

EPSON®
ActionNote™

User's Guide

**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 prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada

IMPORTANT NOTICE
DISCLAIMER OF WARRANTY

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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.

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 Computer an die Netzversorgung muß sichergestellt werden, daß die Gebäudeinstallation mit einem 16 A Überstromschutzschalter 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 Importantes de Sécurité

1. Lire complètement les instructions qui suivent et les conserver pour références futures.
2. Bien suivre tous les avertissements et les instructions indiqués sur l'ordinateur.
3. Debrancher 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 événements dans les meubles, à l'arrière et en dessous sont conçus pour l'aération; on ne doit jamais les bloquer. Ne pas placer l'ordinateur près d'une source de chaleur directe.
7. Le fonctionnement de l'ordinateur doit s'effectuer conformément au type de source d'alimentation indiquée sur l'étiquette.
8. Lorsqu'on desire 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 survolage, l'installation de l'édifice doit comprendre un disjoncteur de 16 amp.
9. On doit brancher tout l'équipement dans une sortie reliée à la masse. Lorsqu'il est impossible d'insérer la fiche dans la prise, on doit retenir les services d'un electricien ou remplacer la prise. Ne jamais utiliser une prise sur le même circuit qu'un appareil à photocopie ou un système de contrôle d'aération avec commutation marche-arrêt.
10. S'assurer que le cordon d'alimentation de l'ordinateur 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 dans la prise murale ne doit jamais excéder 15 ampères.
12. Ne jamais insérer un objet de quelque sorte que ce soit dans 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 technicien qualifié.
14. Débrancher l'ordinateur de la prise murale et confier le service au personnel de service qualifié selon les conditions qui suivent:
 - A. Lorsque le cordon d'alimentation ou la prise sont endommagés.
 - B. Lorsqu'un liquide s'est infiltré dans l'ordinateur.
 - C. Lorsque l'ordinateur refuse de fonctionner normalement même en suivant les instructions. N'ajuster que les commandes qui sont énumérées dans les instructions de fonctionnement. Tout ajustement inadéquat de tout autre contrôle peut provoquer un dommage et souvent nécessiter des réparations élaborées par un technicien qualifié afin de remettre l'appareil en service.
 - D. Lorsqu'on a échappé l'ordinateur ou que l'on a endommagé le boîtier.
 - E. Lorsque l'ordinateur démontre un changement noté au niveau de sa performance.

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Glossary

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Introduction

The Epson® ActionNote™ is a light-weight computer supporting a wide range of applications and hardware in a compact, subnotebook-size form. Its 33 MHz, 486SLC microprocessor chip, designed for portable computers, provides high-speed performance. Standard features include:

- ❑ 2MB, 4MB, or 8MB of RAM
- ❑ Backlit, monochrome LCD screen, which supports VGA resolutions of 640 x 480 and emulates VGA color with 64 shades of gray
- ❑ Removable hard disk drive
- ❑ Built-in trackball
- ❑ PCMCIA version 2.0 Type II expansion PC card slot
- ❑ Parallel port for an external 3.5-inch, 1.44MB diskette drive or a parallel printer
- ❑ Serial port for a serial device
- ❑ Video port for an external color or monochrome VGA monitor
- ❑ Port for a PS/2®-compatible pointing device or external keyboard
- ❑ Rechargeable battery
- ❑ AC adapter for powering the computer and recharging the battery
- ❑ Socket for an optional numeric coprocessor
- ❑ Suspend mode (1 MHz) to save battery power.

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 Epson products
- Assistance with Extra Care Road Service
- 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, be ready 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 Extra Care Road Service. Your ActionNote package should contain a packet describing this program. If a packet is not included, call the Epson Connection. For your convenience there is a sticker located on the bottom of your computer with the number to call for assistance.

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

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

What This Manual Covers

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 describes how to run the SETUP program; run this program the first time you start your system. This is also necessary if you want to set a password or if you change the configuration of your computer.

Chapter 3 covers basic information about using the computer.

Chapter 4 explains how to power your computer using the AC adapter and the battery and how to conserve battery power.

Chapter 5 describes how to connect optional devices.

Chapter 6 describes your VGA utilities.

Appendix A provides troubleshooting tips.

Appendix B lists the computer's specifications.

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:

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 press the letter C , or hold down the key marked Fn and press the F1 key
<i>C:\DOS</i>	Text as it appears on the screen
DISKCOPY A: B:	Text that you type exactly as shown
<i>path\filename</i>	Words printed in lowercase italics represent optional parameter names; here you would type the actual path and filename, such as <code>\WORK\CONTACT</code>
VIDEO	Names of hardware elements

Chapter 1

Setting Up the Computer

This chapter describes how to set up your computer. It covers:

- ❑ Opening the screen
- ❑ Identifying the computer parts
- ❑ Connecting the AC adapter
- ❑ Connecting an external diskette drive
- ❑ Turning on the computer.

