EPSON®

ActionNote™

User's Guide

This manual is printed on recycled paper and is 100% recyclable.

FCC COMPLIANCE STATEMENT
FOR AMERICAN USERS

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 and television reception, However, there is no guarantee that interference will not occur in a particular installation If this equipment does cause interference to radio and 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 into an outlet on a circuit different from that to which the receiver is connected**
- **Consult an experienced radio/TV technician for help.**

WARNING

The connection of a non-shielded equipment interface cable to this equipment will invalidate the FCC Certification of this device and may cause interference levels that exceed the limits established by the FCC for this equipment. It is the responsibility of the user to obtain and use a shielded equipment interface cable with this device. If this equipment has more than one interface connector, do not leave cables connected to unused interfaces.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

FOR CANADIAN USERS

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescribes clans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

IMPORTANT NOTICE
DISCLAIMER OF WARRANTY

Epson America makes no representations or warranties, either express or implied, by or with respect to anything in this manual, and shall not be liable for any implied warranties of merchantability and fitness for a particular purpose or for any indirect, special, or consenquential damages. Some states do not allow the exclusion of incidental or consequential damages, so this exclusion may not apply to you.

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ActionNote is a trademark of Epson America, Inc.

General notice Other product names used herein are for identification purposes only and may be trademarks of their respective companies.

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Important Safety Instructions

1. Read all of these instructions and save them for later reference.

2. Follow all warnings and instructions marked on the computer.

3. Unplug the computer from the wall outlet before cleaning. Use a damp cloth for cleaning; do not use liquid or aerosol cleaners.

4. Do not spill liquid of any kind on the computer.

5. Do not place the computer on an unstable cart, stand, or table.

6. Slots and openings in the cabinet and the back or bottom are provided for ventilation; do not block or cover these openings. Do not place the computer near or over a radiator or heat register.

7. Operate the computer using the type of power source indicated on its label.

8. If you plan to operate the computer in Germany, observe the following safety precaution:

   To provide adequate short-circuit protection and over-current protection for this computer, the building installation must be protected by a 16 Amp circuit breaker.

   Beim Anschluß des Computers an die Netzversorgung muß sichergestellt werden, daß die Gebäudeinstallation mit einem 16 A Übestromschutzschalter abgesichert ist.

9. Connect all equipment to properly grounded (earthed) power outlets. If you are unable to insert the plug into an outlet, contact your electrician to replace your outlet. Avoid using outlets on the same circuit as photocopiers or air control systems that regularly switch on and off.

10. Do not allow the computer's power cord to become damaged or frayed.

11. If you use an extension cord with the computer, make sure the total of the ampere ratings of the devices plugged into the extension cord does not exceed the ampere rating for the extension cord. Also, make sure the total of all products plugged into the wall outlet does not exceed 15 amperes.

12. Do not insert objects of any kind into this product through the cabinet slots.

13. Except as specifically explained in this User's Guide, do not attempt to service the computer yourself. Refer all servicing to qualified service personnel.

14. Unplug the computer from the wall outlet and refer servicing to qualified service personnel under the following conditions:

    A. When the power cord or plug is damaged.

    B. If liquid has entered the computer.

    C. If the computer does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage and often requires extensive work by a qualified technician to restore the computer to normal operation.

    D. If the computer has been dropped or the cabinet has been damaged.

    E. If the computer exhibits a distinct change in performance.

Instructions Importances de Sécurité

1. Lire complèment les instructions qui suivant et les conserver pour références futures.

2. Bien suivre tous les avertissements et les instructions indiqués sur l'ordinateur.

3. Débrancher l'ordinateur de toute sortie murale avant le nettoyage. Utiliser un chiffon humide; ne jamais utiliser un nettoyeur liquide ou une bonbonne aérosol.

4. Ne jamais renverser un liquide d'aucune sorte sur l'ordinateur.

5. Ne pas placer l'ordinateur sur un chariot, un support, ou une table instable.

6. Les évents clans le meubles, à l'arrière et en dessous sent conçus pour l'aération; on ne doit jamais les bloquer. Ne pas placer l'ordinateur près d'une source de chaleur directe.

7. Le fonctiomement de l'ordinateur doit s'effectuer conformément au type de source d'alimentation indiquée sur l'étiquette.

8. Lorsqu'on désire utiliser l'ordinateur en Allemagne, on doit observer les normes sécuritaires qui suivent:

   Afin d'assurer une protection adéquate à l'ordinateur contre les court-circuits et le survoltage, l'installation de l'édifice doit comprendre un disjoncteur de 16 amp.

9. On doit brancher tout l'équipement clans une sortie reliée à la masse. Lorsqu'il est impossible d'insér la fiche clans la prise, on doit retenir les services d'un électricien ou remplacer la prise. Ne jamais utiliser une prise sur le retie circuit qu'un appareil à photocopied ou un système de contrôle d'aération avec commutation marche-arrêt.

10. S'assurer que le cordon d'alimentation de l'ordimteur n'est pas effrité.

11. Dans le cas où on utilise un cordon de rallonge avec l'ordinateur, on doit s'assurer que la valeur totale d'ampères branchés dans le cordon n'excède en aucun temps les ampères du cordon de rallonge. La quantité totale des appareils branchés clans la prise murale ne doit jamais excéder 15 ampères.

12. Ne jamais insérer un objet de quelque sorte que ce soit clans les cavités de cet appareil.

13. Sauf tel que spécifié dans la notice d'utilisation, on ne doit jamais tenter d'effectuer une réparation de l'ordinateur. On doit référer le service de cet appareil à un technician qualifié

14. Débrancher l'ordinateur de la prise murale et confier le service au personnel de service qualifié selon les conditions qui suiventi

    A. Lorsque Ie cordon d' alimentation ou la prise sent endommagés.

    B. Lorsqu'un liquide s'est infiltré dans l'ordinateur.

    C. Lorsque l'ordinateur refuse de fonctiomer normalement même en suivant les instructions. N'ajuster que les commandes qui sent éunmérées clans les instructions de fonctionnement. Tout ajustement inadéquat de tout autre contrôle peut provoquer un dommage et souvent nécessiter des reparations daborées par un technician qualifié afin de remetlre l'appareil en service.

    D. Lorsqu'on a échappé l'ordinateur ou que l'on a endommagé Ie boîtier.

    E. Lorsque l'ordinateur démontre un changement noté au niveau de sa performance.

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Introduction

With your purchase of the Epson® ActionNote™ computer, you have chosen state-of-the-art notebook computing. The 486SLC microprocessor chip, designed for portable computers, provides high-speed performance in a compact, lightweight, notebook-size form.

Standard Configuration

The Action Note is a versatile computer supporting a wide range of applications and hardware. Its standard features include the following:

- 2MB, 4MB, or 8MB of RAM (random access memory), expandable to a maximum of 8MB
- 640 x 480 dpi (dots per inch) VGA (video graphics array), backlit, monochrome LCD (liquid crystal display) screen, which emulates VGA color with 32 shades of gray
- Internal hard disk drive
- One 3½-inch, 1.44MB diskette drive
- Parallel port for a parallel printer
- Two serial ports for serial devices
- RJ-11 standard phone jack for an internal modem
- Video port for an external color or monochrome VGA monitor
- Port for a PS/2®-compatible pointing device

- ❑ Mouse/keyboard adapter for simultaneously attaching an external PS/2-type keyboard and a pointing device
- ❑ Rechargeable battery pack
- ❑ AC adapter for powering the computer and recharging the battery pack
- ❑ Socket for an optional Cyrix® Cx387SLC or Intel® 387SX numeric coprocessor
- ❑ Two processing speeds: Turbo (25 or 33 MHz) and Normal (8 MHz)
- ❑ Suspend mode to save battery power
- ❑ Carrying case with room for the computer, AC adapter, power cable, diskettes, and manuals.

Depending on the configuration you purchased, your computer may also include the following:

- ❑ Internal 9600/2400 fax/modem
- ❑ Logitech™ Trackman® trackball or other pointing device
- ❑ MS-DOS® operating system including diskettes and manuals
- ❑ Microsoft® Windows® including diskettes and manuals
- ❑ Data communications and/or fax transmission software.

Optional Equipment

You can easily upgrade your computer by installing additional memory and adding optional devices, including:

- Expansion memory module (2MB or 6MB)
- Cyrix Cx387SLC or Intel 387SX numeric coprocessor chip
- External PS/2-compatible keyboard
- Extra battery packs
- Adapter for an automobile cigarette lighter
- Third-party external diskette drive.

Where to Get Help

If you purchased your computer in the United States, Epson America provides local customer support and service through a nationwide network of Authorized Epson Service Centers. Epson also provides support services through **the** Epson Connection at: 1-800-922-8911.

Call the Epson Connection for the following:

- Technical assistance with the installation, configuration, and operation of Epson products
- Sales of accessories, manuals, or parts for your Epson products
- Assistance in On-Site Warranty Service for your Epson products
- Assistance in locating your nearest Authorized Epson Reseller or Service Center

- Customer relations
- Epson technical information library fax service-also available directly by calling (310) 782-4214
- Product literature with technical specifications on current and new products.

When you call for technical assistance, you need to be able to identify your system and its configuration, and provide any error messages to the support staff. See Appendix A for more information.

If you purchased your computer in the United States, Epson also provides On-Site Warranty Service. Your ActionNote package should contain a packet describing the program. If a packet is not included, call the Epson Connection for information. For your convenience there is a sticker located on the bottom of your computer with the number to call for product support and On-Site Warranty Service.

If you purchased your computer outside the United States, please contact your Epson dealer or the marketing location nearest you for customer support and service. International marketing locations are listed on the inside back cover of this manual.

If you need help with any software application program you are using, see the documentation that came with the program for technical support information.

How to Use this Manual

This manual explains how to setup and operate your computer, install options, and run diagnostic tests.

You do not need to read everything in this book to use your computer; see the following chapter summaries to find the sections you need:

Chapter 1 provides steps for setting up your computer.

Chapter 2 covers basic information about using the computer.

Chapter 3 explains how to power your computer using the AC adapter and the battery. It also describes ways to conserve battery pow**er.**

Chapter 4 describes how to connect optional devices.

Chapter 5 describes how to run the Setup program; this is necessary if you want to set a password or you change the configuration of your computer.

Chapter 6 gives instructions for running the System Diagnostics program to test system devices.

Chapter 7 describes the VGA utilities provided with your system.

Appendix A provides troubleshooting tips.

Appendix B summarizes the internal modem commands.

Appendix C contains the specifications for your ActionNote computer.

At the end of the manual, you'll find a Glossary and an Index.

Conventions Used in This Manual

This manual uses the following type conventions to represent commands:

Example	Meaning
Enter	Keys you press on the keyboard
Ctrl + C Fn + F1	Keys you press at the same time; hold down the key marked Ctrl, and then press the letter C, or hold down the key marked Fn and then press the F1 key
C: \ DOS	Text as it appears on the screen
DISKCOPY A: B:	Text that you type exactly as shown
path \ filename	Words printed in lowercase Italics represent optional parameter names; here you would type the actual path and filename, such as \ WORK\ CONTACT
COM 1	Name of hardware elements

Chapter 1

Setting Up the Computer

This chapter describes how to complete the basic setup of your ActionNote computer. It covers:

- ❑ Unpacking the computer
- ❑ Identifying the system parts
- ❑ Connecting the AC adapter
- ❑ Opening the screen
- ❑ Turning on the computer.

Instructions for installing optional equipment (such as a memory module or a numeric coprocessor) or connecting external equipment (such as a trackball, monitor, or printer) are provided in Chapter 4.

Unpacking the Computer

Your computer package contains the following:

- ❑ The Epson ActionNote computer
- ❑ A rechargeable battery pack (installed in the computer)
- ❑ An AC adapter and power cord
- ❑ A mouse/keyboard adapter for connecting an external keyboard and a pointing device at the same time
- ❑ This manual, a *Quick Reference* guide, and the Reference diskette
- ❑ A lightweight carrying case.

Depending on the configuration you purchased, your computer package may also include the following:

- ❑ MS-DOS diskettes and manuals
- ❑ Windows diskettes and manuals
- ❑ Logitech Trackman trackball, diskette, and manual.

If your configuration includes the internal fax/modem, your package may include:

- ❑ Data communications program diskette and manual
- ❑ Fax transmission program diskette and manual
- ❑ Telephone cable for the internal fax/modem.

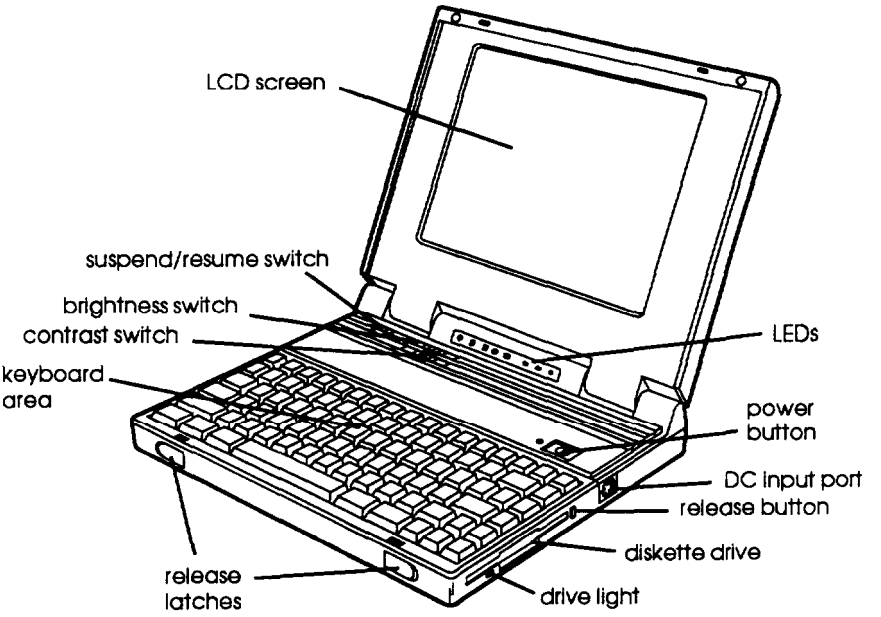
Keep the packing materials and use them if you need to ship your computer later.

Identifying the System *Parts*

Before getting started, refer to the illustrations below to identify the different parts of your computer.

Front View

The main components on the front and right side of the ActionNote are shown below.



LCD screen

Your ActionNote has a backlit, monochrome LCD that supports VGA resolutions up to 640 x 480 dpi x 32 shades of gray.

Suspend/resume switch

Slide this switch to the right to suspend power to the computer when it is on. This places the computer in a very low power consumption state. Slide the switch to the left to return the computer to its previous state.

Brightness switch

This switch controls the brightness of the LCD screen. Slide the switch to the right to lighten the screen and to the left to darken it.

Contrast switch

This switch controls the contrast on the LCD screen. Slide the switch to the right to lighten the screen and to the left to darken it.

Keyboard area

This is where you type commands and enter data. For a full description, see Chapter 2.

Release latches

Slide these latches outward to release the top cover and open the LCD screen.

LEDs

The LEDs (light emitting diodes) on your computer provide information about its operation.

Power-Indicates the power is on; either the AC adapter or the battery pack is supplying power to the computer.

Low battery-Indicates the battery capacity is less than 20%

Charging-Indicates the battery is fully charged; blinks when the AC adapter is connected and charging the battery.

Suspend mod-Indicates the computer is in Suspend mode.

Hard disk drive-Indicates the computer is accessing the hard disk drive.

Num Lock-Indicates that Num Lock is set on the keyboard. This activates the embedded numeric keypad on the keyboard.

Caps Lock-Indicates that Caps Lock is set on the keyboard.

Scroll Lock—Indicates that Scroll Lock is set on the keyboard.

Power button

This button turns the computer on and off.

DC input port

Connect the AC adapter cable here. See page 1-8 for instructions.

Release button

Press this button to eject a diskette from the drive.

Diskette drive

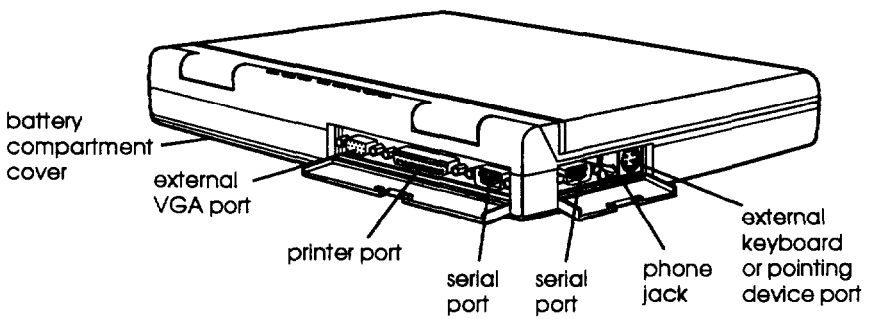
Your computer comes with a 3 ½-inch, 1.44MB diskette drive. For instructions on using diskettes, see Chapter 2.

Drive light

This light is on when the computer is accessing the diskette drive.

Rear Panel and Left Side

The components on the rear panel and left side of the computer are shown below.



Battery compartment cover

Turn the computer upside down and open this cover to access the battery pack. The rechargeable NiCad battery pack powers your computer when the AC adapter is not connected. For a full description, see Chapter 3.

External VGA port (VIDEO)

You can connect a VGA monochrome or color monitor to this port. The ActionNote displays information on both the LCD screen and an external monitor at the same time.

Parallel port (PRINTER)

You can connect a parallel device, such as a printer, to this port. See Chapter 4 for instructions.

Serial port (COM 1)

This port supports a serial (RS-232C) device. See Chapter 4 for more information.

Serial port (COM 2)

This port supports a serial (RS-232C) device. See Chapter 4 for more information. Note that when the internal fax/modem is installed, this port is disabled.

Phone jack (LINE)

Use this standard RJ-11 jack to connect a phone line when the internal fax/modem is installed.

External keyboard port (EXT KB)

Use this port to connect any PS/2-compatible pointing device. This port also supports a mouse/keyboard adapter for attaching both an external PS/2-type keyboard and a pointing device at the same time. See Chapter 4 for instructions on installing optional devices.

Connecting the AC Adapter

The AC adapter is designed to be used in most countries, as it can operate in the ranges 100/240 VAC, 50/60 Hz.

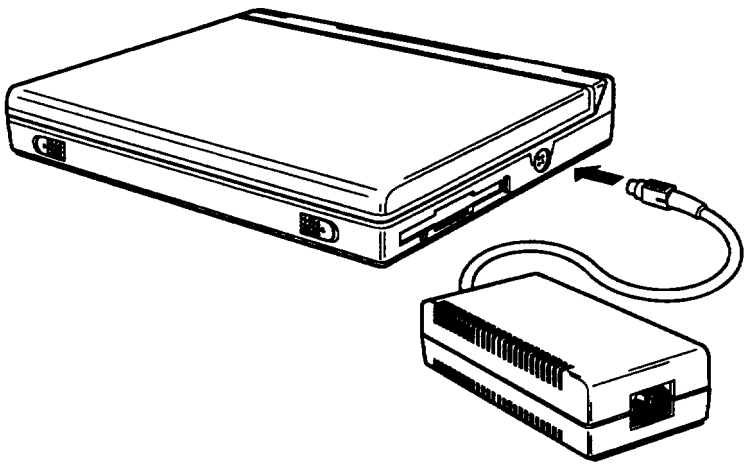
> **Caution**
> Use only the AC adapter (model number AP-3S25) supplied with the computer.

If you are using the adapter in a country other than the one where you purchased your ActionNote, make sure you have the correct power cable for the electrical socket. See the power cable specifications in Appendix C for details.

