit and save to update the parameters. Start Auto Setup.

Exit and save to update the parameters. Turn off the system and check to see if the hard disk is inserted properly. Insert a bootable diskette in drive A and press Ctrl+Alt+Del to start the system from diskette. If the system only boots from diskette, the hard disk might need repair. Fixed disk failure Press F1 to start Auto Setup. Exit and save to update the parameters. Turn off the system and check to see if the hard disk is inserted properly. If the system only boots from diskette, the hard disk might need repair. Real time clock failure Time-of-day not set run Setup program Fixed disk configuration error Solving Problems 5-5 POST Error Messages MESSAGE Fixed disk controller failure WHAT TO DO Press F1 to start Auto Setup. Exit and save to update the parameters.

Turn off the system and check to see if the hard disk is installed properly. The hard disk controller may not work and might need repair. Keyboard clock line failure Keyboard data line failure Keyboard controller failure Unplug the external keyboard, if attached. Have the external keyboard repaired. Unplug the external keyboard, if attached.

Have the external keyboard repaired. Unplug the external keyboard, if attached, and reboot the system. If it still fails, have the external keyboard repaired.

NOTE: Repeated keystrokes during boot may produce an error message. Keyboard stuck key failure A key is jammed.

Remove any obstruction you find. You may have repeatedly pressed the F1 key when trying to enter Auto Setup. If the error message remains, you may have to have the keyboard repaired. IF YOU NEED ASSISTANCE If you have a problem with your computer, first review the checklist and troubleshooting table in the previous section. If you still have a problem, call the NEC Technical Support Center (TSC), toll free, at 1-800-632-4525 Direct technical assistance is available 24 hours a day, seven days a week. 5-6 Solving Problems 6 Getting Help NEC is ready and willing to help you with our products. Here's how to reach us. NEC Versa Diskette Fulfillment Center (800) 842-6446 To purchase backup diskettes and manuals. NEC Customer Service and Support (800) 632-4525 Fax (508) 635-4666 Spare parts ordering, warranty claims, repair services, technical support, and service authorizations. NEC FastFacts (800) 366-0476 (U.

S and Canada) (708) 238-7800 (International) Automated fax service that offers product brochures, installation procedures, quick reference guides, promotional forms, troubleshooting information, and more. NEC Electronic Bulletin Board (508) 635-4706 Remote database system containing files that are dedicated to enhancing the functions of NEC products. It also gives the general public access to drivers for NEC products to be used with various software applications. CompuServe Password: "GO NECTECH" Internet Address: tech-support@NECTECH.com America Online: nectech Getting Help 6-1 Worldwide Web Address: www.nec.com NEC is a member of TSNNet (Technical Support Alliance Network). 6-2 Getting Help A Setting Up a Healthy Work Environment ! WARNING Prolonged or improper use of a computer workstation may pose a risk of serious injury. To reduce your risk of injury, set up and use your computer in the manner described in this appendix. Contact a doctor if you experience pain, tenderness, swelling, burning, cramping, stiffness, throbbing, weakness, soreness, tingling and/or numbness in the hands, wrists, arms, shoulders, neck, back, and/or legs.

MAKING YOUR COMPUTER WORK FOR YOU Computers are everywhere. More and more people sit at computers for longer periods of time. This appendix explains how to set up your computer to fit your physical needs. This information is based on ergonomics -- the science of making the workplace fit the needs of the worker. Some nerve, tendon, and muscle disorders (musculoskeletal disorders) may be associated with repetitive activities, improper work environments, and incorrect work habits.

Examples of musculoskeletal disorders that may be associated with certain forms of repetitive activities include: carpal tunnel syndrome, tendinitis, tenosynovitis, de Quervain's tenosynovitis, and trigger finger, as well as other nerve, tendon, and muscle disorders. Setting Up a Healthy Work Environment A-1 Although some studies have shown an association between increasing hours of keyboard use and the development of some musculoskeletal disorders, it is still unclear whether working at a computer causes such disorders. Some doctors believe that using the keyboard and mouse may aggravate existing musculoskeletal disorders.