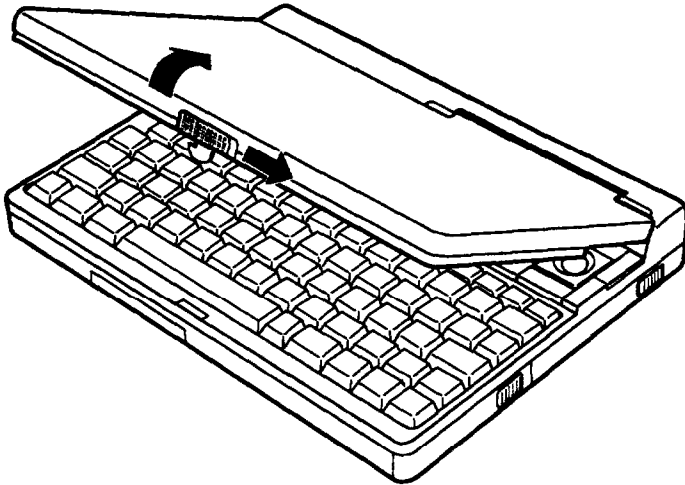
Note

For instructions on installing or connecting additional equipment, such as a memory module, a monitor, or a printer, see Chapter 5.

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 latch on the cover to the right and lift up the screen.

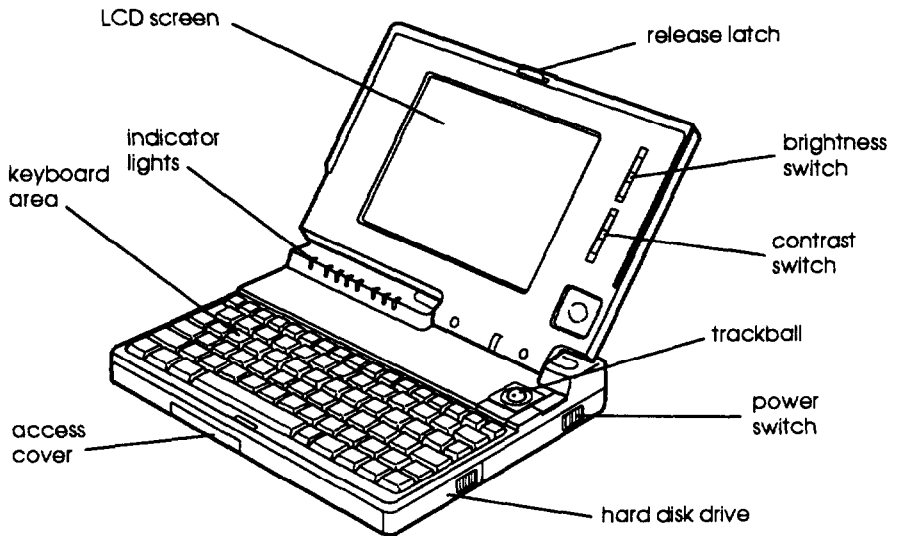


Identifying the System Parts

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

Front View

The main components on the front and right side are shown here.



LCD screen

Your computer has a backlit, monochrome LCD that supports VGA resolutions up to 640 x 480 dpi x 64 shades of gray.

Release latch

Slide this latch to the right to release the top cover and open the LCD screen.

Brightness switch

This switch controls the background brightness of the LCD screen. Slide the switch down to lighten the screen or up to darken it.

Contrast switch

This switch controls the contrast between the background and foreground on the LCD screen. Slide the switch down to lighten the contrast or up to darken it.

Trackball

Use this built-in pointing device to move around the screen, select items, or choose commands in application programs that support a pointing device.

Power switch

This switch turns the computer on and off.

Hard disk drive

Your computer comes with a removable hard disk drive. Slide the drive to the right to remove it. See Chapter 3 for instructions.

Access cover

Remove this cover to install a numeric coprocessor or additional memory. See Chapter 5 for details.

Keyboard area

This is where you type commands and enter data. For more information, see Chapter 3.

Indicator lights

The indicator lights on your computer provide information about its operation.



Power-Indicates the computer is turned on.



Low battery-Flashes to indicate the battery capacity is less than 20%.



Suspend mode-Indicates the computer is in Suspend mode.



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



PC card slot-Indicates a PC card is inserted in the PC card slot.



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



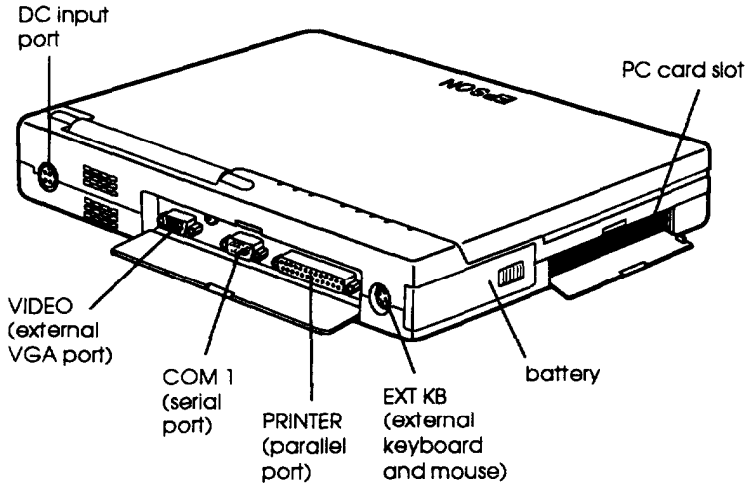
Caps Lock-Indicates that Caps Lock is set on the keyboard.