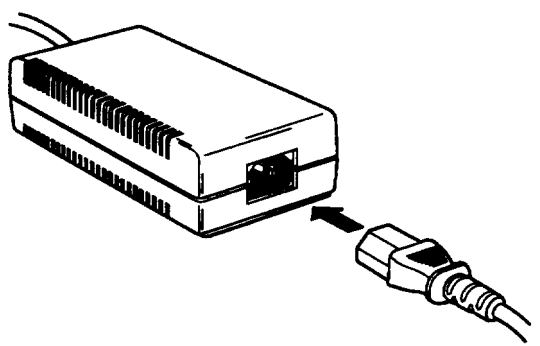
You may need to connect the AC adapter to charge the battery before you use it for the first time. (See Chapter 3 for complete instructions on powering the computer with the AC adapter and/or the battery.)

Follow these steps to connect the adapter to the computer:

1. Connect the AC adapter plug to the DC input port on the right side of the computer.



2. Connect the power cable to the AC adapter.

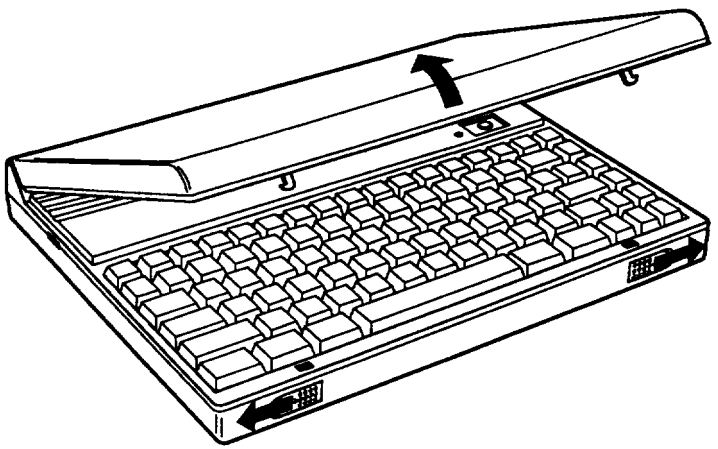


3. Connect the other end of the power cable to a grounded (earthed) electrical outlet.

Opening the Screen

Follow these steps to open the LCD screen:

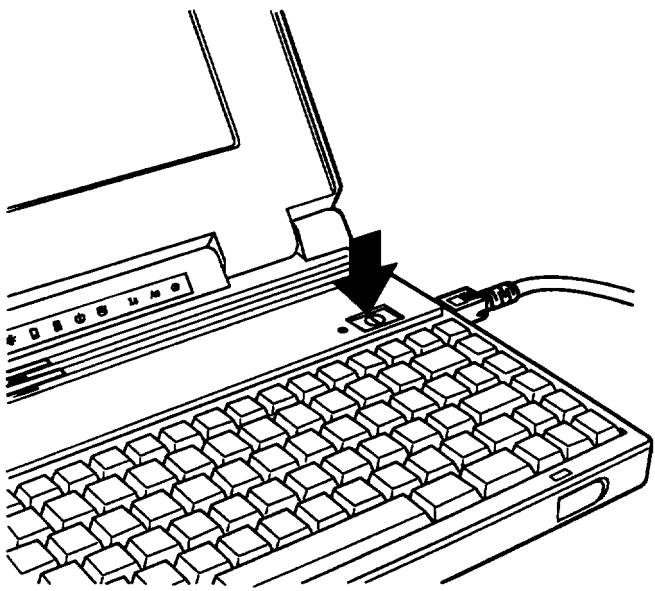
1. Place the computer on a level surface.
2. Turn the computer so its front is facing you.
3. Slide the release latches on the front sides of the computer toward the sides and lift up the screen.



Turning On the Computer

When you first use the ActionNote, the battery may not be charged; so make sure the AC adapter is connected when you turn it on for the first time.

Before you turn on the computer, first connect and turn on any external devices you will be using-such as a printer, monitor, or pointing device. (See Chapter 4 for information about installing optional devices.) Then press the power button on the top of the computer to turn it on.



The computer displays copyright information and then performs a series of power-on diagnostics that check the circuit boards, memory, ports, keyboard, and disk drives. The computer displays several messages during the diagnostics, including this prompt:

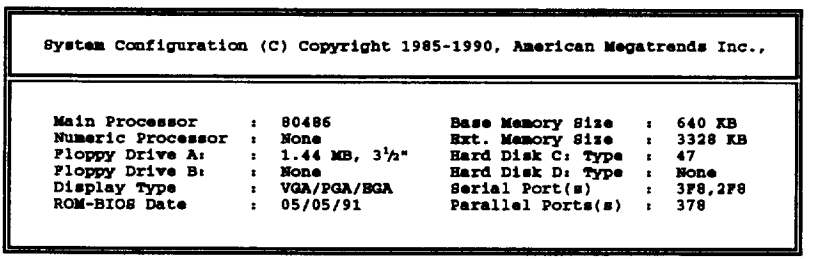
```
Hit <DEL>,  If you want to run SETUP
```

If the tests indicate a problem with the system, you will see an error message followed by this prompt:

RUN SETUP UTILITY
Press <F1> to RESUME

If this happens, press F1 to run the Setup program and check your system configuration. See Chapter 5 for a complete description of the Setup program.

When the computer completes its testing, it displays a screen describing the system's configuration



If necessary, press the Pause button on the keyboard to view the configuration screen. After viewing the screen, press any key to continue the startup process.

Because your computer was set up at the factory, the configuration information should be accurate. If you have changed the computer's setup so that this information does not match your configuration, run the Setup program described in Chapter 5 to correct it.

Depending on your configuration, your computer may come with MS-DOS and Microsoft Windows installed on the hard disk. However, you can use another operating system, such as OS/2,® UNIX,® or XENIX.® Although this manual includes sample MS-DOS commands, it does not explain how to use the operating system; see your MS-DOS or other operating system manuals for complete instructions.

If MS-DOS was loaded on your computer at the factory, the computer starts up in MS-DOS as soon as it completes the power-on diagnostics. The messages you see as the computer loads MS-DOS depend on how your computer has been setup.

If you plan to use another operating system, you need to install it now. See the documentation that came with your operating system for installation instructions.

The procedures described in this manual assume you are using MS-DOS. If you are using another operating system, see your documentation for instructions on how to perform the various procedures.

Chapter 2

Using Your Computer

This chapter describes how to use your ActionNote computer on a daily basis. It provides information on the following procedures:

- ❑ Taking care of the computer
- ❑ Copying utilities from the Reference diskette
- ❑ Using the password function
- ❑ Using the keyboard
- ❑ Stopping a command or program
- ❑ Resetting the computer
- ❑ Turning off the computer
- ❑ Changing the CPU speed
- ❑ Using the LCD screen
- ❑ Using diskettes
- ❑ Using the hard disk
- ❑ Using memory.

Taking Care of the Computer

Before you begin using your computer, read the following guidelines to ensure proper maintenance of the ActionNote:

- ❑ Keep the computer and AC adapter dry, and do not subject them to extreme heat or cold.
- ❑ Do not place external devices on top of the computer, even if it is closed, to prevent damage to the LCD display.
- ❑ When you are not using the external device connectors, keep the covers closd to prevent damage to the ports.
- ❑ Always operate the computer with the battery pack installed to maintain a full battery charge.
- ❑ Occasionally clean the exterior of the computer with a soft, damp cloth.
- ❑ Occasionally clean the LCD display using glass cleaner on a soft cloth; do not apply the cleaner directly to the screen.

Copying the Reference Diskette Utilities

Your Reference diskette contains the system diagnostics programs, as well as VGA drivers and a VGA utility program. These programs are organized in the following directories on the diskette

Directory	Includes
\ DIAG	System diagnostics program, which is initiated by the DIAG batch flie (DIAG.BAI); see Chapter 6 for details
\UTILS	VGA utility programs; see Chapter 7 for details
\ LOTUS	Lotus® 1-2-3® VGA drivers; see Chapter 7 for details
\WIN3	Microsoft Windows VGA drivers; see Chapter 7 for details
\WP	WordPerfect® VGA drivers; see Chapter 7 for details

You may want to copy the VGA utility program in the \UTILS directory to your hard disk. If so, you may want to create a directory called \UTILS on the hard disk. You can easily copy the files using the MS-DOS COPY command. See your MS-DOS documentation for details on creating directories and copying files.

You don't need to copy the diagnostics programs or the VGA drivers to your hard disk. You always run the diagnostics programs from the diskette as described in Chapter 6, and you can easily install the VGA drivers from the diskette as described in Chapter 7.

Using the Password Function

The ActionNote provides password security for the entire system or only the Setup program. This allows you to safeguard all your data or only your Set-up configuration. The password function is optional and you do not have to set a password if you don't want to use one.

You use the Setup program to first enable or disable a password and then define it. (See Chapter 5 for instructions.)

If you enable the power-on password, you must enter it each time you turn on or reset your computer. (Resetting the computer is described later in this chapter.) The computer prompts you for the password after it completes its power-on diagnostics.

If you enable the Setup password, you must enter it before you can use the Setup program. The computer prompts you for the password after you press Delete to start Setup.

Typing the Password

You see this prompt when the password feature is activated:

Enter CURRENT password:

Type the correct password and press Enter. To protect your password, the screen does not display the characters you type.

If you do not type the correct password, the screen displays an X and repeats the password prompt. Try typing the password again.

The computer allows you three tries to enter it correctly. After the third incorrect attempt, the system displays a blinking face icon and locks up. You must reset the system to try again.

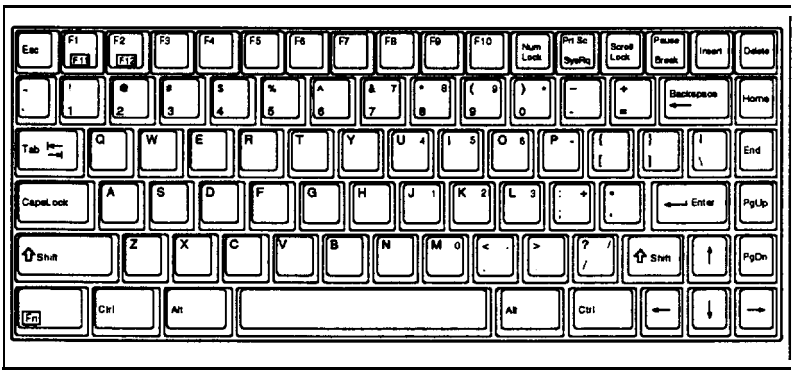
Note
If you want to change your current password or disable the password function, you need to use the Setup program. See Chapter 5 for instructions. If you forget your password, call the Epson Connection at 1-800-922-8911 for assistance.

Using the Keyboard

Although the keyboard on the ActionNote has only 84 keys (85 on the international version), it still provides all the functions of a fall-size (102-key) keyboard. For example, a full-size keyboard has a separate numeric keypad you can use for both numeric entry and cursor control. The ActionNote has an embedded numeric keypad that you access using the Fn and Shift keys in the same way you use the Shift key to enter uppercase characters. (Using the embedded numeric keypad is described later in this section.)

Note
The keyboard on the ActionNote is available with different layouts for different languages. Special keytop sets are available in some countries. Additionally, you can use MS-DOS to reassign the layout of your keyboard to duplicate that of another country. See your MS-DOS manual for more information.

The following illustration shows the 84-key, US keyboard layout.



This section describes how to use the following features on your keyboard:

- Special keys
- The F11 and F12 keys
- The embedded numeric keypad.

Special Keys

Certain keys on your keyboard serve special functions when your computer is running MS-DOS or application programs. The special keys are described in the following table.

Key	Purpose
Tab	Moves the cursor one tab to the right in normal mode and one tab to the left In Shift mode.
Caps Lock	Changes the letter keys from lower- to uppercase; changes back to lowercase when pressed again. The number/symbol keys on the top row of the keyboard and the symbol keys in the main part of the keyboard are not affected.
Shift	Produces uppercase characters or the top symbols on the keys when used with the main character keys. Produces lowercase characters when the Caps Lock function is on. Note: Use this key to reactivate the system when it is in Suspend mode.
Fn	Controls functions on the embedded numeric keypad as well as other special functions.
Ctrl	Works with other keys to perform special (control) functions,
Alt	Works with other keys to enter alternate character codes or functions,
<- Backspace	Moves the cursor back one space.
Enter	Ends a line of keyboard input or executes a command,
Home End Pg Up Pg Dn	Control cursor location.
Esc	Cancels the current command line or operation.

Key	Purpose
F1 – F10 F11 F12	Perform special functions wtthin application programs,
Num Lock	Turns on the numeric keypad; changes back when pressed again.
Prt Scr	Prints the screen display on a printer,
Sys Req	Works as defined by an application,
Scroll Lock	Controls scroiling in some applications.
Pause	Suspends the current operation.
Break	Terminates the current operation (when used with Ctrl).
Insert	Turns the insert function on and off,
Delete	Deletes the character marked by the cursor.

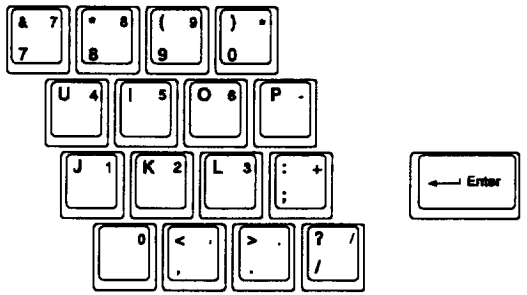
The Num Lock, Caps Lock, and Scroll Lock keys work as toggles; press them once to turn on the function and again to turn it off. When the function is on, the corresponding LED above the keyboard is lit.

Using F11 and F12

The F11 and F12 keys perform special functions within application programs. You activate these keys by using Fn with the F1 and F2 keys. Hold down Fn and press F1 to produce F11; hold down Fn and press F2 to produce F12.

Using the Embedded Numeric Keypad

The embedded numeric keypad allows you to enter numeric characters from the keyboard when the Num Lock function is on. The numeric keypad is shown below:



Press Num Lock to turn Num Lock (and its LED) on and off. Then press the key to enter the numeric character printed on the front of the key. You can press Fn plus the to to enter the alphabetic character on the key; press Fn + Shift plus the key to enter the alphabetic character in uppercase.

When Num Lock is off, you can generate the numeric character by pressing Fn + Shift plus the key.

Stopping a Command or Program

You may sometimes need to stop a command or program while it is running. Many programs provide a command you can use to cancel or even undo an operation. If you have entered an MS-DOS command that you want to stop, try one of the following commands:

- Hold down Ctrl and press C
- Hold down Ctrl and press Break.

These methods may also work in your application program. If not, you may need to reset the computer, as described below.

caution
It is best not to turn off the computer to stop a program or command. If you have created new data and have not yet stored it, it will be erased if you turnoff the computer.

Resetting the Computer

If necessary, you can clear the computer's current settings or its memory without turning it off; you do this by resetting it. For example, if an error occurs and the computer does not respond to your keyboard entries, you can reset it to reload the operating system and try again.

Caution
Resetting the computer erases any data in memory you have not saved, so do not use the reset function unless necessary. Also, some programs classify and store new data when you exit them properly; so do not reset the computer before you exit a program, if possible.

To reset the computer, the operating system must be either on the hard disk or on a diskette in drive A. If you are using MS-DOS, hold down Ctrl and Alt and press Delete. The screen goes blank for a moment and then the computer reloads MS-DOS.

If resetting the computer does not correct the problem, you probably need to turn it off and back on again.

Turning Off the Computer

Before turning off the computer, save your data and leave the application program you are using. Make sure the hard disk drive and the diskette drive lights are off, then turn off the computer by pressing the power button on top of the computer.

> **Caution**
> Always make sure the computer is off when you connect or disconnect equipment, such as a printer or the trackball.

Changing the CPU Speed

Your computer's processor can operate at two speeds: Turbo (25 or 33 MHz) or Normal (8 MHz). At the higher speed, the computer performs all tasks faster. You may need to select the slower speed, however, to run some copy-protected programs or a program that has a specific timing requirement.

Whenever you turn on or reset the computer, it starts up in Turbo speed. To change the speed, you must turn on the Num Lock feature.

If necessary, press Num Lock to turn Num Lock (and its LED) on. Then, to change to Normal speed, press Ctrl + Alt + −. To change back to Turbo speed, make sure Num Lock is on, and press Ctrl + Alt + +.

> **Note**
> You must press − or + on the embedded numeric keypad only.

Using the LCD Screen

The screen on your ActionNote is a backlit monochrome LCD, You can adjust the brightness and contrast with the two controls on the top left side of the computer. Adjust the switches to produce the best display for your viewing angle.

Slide the brightness switch to the right to lighten the brightness, and to the left to darken the brightness. Slide the contrast switch to the right to lighten the contrast, and to the left to darken the contrast.

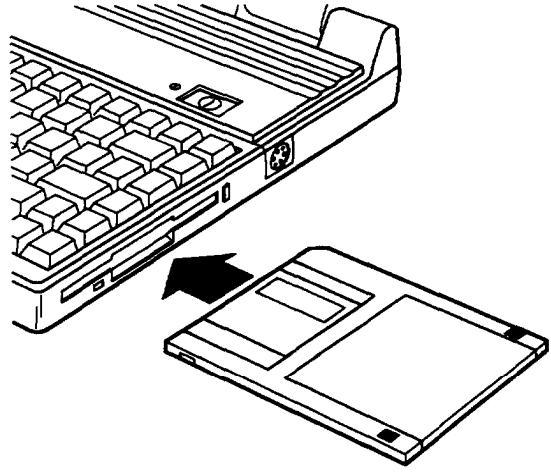
Using Diskettes

Be sure to purchase high-quality diskettes to ensure reliability. For the 3½-inch, 1.44MB diskette drive in your ActionNote, you can use either of the following types of diskettes:

- 720KB, double-sided, double-density (usually labelled 2DD)
- 1.44MB, double-sided, high-density (labelled 2HD).

Inserting and Removing Diskettes

To insert a diskette, hold it with the label facing up and the metal shutter leading into the drive. Slide it into the drive until it clicks into place.



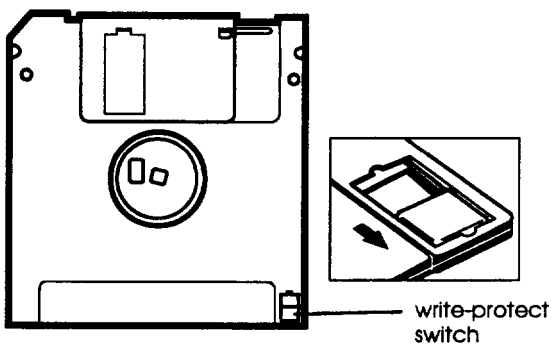
When you want to remove the diskette, make sure the drive light is off, then press the release button. When the diskette pops out, remove it and store it properly.

Caution
Never remove a diskette or reset or turn off the computer while the drive light is on. You could lose data. Also, be sure to remove all diskettes before you turnoff the computer.

Write-protecting Diskettes

You can write-protect a diskette to prevent its data from being altered. When a diskette is write-protected, you can read it and copy data from it, but you cannot store new data on it or delete any files it contains. If you try to change data stored on a write-protected diskette, you see an error message.

To write-protect a 3½-inch diskette, turn the diskette over so you are looking at the underside. Slide the switch in the lower left corner toward the edge of the diskette until it clicks into position, exposing a hole.



To remove the write protection, slide the switch toward the center of the diskette until the hole is covered.

Making Backup Copies

It is important to make copies of all your data and system diskettes. Make backup (working) copies of all diskettes that contain programs, such as your MS-DOS and Reference diskettes; then use only the copies. Store the original diskettes away from your working diskettes. Also, copy your data diskettes as necessary to keep your files up-to-date.

If you have a hard disk, you'll probably use it to store the programs and data files you use regularly. Keep backup copies of all your files on diskettes.

You can copy your data in several ways. See your MS-DOS or other operating system manual for instructions.

Using a Single Diskette Drive System

MS-DOS expects a computer to have at least two diskette drives (A and B), and displays prompts and messages accordingly. Your ActionNote has one 3½ -inch diskette drive; this is drive A. MS-DOS uses the one drive as two by displaying alternate prompts for the source and target diskettes.