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Some people are more susceptible to developing these disorders due to pre-existing conditions or psychosocial factors (see "Pre-existing Conditions and Psychosocial Factors" later in the appendix). To reduce your risk of developing these disorders, follow the instructions in this appendix. If you experience discomfort while working at your computer or afterwards, even at night, contact a doctor as soon as possible. Signs of discomfort might include pain, tenderness, swelling, burning, cramping, stiffness, throbbing, weakness, soreness, tingling and/or numbness in the hands, wrists, arms, shoulders, neck, back, and/or legs. To increase your comfort and safety when using your notebook computer as your primary computer system at your home or office, note the following recommendations: s NOTE use a separate, external keyboard attached to your notebook computer use a separate, external monitor attached to your notebook computer. s A-2 Setting Up a Healthy Work Environment ARRANGE YOUR EQUIPMENT Arrange your equipment so that you can work in a natural and relaxed position. Place items that you use frequently within easy reach. Adjust your workstation setup to the proper height (as described in this appendix) by lowering the table or stand that holds your computer equipment or raising the seat height of your chair. Position your notebook computer directly in front of you for increased safety and comfort. ADJUST YOUR CHAIR Your chair should be adjustable and stable. Vary your posture throughout the day. Check the following: s Keep your body in a relaxed yet upright position.

The backrest of your chair should support the inward curve of your back. s Use the entire seat and backrest to support your body. Tilt the backrest slightly backwards. The angle formed by your thighs and back should be 90° or more. s Your seat depth should allow your lower back to comfortably contact the backrest. Make sure that the backs of your lower legs do not press against the front of the chair. s Extend your lower legs slightly so that the angle between your thighs and lower legs is 90° or more. s Place your feet flat on the floor. Only use a footrest when attempts to adjust your chair and workstation fail to keep your feet flat. s Be sure that you have adequate clearance between the top of your thighs and the underside of your workstation. Setting Up a Healthy Work Environment A-3 s Use armrests or forearm supports to support your forearms. If adjustable, the armrests or forearm supports should initially be lowered while all the other adjustments discussed in this appendix are made. Once all these adjustments are completed, raise the armrests or adjust the forearm supports until they touch the forearms and allow the shoulder muscles to relax. ADJUST YOUR INPUT DEVICES Note the following points when positioning your notebook computer or any external input devices. s Position your keyboard directly in front of you. Avoid reaching when using your keyboard or mouse. s If you use a mouse, position it at the same height as the keyboard and next to the keyboard. Keep your wrists straight and use your entire arm when moving a mouse. Do not grasp the mouse tightly. Grasp the mouse lightly and loosely. s Adjust the keyboard height so that your elbows are near your body and your forearms are parallel to the floor, with your forearms resting on either armrests or forearm supports, in the manner described previously. If you do not have armrests or forearm supports, your upper arms should hang comfortably at your sides. s Adjust the keyboard slope so that your wrists are straight while you are typing. s Type with your hands and wrists floating above the keyboard. Use a wrist pad only to rest your wrists between typing. Avoid resting your wrists on sharp edges. s Type with your wrists straight. Instead of twisting your wrists sideways to press hard-to-reach keys, move your whole arm. Keep from bending your wrists, hands, or fingers sideways. A-4 Setting Up a Healthy Work Environment s Press the keys gently; do not bang them.

Keep your shoulders, arms, hands, and fingers relaxed. ADJUST YOUR SCREEN OR MONITOR Correct placement and adjustment of the screen or external monitor can reduce eye, shoulder, and neck fatigue. Check the following when you position the screen or external monitor. s Adjust the height of your screen or external monitor so that the top of the screen is at or slightly below eye level. Your eyes should look slightly downward when viewing the middle of the screen or external monitor. s Position your screen or external monitor no closer than 12 inches and no further away than 28 inches from your eyes. The optimal distance is between 14 and 18 inches. s Rest your eyes periodically by focusing on an object at least 20 feet away. Blink often. s Position the screen or external monitor at a 90° angle to windows and other light sources to minimize glare and reflections.

Adjust the monitor tilt so that ceiling lights do not reflect on your screen or external monitor. s If reflected light makes it hard for you to see your screen or external monitor, use an anti-glare filter. s Clean your screen or external monitor regularly. Use a lint-free, non-abrasive cloth and a non-alcohol, neutral, non-abrasive cleaning solution or glass cleaner to minimize dust. s Adjust the screen or external monitor's brightness and contrast controls to enhance readability.

s Use a document holder placed close to the screen or external monitor. Setting Up a Healthy Work Environment A-5 s Position whatever you are looking at most of the time (the screen or reference material) directly in front of you to minimize turning your head while you are typing. s Get regular eye check-ups.