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

Rear Panel and Left Side

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



PC card slot

Insert PCMCIA version 2.0, Type I or II PC cards here.
See Chapter 3 for instructions.

Battery

The rechargeable NiCad battery powers your computer when the AC adapter is not connected. To remove the battery, slide this edge toward the back of the computer. For a full description, see Chapter 4.

EXT KB (external keyboard/mouse port)

Use this port to connect any PS/2-compatible keyboard or keypad. Additionally, if you attach the adapter to this port, you can connect a mouse or other pointing device and a keyboard or keypad. When used along with the PRINTER port, this port also supports an external diskette drive. See page 1-10 for instructions on connecting a diskette drive or Chapter 5 for instructions on installing optional devices.

PRINTER (parallel port)

You can connect a parallel device, such as a printer, to this port. When used along with the EXT KB port, this port also supports an external diskette drive. See page 1-10 or Chapter 5 for instructions.

COM 1 (serial port)

This port supports a serial (RS-232C) device. See Chapter 5 for more information.

VIDEO (external VGA port)

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

DC input port

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

Connecting the AC Adapter

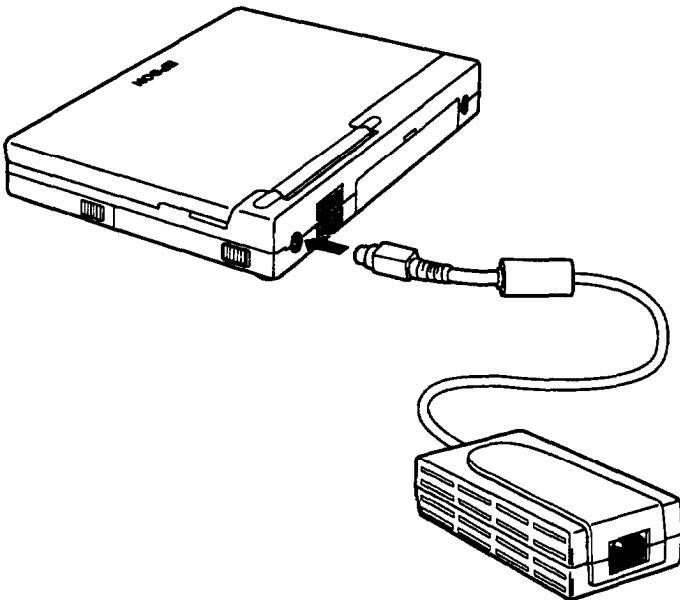
The AC adapter is designed to be used in most countries, as it can operate in the ranges 100-240 VAC, 50-60 Hz. If you are using the adapter in a country other than the one where you purchased your computer, make sure you have the correct power cable for the electrical socket. See the power cable specifications in Appendix B for details.

Caution

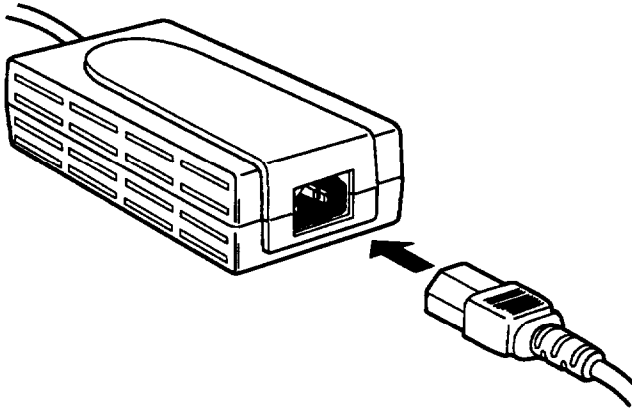
Use only the AC adapter (model number AP-006) supplied with the computer.

You may need to connect the AC adapter to charge the battery before you use it the first time. Follow these steps:

1. Connect the AC adapter plug to the DC input port on the back 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.

The indicator lights on the AC adapter tell you the adapter is working properly:



Indicates the adapter is connected to an outlet.



Flashes when the battery is recharging; remains steady when the battery is fully charged.

Note

For complete instructions on using the AC adapter, see chapter 4.