For example, if you need to make a copy of a diskette, you can insert the diskette in drive A and enter the following command:

DISKCOPY A: B:

MS-DOS copies the data from drive A (the source diskette) to its memory and then prompts you to insert the diskette for drive B. At this point, you remove the original diskette, insert a blank diskette (the target diskette), and press any key to continue. Then the operating system copies the data from its memory to the second diskette.

When you swap diskettes this way, it is a good idea to write-protect the original diskette so you don't accidentally write over it. (See "Write-protecting Diskettes" earlier in this chapter for more information.)

Using a Hard Disk

The hard disk installed in the ActionNote has been prepared for use at the factory. It also may have MS-DOS and Windows installed. If you plan to use MS-DOS or Windows, you can install your application programs and begin work. See the documentation that came with your programs for instructions.

Follow these precautions to protect your hard disk from damage and to avoid losing data:

- Never turn off or reset the computer when the hard disk drive light is on. This light indicates that the computer is copying data to or from the hard disk.

- After turning the power off, wait 20 seconds before moving the computer. This allows the disks in the drive to stop spinning and the hard disk read/write heads to lock in place so you do not damage the drive.

Backing Up the Hard Disk

Although the hard disk is very reliable, be sure to backup your files onto diskettes in case you lose some data accidentally. Make copies of all your system and application program diskettes before copying the programs to the hard disk. See your operating system manual for instructions.

Saving Battery Power

If you are using the hard disk while the computer is running on the battery, remember that it uses more battery power. You can reduce the power consumption, however, with the following conservation measures:

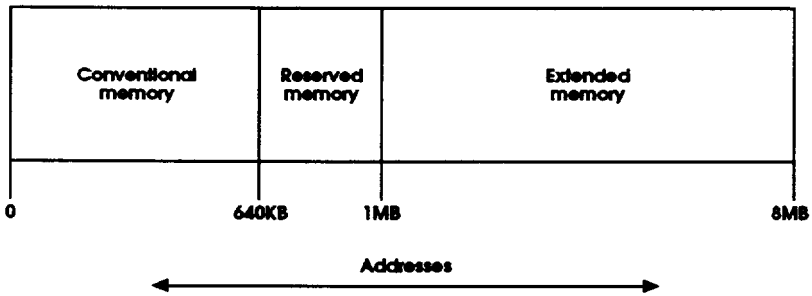
- Define a timeout period for the hard disk through the Setup program. See Chapter 5 for instructions.
- Use the suspend/resume switch to place the computer in Suspend mode when you are not using your computer but you want to leave it turned on. See "Using the Suspend/Resume Switch" in Chapter 3.

> **Note**
> To reactivate the system from Suspend mode, press the Shift key.

Using Memory

Your computer comes with 2MB, 4MB, or 8MB of memory, and you may have installed an optional expansion memory module to increase the total amount. This section describes how the memory in your computer works. Also be sure to see your MS-DOS manual for complete information on memory management.

A computer's memory is divided into three types: conventional, reserved, and extended. The following diagram shows the relationships between these types of memory and their addresses.



All memory in a computer is managed using addresses-numbers that describe the location of each byte of data. Each memory chip must have its own set of unique addresses so that the operating system knows where to store and find data.

Conventional memory is memory that MS-DOS recognizes and manages directly. The size of conventional memory is limited to 640KB and has addresses in the range 0 to 640KB.

Reserved memory is memory in the range 640KB to lMB. The system enhances its performance by using 128KB of this memory as shadow RAM, and the remaining memory is available.

Extended memory is memory with addresses in the range 1MB to 8MB, and is used only by the following:

- Certain operating systems, such as OS/2
- Some MS-DOS interfaces, such as Windows
- Some RAM disk programs, such as VDISK
- Some hard disk caching programs, such as SMARTDRV
- Certain specially-written MS-DOS applications.

Use of extendd memory requires a memory manager. Most versions of MS-DOS include a standard extended memory manager. If you are using MS-DOS, Windows, and other compatible programs, it is best to use one of the memory managers (such as HIMEM.SYS) that came with your software because these memory managers have been tested and proven reliable.

Most MS-DOS commands and application programs cannot use extended memory directly. They need to use *expanded memory*, which uses a portion of reserved memory as a window to access RAM beyond lMB. This type of memory allows some MS-DOS applications to get around the 640KB size limitation. You control expanded memory with a memory manager (such as EMM386.EXE), which enables the computer to use extended memory as expanded memory.

Chapter 3

Powering the Computer

You can operate your ActionNote using the AC adapter or the removable battery pack. This chapter describes how to use these power sources, and how to best conserve energy when using the battery pack.

Using the AC Adapter

To conserve the battery, use the AC adapter whenever you have access to an electrical outlet. When the computer runs on the AC adapter, it draws power from the adapter instead of using the battery. Whenever the AC adapter is connected, it recharges the battery pack.

The AC adapter is ideally suited for travel to foreign countries. It is designed to operate in 100/240 VAC ranges with a frequency of 50/60 Hz. All you need is an appropriate plug for the electrical socket; see Appendix C for specifications.

See Chapter 1 for instructions on how to connect the AC adapter to the computer.

Using the Battery Pack

The removable NiCad battery pack powers the computer when the AC adapter is not connected. The length of time the battery can provide power depends on how you use the ActionNote. If you operate the computer using a bright screen display and access the hard disk often, you will consume more battery power and shorten the length of the charge.

To increase the amount of time you can use the computer without electrical power, you can purchase additional battery packs. Maintaining a supply of charged battery packs allows you to replace a low battery and continue your work.

> **Note**
> Use only the battery pack designed for use with the ActionNote (model number 8KR-1700AE).

Replacing the Battery Pack

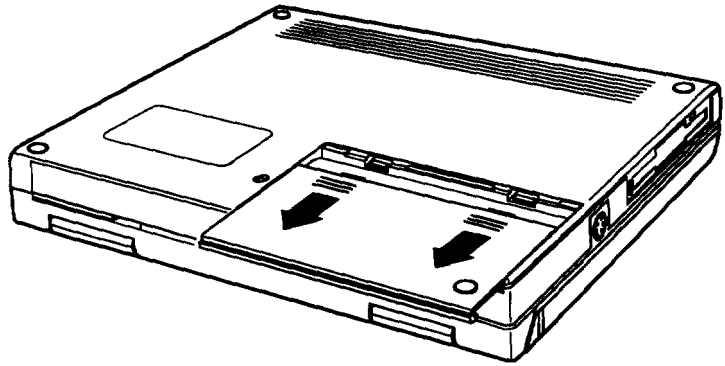
Follow these steps to install the battery pack:

1. Turn off the computer.

2. If the AC adapter is connected, disconnect it.

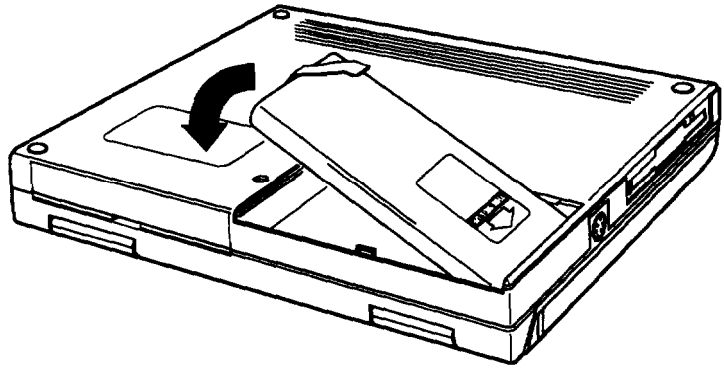
3. Turn the computer upside down with the back facing you.

4. Press down on the release buttons on the battery compartment cover and slide the cover toward you.

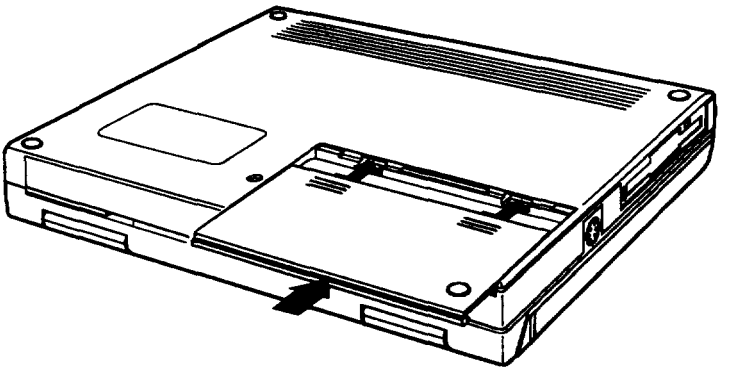


5. Pull up on the cloth tab and lift out the low battery.

6. Slide the fully-charged battery pack into the slot. Insert the right side (with contacts) first, then press on the left side to secure the battery.



7. Slide the battery cover back into place making sure the tabs on the cover fit into the slots on the computer's cover. Press the cover from the back side until it snaps closed.



Note

When you replace the battery pack, make sure the new battery is fully charged, otherwise you'll need to recharge it befpre you can use it.

8. Turn the computer right side up.

Recharging the Battery

The battery pack that comes with your ActionNote is rechargeable. You may need to charge the battery pack before using it for the first time, and you must charge it when it runs low on power. Your computer warns you when the battery is low through the low battery light.

To charge the battery pack, leave it in the computer. Connect the AC adapter to the computer and to an electrical outlet. The computer charges the battery whenever the AC adapter is attached.

The charging light blinks while the battery is charging. When the battery is completely charged, the light stays on.

The computer takes approximately 3½ hours to charge a completely discharged battery pack. If the battery still has some charge left when you start charging the time will be less.

If you have additional battery packs, it is a good idea to keep them fully charged so you can use them to replace the battery pack in your computer when it runs low. This is especially useful if you are traveling and will need to run the computer off the battery; an extra battery pack or two extends the length of time you can power the computer.

If you use the battery pack frequently, it is a good idea to let it discharge completely before you recharge it; then recharge it to its maximum power. This extends the life of the battery.

If you find that over time the battery is losing its charge sooner, the life of the battery may be reaching its end. You may need to replace it with a new battery pack.

Note
When your battery can no longer be recharged, please contact your local government agency responsible for hazardous waste disposal. NiCad batteries are considered hazardous waste and should be recycled or disposed of properly.

Low Battery Indicator

When the battery's power is getting low, the low battery light starts flashing orange and the computer starts beeping. At this point, connect the AC adapter. You need to recharge the battery (as described above) before you can use it again to power the computer without the AC adapter.

If your AC adapter is not available, follow these steps:

1. Complete your current activity.

2. Save your data.

3. Exit the program you are using.

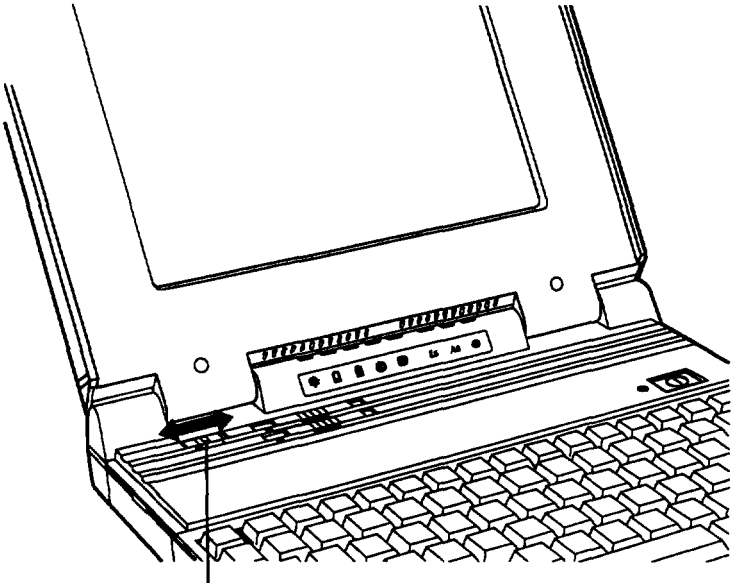
4. Turn off the computer.

You have approximately two minutes to save your data. If the batteries run out suddenly, you will lose any data you have not saved.

Turn off the computer before replacing the battery pack. Replacing the battery pack when the computer is turned on causes the computer to restart, and any data stored in RAM is lost.

Using the Suspend/Resume Switch

The suspend/resume switch provides an efficient way to save battery power. This switch is located on the top left side of the computer.



suspend/resume switch

Slide the suspend/resume switch to the right to temporarily stop system activity when you do not need to use your computer for short periods of time. The screen goes dark and the computer suspends power to its components and devices; it continues to supply power to the RAM. (If you are not going to use the computer for a longer time-20 minutes or more, for example—turn it off.)

To resume activity, slide the switch to the left or press the Shift key. The computer resumes normal operation at the point at which you suspended it.

Using Setup to Conserve Battery Power

The Setup program includes power management options that enable you to conserve battery power. These options allow you to control various functions of the computer so you don't waste power on devices you are not using.

The power mamgement options are available from the **ADVANCED CHIPSET SETUP** portion of the Setup program. You can specify timeout periods for the LCD display, the hard disk drive, and/or the system. For a complete description of these options and the Setup program, see Chapter 5.

Chapter 4

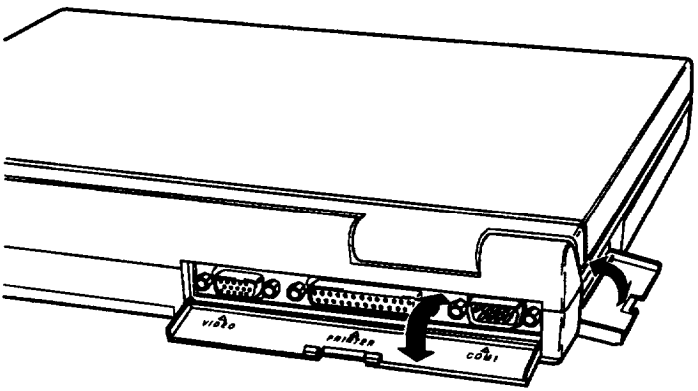
Connecting Options/Devices

This chapter describes how to connect the following optional devices to your ActionNote:

- ❑ External monitor
- ❑ Parallel printer
- ❑ Serial device
- ❑ Logitech trackball, mouse, or other pointing device, or an external keyboard
- ❑ Internal 9600/2400 fax/modem
- ❑ Expansion memory modules
- ❑ Numeric coprocessor.

Make sure the computer is turned off before you install or connect any of these devices. This is a safety precaution and is also necessary for the computer to recognize that you connected a new device.

The interfaces for the VIDEO, PRINTER, and COM 1 ports are located on the back of the computer. The interfaces for the COM 2, LINE, and EXT KB ports are located on the left side of the computer. To access any of these ports, open the port cover by pulling down on the notch at the top.



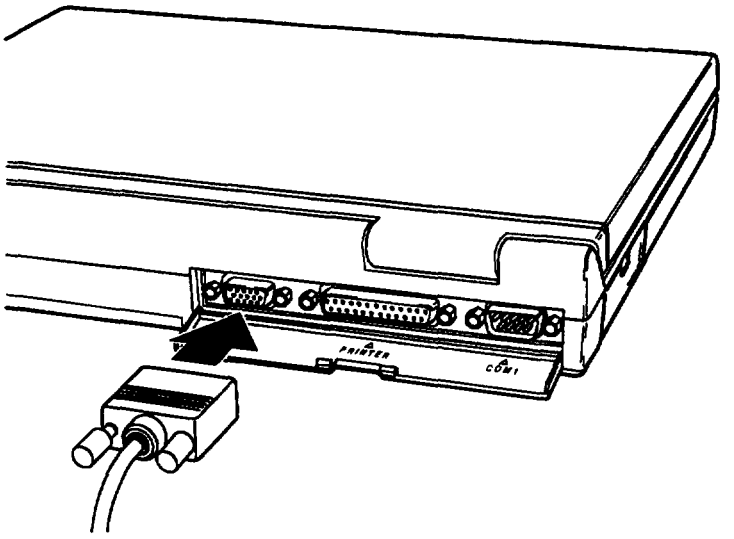
Connecting an External Monitor

The VIDEO port on your computer allows you to connect an external color or monochrome VGA monitor. When a monitor is connected, you can display text and graphics on both the LCD screen and the monitor.

Follow these steps to connect a monitor:

1. Make sure both the computer and the monitor are turned off.

2. Connect the monitor cable to the port labelled VIDEO on the back of the computer.



3. If the connector has retaining screws, tighten them by hand or with a screwdriver.

4. Connect the other end of the cable to the monitor, if it is not already attached.

5. Connect the monitor's power cable to a grounded (earthed) electrical socket.

See Chapter 7 for details on using the VGACONF utility, which allows you to change the display characteristics of your LCD and/or external monitor.

Connecting a Parallel Printer

You can use the PRINTER port to connect a parallel device, such as a Centronics®-compatible printer. Before connecting a printer, check the manual that came with it to see if you need to change any of its settings.

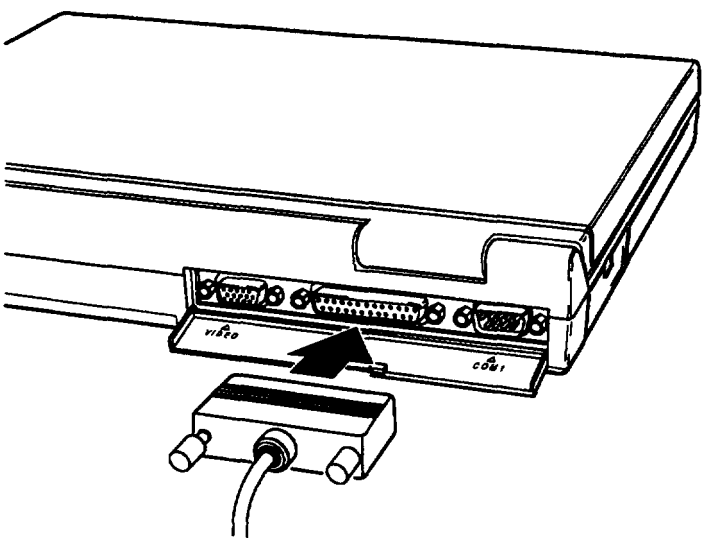
You can also connect some third-party external diskette drives to this port. Check with the Epson Connection for product compatibility requirements. If you do connect an external diskette drive to this port, be sure to run the Setup program to identify the drive.

Follow these steps to connect a parallel printer:

1. Place the printer in a convenient location near your computer, so that the power and data cables will not interfere with the paper or paper trays.

2. Make sure both the computer and printer are turned off.

3. Connect the printer cable to the PRINTER port.



4. If the connector has retaining screws, tighten them by hand or with a screwdriver.

5. Connect the other end of the cable to the printer. If the printer interface has retaining clips, squeeze them gently until they snap into place.

6. Connect the printer's power cable to a grounded (earthed) electrical socket.

If the printer is connected when you turn on the ActionNote, the computer automatically configures the port as the primary parallel port.

Connecting a Serial Device

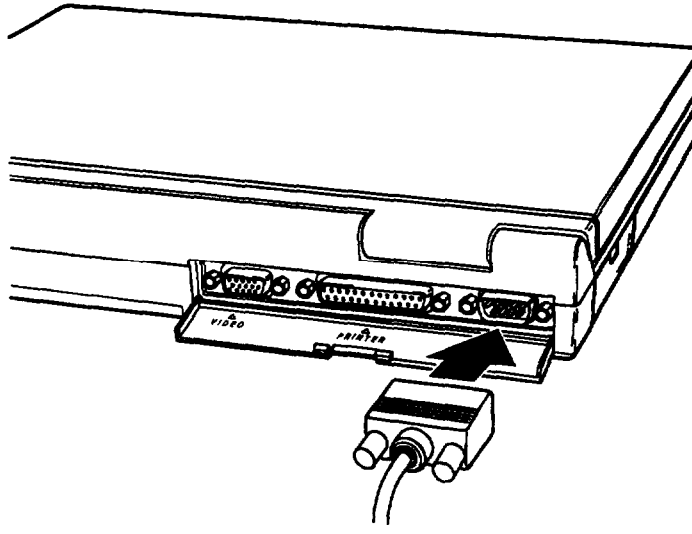
You can use the COM 1 and/or COM 2 port to connect serial devices, such as a serial printer or plotter. You could also connect a modem or pointing device, such as a trackball or mouse.