VARY YOUR WORKDAY If you use your computer for prolonged periods, follow these instructions. s Vary your tasks throughout the day. s Take frequent short breaks that involve walking, standing, and stretching. During these breaks, stretch muscles and joints that were in one position for an extended period of time. Relax muscles and joints that were active. s Use a timer or reminder software to remind you to take breaks. s To enhance blood circulation, alter your sitting posture periodically and keep your hands and wrists warm. For more information on workstation setup, see the American National Standard for Human Factors Engineering of Visual Display Terminal Workstations. ANSI/HFS Standard No. 100-1988. The Human Factors Society, Inc., P.

O. Box 1369, Santa Monica, California 90406 NOTE A-6 Setting Up a Healthy Work Environment PRE-EXISTING CONDITIONS AND PSYCHOSOCIAL FACTORS Pre-existing conditions that may cause or make some people more susceptible to musculoskeletal disorders include the following: hereditary factors, vascular disorders, obesity, nutritional deficiencies (e.g., Vitamin B deficiency), endocrine disorders (e.



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g., diabetes), hormonal imbalances, connective tissue disorders (e.g., arthritis), prior trauma (to the hands, wrists, arms, shoulders, neck, back, or legs), prior musculoskeletal disorders, aging, fluid retention due to pregnancy, poor physical conditioning and dietary habits, and other conditions. Psychosocial factors associated with these disorders include: workplace stress, poor job satisfaction, lack of support by management, and/or lack of control over one's work. Contact a doctor if you experience pain, tenderness, swelling, burning, cramping, stiffness, throbbing, weakness, soreness, tingling and/or numbness in the hands, wrists, arms, shoulders, neck, back, and/or legs.

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

, Ann Arbor, Michigan. Setting Up a Healthy Work Environment A-7 B Specifications and Environment The following specifications are standard except where noted. System Processor Intel P54LM-75MHz Random Access Memory (RAM) Standard Main Memory -- 8-MB high-speed interleaved access Expansion (optional) Two slots for DIMM sockets. Expandable in 4-MB, 8-MB, 16-MB increments up to a total of 40MB. Video RAM 1 MB Cache RAM L1: 8-KB code, 8-KB data Read-only Memory (ROM) 256-KB x 8 bit, Flash ROM Calendar Clock Year/month/day/hour/minute/second maintained by internal back-up battery Input/Output (I/O) Facilities Integrated industry-standard interfaces s Parallel 1 port, 25-pin D-sub s Serial 1 port, 9-pin D-sub s VGA -- 1 port, 15-pin high-density D-sub 32bit Local Bus Hardware Windows Acceleration Specifications and Environment B-1 s External Keyboard/External Mouse 1 port, PS/2, 6-pin MiniDin; exclusionary use s Expansion 1 port, VGA CRT signal, external key-board signal, PS/2 mouse signal s Phone -- 1 port, RJ11 (when an internal modem is installed) s Power -- 3-pin Mini Jack Card Slots Two slots for two Type I/Type II PCMCIA cards or one Type III PCMCIA card. 3.3V interface. Internal Fax/Modem Ready to accept an optional NEC (Sierra Chip Set) 14.4Kbps v32 bis Fax/Modem with RJ11 connector. See Appendix C for common modem commands. Display LCD s 9.5-inch Thin-film transistor (TFT) CCFT backlit color Resolution -- 640 x 480 pixels s Dot Pitch 0.3 mm s Colors 4,096 (64K colors on external CRT with video subsystem) s Viewing Area 9.5 in. diagonal s Aspect Ratio 4:3 (or true CRT aspect ratio) Keyboard Membrane Ultra Low Profile 83 keys with standard QWERTY-key layout (79 keys for International) s Function keys 12 keys s Cursor Control keys 8 keys; arrow keys arranged in inverted T layout B-2 Specifications and Environment s Numeric keypad -- embedded s Fn key function key for ROM-based key functions (5 keys for the Versa 2200) (2 additional function keys for Windows 95) s Stroke 3 mm Diskette Drive Standard 1.