Connecting an External Diskette Drive

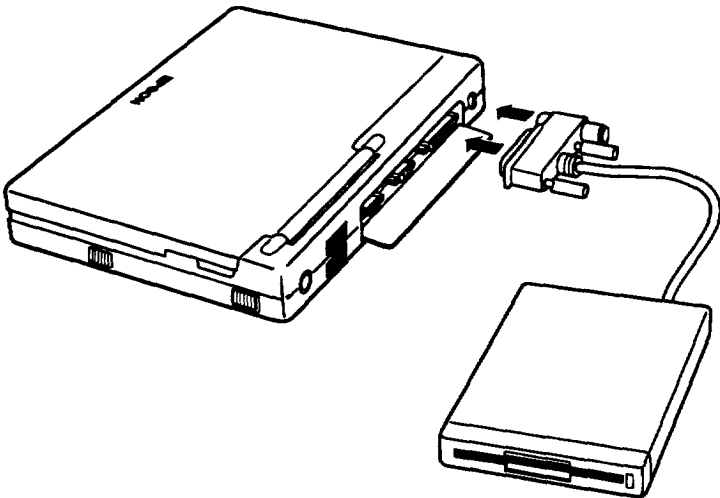
An external diskette drive is a portable device for accessing data on diskettes. You can connect an Epson 3.5-inch external diskette drive every time you use your computer, or just when you want to use diskettes. Follow these steps:

1. Make sure the computer power is off.

Caution

Make sure the computer is turned off before connecting or disconnecting the external diskette drive; otherwise you could damage the drive.

2. Open the port cover on the back of the computer by pulling down on the notch at the top.
3. Align the diskette drive cable connector with the parallel port and external keyboard port. Push it firmly into place over both ports.

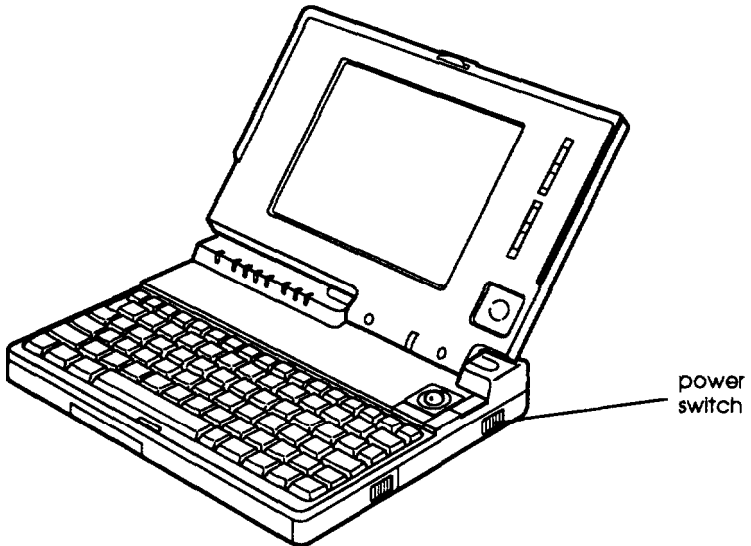


4. Tighten the retaining screws to secure the connection.
5. Run SETUP as described in Chapter 2 to set the **Parallel Option** to 1.44MB, 3.5" .

Turning On the Computer

When you first use your computer, 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 5 for information about installing optional devices.) Then slide the power switch **on the right side 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. It displays several messages, including this prompt:

Press Delete to run SETUP

You may also see an error message followed by this prompt:

Press <F1> to resume or Delete to run SETUP

If this happens, press **Delete** to run the SETUP program and check your system configuration. See Chapter 2 for a complete description of the SETUP program.

While the computer finishes its testing, it displays several screens showing your system configuration. If necessary, press the **Pause** button on the keyboard to view the configuration screens. Then press any key to continue the startup process.

Because your computer was set up at the factory, the configuration listing should be accurate, but you will want to run SETUP to enter the correct time and date. Additionally, if you have changed the computer's setup so that this information does not match your configuration, be sure to run SETUP

Depending on your configuration, your computer may come with MSDOS® and Microsoft® Windows® installed on the hard disk. If your computer comes with MS-DOS, it starts up in MS-DOS as soon as it completes the power-on diagnostics.

If you plan to use another operating system, such as OS/2®, Unix®, or Xenix® install it now. See the documentation that came with it for installation instructions. (Although this manual includes sample MS-DOS commands, it does not explain how to use your operating system; see your operating system manuals for complete instructions.)

Chapter 2

Running *SETUP*

The *SETUP* program defines your system's configuration so the computer recognizes all of its devices. Because your computer was set up at the factory, the configuration information is accurate the first time you start the computer. If you change the computer's configuration by adding optional devices, however, you need to update the *SETUP* settings.

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

- Current date and time
- Diskette drive or printer connection
- Self test error level (Halt on)
- Shadow RAM
- Password feature
- Hard disk drive type
- System booting sequence
- Virus warning
- Power management options.