> **Note**
> You cannot use the COM 2 port if the internal fax/modern is installed.

Follow these steps to connect a serial device:

1. Make sure both computer and the serial device are off.

2. Connect the serial cable to the COM 1 or COM 2 port,



3. If the connector has retaining screws, tighten them by hand or with a screwdriver.

4. Connect the other end of the cable to the serial device. If the connector has retaining screws, tighten them.

5. Connect the serial device's power cable (if it has one) to a grounded (earthed) electrical socket.

Check the documentation that came with your serial device to see if any other steps are necessary.

Checking the Serial Port Settings

The COM 1 and COM 2 ports are capable of sending and receiving data at a variety of speeds and with many different protocols. This means you need to configure the port to match the signals of the serial device. As a general rule, choose the highest speed (baud rate) and the protocol that provides the best error detection.

Check the documentation that came with your serial device to see if you need to adjust any of its settings.

> **Note**
> If your application program cannot send printer output directly to the serial port, you can use the MS-DOS MODE command to redirect the output. You can even tell the computer to redirect printer and serial port settings automatically if you place the appropriate MODE commands in your AUTOEXEC.BAT file. See your MS-DOS manual for instructions.

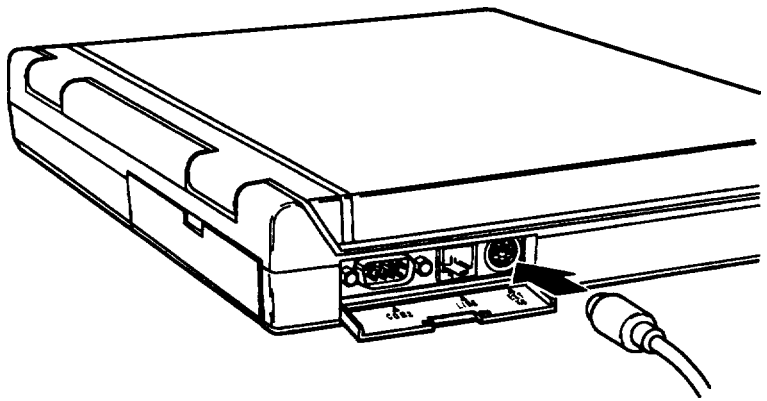
Using the EXT KB Port

You can use the EXT KB port to connect the Logitech trackball or any PS/2-compatible pointing device.

You can also connect the mouse/keyboard adapter to this port. This adapter has two ports, which allow you to connect both a pointing device and an external keyboard at the same time. You can connect a PS/2-compatible keyboard to this adapter; it does not support AT®-type keyboards.

Connecting the Trackball

Your computer package may include the Logitech Trackman trackball. You connect this trackball to the EXT KB port on the left side of the computer.



You can attach the trackball to the right or left side of your keyboard or LCD screen. If you attach it to the right side of your keyboard, make sure there is not a diskette in the diskette drive. Also, you will not be able to access the diskette drive while the trackball is attached.

Before you can use an optional device, you must install special software, called a device driver. The device driver allows the operating system and your application software to recognize the device. The device driver for the Logitech trackball has already been installed on your hard disk so the ActionNote will recognize the trackball as soon as you turn it on.

For information on using the trackball, or if you would like to know more about its device driver, see the documentation that came with it.

To use the trackball, or any other pointing device attached to the EXT KB port, you must enable the PS/2 Mouse support option in the ADVANCED CMOS SETUP portion of the Setup program. This option has been enabled for you, but if you want more information on the Setup program, see chapter 5.

Connecting Any Other Pointing Device

You can connect a PS/2-type mouse or other pointing device to the EXT KB port as shown above. Before you can use the mouse or other pointing device with your applications, you need to install the special software driver that came with it. See the documentation supplied with the device for instructions.

Also, before using a pointing device attached to the EXT KB port, you must enable the PS/2 Mouse Support option in the ADVANCED CMOS SETUP portion of the Setup program. See Chapter 5 for details on using the Setup program.

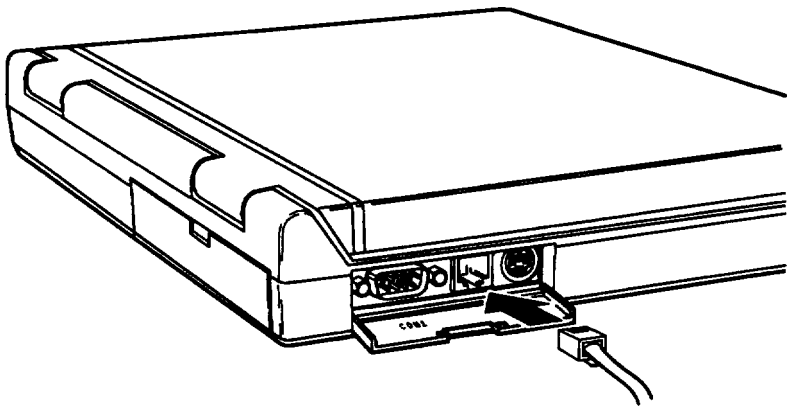
Connecting an External Keyboard

If you are typing for extended periods of time, you may want to connect an optional external keyboard. You connect the keyboard to the mouse/keyboard adapter in the EXT KB port on the computer.

Connecting the Internal Fax/Modem

If the internal fax/modem is installed in your ActionNote computer, you can connect it directly to your telephone line using a standard phone jack. The modem will then be ready to use.

A telephone cable is included in your computer package. Insert one end of the modular jack cable into the LINE port on the left side of the computer and insert the other end into a modular jack outlet.



Your computer package may have included data communications and fax transmission software. If so, this software is already loaded on your hard disk drive. See the documentation that came with these applications for details on how to use them.

Appendix B provides a summary of the modem's internal command set. You need to use the fax/modem's built-in set of commands only if you are not using a telecommunications software package. Each communications program provides its own set of commands that you will use to control the modem instead of the built-in set.

Note
Be sure to read the modem FCC information in Appendix B.

Adding Memory Modules or a Numeric Coprocessor

The sections below describe how to add memory to your computer and install a numeric coprocessor. To access the sockets for these options, you need to remove the keyboard.

> **Caution**
> It is best to have your Authorized Epson Servicer install the memory module or a numeric coprocessor for you because they can be damaged easily if installed incorrectly. If you prefer to install them yourself, carefully follow all the instructions in this section. If you have any questions at all, please contact your Authorized Epson Servicer or call the Epson Connection.

Removing the Keyboard

To remove the keyboard, follow these steps:

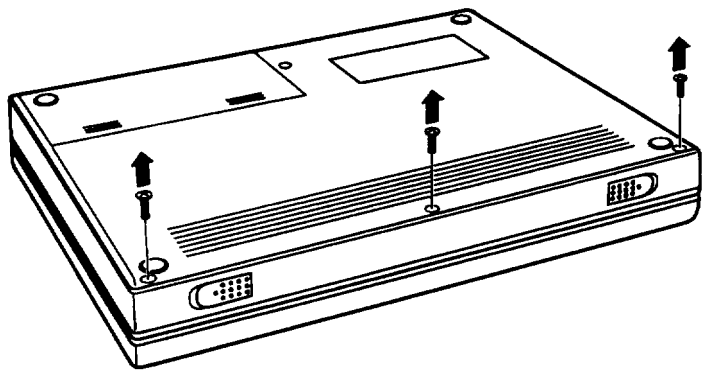
1. Make sure the computer is turned off.

2. Disconnect all cables from the ports and connectors on both the sides and back of the computer. (Unplug the AC adapter from its wall outlet, if necessary.)

3. Turn the computer upside down with the front facing you.

4. Remove the battery pack (as described in Chapter 3).

5. Remove the three screws on the front edge of the computer's case.

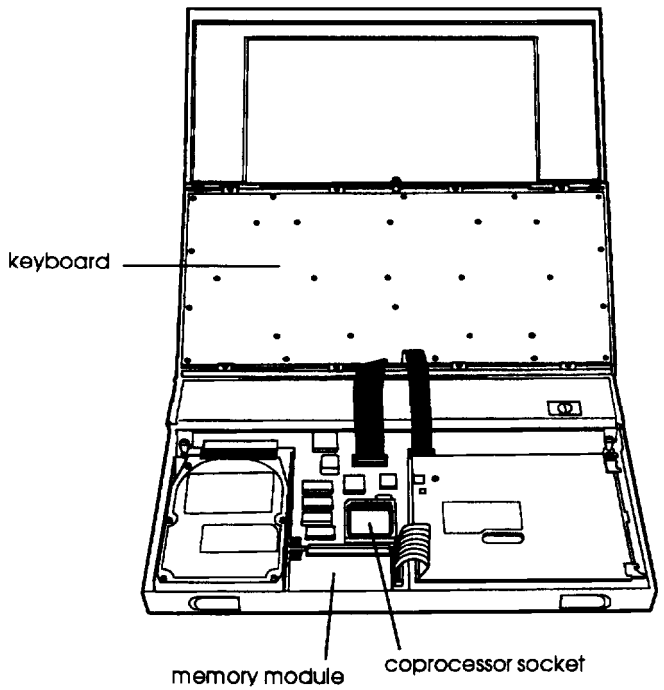


6. Turn the computer right side up.

7. Open the top cover.

8. Carefully detach the keyboard by lifting up on the front and sides of the keyboard. Then pull it toward you.

9. Turn the keyboard upside down by tilting the front of the keyboard up and back toward the LCD. Carefully set the keyboard on top of the computer. Be careful not to strain or twist the keyboard cables.



Installing a Memory Module

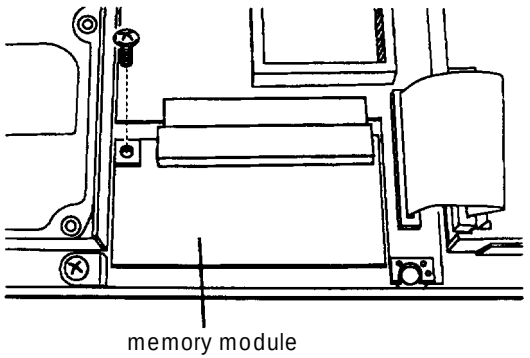
Your computer comes with 2MB, 4MB, or 8MB of memory; 2MB are soldered directly onto the system board. You can increase your memory up to a maximum of 8MB, by adding either a 2MB or 6MB memory module.

If your computer comes with 4MB of memory, a 2MB memory module is already installed in the computer (as shown above). You can increase your memory to 8MB by replacing the 2MB memory module with a 6MB memory module.

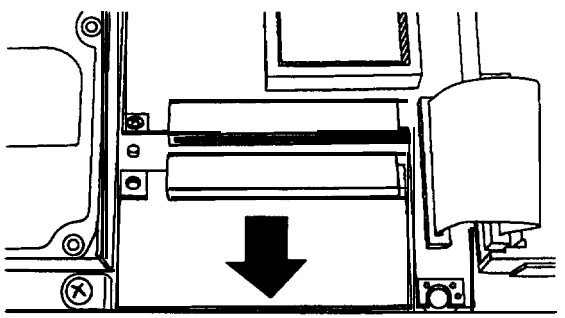
Follow these steps to install a memory module

1. Remove the keyboard as described above.

2. If the 2MB memory module is installed, remove the screw that attaches the memory module to the system board.



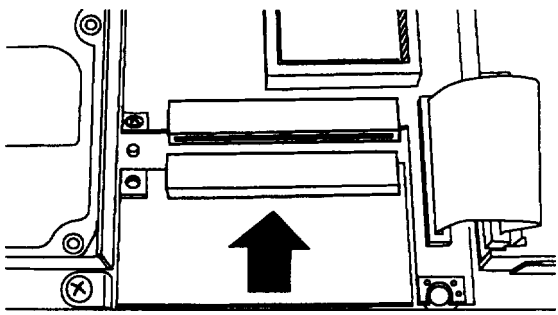
3. Gently disconnect the memory module from its socket by sliding the module toward the front of the computer.



4. Lift the memory module out of the computer.

5. Lower the new memory module (2MB or 6MB) straight down into the computer until its connector aligns with the socket on the system board. Make sure the hole for the attachment screw is on your left.

6. Carefully press the module straight into the socket. The connector and socket are designed so they fit together only if you have aligned them correctly; so do not force them. If you have trouble, remove the module and try again.



7. When the connector is firmly attached to the socket, replace the screw on the left side of the module.

8. Replace the keyboard as described later in this chapter.

After you reassemble your computer, you need to run the Setup program to make sure it recognizes the new amount. As soon as you turn on the computer, it will prompt you to run Setup because of the memory mismatch. See Chapter 5 for instructions.

If you later remove a memory module, be sure to run the Setup program again.

Installing a Numeric Coprocessor

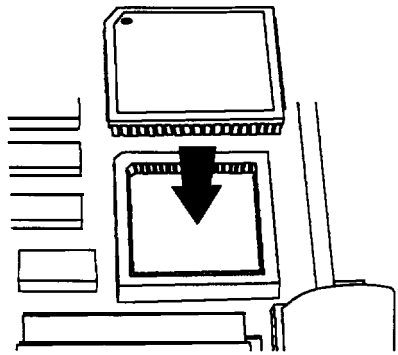
Your computer has a socket for a numeric (math) coprocessor. You can install either a Cyrix Cx387SLC or an Intel 387SX multifrequency coprocessor. Installing a numeric coprocessor speeds up your computer's numeric calculations and graphic displays when you are using certain application software.

The coprocessor chip can be easily damaged and is expensive to replace; so if you don't feel confident about installing it yourself, ask your Authorized Epson Servicer for assistance.

To install the coprocessor, follow these steps:

1. Remove the keyboard as described on page 4-11.

2. Place the coprocessor onto the socket so that the round indentation indicating pin 1 is in the upper left corner. Then push it down.



3. Replace the keyboard as described in the next section.

The computer automatically detects when a coprocessor is installed. When you turn on the computer, the system configuration screen shows that a numeric coprocessor is present.

Caution
If you need to remove the math coprocessor, do not try to do it yourself. This procedure requires a special extraction tool. Contact your Authorized Epson Servicer.

Replacing the Keyboard

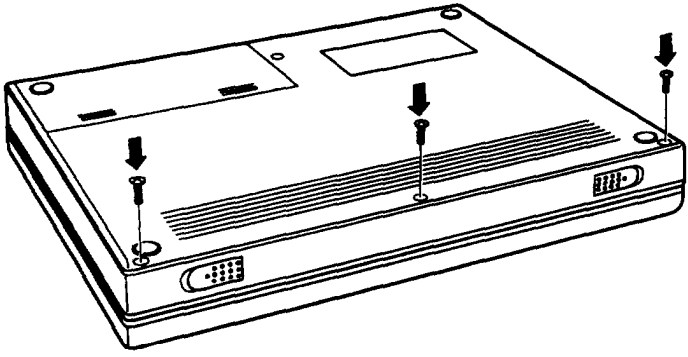
After installing a memory module or numeric coprocessor, you must replace the keyboard. Follow these steps:

1. Carefully lift the keyboard off the top of the computer, turn it right side up, and align it over the front of the computer. Make sure the keyboard cables are not twisted.

2. Carefully press the keyboard forward until the tabs on the keyboard fit into the slots on the computer's cover.

3. Press down on the front of the keyboard until it is securely in place.

4. Turn the computer upside down with the front facing you and replace the three screws on the front side of the cover.



5. Turn the computer right side up.

6. Connect any optional devices that you may have installed previously.

Chapter 5

Running Setup

The Setup program defines your system's configuration so the computer uses all of its devices properly. Because your computer was set up at the factory, the configuration information is accurate when you first setup the computer. If you change the computer's configuration by adding optional devices, however, you need to run the Setup program to update the system.

The Setup program is stored in the computer's ROM BIOS (read-only memory, basic input/output system), so you can run the program any time you turn on or reset the computer. Setup lets you verify or change the following settings:

- Standard CMOS settings, such as the current date and time and drive types
- Advanced CMOS settings, such as typematic rates, startup functions, and password checking
- Advanced chipset settings, such as power management functions.

The configuration you define through the Setup program is stored in a special area of memory called CMOS RAM. This memory is backed up by a battery, so it is not erased when you turn off or reset the computer. Whenever you start the computer it checks the settings, and if it discovers a difference between the information in CMOS RAM and your system's configuration, it prompts you to run Setup. You see a message such as the following:

CMOS display type mismatch
RUN SETUP UTILITY
Press <F1> to RESUME

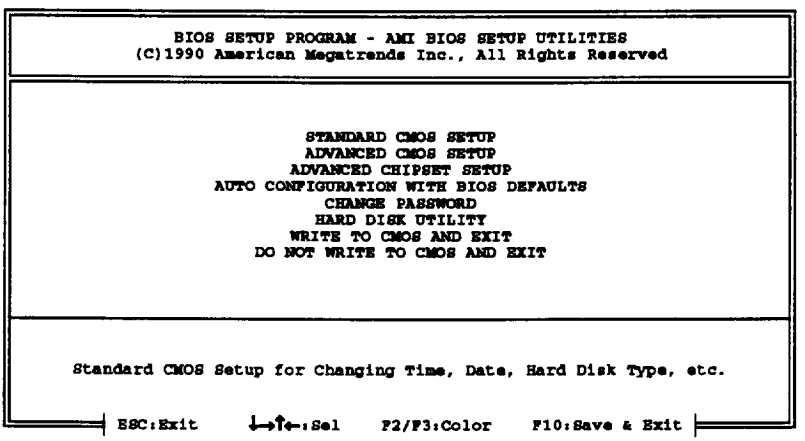
If this happens, press F1 to run Setup and correct the setting.

Starting the Setup Program

To start the Setup program, you must turn on or reset the computer. During the memory test, press Delete to start the Setup program.

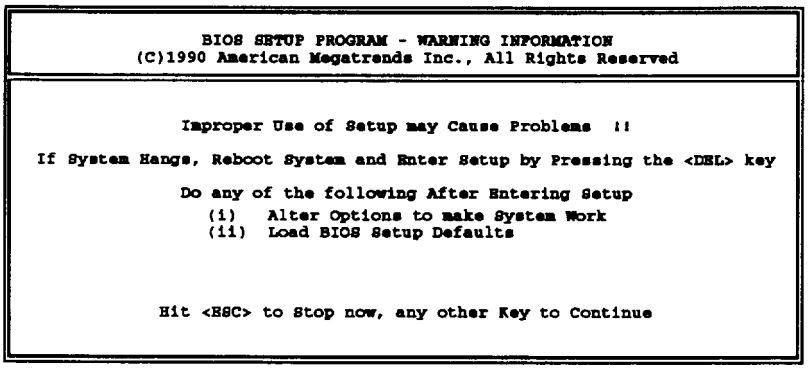
If you have already enabled the Password function for the Setup program, you will be prompted to enter it now.

You see the first menu screen:



Press ↑, ↓, ←, or → to move from one menu item to the next. The screen displays a brief description of the highlighted menu item. When the correct procedure is highlighted, press Enter to start the operation.

When you select one of the SETUP options, you see this screen:



Press any key to continue, or press Esc to exit the Setup program.

Changing the Settings

At the bottom of each Setup screen, you see a list of the keys you can use to select options on that screen. Their functions are described in the following table. (Each screen lists the keys available; use only the keys listed for that screen.)