44-MB drive s Size 3.5 inch s Capacity 720 KB or 1.44 MB s Access Time (average) -- 94 ms s Transfer Rate 250 to 500K bps s Interleave 1:1 s Controller NS PC87334VJG Hard Disk Drive Internal 2.5-inch, 810-MB or 1-GB drive, removable s Track-to-track seek rate 4ms s Average seek 13ms (read), 14ms (write) s Revolutions per minute 4000 s I/F data rate 3-11 MB per second s Media data rates 39.5 - 27 bps s 1579 cylinders x 16 heads x 63 sectors per track Specifications and Environment B-3 Power AC Adapter s Input Voltage 100 to 240 volts (V) AC, 50 or 60 Hz, 1.5 A maximum s Output Voltage 19 V DC, 2200mA (42W) Battery Pack s Type -- Lithium Ion (Li-Ion) s Output Voltage -- 14.4 V s Capacity -- 2,700 mA s Battery Life Power Management off: 2 - 4 hours Power Management on: 3 - 4 hours Recharging Time Approximately 2 hours when the system is off (Quick Charge) Approximately 6 to 7 hours when the system is on (Normal Charge) Bridge Battery Fully charged, backs up memory contents and system status for up to 30 minutes under Suspend mode, but battery change time is under 5 minutes. Charge time: 24 hours. Dimensions System Unit s Width 11.8 in.

(302 mm) s Depth 9.4 in. (241mm) s Height 2.1 in. (53.

8 mm) Battery Pack s Width 4.2 in. (108 mm) s Depth 4.5 in. (114.

5 mm) s Height 0.85 in. (21.8 mm) B-4 Specifications and Environment Weight System 6.51 lb (2.95 kg) Battery Pack 1.16 lb (527.6 kg) Recommended Environment Operation s Temperature 41°F to 95 F (5 C to 35 C) s Relative Humidity 20% to 80% (Noncondensing) Storage s Temperature -4°F to 104°F (-20°C to 40°C) s Relative Humidity 20% to 80% (Noncondensing) Memory Map The system supports system miser and video shadowing. The system supports BIOS as a cacheable area with write protection. The following table shows the system's memory map.

MEMORY SPACE 00000h-9FFFFh A0000h-AFFFFh B0000h-B7FFFh B8000h-BFFFFh C0000h-C9FFFh CA000h-CFFFFh D0000h-DFFFFh SIZE 640 KB 64KB 32KB 32KB 40KB 24KB 64KB FUNCTION Base Memory Video Memory (graphics) Upper Memory Block (UMB) Video Memory (text) Video BIOS Available UMB PCMCIA (in Windows for Workgroups Available UMB in Windows 95 Available UMB Miser BIOS System BIOS ROM E0000h-E7FFFh E8000h-EFFFFh F0000h-FFFFFh 32KB 24KB 64 KB Specifications and Environment B-5 Interrupt Controllers Using interrupts, it is possible to change the code sequence. To change the sequence, reassign the interrupt levels. Fifteen interrupts can be used with a cascade connection of 8259INTC x 2. The table shows interrupt level assignments 0 through 15, in order of decreasing priority. CONTROLLER MASTER/SLAVE Master Master Master Slave Slave Slave Slave Slave Slave Slave Master Master Master Master Master PRIORITY 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 NAME IRQ0 IRQ1 IRQ2 IRQ8 IRQ9 IRQ10 IRQ11 IRQ12 IRQ13 IRQ14 IRQ15 IRQ3 IRQ4 IRQ5 IRQ6 IRQ7 DEVICE Timer 1 counter 0 output Keyboard (Output buffer full) INT output from controller 2 Real time clock Reserved Reserved Reserved Mouse (Co-processor) Hard disk controller 1 Reserved Serial port 2 (Internal Fax/Modem) Serial port 1 Reserved Floppy disk controller 1 Parallel port 1 B-6 Specifications and Environment C Modem Commands, Registers, and Codes AT commands, S registers, and result codes are universally understood instructions for network communications. Most fax/modem applications automatically initialize your modem with the proper AT commands and you do not need to change anything. In case you ever do need to communicate directly with your modem, or change a setup string, the following tables list the most commonly-used AT commands, S registers, and result codes that you can use to configure and use your optional internal 14.4 Kbps data/fax modem. AT Commands AT commands tell the modem how to operate. Except for the escape sequence (+++) (switch to command mode) and the A/ command (repeat last command), precede all the commands in the following table with the letters AT.



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