The configuration you define through SETUP 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 memory mismatch
Run SETUP
```

You also see the following prompt at the bottom of the screen:

```
Press F1 to continue or Delete to run SETUP
```

If this happens, press **Delete** to run SETUP and correct the setting.

Starting the SETUP Program

To start SETUP, make sure there is no diskette in the diskette drive; then turn on your computer. (If your computer is already on, turn it off, wait 20 seconds, and then turn it on again.) After the self test, you see the following prompt at the bottom of the screen:

```
Press Delete to run SETUP
```

As soon as you see this message, press **Delete**.

If you do not press **Delete** within approximately five seconds, the computer starts loading the operating system and you will not be able to run SETUP. If this happens, restart or reset the computer and try again.

When you press **Delete**, you'll see the first SETUP screen. The options for each setting are shown in the following table.

SETUP options


















Setting	Options
Parallel	Ext printer 1.44MB.3.5"
Trackball	Enabled Disabled
Halt On	All errors All but diskette No errors
Shadow	System & Video video BIOS System BIOS Disabled
security	Disabled System access Setup access
Boot Sequence	A, C C,A
Virus Warning	Enabled Disabled
Default Speed	High Low
Drive C:	None Type 1 (85MB) Type 2 (120MB) Type 49 ("MB)

Note

If you are having trouble seeing your cursor position, press **F2** to change the screen colors. Your cursor changes to a solid highlight bar over the option.

The table below lists the keys you can use to perform SETUP operations.

Setup function keys

Key	Function
 + 	Displays a help screen describing some of the keys you can use with the program
	Displays a help screen describing the option currently selected
	Changes screen colors; if you have a color monitor, pressing this key changes the display from color to monochrome or monochrome to Color
	Displays the exit menu so you can exit the SETUP program
 ,   , 	Moves the cursor to the next modifiable option
 +  or 	Changes the current setting; for numeric parameters, increases or decreases the current numeric value
	Cancels the exit menu and returns to the current screen
 + 	Displays the next page
 + 	Displays the previous page

Setting the Date and Time

The real-time clock in your computer continuously tracks the date and time—even when the computer is turned off. The first time you run SETUP, you'll want to enter the correct date and time. Once you set the date and time using SETUP, you should not need to change them, unless you need to adjust the time for daylight savings or other seasonal adjustments. (The computer automatically changes the date for leap years.)

Use the cursor arrow keys to position the cursor over the portion of the date or time you want to change. For the date option, you can change the first two digits of the year field separately from the last two digits.

Use the or key to modify the date or time. You can also turn on NumLock and type numbers into the fields that accept numbers. Change the time using a 24-hour clock. For example, 5 p.m. would be 17.

Setting the Diskette Drive or Printer

Your system may have come with one external diskette drive and you may want to connect a printer to the computer. The Parallel option lets you select one of the following:

- 1.44MB, 3.5-inch
- Ext printer.

If you want to connect the Epson external diskette drive, select 1.44MB, 3.5-inch. For a printer, select Ext printer.

Setting the Trackball

This option enables or disables the computer's built-in trackball. To use a mouse or other pointing device connected to the EXT KB or COM 1 port, set this option to Disabled. To use the built-in trackball, set this option to Enabled.

Setting the Self Test (Halt On) Error Level

When you start your system, it performs a self test. The **Halt On** option determines the point at which the system will stop if it finds an error during the self test.

This option allows flexibility in your configuration. If your computer is running without an external diskette drive or it must always start, you can choose one of the options in the following table to ensure the computer will boot.

Self test error levels

select	If
All errors*	You want your system to stop booting if it encounters any errors during the self test
All but diskette	You want your system to stop booting if it encounters any error except a diskette drive error during the self test
No errors	You don't want your system to stop booting, even if it encounters errors during the self test

- Default setting

Setting the Shadow RAM

Your computer can access RAM (random access memory) faster than ROM (read only memory). The **Shadow** option allows your system to copy the contents of its system BIOS and/or video BIOS into RAM so it can perform certain operations faster.

If you set this option to **System & Video**, your system automatically enables shadow RAM for both the system BIOS and the video BIOS. You may need to disable one or both shadow options, however, if you install a device that locates its RAM in one of these areas.

The Shadow option lets you choose what to place in the shadow RAM area.

Shadow RAM options

Select	If
System & Video'	You want to copy both your system and video BIOS into RAM
Video BIOS	You want to copy your video BIOS into RAM
System BIOS	You want to copy only your system BIOS Into RAM
Disabled	You don't want to use shadow RAM

. Default setting

Setting the Password (Security) Options

The SETUP program lets you enter, change, or disable an optional password to control who can access your system. The following table lists the available options.

Security options

Select	If
Disable*	You do not want to set a password
Setup Access	You want to set a password to use the SETUP program
System Access	You want to set a password to use the system (computer). Including the SETUP program

* Default setting

If you select Setup Access, you'll see the password prompt only when you use the SETUP program. If you select System **Access**, you'll see the password prompt both for the SETUP program and whenever the computer boots (loads the operating system).

Follow these steps to enter a password:

1. Move your cursor to the security option.
2. Use **←** or **→** to select either `Setup Access` or `System Access`; then press **Enter**.
3. You'll see the following prompt in a window at the center of the screen:

Enter Password:

4. Enter the password you want to use. As you type the password, the screen displays an asterisk for each letter. Then you see this prompt:

Confirm Password:

Again, you'll see an asterisk for each letter you type.

If the password you type the second time doesn't match the first password you entered, you see the `Enter Password:` prompt again.