Key(s)	Function
Esc	Cancels the current screen and returns to the previous menu
↑ ↓ ← →	Move between options on the screen
Pg Up or Pg Dn	Change the value of an option on the STANDARD CMOS SETUP screen
Ctrl + Pg Up or Ctrl + Pg Dn	Change the value of an option on the ADVANCED CMOS SETUP or ADVANCED CHIPSET SETUP screen

Key(s)	Function
F1	Displays help information about the option currently selected
F2 or F3	Reverses the color of the screen
F5	Automatically changes all settings to their original values before changes were made
F6	Automatically changes all settings to their BIOS default values
F10	Save the current values and exit

Automatically Configuring Your System

You can use the **AUTO CONFIGURATION WITH BIOS DEFAULTS** option to automatically configure your system to the default settings. When you select this option, the program asks you to confirm that you want to load the defaults.

Saving Your Selections

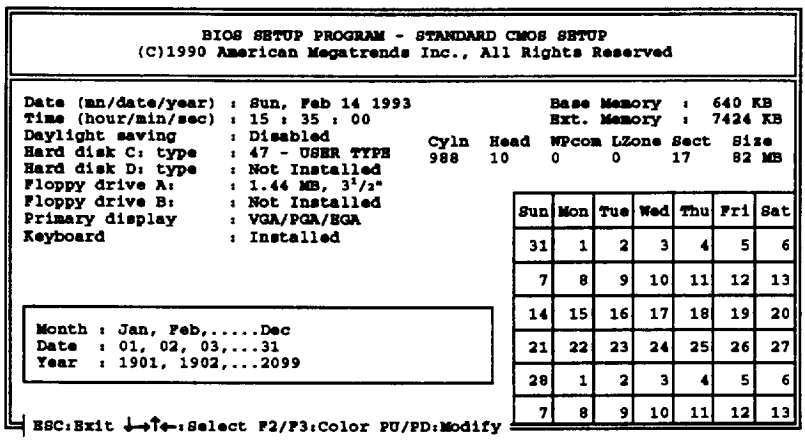
The changes you make in the Setup program are temporary until you save them. This is important to remember in case you change any settings by mistake and want to return to your previous settings.

Whenever you want to save your new settings, select the **WRITE TO CMOS AND EXIT** option. The program asks you to confirm that you want to save the new settings and exit. Press Y and Enter. The system restarts with the new configuration settings.

You can also exit the Setup program without writing the new selections to CMOS RAM. Select the **DO NOT WRITE TO CMOS AND EXIT** option. The program asks you if you want to quit without saving the current settings. Press Y and Enter. The system restarts with the previous configuration settings.

Changing the Standard CMOS Setup

When you select the **STANDARD CMOS SETUP** option from the main menu, you see this screen:



Press ↑, ↓, ←, or → to select the option you want to change. The Setup program displays information about each option as you highlight it. **Use Pg Up or Pg Dn to change** the value of an option. Press Esc to return to the main menu.

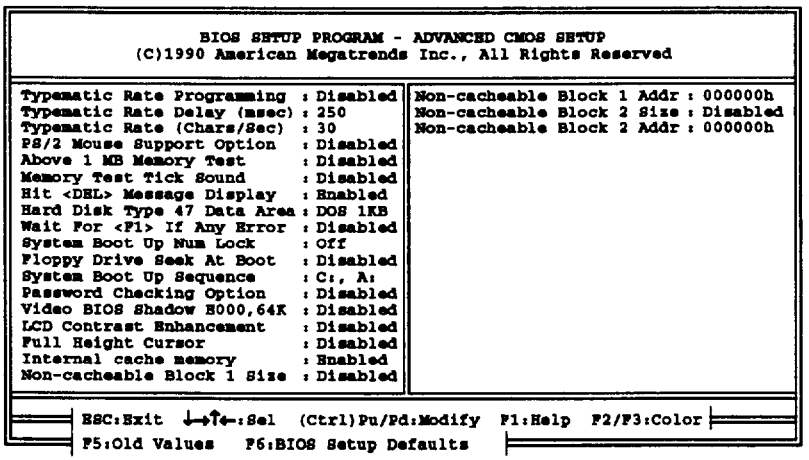
The options on the STANDARD CMOS SETUP screen are described in the following table. Note that the Setup program displays the possible settings for each option when the option is highlighted.

***STANDARD CMOS SETUP* Options**

Option	Function
Date	Sets the current system date in mm/dd/yy format
Time	Sets the current system time
Daylight saving	Enables or disables daylight savings
Hard disk C: type	Identifies the hard disk drive installed in the computer; this setting is accurate for the factory-installed hard disk; do not change it
Hard disk D: type	Always set to Not Installed
Floppy drive A:	Identifies the diskette drive, which is 1.44MB, 3½ inch; do not change this setting
Floppy drive B:	Always set to Not Installed (unless you install an optional, external diskette drive)
Primary display	identifies the LCD display
Keyboard	Tells the system whether or not to test the keyboard during system setup

Changing the Advanced CMOS Setup

When you select the **ADVANCED CMOS SETUP** option from the main menu, you see this screen:



Note
This screen shows the BIOS default settings.

Press ↑, ↓, ←, or → to select the option you want to change. When an option is highlighted, you can press F1 to display information about the option, including the possible settings. Use Ctrl + Pg Up or Pg Dn to change the value of an option. Press Esc to return to the main menu.

The options on the ADVANCED CMOS SETUP screen are described in the following table. Note that the Setup program displays the possible settings for each option when the option is highlighted and you press the F1 key.

ADVANCED CMOS SETUP Options

Option	Function
Typematic Rate Programming	Enables or disables programming of the typematic rate; If enabled, you can change the next two options on the screen
Typematic Rate Delay	Sets the delay period between the time you press a key and the time the character appears on the screen (in milliseconds); the higher the number, the longer the delay; the default is 500 msec, or 1/2 second
Typematic Rate	Sets the rate at which a character repeats when you hold down a key; the higher the number, the faster the repeat rate; the default is 24 characters per second
PS/2 Mouse Support Option	Enables or disables PS/2-type mouse support for the EXT KB port; always enable this option when you connect a pointing device to the EXT KB port
Above 1 MB Memory Test	Enables or disables testing of memory above 1MB during system startup; disabling this option speeds up the startup process
Memory Test Tick Sound	Enables or disables an audible ticking sound as memory Is tested during system startup
Hit <Del> Message Display	Enables or disables the message that prompts you to run the Setup program: if you disable this message, you will not see Hit <Del>, If you want to run Setup:you can still start the Setup program by pressing Delete during the memory test
Hard Disk Type 47 Data Area	Identifies where the hard disk drive parameters table is stored; it is not necessary to change this setting
Wait For <F1> If Any Error	Enables or disables the message that prompts you to press F1 to run Setup when an error occurs
System Boot Up Num Lock	Turns the Num Lock function either On or Off whenever the system starts up
Floppy Drive Seek At Boot	Enables or disables checking the diskette drive for COMMAND.COM during system startup; enable this option if you plan to start the computer from drive A

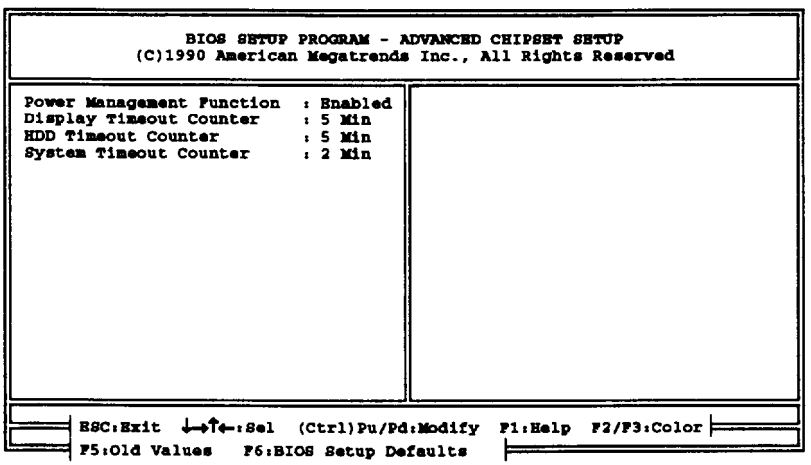
ADVANCED CMOS SETUP Options (continued)

Option	Function
System Boot Up Sequence	specifies the order In which the computer checks the drives when looking for the operating system; the default (C:, A:) loads the operating system from drive C; if you want to load the operating system from diskette, change this setting to A:, C:
Password Checking Option	Enables or disables password security; select Always to enable password checking whenever the computer is fumed on or reset: select Setup to enable password checking only when you start the Setup program; if you enable this option, you then select the CHANGE PASSWORD option to specify your password
Video BIOS Shadow E000,64K	Enables or disables shadow RAM for the video BIOS; If you enable this feature, the system copies the contents of its video BIOS into RAM so it can perform certain operations faster
LCD Contrast Enhancement	Enables or disables the LCD contrast enhancement feature; to enable this feature, you can specify foreground, background, or both
Full Height Cursor	Enables or disables a full height cursor; the normal cursor is an underscore _ ; the full height cursor Is a rectangle ▮
Internal cache memory	Enables or disables the 1KB Internal memory cache built into the microprocessor; when the cache is enabled, the system performs most efficiently
Non-cacheable Block 1 Size	Enables or disables a non-cache block of memory; your computer automatically caches all system memory unless you enable a non-cache block of memory
Non-cacheable Block 1 Addr	Displays the starting address of the non-cache block of memory
Non-cacheable Block 2 Size	Enables or disables a non-cache block of memory; your computer automatically caches all system memory unless you enable a non-cache block of memory
Non-cacheable Block 2 Addr	Displays the starting address of the non-cache block of memory

Changing the Advanced Chipset Setup

These configuration settings include the power management functions that allow you to conserve battery power.

When you select the **ADVANCED CHIP SET SETUP** option from the main menu, you see this screen:



Press [↑], [↓], [←], or [→] to select the option you want to change. When an option is highlighted, you can press [F1] to display information about the option including the possible settings. Use [Ctrl] + [Pg Up] or [Pg Dn] to change the value of an option. Press [Esc] to return to the main menu.

The options on the ADVANCED CHIPSET SETUP screen are described in the following table. Note that the Setup program displays the possible settings for each option when the option is highlighted and you press the F1 key.

ADVANCED CHIPSET SETUP Options

Option	**Function**
Power Management Function	Enables or disables the power management functions; if enabled, you can set the next three counters
Display Timeout Counter	Enables or disables a timeout period for the LCD display; if enabled, and the LCD screen is not accessed far the specified period of time, the computer goes Into Suspend mode
HDD Timeout Counter	Enables or disables a timeout period for the hard disk drive; if enabled, and the hard disk drive Is not accessed for the specified period of time, the computer goes Into Suspend mode
System Timeout Counter	Enables or disables a timeout period for the system; if enabled, and the system is not accessed for the specified period of time, the computer goes into Suspend mode

Highlight the option you want to change and press F1 to see what timeout periods are available. If you do not use the keyboard for the specified amount of time, the computer turns off the LCD screen, hard disk drive, or the entire system to save battery power. The next time you press a key, the system comes back on. It's a good idea to always press the Shift key when you want to resume activity on the computer.

Changing the Password

If you enable the **Password Checking** option on the **ADVANCED CMOS SETUP** screen, you use the **CHANGE PASSWORD** option to specify the password.

> **Caution**
> If you do set a password, be sure it is easy to remember. If you forget your password, you will have to call the Epson Connection for assistance.

When you select the **CHANGE PASSWORD** option, you see the following prompt:

```
Enter CURRENT Password:
```

Type the current password. (When you enable a password for the first time, the current password is AMI.) You see the following prompt:

```
Enter NEW password:
```

Type your password using up to six characters. To protect your password, the screen does not display what you type. After typing the password, press Enter. Then you see the following prompt:

```
Re-Enter NEW Password:
```

Type the same password again and press Enter. (This confirms your password for the system.) The program displays the following message

```
NEW Password Installed
```

Press Esc to return to the main menu screen. Highlight **WRITE TO CMOS AND EXIT** and press Enter.

Now, you must enter the password each time you start or reset the computer and/or before the Setup program will start. (See Chapter 2 for information about using the password you have defined.)

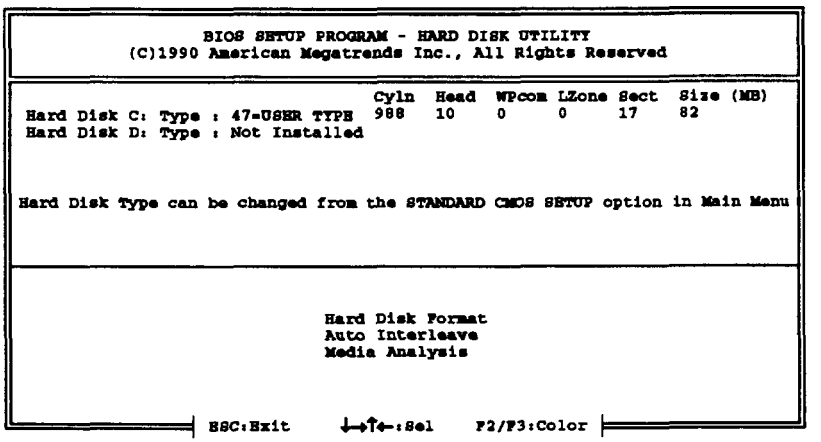
Hard Disk Utility

You need to select this option only if you are having serious problems with your hard disk, such as not being able to access it. This option provides utilities that allow you to perform a low-level (or physical) format of your hard disk. Do not confuse this procedure with the logical format performed by your operating system. The physical formatting of a hard disk is a separate step that is usually done at the factory by the disk manufacturer.

> **Caution**
> Physically formatting a hard disk erases any data it contains. Be sure to back up any data on your hard disk before you format it. If you are unsure whether formatting is necessary, contact your Authorized Epson Servicer or call the Epson Connection (1-800-922-8911) for assistance.

In addition to destroying all the data on the hard disk, formatting removes any partitions and logical formatting defined on the disk by your operating system. After you physically format a hard disk, you need to logically format the disk again using your operating system.

When you select the HARD DISK UTILITY from the main Setup menu, you see this screen:



The three options listed on the bottom half of the screen are hard disk diagnostic tests. These tests are destructive in that they destroy data on the hard disk. Therefore, if possible, be sure to backup any data on your hard disk before performing these tests.

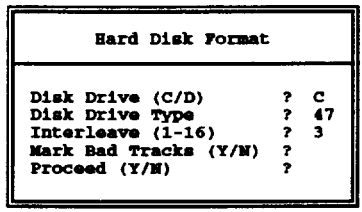
Hard Disk Format

The hard disk in your computer has already been formatted for you. You need to reformat this hard disk only if you have a serious problem with the drive. However, before formatting a disk with data on it, try every other recovery procedure described in your operating system manuals. Then, if possible, back up all the data on the disk before you begin.

You must still partition and format the hard disk for the operating system after performing this low-level format. See your operating system manuals for instructions.

Caution
The hard disk format procedure destroys any data on your hard disk.

Select the **Hard Disk Format** option only when you need to perform a low-level format of the hard disk. The program displays this screen:



The **Mark Bad Tracks** option allows you to specify the bad tracks on the hard disk. If you do not enter a bad track list before you format the disk, the format program analyzes the surface of the hard disk to determine the bad tracks.

Auto Interleave

This option is available for service personnel only. You should never select this option.

Media Analysis

This test identifies the bad tracks on the hard disk by analyzing the surface of the disk to find them. The program uses three different bit patterns: formatting the disk, marking the bad tracks, and displaying the bad track list.

Caution
The Media Analysis test destroys any data on your hard disk.

Chapter 6

Running System Diagnostics

You can test the following devices using System diagnostics:

- System board
- Numeric coprocessor
- System memory
- Diskette drive
- Hard disk drive
- Serial port(s)
- Parallel port
- Video adapter
- Keyboard
- Dot matrix printer(s).

See the table on page 6-7 for a list of the tests available for each device.

Note
The Write, read checks for the hard disk drive and diskette drive destroy data on the disk. Be sure to backup any data on your hard disk or insert a blank, formatted diskette before you run this test. Also be sure to do this if you select Run all above checks.

Starting the Program

Follow these steps to start the System diagnostics program:

1. Insert the Reference diskette in drive A and turn on or reset the computer.

> **Note**
> Always start the computer from the Reference diskette to run System diagnostics. This clears any terminate-and-stay-resident (TSR) programs or other utilities from memory and frees it for use by the diagnostics program.

2. At the **A:** prompt, type DIAG and press Enter. This executes the DIAG.BAT batch file in the root directory of your Reference diskette.

3. You see a menu bar at the top of the screen with Items Detected highlighted. Press Enter.

4. You see a list of all the testable devices the computer detects in your system. Check to be sure the list is correct.

5. If the list is not correct, press → to select Quit and press Enter. Run the Setup program to make sure any missing devices are configured properly. (See Chapter 5 for instructions.) Then run System diagnostics again beginning at step 1.

   When the list is correct, you can run diagnostic tests on each device. If you do not want to test a device, you can remove it from the list. You can also add a device to the list.

Deleting Tests

To remove devices from the Items Detected list so the System diagnostics program cannot test them, follow these steps:

1. Press [→] to select Delete Tests. You see the Delete menu, such as the following:

```
System Board
Numeric Coprocessor
System Memory
Diskette Drive A
Hard Disk Drive #1
Serial Port COM1
Serial Port COM2
Printer Port LPT1
Video Adapter Test
Keyboard Test
```

2. Press [↓] or [↑] to highlight the device you want to delete and press [Enter]. The device is removed from the Delete menu. You can delete as many devices as you want.

3. When you are finished deleting devices, press [←] to select Execute and see "Running Tests" on page 6-5.

Adding Tests

If you want to add devices to the Items Detected list, follow these steps:

1. Press ← or → to select **Add Tests.** You see the Add menu, such as the following:

```
Numeric Coprocessor
Diskette Drive B
LPT1 Printer Test
```

   The Add menu lists the testable devices that the computer has not detected as Enabled in your system. You also see any devices that you deletd from the Delete menu in case you want to be able to test them.

2. Press ↓ or ↑ to highlight the device you want to add and press Enter. The device is removed from the Add menu and added to the Execute list. You can add as many devices as you want.

3. When you are finished adding devices, press ← to select Execute and see the next section.

Running Tests

Follow these steps to run a test from the Execute menu:

1. Press [←] or [→] to select Execute. You see the Execute menu, such as the following:

   System Board
   Numeric Coprocessor
   system Memory
   Diskette Drive A
   Hard Disk Drive #1
   Serial Port COM1
   Serial Port COM2
   Printer Port LPT1
   Video Adapter Test
   Keyboard Test

2. Press [↑] or [↓] to highlight the device you want to test and press [Enter]. You see the Repeat prompt:

   ```
   How often to repeat test? 1
   ```

3. If you want to run the test once, press [Enter]. To run the test more than once, type the number of times and press [Enter].

4. If there is only one test for a device, the program begins testing immediately. If there is more than one test for the device, you see a submenu, such as the following:

   HARD DISK DRIVE (S) AND CONTROLLER CHECK MENU

   ```
   1 - Seek check
   2 - Write, read check
   3 - Read, verify check
   4 - Run all above checks

   0 - Exit
   ```

Use ↑ or ↓ or type the number of the desired option to highlight a test and then press Enter to run it.

> **Note**
> **If** you selected to run the tests more than once, you do not see a submenu. The program immediately begins executing all tests that do not destroy data.

5. **When** the test is completed, you see the Execute menu or the test submenu again. You can select another test or exit the menu.

To exit System diagnostics, press → to select Quit and press Enter. You return to the operating system command prompt.

Resuming From an Error

If an error prevents a test from running you see a Runtime Error information box. Follow the instructions on the screen to solve the problem.

If an error occurs during a test, the test stops and an error message appears. Follow the instructions on the screen to print the message or to continue without printing it.

For a complete list of the error messages the program may display, see the table at the end of this chapter.

System Diagnostic Tests

The table below lists all the System diagnostic tests you can run on your system.

System diagnostic tests

Device	Tests available	Description
System Board		Checks the system board components
Numeric Coprocessor		Tests the operation of any existing numeric coprocessor
System Memory		Checks ail memory and displays a memory count
Diskette Drive(s) A or B	Sequential seek check Random seek check Write, read check' Disk change check Run all above checks	Tests the operation of the selected diskette drive; requires a formatted dskette for some tests
Hard Disk Drive	Seek check Write, read check · Read, verify check Run all above checks	Tests the operation of the internal hard disk drive
Serial Port(s) COM1 or COM2		Tests the selected serial port: requires a loop-back connector
Printer Port LPT1		Tests the selected printer port; requires a loop-back connector
LP1 Printer Test(s)		Tests the operation of the selected dot matrix printer and prints a test pattern

System diagnostic tests (continued)

Device	Tests available	Description
video Adapter	Adapter check Attribute check Character set check Graphics mode check Screen paging check Sync check Run all above checks	Tests the operation of the built-in VGA display adapter
Keyboard		Tests the operation of your keyboard by displaying an asterisk on a keyboard diagram for each key you press

* The Write, read check destroys data on the disk. Be sure to back up data on a hard disk or insert a blank, formatted diskette before running this test.

Error Messages

The following table lists all the error messages that may appear during System diagnostic testing.

System diagnostic error messages

Error code	**Message**
System board	
0101	CPU error
0102	ROM checksum error
0103	Timer counter register error
0104	Timer counter error
0105	Refresh error
0105	DMA controller register error
0106	DMA page register error
0107	Refresh error
0108	Keyboard controller timeout error
0108	Keyboard controller self diagnostic error
0108	Keyboard controller write command error
0109	CMOS checksum error
0110	CMOS shutdown byte error
0111	CPU instruction error

System diagnostic error messages (continued)

Error code	Message
System board	
0112	CMOS battery error
0113	Interrupt controller error
0114	Protect mode error 1
0115	Protect mode error 2
Memory	
0201	Memory error
0201	Parity error
Keyboard	
0302	Keyboard is non-standard or defective
Diskette drive(s)	
0601	Diskette drive controller error
0602	Sequential seek error
0603	Random seek error
0604	Write error
0605	Read error
0606	Remove error
0607	Insert error
Coprocessor	
0701	Coprocessor not installed
0702	Coprocessor initialize error
0703	Coprocssor invalid operation mask error
0704	Coprocessor st field error
0705	Coprocessor comparison error
0706	Coprocessor zero divide mask error
0707	Coprocessor addition error
0708	Coprocessor subtraction error
0709	Coprocessor multiplication error
0710	Coprocessor precision error
Parallel port	
0901	Error pin p
Serial port(s)	
1101	control signal always low
1101	control signal always high
1102	Timeout error
1103	Verify error

System diagnostic error messages (continued)

Error Code	Message
Hard disk drive	
1701	Seek error
1702	Write error
1703	Read error

Chapter 7

Using the VGA Utilities

The Reference diskette included with your system contains special VGA (video graphics array) drivers and utilities for your computer's built-in VGA adapter. This chapter describes how to install and use these drivers and utilities.

> **Note**
> You need to install these drivers only if you plan to use an external VGA or SVGA monitor. Your LCD screen, which provides a VGA resolution of 640 x 480 with 32 shades of gray, does not require a driver.

Because software programs can run on different types of display adapters with different types of monitors, the VGA drivers identify your display adapter and monitor for the software. These drivers are files your software uses to communicate with your display adapter and monitor.

A utility is a program that supports the processes of a computer. The utilities on your VGA diskette allow you to change the system's default graphic configuration and enhance your system operation by setting various video modes.

The ActionNote's built-in VGA adapter is 100% compatible with IBM® VGA. This adapter allows you to use the computer with Epson VGA monitors, other brands of VGA monitors, and VGA-compatible, multifrequency monitors that use analog input. The drivers and utilities described in this chapter work with any of these monitors.

Standard VGA monitors display resolutions up to 640 x 480, and you do not need to install the drivers for your monitor to operate properly with your application programs at this resolution. However, the display drivers provide improved resolution for each application supported.

The following table lists the applications for which high resolution VGA drivers are provided, as well as the supported text modes or graphics resolutions and colors for each application. (For additional driver support, call the Epson Connection.)

Supported applications

Application	supported resolutions	supported colors
Lotus 1-2-3, version 2.x	100 x 60 text	
Microsoft Windows, version 3.0	640 x 480 800 x 600	16 16
WordPerfect, version 5.1	800 x 600	16

Note
These drivers and utilities are designed for systems running MS-DOS. If you are using another operating system, see the documentation that came with it for information about the VGA drivers you can use.

If you are displaying data simultaneously on both the LCD and an external monitor, the screens will default to a resolution of 640 x 480 regardless of what drivers are loaded. (This is because the LCD supports 640 x 480 only.) To display in a resolution of 800 x 600, make sure you are displaying on the external monitor only.

You can control where data is displayed using the VGACONF utility described later in this chapter.

Lotus 1-2-3, Version 2.x

The Lotus display driver supports text mode operations for Lotus 1-2-3, version 2.x, at a resolution of 100 x 60.

To install the driver, follow these steps:

1. Log onto the Lotus directory on your hard disk that contains the Lotus INSTALL files.

2. Insert the Reference diskette into drive A.

3. Copy the Lotus driver from the Reference diskette to this directory. At the command prompt, type the following and press Enter:

   ```
   COPY A:\LOTUS\L100X60.DRV
   ```

4. Type **INSTALL** and press Enter to run the Lotus installation program.

5. From the main menu, select Advanced options and press Enter.

6. Then select Add new drivers to library and press Enter.

7. When the program finishes adding drivers to the library, select Modify current driver set and press Enter.

8. Select Text display to modify the text mode and press Enter.

9. Select the following display and text mode:

   VGA (100 x 60)

10. Select Return to menu and press Enter.

11. At the installation menu, select save changes.

12. At the prompt, enter a name that identifies this driver; it's a good idea to include the driver's resolution, 100 x 60. The default driver name assigned by the program is 123.SET.

13. Exit the Lotus Install program.

To start Lotus with the new driver resolution, you include the name of the driver with the Lotus prompt. For example, if you named your driver 100 x 60.SET, you would type the following and press Enter:

123 100 x 60

Microsoft Windows, Version 3.0

The Microsoft Windows driver supports a resolution of 800 x 600 with 16 colors.

> **Note**
> Even though this driver is specific to Windows 3.0, you can use it with Windows version 3.1. Check with the Epson Connection for the availability of the Windows 3.1 driver.

To install the driver, follow these steps:

1. Log onto the Windows directory on your hard disk.

2. At the command prompt, type **SETUP** and press Enter.

3. At the System information screen, select Display and press Enter.

4. From the Display menu, select Other (Requires disk provided by a hardware manufacturer) and press Enter.

5. The program prompts you to insert your display driver diskette into drive A. Insert the Reference diskette into drive A.

6. Type **WIN3** as the pathname and press Enter. The program displays a list of drivers and their associated resolutions. For example

   Cirrus Logic VGA 800 x 600 (16 colors)

7. Select the display driver you want and press Enter.

8. Remove the Reference diskette from drive A.

9. Complete the Windows Setup.

WordPerfect, Version 5.1

The WordPerfect driver supports high resolution text and graphics. WordPerfect allows text and graphics drivers to be set up separately, so be sure to install both of these drivers.

Follows these steps:

1. Log onto the WordPerfect directory on your hard disk. This directory is normally called WP51.

2. Copy the WordPerfect driver from the Reference diskette to this directory. At the command prompt, type the following and press Enter:

   COPY A:\WP\CIRRUS.VRS

3. Start WordPerfect.

4. To display the Setup menu, press Shift + F1.

5. Select Display by typing 2.

6. If you are installing the driver for text mode, select Text Screen Type. If you are installing the driver for graphics mode, select Graphics Screen Type.

7. Move the cursor until Cirrus Logic VGA appears on the list, and choose SELECT. The program displays a list of all the resolutions supported by the Cirrus Logic text driver.

8. Select the desired resolution.

9. Press F7 to exit. Your selection is saved and used for displaying text and the print preview and graphics functions of WordPerfect.

Using the VGACONF Utility Program

The Reference diskette includes the utility program, VGACONF. This program is located in the UTILS directory. You may have copied the program to a directory on your hard disk; if so, log onto that directory before running the program.

This utility allows you to change your system's default graphic configuration. Follow these steps to run VGACONF:

1. Log onto the directory that contains the VGACONF.EXE file. This is either A:\ UTILS or a directory on your hard disk.

2. Type **VGACONF** and press Enter. . You see this main menu:

```
MAIN MENU

Display Status   Display current user options
Select Option    Select user option
Standby Timer    Standby timer control
Quit             Quit and return to DOS
```

Use ↑, ↓, ←, or → to highlight the selection you want and press Enter.

The Display Status option displays the current settings. For example

```
Display Status
Reverse video is set to enable text and disable graphics
Bold font is disabled
Contrast enhancement is set to automap
Expanded mode is enabled
Vertical position is set to center unexpanded modes
Display type is set to panel
16 bit ram access is enabled
Font load is inhibited
Full height cursor is disabled
RGB weighting is set to 5:9:2
Timer is set to enable stand-by mode timer for no CPU video access
( Power save timer =  4 to  6 minutes )
```

Press any key to return to the main menu.

Select option allows you to change the current settings. You see this screen:

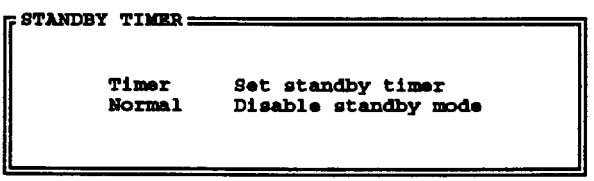
```
SELECT OPTION

Reverse              Reverse text and graphics control
Bold                 Bold font mode
Contrast enhancement Map color to black and white
Expand               Expansion control
Vertical Position    Vertical position of non-expanded modes
Display              Display device selection
Bus Width            Select bus width
Inhibit Font         Inhibit automatic font load when switching display
Cursor               Full height cursor control
Rgb                  Change RGB weighting
```

Highlight the option you want to change and press Enter. You see a submenu of the available selections. Use ↑, ↓, ←, or → to highlight the desired setting and press Esc to return to the SELECT OPTION menu.

Some options are designed for a specific display mode CRT, SimulSCAN, or panel. CRT mode refers to a VGA monitor connected to the VIDEO port; SimulSCAN refers to both the LCD screen and a VGA monitor; panel refers to the LCD screen. The following table shows the display modes available for each option

Option	Display mode
Reverse	SimulSCAN, panel
Bold	Panel
Contrast enhancement	Panel
Expand	SimulSCAN, panel
Vertical position	I Panel
Display	CRT, SimulSCAN, panel
Bus width	CRT, SimulSCAN, panel
Inhibit font	CRT, SimulSCAN, panel
Cusor	Panel
RGB	Panel

Standby Timer allows you to set a timeout period for the LCD display panel if the Display option is set to PANEL. When you select Standby Timer your see this menu:



Select Timer to set a timeout period, or select Normal to disable standby mode. When you select Timer, you see these prompts:

```
Standby Time (minutes):
Time-out on (K)eyboard activity or (M)emory
access (K/M):
```

Enter the number of minutes to wait before entering standby mode and press Enter. Then enter K or M to indicate the type of activity. If you enter K, the LCD panel will enter standby mode if there **is** no keyboard activity for the specified number of minutes. If you enter M, the LCD panel will enter standby mode if video memory is not accessed for the specified number of minutes. Press Pg Dn to initiate the timer.

The standby mode initiated by the VGACONF utility is exactly the same as Suspend mode. You can reactivate the system at any time by pressing the Shift key.

Select Quit to exit the VGACONF program and return to the operating system prompt.

Using VGACONF From the Command Line

To quickly change one or more VGA configuration settings, you can initiate VGACONF from the command line with option parameters. At the command prompt, enter the VGACONF command in the following format:

```
VGACONF [options]
```

In place of the options parameter, you enter one or more of the following option names, separated by spaces:

Option name	Description
- ? or -H	Dispiay the help screen
-S	Dispiay status information
-N	Disabie standby mode
-K=xx	Set standby timer for keyboard to xx minutes
-M=xx	Set standby timer for memory access to xx minutes
ETDG	Enable text and disable graphics reverse video mode
NOREVERSE	Disable text and graphics reverse video
REVERSE	Enable text and graphics reverse video
DTEG	Disable text and enable graphics reverse video
BOLD	Enable bold mode
NOBOLD	Disable bold mode
ATTREMUL	Disable Automap
NOATTREMUL	Enable Automap
BKGND	Enable background enhancement
FRGND	Enable foreground enhancement
BKFRGND	Enable background and foregound enhancement
EXPAND	Enable expand mode
NOEXPAND	Disable expand mode
CENTER	Center the screen on the panel
TOP	Allgn the screen on the top of the panel
BOTTOM	Align the screen on the bottom of the panel
PANEL	Switch the display to the panel
CRT	Switch the display to the CRT (monitor)
SIMUL	Use the panel and the CRT simultaneously

Option name	Description
16BIT	Enable 16-bit operations
NO 16BIT	Force 8-bit operations
INHFONT	Inhibit font loading when switching display
NOI	Allow font loading when switching display
FULLHGT	Select full height cursor
NOFULLHGT	Select normal cursor
W259	Select RGB weighting 2:5:9
W529	Select RGB weighting 5:2:9
W295	Select RGB weighting 2:9:5
W592	Select RGB weighting 5:9:2
W925	Select RGB weighting 9:2:5
W952	Select RGB weighting 9:5:2

You can abbreviate any of the VGACONF options by typing only the first three characters of the option name. The following examples show how to enter the VGACONF command with the options parameters:

```
VGACONF  SIMUL
VGACONF  SIM
VGACONF  PANEL  NOATTREMUL  NOBOLD NOEXPAND
VGACONF  PAN  NOA  NOB  NOE
VGACONF  - S
VGACONF  -M=4
```

Appendix A

Troubleshooting

You should not encounter any difficulties as you set up and use your ActionNote. If anything out of the ordinary happens, refer to this appendix. It provides you with the following problem-solving sections:

- ❑ The computer won't start
- ❑ Battery problems
- ❑ AC adapter problems
- ❑ The LCD screen is blank
- ❑ The external monitor screen is blank
- ❑ The computer locks up
- ❑ Password problems
- ❑ Diskette problems
- ❑ Diskette drive problems
- ❑ Hard disk problems
- ❑ Software problems
- ❑ Printer problems
- ❑ Memory module problems
- ❑ Math coprocessor problems
- ❑ CMOS battery problems.

Besides trying the suggestions in this appendix, you can run diagnostic tests on your system. See Chapter 6 for instructions.

If the suggestions here or the diagnostic tests do not solve the problem, perform the steps below to identify your system and make a note of any error messages your computer displays. Then contact your Authorized Epson Servicer or call the Epson Connection at 1-800-922-8911.

Identifying Your System

When you request technical assistance, be ready to provide the serial number of your computer, its ROM BIOS version number, its configuration (including the types of disk drives and options), and the names and version numbers of any software programs you are using.

You can find the serial number on the underside of the computer. If you are able to use your computer, follow these steps to obtain information about your configuration, as well as the version numbers of your system BIOS and MS-DOS

1. Turn on your computer or Ctrl + Alt + Delete to restart it.

2. As the computer performs its power-on diagnostics, it displays the version number of your system BIOS as part of the copyright information. Write down the number.

3. Write down any information about your setup shown on the configuration screen that may help in identifying the problem.

4. After the MS-DOS prompt appears, type **VER** and press Enter to display the MS-DOS version number. Write it down.

Error Messages

Your computer's built-in memory (ROM) contains a series of diagnostic programs, called power-on diagnostics, which your computer runs automatically every time you turn it on. These programs check internal devices such as ROM, RAM, the timer, the keyboard controller, and the hard disk drive.

When the diagnostics test RAM, you see the total amount of memory currently installed in your system. If the computer finds an error, it displays an error message on the screen. Write down the error message and give it to the person who is helping you when you report the problem.

If the error is serious, the computer cancels further checking and halts system initialization. The error message remains on the screen and the computer locks up. If this happens, contact your Authorized Epson Servicer as soon as possible to report this information and the error message.

The Computer Won't Start

If your computer does not start when you press the power button, try the following:

1. Check the power light. If it is on, the computer is on and you should follow the steps under "The LCD Screen is Blank" later in this chapter. If the light is not on, go to step 2.

2. Press the power button to turn off the computer. If you are using the battery pack, remove it and reinstall it. If you are using the AC adapter, disconnect it and then reconnect it. Then turn the power on again.

3. If the computer still does not start, the problem is probably caused by the power source; see "Battery Problems" or "AC Adapter Problems: below.

Battery Problems

If you have trouble running the computer from the battery pack, follow the steps in this section to find the problem. (Be sure to read Chapter 3 for information on the battery.)

1. Check the low battery light. If it is blinking, the battery is low and you need to recharge it. See Chapter 3 for instructions.

2. If you think the battery is not providing any power, it may not be installed properly. Try removing and reinstalling it, according to the instructions in Chapter 3. Make sure the battery cover is closed securely.

3. If you replace the battery pack and the computer works properly, then you need to recharge the other battery that is out of power.

4. If you replace the battery pack and the computer does not work properly, the new battery may not be fully charged. Recharge this battery until it reaches its maximum capacity.

5. If the power light still does not come on, connect the AC adapter to the computer and plug the adapter into an electrical outlet. Turn on the computer and see if it works using the AC adapter.

   If the computer works using the AC adapter, you may need to check your battery pack. If the computer does not work with the AC adapter, see "AC Adapter Problems" later in this appendix.

6. If you have not used a battery in a long time (three months or more), you may need to recharge it.

7. If you find that over time the battery is losing its charge in less and less time, it may be reaching the end of its life. You may need to replace it with a new battery pack.

AC Adapter Problems

If the computer does not work properly when you have connected the AC adapter, check the power light. If it is on, the AC adapter is working and supplying power to the computer. If it is not on, follow these steps to find the problem:

1. Remove any diskette from the diskette drive and turn off the computer. Disconnect the AC adapter and then reconnect it. Then turn the computer back on. If the power light is still off, go to step 2.

2. Check the connections: make sure the AC adapter cable is securely connected to the computer and that the power cable is properly connected to both the AC adapter and an electrical outlet.

3. If the connections are good, then check the electrical outlet to make sure it is supplying power. (For example, plug a portable lamp into the socket and turn it on.) If the outlet is working and the connections are secure, there may be something wrong with your adapter.

Caution
Use only the AC adapter (model number AP-3S25) supplied with the computer.

The LCD Screen Is Blank

If the computer starts up but no image appears on the LCD screen, follow these steps to solve the problem:

1. Use the brightness and contrast controls to adjust the screen display.

2. To save power, you may have set a time-out period for the LCD screen in the Setup program. This turns off the screen automatically after a specified period of time has elapsed with no keyboard input. Press any key to see if this restores the display. (See Chapter 5 for information about the power management options.)

3. Make sure the suspend/resume switch is set to the left. The computer may just be in Suspend mode.

4. If you have connected an external monitor to your computer and you are using it, you should not have any problem displaying information on both screens at the same time. Check your VGACONF settings; see Chapter 7 for details.

The External Monitor Screen is Blank

If you are using an external monitor and no image appears on its screen, follow these steps to solve the problem:

1. Make sure the power switches on the computer and the monitor are turned on.

2. Adjust the brightness and contrast of the monitor screen.

3. If your LCD screen is displaying information, you may have disabled the external monitor. Check your VGACONF settings; see Chapter 7 for details.

4. Remove any diskette from drive A, and turn off the computer and the monitor. Check that the monitor's power cable is securely connected to the monitor and to an electrical outlet. Be sure the monitor cable is properly connected to both the monitor and the computer. Then turn both power switches back on.

5. If the monitor still does not work, turn off both the computer and the monitor. Then check the electrical outlet for power. Plug a portable lamp into the outlet and turn it on to see if the outlet supplies power.

6. If the outlet works and an image still does not appear on your monitor when you turn on the computer, contact your Authorized Epson Servicer.