5. As you exit the `SETUP` program, make sure you press **F5** to save the new settings. If you set the `System Access` password, when the system reboots you will see the password prompt.

Changing or Deleting a Password

If you want to change one of the Password options, follow the same steps as to enter a new one. When you see the `Enter Password:` prompt, just type the new password you want to use.

If you want to delete a password, move your cursor to the Security option and press **[+]** or **[-]** until you see the Disabled option.

Whenever you change or delete your password using the SETUP program, make sure you save the new settings as you exit the program.

Setting the Hard Disk Drive(s)

The SETUP program lets you set the type of hard disk drive installed in your computer. The system is set at the factory for the type of hard disk drive installed, so you should only change this setting if you purchase an additional Epson ActionNote drive with a different capacity.

Caution

Use only the appropriate removable hard disk drives designed for your ActionNote computer, Inserting an incompatible drive could damage your system.

Drive C options are as follows:

- None
- Type 1 (85MB)
- Type 2 (120MB)
- Type 49 (userdefined).

When you install another Epson ActionNote hard disk drive, choose the drive type number that matches your drive's parameters. Future drives with higher capacities may require you to define your own drive type; see the next section.

Defining Your Own Drive Type

If the parameters for your hard disk (listed in its documentation) do not match either of the types listed by SETUP, you can define your own type. Follow these steps:

1. With the cursor on the drive you are defining, press or until you see Type 49.
2. Press to move the cursor into the parameter fields.
3. Enter the appropriate values for these parameters or press or to scroll through the available options.

Drive type options

Heading	Description
CYLS	The number of cylinders on the drive
HEADS	The number of read/write heads in the drive
SECTORS	The number of sectors on the drive
PRECOMP	The precompensation cylinder
LANDZONE	The landing zone (the area on which the computer parks the heads)

Press after typing each number. Check your drive documentation for the correct value if the SETUP program does not accept a value you've typed.

SETUP provides the hard disk size based on the other values you entered.

Checking System Memory

Your computer comes with either 2MB, 4MB, or 8MB of random access memory. MS-DOS and application programs that run under MS-DOS use the first 640KB of memory. You can use the memory above 1MB as extended or expanded memory.

Expanded memory can be used by application programs conforming to the Lotus/Intel/Microsoft Expanded Memory Specification (LIM EMS). Your computer is compatible with version 4.0 of the LIM EMS.

The memory portion of the SETUP program's STATUS page displays the total memory available as well as the amount of memory contained in each of the following:

- Basememory
- Extended memory
- Expanded memory
- Reserved memory between 640 KB and 1MB
- Other memory.

Note

See Chapter 3 for more information on system memory.

Setting the *Booting Sequence*

The booting sequence determines the order in which the computer checks the drives when it looks for the operating system.

For example, if you select *A, c*, each time you turn on the computer it first checks drive A (the external diskette drive) for an operating system diskette and loads the operating system from that diskette. If drive A does not contain an operating system diskette, the computer loads the operating system from drive C. This is the default setting because you may sometimes want to boot the computer from a system diskette in drive A.

If you select *c, A*, the computer loads the operating system from drive C. If it doesn't find the operating system on drive C, it checks the diskette in drive A. This setting allows the computer to load the operating system a little faster.

Setting the *Virus Warning*

Your computer contains a built-in virus warning function to protect your data should a software virus come in contact with your system.

If the *virus warning* option is enabled, the system displays a virus warning message when it detects a program attempting to write to the boot sector on either a diskette or the hard disk drive. You must respond to a prompt either to allow a legitimate program (such as the MS-DOS *FORMAT* command) to write to the boot sector or to deny access to a program that shouldn't be writing to the boot sector.

If you install an operating system, it writes to the boot sector as you install it. In this case, you probably do not want the virus warning feature enabled. Therefore, your system initially has the virus warning feature disabled. This way you won't need to respond to the virus warning prompts if you install an operating system. Once you have installed it, you can enable this option to take advantage of the virus warning feature.

Setting the Default Speed

Your computer's processor can operate at two speeds: High (33 MHz) or Low (8 MHz). The processor is factory set to High speed, where it can access memory faster. If you want the computer to always start at Low speed, change this option to Low.




Use High speed for everything you do unless you have an application program that requires a slower speed. Some applications, like word processing programs, don't need the performance of a high CPU speed. (Check your application software manual for guidelines.) You may also want to set this option to Low to conserve battery power.

Setting the Power Management Options

The options on the POWER MANAGEMENT SETUP screen allow you to set custom timeout periods to conserve battery power. Each setting is described in the following table.

POWER MANAGEMENT SETUP Options

Option	Function
Power management function	Enables or disables the power management functions; If enabled, you can Set the next two counters
HDD timeout	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 hard disk drive goes into Suspend mode
System timeout	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 the  or  key repeatedly to see what timeout periods are available; then press  to make your selection. If you do not use the keyboard for the specified amount of time, the computer suspends the hard disk drive or the entire system to save battery power. To resume activity, simply press the spacebar. (You may have to wait a few seconds until the hard disk drive reaches operating speed.)

Saving Your Settings and Exiting SETUP

When you leave the SETUP program, you can choose to either save the settings you have changed or exit the program without saving any changes.

Follow these steps:

1. Press **F10**. You see the following prompt:

```
PRESS F5 TO SAVE AND EXIT  
PRESS F1 TO EXIT W/O SAVE
```

2. If you want to save your changes, press **F5**. If you don't want to save your changes, press **F1**. Either way, the system reboots.
3. If you have just run SETUP for the first time, see "Post-SETUP Procedures," below.

Note

You may see an error message and a prompt to run SETUP when your computer is rebooting if it detects a problem in your SETUP configuration. If so, follow the instructions on the screen to run SETUP and correct the problem.

You may also see an error message if you have not installed your operating system on the hard disk and you have not inserted a system diskette in drive A. If you receive this error message, follow the instructions in your operating system manual to install the software.

Post-SETUP Procedures

If you have just run SETUP for the first time and your system has not been configured, you now need to install the operating system on your computer. See your operating system manual for instructions.

After you have installed your operating system, you can install any software you plan to use. See your application program manual for instructions.

Chapter 3

Using Your Computer

This chapter describes daily use of your computer, including:

- ❑ Taking care of the computer
- ❑ Using the password
- ❑ Using the keyboard
- ❑ Stopping a command or program
- ❑ Resetting the computer
- ❑ Turning off the computer
- ❑
- ❑ Adjusting the LCD screen
- ❑ Using the trackball
- ❑ Using diskettes
- ❑ Using the hard disk
- ❑ Using PC cards
- ❑ Using memory.

Taking Care of the Computer

Before you use your computer, take note of these guidelines to ensure proper maintenance:

- ❑ Keep the computer and AC adapter dry, and do not subject them to extreme heat or cold.
- ❑ To prevent damage to the LCD display, do not place external devices on top of the computer, even if it is closed.
- ❑ When you are not using the external device connectors, keep the covers closed 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 screen using glass cleaner on a soft cloth; do not apply the cleaner directly to the screen.

Using the Password Function

You can select password security for the entire system or only the SETUP program. This allows you to safeguard all your data or to prevent unauthorized access to your SETUP configuration. The password function is optional; you do not have to set a password.

You use the SETUP program to enable and define a password or disable it. (See Chapter 2 for instructions.)

If you enable the System 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 a box with this prompt when the password feature is active:

Enter 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 system beeps 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 locks up and you see the following message:

Password check failed - system halted

You must reset 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 2 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 your computer has only 79 keys (80 on the international version), it still provides all the functions of a full-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. Your keyboard has an embedded numeric keypad that you access using the **Fn** and **Shift** keys. (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.














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

- ❑ Special keys
- ❑ The **F11** and **F12** keys
- ❑ Display key combinations
- ❑ The embedded numeric keypad.

Special Keys

Certain keys on your keyboard serve special functions when your computer is running MS-DOS or application programs. These special keys are described below.