The Computer Locks Up

If the computer locks up and does not respond to your keyboard entries, try the following:

1. Wait a few minutes to see if the computer really is disabled. Some operations take longer than others to perform. For example, a spreadsheet program takes longer to recalculate an entire spreadsheet than to record one figure. Also, programs involving many calculations can take several minutes to complete.

2. Make sure the suspend/resume switch is set to the left. The computer may just be suspended.

3. You may be able to resume activity cancelling the current operation. Try pressing Ctrl + C or Ctrl + Break.

4. If the computer remains locked up after you've waited a reasonable amount of time, reset it by pressing Ctrl + Alt + Delete.

5. If resetting does not work, you probably need to turn off the computer, wait five seconds, and turn it back on.

Password Problems

If you set a password using the Setup program, you must enter it at the times you selected in Setup: either whenever you start or reset the computer or whenever you start the Setup program. If you have trouble using your password, try the following

1. If you type the password and then see an *x, type* it again and press Enter. If you type it wren three times, the computer locks up. Press Ctrl + Alt + Delete to reset the computer and try again.

2. If you know the current password but you want to change it, see Chapter 5 for instructions.

3. If you have forgotten your password, call the Epson Connection for assistance.

Diskette Problems

If you have trouble accessing data on a diskette, follow these steps to identify the problem:

1. Is the diskette properly inserted in the drive? Remove the diskette from the drive and make sure it is inserted with the label facing up.

2. Are you using the right type of diskette for your drive? The 3½--inch drive in your computer can read either 720KB or 1.44MB diskettes.

3. Is the diskette write-protected? If you want to copy to a diskette, it must not be write-protected. If the write-protect switch is set, first make sure the diskette does not contain files you do not want to change or lose. Then move the switch to remove the write protection. Ordinarily, it's a good idea to leave program diskettes write-protected, but some programs don't work properly using write-protected diskettes.

4. Is the diskette formatted? A new diskette must be formatted before you can store data on it. See your operating system manual for instructions.

5. Is the diskette damaged? Use your backup copy of the diskette and repeat the operation that caused the problem. If the operation works using the copy, the original diskette is probably damaged. Discard it and use the copy.

   If you need to save the files on the original diskette, try using the COPY command to copy one file at a time.

6. Try formatting a blank diskette to determine if the diskette drive is operating properly. If you cannot format a diskette, see the following section.

Diskette Drive Problems

If you are having problems with the diskette drive, check the following

1. If the drive does not seem to be working as it should, try performing a similar operation with a diskette in another computer's drive, if you have access to one.

2. If the drive is making loud or unusual noises, stop the current operation immediately. If the problem continues, contact your Authorized Epson Servicer.

3. You can run a diagnostic check for the diskette drive; see Chapter 6 for instructions.

Hard Disk Problems

If you have problems with your hard disk drive, check the following:

1. Check the hard disk drive light. If you enter commands (such as COPY) to access the hard disk, the light should be on when the computer accesses the drive. If the light is blinking, there may be a problem with the hard disk. Contact your Authorized Epson Servicer if this occurs.

2. If you have set a time-out for the hard disk in the Setup program and it has timed out, the hard disk drive requires about 15 seconds to come backup to speed when you access it again.

3. Make sure you have formatted the hard disk correctly for MS-DOS or the operating system you are using. See the instructions in your operating system manual.

4. Try running the hard disk diagnostic check described in Chapter 6. If you still cannot identify the problem, contact your Authorized Epson Servicer.

Software Problems

If you are having trouble with an application program, try the following Solutions:

1. If the application program does not start, check that you are following the correct procedure for starting the program, and that it is installed correctly. If the program is stored in a directory on the hard disk drive, make sure you are working in or specifying the correct directory. If you are using a program on a diskette, make sure you have inserted the correct diskette in the correct drive.

2. *Your* computer can run at either Turbo speed (25 or 33 MHz) or Normal speed (8 MHz). While almost all programs work properly at the faster speed, some must run at the slower speed. Check your software manual to see if this is the case, and change the CPU speed if necessary. See "Changing the CPU Speed" in Chapter 2 for instructions.

3. If you have entered an MS-DOS command that you want to stop, there are special key coremands you can use to tell MS-DOS to stop what it is doing. These methods may also work in your application programs:

   - Hold down Ctrl and press C
   - Hold down Ctrl and press Break.

4. An application program can occasionally lockup the computer making it unresponsive to the keyboard. If your computer does not respond when you keyboard, you can reset it. Press Ctrl + Alt + Delete to reset the computer.

5. If resetting the computer doesn't help, turn off your system, wait five seconds, and then turn it back on. Then you can restart your application program.

6. If none of these solutions solve your software problem, contact the software manufacturer for technical support.

Printer Problems

You can solve most printer problems by following the instructions in your printer manual. If you have just connected the printer, first check that the printer has power and **is** correctly connected to the computer. See Chapter 4 for instructions on connecting a printer. (The printer manual also gives instructions on cable connections.)

If you have a serial printer or if you have problems feeding paper, check the printer manual for the correct DIP switch settings. Refer to your printer documentation to see whether you need to use the MODE command (described in the MS-DOS manual) to match the serial settings.

Memory Module Problems

If you have added extra memory to your system, and that memory is not operating properly, check the following:

1. Make sure the Setup program is displaying the correct amount of memory. See Chapter 5 for instructions.

2. Have you defined the memory properly in your CONFIG.SYS file? See "Using Memory" in Chapter 2 and your MS-DOS manual for more information.

Numeric Coprocessor Problems

If you have installed a numeric coprocessor but it doesn't seem to be operating properly, check the documentation that came with it for troubleshooting information and for any diagnostic procedures you can perform. Contact your Authorized Epson Servicer or call the Epson Connection if you cannot solve the problem.

Caution
Do not attempt to remove the numeric coprocessor yourself; this requires a special extraction tool. Contact your Authorized Epson Servicer for assistance.

CMOS Battery Problems

The Dallas® clock chip in your computer preserves the contents of CMOS RAM even when the power is off. This battery should last more than a year before you need to replace it. When this battery's life is exhausted, you see a message similar to the following

```
System battery is dead - Replace and run Setup
```

Contact your Authorized Epson Servicer to install a new battery for you or call the Epson Connection for referral information.

Appendix B

Fax/Modem Command Set

This appendix summarizes the built-in set of commands supported by the internal fax/modem that may be installed in your ActionNote computer. This command set is compatible with the Hayes® Smartmodem® series of modems.

> **Note**
> If you are using a telecommunications software program, it provides its own set of commands that control the fax/modem. You will use the program's commands instead of the built-in set.

You need the information in this appendix only if you are not using a telecommunications software program and need to use the fax/modem's built-in set of commands.

When to Issue Commands

Your fax/modem has two operating states: command state and on-line state. The fax/modem must be in command state to receive commands from you; in on-line state, your keystrokes are passed directly to the telephone line.

The fax/modem enters the command state when you:

- ❑ Turn on your computer
- ❑ Select the Reset command (ATZn)
- ❑ Place a call but are unable to make a connection
- ❑ Exit the on-line state using the escape sequence (+++).

AT Command Summary

Command	Description
+++	Escape code
A/	Repeat last command string
AT	Attention
A	Answer Immediate (Incoming call)
B0	CCITT V.22 protocol at 1200 bps
B1	Bell 103/212A protocol at 1200 bps
D	Dial; originates a call
E0	Echo off (command mode)
E1	Echo on (command mode)
H0	On hook; hang up immediate
H1	Off hook; ready to dial
0	Returns modem's product ID code
1	Returns modem's ROM checksum
2	Tests modem's internal memory
3	Speaker volume high
M0	Speaker always off
M1	Speaker on until carrier is detected
M2	Speaker always on
M3	Speaker on after last digit dialed; off when carrier is detected
O0	Return on-line
O1	Return on-line and initiate equalizer retrain (2400 bps)
Q0	Result codes on
Q1	Result codes off
Sr	Sets pointer to register r

AT Command Summary (continued)

Command	Description
Sr?	Reads value stored in r
Sr=n	Sets register *r* to *n*
V0	Returns result codes as numbers
V1	Returns result codes as words
X0	Enables basic result codes (0-4)
Xl	Enables extended result codes (05, 10)
X2	Enables extended result codes (0-6, 10)
X3	Enables extended result codes (0-5, 7, 10)
X4	Enables all result codes
Y0	Disable long space disconnect
Y1	Enable long space disconnect
Z0	Software reset; recalls user configuration 0
Z1	Software reset; recalls user configuration 1
&C0	DCD signal always on
&C1	DCD signal on when carrier present
&D0	Ignore DTR signal
&D1	Returns to command mode when an on-to-off DTR transition occurs
&D2	Hangs up and returns to command mode when an on-to-off DTR transition occurs
&D3	Resets when an on-to-off DTR transition occurs
&F	Loads factory configuration settings
&G0	No guard tone in CCITT mode
&G1	550 Hz guard tone in CCITT mode
&G2	1800 Hz guard tone in CCITT mode
&P0	Pulse dial make/break ratio = 39%/61% (U.S.)
&P1	Pulse dial make/break ratio = 33%/67% (U.K.)

AT Command Summary (continued)

Command	Description
&V	Display configuration values and dialog settings
&W0	Save storable parameters as user configuration 0
&W1	Save storable parameters as user configuration 1
&Y0	Load user configuration 0 on power up
&Y1	Load user configuration 1 on power up
&Zn=x	Store phone number x in location *n (n=0-3)*

Dial Modifiers

Modifier	Description
!	Hookflash (0.5 seconds)
,	Pause (2 seconds)
;	Return to command state after dialing
@	Wait for 5 seconds if silent answer
P	Pulse dialing
R	Reverse to answer mode
S	Dial stored number
T	Touchtone dialing
W	Wait 30 seconds for second dialtone

MNP Command Summary

Command	Description
\A0	Sets the MNP block size to 64 characters
\A1	Sets the MNP block size to 128 characters
\A2	Sets the MNP block size to 192 characters
\A3	Sets the MNP block size to 256 characters
\B3	Sets transmit break to 300ms
%C0	Disable data compression during MNP level 5 reliable link connection
%C1	Enable data compression during MNP level 5 reliable link connection
\G0	Disable modem port flow control
\G1	Enable modem port flow control
\J0	Disable speed adjust at serial Port
\J1	Enable speed adjust to match serial port
\K1	Empty data buffers and immediately send a break to the remote system
\K3	Send a break to the remote modem in sequence with data
\K5	Send a break to the remote terminal or computer in sequence with any data received form the serial port
\N0	Set normal mode
\N1	Set direct mode
\N2	Set reliable mode
\N3	Set auto-reliable mode
\N4	Set V.42 (LAP-M) mode

MNP Command Summary (continued)

Command	Description
\N5	Set V.42 auto-reliable mode
\N6	Set V.42/MNP reliable mode
\N7	Set V.42/MNP auto-reliable mode
\O	Force a reliable link Independent of whether or not the modem originated or answered the call
\Q0	Disable flow control
\Q1	Enable XON/XOFF flow control
\Q2	Enable RTS/CTS flow control
\Q3	Enable XON/XOFF software flow control
\Q4	Enable unidirectional hardware flow control, keeping CTS off until connection is established
\Q5	Unidirectional, keep CTS off until connection established
\Q6	Kept CTS off until connection for bidirectional hardware flow control established
\S	Display on-line modem status
\T0	Inactivity timer: Disables timer
\Tn	Sets timer to number *(n)* up to 90 minutes
\U	Accept a reliable link request, Independent of whether or not the modem originated or answered the call
\V0	Disable extended MNP and V.42 result codes
\V1	Enable extended MNP and V.42 result codes
\X0	Disable XON/XOFF pass through, but still process
\X1	Enable XON/XOFF pass through and process
\Y	Establish an MNP reliable link while already connected in direct mode
\Z	Switch to direct mode

MNP Command Summary (continued)

Command	Description
&Q5	Select error correction mode To make an MNP5 connection: &Q5 plus S36 = 7 (MNP) S46 = 138 (MNP5) S48 = 128 (Fallback. no V.42) To make an MNP4 connection: &Q5 plus S36 = 7 (MNP) S46 = 133 (No compression) S48 = 128 (Fallback, no V.42)
&Q6	Normal mode
&Y0	Recall user profile 0 at power up
&Y1	Recall user profile 1 at power up
%An	Set the auto-reliable fallback character *(n=0 to* 127)
%C0	Disable data compression
%C1	Enable NMP5 data compression
%D0	Hang up without clearing buffer
%D1	Clear the receive buffer before hanging up
-*Cn*	Maximum string length (n=6 to 250, default=32)
-D0	Set *dictionary size* to 512 entries and one/two-way mode (BTLZ)
-D1	Set dictionary size to 1024 entries and one/two-way mode (BTLZ)
-D2	Set dictionary size to 2048 entries and one/two-way mode (BTLZ)
-D3	Set dictionary size to 4096 entries and one/two-way mode (BTLZ)
-P0	ignore parity for special characters
-P1	Process special characters only if they have correct parity

AT *Register Summary*

Command	Description	Range	Unit	Default
S0	Auto-answer ring number	0-255	1 ring	000
S1	Ring counter	0-255	1 ring	000
S2	Escape code character	0-127	ASCII	043
S3	Carriage return character	0-127	ASCII	013
S4	Linefeed character	0-127	ASCII	010
S5	Backspace character	0-31,127	ASCII	008
S4	Wait time, dialing	2-255	1 sec	002
S7	Wait time, before carrier	1-255	1 sec	030
S8	Dial pause duration	0-255	1 sec	002
S9	Carrier response time	1-255	1/10 sec	006
S10	Carrier loss disconnect	1-255	1/10 sec	014
S11	Tone duration and spacing	10-255	1/1000 sec	095
S12	Escape guard time	0-255	1/50 sec	050
S13	Reserved	—	—	—
S14	Option register (see below)	None	—	AAH
S15	Reserved	—	—	—
S16	Self-test register	—	—	—
S17	Reserved	—	—	—
S18	Self-test timer value	—	—	—
S19	Reserved	—	—	—
S20	Reserved	—	—	—
S21	Option register (see below)	None	—	00H
S22	Option register (see below)	None	—	76H

AT Register Summary (continued)

Command	Description	Range	Unit	Default
S23	Option register (see below)	None	—	07H
S24	Reserved	—	—	-
S25	DTR delay value	0-255	1/100 sec	005
S26	RTS to CTS turnaround delay	—	—	-
S27	Option register (see below)	None	—	40H
S37	MNP modem line connect speed	—	—	—

Option Registers

S14 Bit mapped configuration register

bit 0	Unused	
bit 1	0	Command echo disabled (E0)
	1	Command echo enabled (default E1)
bit 2	0	Result codes enabled (default Q0)
	1	Result codes disabled (Q1)
bit 3	0	Digit result codes (V0)
	1	Word result codes (default V 1)
bit 4	Unused	
bit 5	0	Tone dial (T)
	1	Pulse dial (default P)
bit 6	Unused	
bit 7	0	Answer mode
	1	Originate mode (default)

S21 Bit mapped configuration register

bit 012	**Unused**	
bit 34	**00**	**Modem ignores DTR (&D0)**
	01	**ON-to-OFF transition on DTR cusses the modem to go to the command state (&D1)**
	10	**ON-to-OFF transition on DTR causes the modem to hang up (default &D2)**
	11	**ON-to-OFF transition on DTR causes the modem to reset (&D3)**
bit 5	**0**	**DCD always ON (&C0)**
	1	**DCD tracks the actual state of the data carrier (default &C1)**
bit 6	**Unused**	
bit 7	**0**	**Long Space Disconnect disabled (default Y0)**
	1	**Long Space Disconnect enabled (Y1)**

S22 Bit mapped configuration register

bit 01	**00**	**Speaker volume low (L0)**
	01	**Speaker volume low (L1)**
	10	**Speaker volume medium (default L2)**
	11	**Speaker volume high (L3)**
bit 23	**00**	**Speaker disabled (M0)**
	01	**Speaker on until carrier detected (default M1)**
	10	**Speaker always on (M2)**
	11	**Speaker on until carrier detected but off during dialing (M3)**

S22 Bit mapped configuration register (continued)

bit 456	000	Select basic result code set (X0)
	100	Select first extended result code set (X1)
	101	Select second extended result code set (X2)
	110	Select third extended result code set (X3)
	111	Select fourth extended result code set (default x4)
bit 7	0	Make/Break ratio is 39/61 for US (default & P0)
	1	Make/Break ratio is 33/67 for UK/HK (&P1)

S23 Bit mapped configuration register

bit 0	Unused	
bit 123	000	Communications rate-300 bps
	001	Communications rate-600 bps
	010	Communications rate-1200 bps
	011	Communications rate-2400 bps
	100	Communications rate-4800 bps
	101	Communications rate-9600 bps
bit 45	00	Even parity selected (AT entered in even parity)
	01	Space parity selected (AT entered in space parity)
	10	Odd parity selected (AT entered in odd parity)
	11	Mark parity selected (AT entered in mark parity)
bit 67	00	No guard tone (default & G0)
	01	550 Hz guard tone (&G2)
	10	1800 Hz guard tone (&G2)
	11	Unused

S27 Bit mapped configuration register

bit 012345	Unused	
bit 6	0	CCITT V.22 (1200 bps); V.21 (300 bps B0)
	1	Bell 212A (1200 bps)
bit 7	Unused	

MNP Register Summary

S36 Negotiate failure treatment

0	Hangup
1	Attempt direct connection
2	Reserved
3	Attempt normal connection
4	Attempt V.42bis then MNP 5 connection, if fail. hang UP
5 or 7	Attempt V.42bis then V.42, then MNP 5 connection, if fail, negotiate MNP 2-4 with constant terminal speed

S46 Protocol selection

136 Execute LAPM protocol with no BTLZ compression
138 Execute LAPM protocol with BTLZ compression

S48 V.42 negotiation action

0	Disable the negotiation process; remote modem must be configured the same
3	Half duplex negotiation; your modem remains silent during detection
7	Enable negotiation
128	Disable negotiation; bypass the detection and negotiation phases; proceed at once with the fallback action specified in S36

S82 Break handling; affected by \K commands

3	I Send break Immedately and save data in buffers
7	Send break Immediately and ignore data in buffers
128	Break Is sent In sequence with the transmitted data as \K5

Result Code Summary

Word	Number	Description
OK	0	Command executed
CONNECT	1	Connect at 300 bps
RING	2	Telephone is ringing
NO CARRIER	3	Carrier lost or not detected
ERROR	4	Command entry error
CONNECT 1200	5	Connect at 1200 bps
NO DIALTONE	6	No dial tone detected
BUSY	7	Called line was busy
NO ANSWER	8	Called Iine did not answer
CONNECT 2400	10	Connect at 2400 bps
CONNECT 1200/REL 4	22	MNP Class 4 Link
CONNECT 1200/REL 5	22	MNP Class 5 Link
CONNECT 2400/REL 4	23	MNP Class 4 Link
CONNECT 2400/REL 5	23	MNP Class 5 Link
CONNECT 1200/V.42	22	V.42 Link
CONNECT 2400/V.42	23	V.42 Link

MODEM
FCC INFORMATION

FCC *Part* 68

This equipment complies with FCC rules, Part 68. On the underside of your computer is a label that contains, among other things, the FCC Registration Number and Ringer Equivalence Number (MN) for this equipment. You must, upon request, provide this information to your telephone company.

An FCC compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68 compliant. See the installation instructions for details.

The Ringer Equivalence Number (REN) is useful to determine the quantity of devices you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most, but not all areas, the sum of the REN's of all devices connected to one line should not exceed five (5.0). To be certain of the number of devices you may connect to your line, as determined by the REN, you should contact your local telephone company to determine the maximum REN for your area.

Should this equipment cause harm to the telephone network, the telephone company shall, where practical, notify the customer that temporary discontinuance of service may be required; however, where prior written notice is not practical the telephone company may discontinue service forthwith, if such action is reasonable in the circumstances. You will be informed of your right to file a complaint with the FCC.

The telephone company may make changes in its communications facilities, equipment, operation procedures, where such action is reasonable, required in the operation of its business and is not inconsistent with the rules and regulations of the Federal Communications Commission. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

***Do* not attempt to repair or modify this equipment. If defective, return it to the person from whom it was purchased, who will in turn arrange to return it or to have it repaired by the manufacturer or his authorized agent. The telephone company may ask that you disconnect this equipment from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning. If equipment is determined to be malfunctioning, its use shall be discontinued until the problem has been corrected.**

This equipment should not be used on coin service provided by the telephone company. Correction to party line is subject to state tariffs.

FCC COMPLIANCE STATEMENT FOR AMERICAN USERS

Note
FCC ID: JRUAM-3S25

This device complies with FCC Rules, Part 15. Operation is subject to the following two conditions

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

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 or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause 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 into an outlet on a circuit different from that to which the receiver is connected**
- **Consult the dealer or an experienced radio/TV technician for help.**

WARNING

The correction of a telephone company line to this equipment, other than the one supplied with the modem, will invalidate the FCC Certification of this device. It is the responsibility of the user to connect and use only the ferrite-loaded telephone company line supplied with this modem.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Appendix C

Specifications

This appendix lists the specifications for your ActionNote. It also includes a table of hard disk drive types and the specifications for international power cables.

Main Unit

CPU	**486SLC microprocessor; 25 or 33 MHz (and simulated 8 MHz) clock speed**
System memory	**2MB, 4MB, or 8MB; expandable to a maximum of 8MB; the first 640KB is conventional memory and 128KB is used for shadow RAM, the rest can be used as extended or expanded memory**
ROM BIOS	**128KB on a single one-time PROM (includes system BIOS, VGA BIOS, and the Setup program)**
Numeric coprocessor	**Socket for optional Cyrix Cx387SLC or Intel 387SX multifrequency numeric coprocessor**
Clock/ calendar	**Real-time clock, calendar, and CMOS RAM for configuration; backed up by built-in Dallas clock chip (DS 1287)**
Video RAM	**256KB**

Controllers

Diskette drive	Built-in controller for one internal 3½-inch diskette drive; supports 1.44MB and 720KB formats
Hard disk	Built-in controller for internal hard disk drive
LCD	Built-in controller supporting standard monochrome LCD; maximum resolution of 640x480 dots
External VGA	15-pin, D-sub, female connector for analog VGA or SVGA monitor; maximum resolution of 800x 600 dots
Parallel	Centronics-compatible; 25-pin, D-sub, female connector; standard 8-bit parallel
Serial (2)	RS-232C, programmable, asynchronous, 9-pin, D-sub male connector
Pointing device or externa/ keyboard	6-pin, mini-DIN connector for a PS/2-type pointing device or for the mouse/keyboard adapter (which allows you to connect both a pointing device and an external keyboard)
Speaker	Built-in ISA compatible speaker controller; internal
Modem	Internal connector for fax/modem (may or may not be installed)
Phone jack	Standard RJ-11 connector for the internal fax/modem

Keyboard

84/85 (US) Keys; embedded numeric keypad and [F11] and [F12] keys

Mass Storage

Diskette drives	**Support for one internal, 3¼-inch diskette drive; supports 1.44MB and 720KB formats**
Hard disk drive	**Support for one internal hard disk drive**

LCD Display

Monochrome 640 x 480 dots x 32 shades of gray, 0.3 mm, high-contrast two-film; paper-white, backlit by one cooled cathode fluorescent tube (CCFT); continuous brightness and contrast controls; power-saving feature; brightness and contrast enhancement

Power Supply

AC adapter	**+15.5VDC, 2.4A continuous AC adapter with international voltage input, 50/60 Hz**
Battery pack	**Rechargeable, internal NiCad battery pack; 8-cell, 9.6 volt, 1.7AH, 16.3W**

> **Caution**
> **Use only the AC adapter and battery designed for use with the ActionNote (AC adapter model number AP-3S25 and battery model number 8KR-1700AE).**

Physical Dimensions

Height	**42mm (1.6 in)**
Width	**280mm (11.0 in)**
Depth	***225 mm* (8.7 in)**
Weight (with battery pack installed)	**2.5 kg (55 lbs)**

Environmental Requirements

Temperature	**Operating 5° to 35° C (41° to 95° F)** **Non-operating –20° to 60° C (-4° to 140° F)**
Humidity	**Operating 30% to 90% (non-condensing)** **Non-operating: 5% to 95% (non-condensing)**
Acoustical Noise	**–35dB @ 1 meter**
Altitude	**Operating: -61 to 3048 m (-200 to 10,000 feet)** **Non-operating: –261 to 10,668 m (-200 to 35,000 feet)**

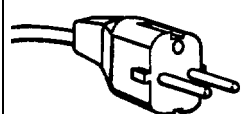
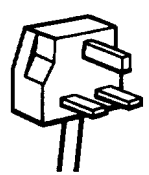
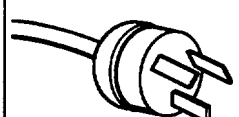
Caution
When travelling by airplane, be sure to take your computer into the passenger compartment as carry-on luggage to prevent it from being stored in an unpressurized storage area.

Power Source Requirements

120 ***Volt power source requirements***

AC plug	Plug type	Reference standards	Power cord
	North America 125V, 10A	ANSI C73.11 NEMA 5-15-P IEC 83	UL/CSA Listed Type SJT no. 18/3AWG. or no. 16/3AWG or <HAR> 300V, 10A or 13A

240 ***Volt power source requirements***

AC plug	Plug type	Reference standards	Power cord
	Europe 240V, 10A to 16A	CEE 7/7 IEC 83 IEC 127 HD 21	<HAR> 1.00 mm^2 300V, 10A
	UK 240V, 10A	BS 1362 BS 1363A IEC 83 IEC 127 HD 21 EN 60320-1 ASTA mark	<HAR> 1.00 mm^2 300V, 10A
	Australia 240V, 10A	AS C112 IEC 127 HD 21	<HAR> 1.00 mm^2 300V, 10A
	North America 240V, 15A	ANSI C73.20 NEMA 6-15-P IEC 83 UL 198.6	UL/CSA Listed Type SJT No. 18/3AWG 300V, 10A

Glossary

387SX

A special-purpose CMOS integrated circuit used to assist the microprocessor chip and speed up certain kinds of mathematical calculations and graphics displays. The computer has a socket to accommodate either a Cyrix Cx387SLC or an Intel 387SX multifrequency numeric coprocessor.

486SLC

A CMOS process technology integrated circuit; the central processing unit (CPU) of your ActionNote which controls all the processing of your computer.

AC adapter

The device that converts AC voltage from a wall outlet into the proper DC voltage to power your ActionNote. The AC adapter also charges the battery pack while it is in the computer.

Address

A number or name that identifies the location of each piece of information in the computer's memory.

Application program

A software program that performs a specific task, such as word processing, spreadsheet analysis, or database management.

ASCII

American Standard Code for Information Interchange. A standard system for encoding text characters, such as letters, numbers, and symbols. An ASCII character occupies one byte of storage. Many different computers, printers, and programs can use files stored in ASCII code.

AUTOEXEC.BAT file

A **batch file that MS-DOS executes automatically each time you turn on or reset the computer. See also** Batchfile.

Backlighting (or backlit)

The internal fluorescent illumination of the computer's LCD screen. LCD screens that are not backlit are difficult to see without an external source of light.

Backup

A copy of a program, data file, or disk, kept in case the original is damaged or lost.

Base memory

See *Conventional memory.*

Batch file

A type of file that allows you to execute a series of MS-DOS commands by typing one command. Batch files are text files with the filename extension, .BAT. In a batch file, each command is entered on a separate line. When you type the filename, MS-DOS executes each command in the file in sequence. See also *AUTOEXEC.BAT file.*

Baud rate

A **measure of data transmission speed. Usually equivalent to bits per second.**

BIOS

Basic Input/Output System. Routines in ROM that handle the basic input/output functions of the operating system. In the ActionNote, the Setup program is contained in the computer's ROM BIOS.

Bif

A binary digit (0 or 1). The smallest unit of information a computer can store.

Byte

A sequence or group of eight bits that represents one character of data in the ASCII encoding system.

Character

Any number, letter, punctuation mark, or graphic symbol which can be represented by one byte of data.

Chip

A hardware component of your system (formally known as an integrated circuit). Examples of chips include memory chips and the microprocessor.

Clock speed

See CPU speed.

CMOS

Complementary Metal-Oxide Semiconductor. A type of low power, integrated circuit (chip).

CMOS RAM

A special type of low-power memory in your ActionNote that records information about your system configuration. Unlike ordinary RAM, CMOS RAM is backed up by a battery and is not erased when you turn off the computer.

Code

A system of symbols for representing data or instructions. Also, any software program or part of a program.

COM1

The name that MS-DOS uses to identify the primary serial port.

COM2

The name that MS-DOS uses to identify the secondary serial port.

Command

An instruction you give the computer to direct it to perform a specific function.

Command prompt

The characters the operating system displays to indicate it is loaded and ready to receive instructions. The MS-DOS command prompt usually displays the current drive and directory with a greater-than symbol (A:\> or C:\>, for example). You can add other information to the command prompt using the PROMPT command, described in your MS-DOS manual.

CONFIG.SYS file

A special system file that MS-DOS executes each time you turn on or reset the computer. You use this file to customize your system by installing device drivers, setting limits for files and buffers, and specifying MS-DOS commands to be run during startup.

Configuration

The particular arrangement of the hardware components installed in or attached to your computer. For example, your configuration might include the built-in 3½-inch diskette drive, a hard disk, a trackball, and an internal modem.

Control code

A command (generated by holding down Ctrl and pressing another key on the keyboard) that instructs the computer to perform a specific function.

Controller

A hardware component of your computer that manages the operation of the display, hard disk, or diskette drive.

Conventional memory

The amount of memory in the computer below lMB that is available to MS-DOS and application programs-usually 640KB. Also called base memory or main memory.

Coprocessor

An optional integrated circuit (chip) that assists the CPU in performing certain numeric calculations faster. See also 387SX.

Copy-protected program

A type of program that cannot be copied. Some copy-protected programs require you to leave the program diskette in the diskette drive while you are using it. Some also require the computer to be running at low speed instead of high speed.

CPU

Central Processing Unit. The integrated circuit (chip) responsible for integrating program instructions, performing calculations, and controlling all input and output operations.

CPU speed

The speed at which the CPU can execute commands. The ActionNote can run at 25 or 33 MHz (Turbo) or 8 MHz (Normal). Also called clock speed, execution speed, or operating speed.

CRT

Cathode Ray Tube. A type of video display, such as a color monitor or a TV screen.

Cursor

The highlighted marker that shows your position on the screen and moves as you enter and delete data.

Cylinder

A set of tracks in a hard disk which can be lined up under one read / write head. The number of tracks in a disk is equal to the number of cylinders times the number of heads.

Data

The information a computer stores or processes.

Data diskette

A formatted diskette you use to store data files.

Data file

A file you **create using an application program (for example, a memo created by a word processor), as opposed to a file containing program code.**

Default

A value or setting that takes effect when you turn on or reset **the** computer. Also, the response to a command that the system uses unless you provide a different response.

Device

A piece of equipment that is part of a computer system and performs a specific task, such as your hard disk, diskette drive, or printer.

Device driver

See Driver.

Diagnostics

The tests and procedures the computer performs to check its internal circuitry and set up its configuration.

DIP switch

Dual In-line Package switch. A small switch on a piece of hardware, such as a printer, that controls a particular function,

Directory

A group of files stored in a particular area on a disk; part of a structure for organizing files into groups.

Disk

A general term meaning either a diskette or a hard disk. See also ***Diskette*** and *Hard disk.*

Disk drive

The physical device that allows the computer to read from and write to a disk. A diskette drive has a slot into which you insert a diskette. A hard disk is permanently sealed inside its own container.

Diskette

A flat piece of flexible plastic coated with magnetic material and used to store data. Also called a floppy disk.

Diskette drive

The physical device that enables the computer to read from and write to a diskette.

Double-density

A type of diskette format. A 3½-inch, double-density diskette has a capacity of 720KB.

Drive

See *Disk drive.*

Driver

A program that controls a specific piece of equipment in the system. Examples of drivers include expanded memory managers, display drivers, printer drivers, and mouse drivers.

Embedded numeric keypad

See Numeric keypa*d.*

EMS or Expanded memory

Memory that can be used by applications and programs conforming to version 4.0 of the Lotus / Intel / Microsoft (LIM) Expanded memory Specification (EMS). Expanded memory does not have addresses like conventional or extended memory.

Expansion memory module

See *Memory module.*

Extended memory

Memory with addresses above lMB. Extended memory is generally not available to MS-DOS applications but can be used by some RAM disk programs, such as VDISK, and some hard disk caching programs, such as SMARTDRV. Extended memory can also be used with OS/2 and some versions of Windows.

External device

See Peripheral device.

FDD

Floppy disk drive. See Diskette *drive.*

File

A group of related pieces of information (sometimes called records or entries) stored together on a disk. Text files consist of words and sentences. Program files consist of codes, which computers use to perform instructions.

Floppy disk

See Diskette.

Fn

A key provided on the ActionNote keyboard to access alternate key functions for the embedded numeric keypad and the F11 and F12 keys.

Format

To prepare a new disk (or erase an old one) so that it can store information. Formatting a disk divides it into tracks and sectors and creates addressable locations on it.

Graphics

Lines, angles, curves, and other non-alphanumeric data.

Hard disk

A sealed mass storage device you use to store large amounts of data.

HDD

Hard disk drive. See Hard disk.

Hexadecimal

A base 16 numbering system commonly used by programmers. Any decimal number between 0 and 255 can be represented by a two-digit hexadecimal number in the range O through FF.

High-density

A type of diskette format. A 3½-inch, high-density diskette has a capacity of 1.44MB.

Input/Output (I/O) port

See Port.

Integrated circuif

See Chip.

Interface

A hardware or software connection used to transmit data between equipment or programs.

KB

Kilobyte. A unit used to measure storage space in a computer's memory or on a disk. One kilobyte equals 1,024 bytes.

LCD

Liquid Crystal Display. A thin, backlit panel containing thousands of pixels that can be turned on and off individually by electric currents. Used as the main display on most portable computers.

LED

Light Emitting Diode. An indicator light such as those used for the ActionNote power, disk drives, and keyboard settings.

LIM EMS 4.0

Lotus/Intel/Microsoft Expanded Memory Specification version 4. A standard that enables certain applications to use more than 640KB of memory.

Main memory

See Base memory.

Math coprocessor

See Coprocessor.

MB

Megabyte. A unit used to measure storage space in a computer's memory or on a disk. One megabyte equals 1,048,76 bytes or 1024KB.

Megahertz

See *MHz.*

Memory

The area where the computer stores data. Memory contents may be permanent (ROM) or temporary (RAM). See also *ROM* and RAM.

Memory module

An optional card that adds 2MB or 6MB of extended memory to your computer. (Also called an extension memory module.)

Memory-resident program

A program that remains in RAM so you can access it while another program is running.

MHz

Megahertz. A unit used to measure the oscillation frequency of a computer's internal timing clock. One megahertz is one million cycles per second.

Microprocessor

A CPU chip, such as the 486SLC. See *CPU.*

Modem

Modulator/Demodulator. A serial device that allows the computer to send and receive data over the telephone lines.

Monitor

A device that contains a screen and displays keyboard input and other information. See also CRT.

MS-DOS

A common operating system for IBM-compatible computers developed by Microsoft. See also *Operating system.*

NiCad

Nickel-cadmium. The type of battery used by your ActionNote.

Numeric coprocessor

See Coprocessor.

Numeric keypad

The embedded numeric keypad in the ActionNote keyboard, which you can activate either by turning on the Num Lock function or by holding down the Fn + Shift] keys.

Operating speed

See *CPU speed.*

Operating system

A collection of programs (for example, MS-DOS) that control the operation of a computer. The operating system determines how programs run on the computer and supervises all input and output. See also *MS-DOS.*

Parallel

Away of organizing communications between two pieces of computer equipment, in which the signals that makeup each character are sent simultaneously. See also Serial.

Parameter

A qualifier added to a command that tells the computer how to perform the command (such as what data file to use or what particular conditions to expect). For example, in the command FORMAT A:, the A: parameter tells the computer to format the diskette in drive A. See also *Switch.*

Partition

The area defined on a hard disk to run an operating system. Also, to divide a hard disk into separate logical drives.

Pathname

The list of directories the MS-DOS operating system must search through to locate a file. For example, the pathname for a file named CONTRACT.TXT that is located in the BUSINESS subdirectory is \BUSINESS\CONTRACT.TXT.

Peripheral device

An external device, such as a printer or mouse, connected to the computer.

Port

An input/output connection on a computer to which you can attach a peripheral device.

Power-on diagnostics

A set of testing routines the computer performs automatically every time you turn it on.

Program

A file that contains coded instructions telling the computer what to do and how to do it.

Prompt

A message on the screen that requests information or tells you the action you need to perform next. See also Command prompt.

RAM

Random Access Memory. The portion of the computer's memory that runs programs and temporarily stores data while you work. All data stored in RAM is temporarily maintained while the computer is in Suspend mode, but erased when you turn off the computer. You must save any data you want to keep on a diskette or hard disk. See also *ROM*.

Read

To copy data from one area to another. For example, when you open a text file stored on disk, the computer reads the data from the disk and displays it on the screen.

Read/write head

The physical device inside a disk drive that reads and records data on the magnetic surface of a disk.

Real-time clock

A battery-powered clock in the computer that keeps track of the current time and date even when the computer's power is off.

Reset

To reload a computer's operating system so you can retry a task or begin using a different operating system. Resetting erases any information stored in RAM.

R O M

Read Only Memory. The portion of the computer's memory that contains permanent instructions and cannot be modified. Unlike RAM, ROM retains its contents even after you turn off the computer. See also RAM.

ROM BIOS

See BIOS.

Root directory

The top-level MS-DOS directory on a diskette or hard disk. The root directory is desigmted by a backslash (\). All other directories are subdirectories of the root directory, or of other subdirectories.

RS-232C

A standard serial interface. The ActionNote has a connector that lets you attach an RS-232C-compatible device to your computer.

Sector

A contiguous section of a disk track that provides an address at which the computer can access data.

Self tests

See Power-on diagnostics.

Serial

A way of organizing communications between two pieces of computer equipment, in which the signals that makeup each character are sent sequentially. See also Parallel.

Setup

The program you run to define the configuration settings and Power Mamgement options of your computer.

Shadow RAM

The function that copies the system video ROM into RAM to speed up processing.

Software

The programs that enable the computer to perform the tasks and functions you indicate.

Subdirectory

A disk directory that branches down from another directory or from the root directory.

Suspend mode

The power-saving mode your computer enters after you slide the suspend/resurne switch to the right or it detects a standby timeout period specified in the Setup program.

Switch

An option you can add to a command that modifies the way the command works. Switches are usually preceded by a / (forward slash). For example, if you add the/S switch to the FORMAT command, MS-DOS installs the operating system on a diskette as it formats it. See also *Parameter.*

System disk

A disk containing one of the operating systems used by your computer.

Timeout period

An amount of time you can specify using the Setup program; if the selected device is not accessed for the specified amount of time, the computer enters Suspend mode.

Track

A circular region on a diskette, which is divided into sectors. Each side of a 1.44MB, 1.2MB, or 720KB diskette has 80 concentric tracks. Each side of a 360KB diskette has 40 tracks.

Utility program

A type of program designed to allow you to change computer settings and perform useful applications. The utility programs for your ActionNote are included on the Reference diskette.

VGA

Video Graphics Array. A type of high-resolution display adapter. The VGA capabilities of the ActionNote can display resolutions up to 640 x 480 on the LCD screen and up to 800 x 600 on an external VGA monitor.

Write

To record data on a disk.

Write-prefect

To prevent a diskette from being overwritten. When a diskette is write-protected, you cannot erase, change, or record over its contents.

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