Special key functions

Key	Purpose
	Moves the cursor one tab to the right in normal mode and one tab to the left in shift mode.
	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.
	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.
	Controls functions on the embedded numeric keypad as well as other special functions.
	Works with other keys to perform special (control) functions.
	Works with other keys to enter alternate character codes or functions.
	Moves the cursor back one space.
	Ends a line of keyboard input or executes a command.
 , 	Control cursor location.
 , 	
	Cancels the current command line or operation.

Special key functions (Continued)

Key	Purpose
F1 – F10 , F11 , F12	Perform special functions within 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 scrolling 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 light 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**.

Display Key Combinations

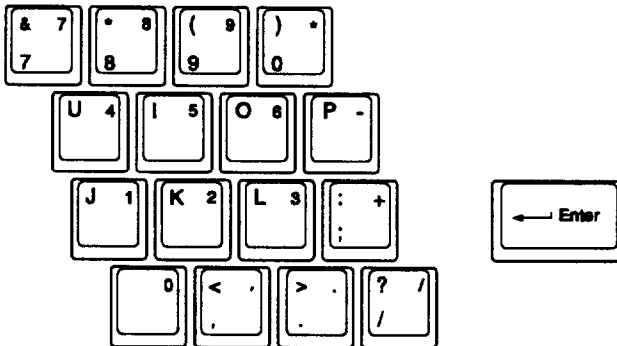
You can use the key combinations listed below in most DOS applications to control the display.

Display key Combinations

Key	Function
Fn + Delete	Enters Suspend mode.
Fn + F4	Toggles normal and reverse video.
Fn + F5	Toggles between LCD, CRT, and simultaneous display.
Fn + F6	Toggles LCD backlight on and off.

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 indicator light) on and off. When you press the key in Num Lock mode, you enter the numeric character instead of the letter. You can press **Fn** plus the key 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 turn off the computer.

Resetting the Computer

If necessary, you can reset the computer without turning it off by pressing a combination of keys. This clears the computer's RAM and restores any default configuration settings. 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.

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.

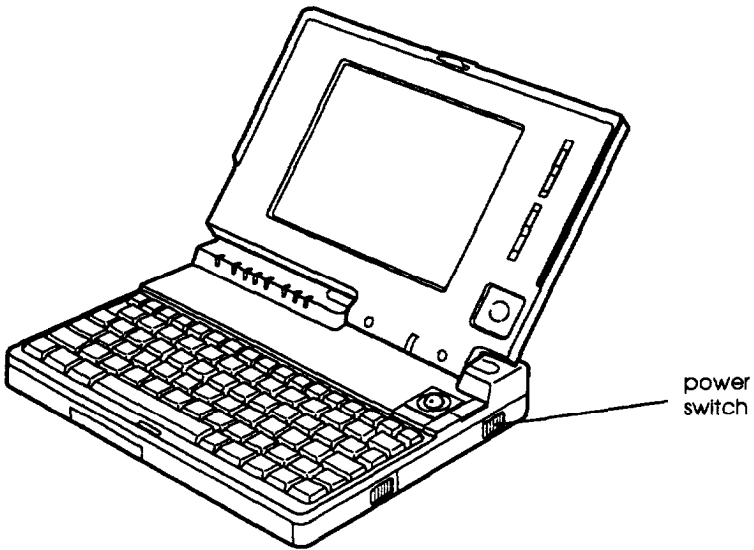
Caution

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 only when you exit them properly; so do not reset the computer before you exit a program, if possible.

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 exit the program you are using. Make sure the hard disk drive and the diskette drive lights are off, then turn off the computer by sliding the power switch on the right side of the computer.



Caution

Always make sure the computer is off when you connect or disconnect equipment, such as a printer or diskette drive.

Changing the CPU Speed

Your computer's processor can operate at two speeds: High (33 MHz) or Low (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.

Unless you change the default setting in SETUP, whenever you turn on or reset the computer, it starts up in High speed. To change the speed temporarily, first press **Num Lock** to turn Num Lock (and its indicator light) on. Then, to change to Low speed, press **Ctrl** + **Alt** + **-**. When you want to change back to High speed, make sure Num Lock is on, and press **Ctrl** + **Alt** + **+**.

Note

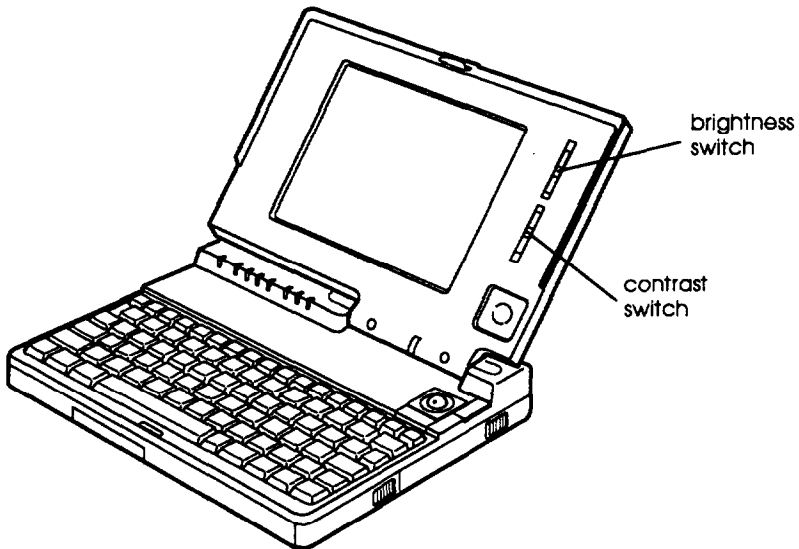
You must press **-** or **+** on the embedded numeric keypad.

If you want your computer to always start at Low speed, you can change the default setting through SETUP. See Chapter 2 for instructions.

Adjusting the LCD Screen

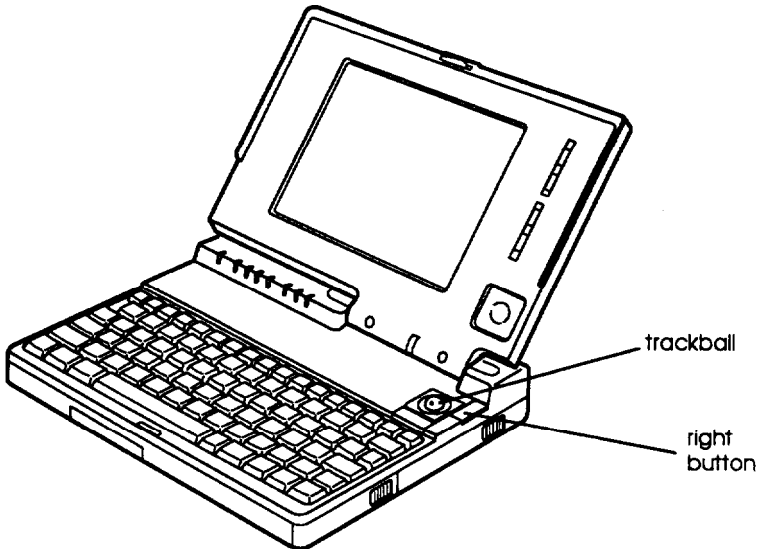
The screen on your ActionNote is a backlit monochrome LCD. You can adjust the brightness and contrast with the two switches next to the screen. Adjust these switches to produce the best display for your viewing angle.

Slide the brightness switch down to increase the background brightness, or up to darken it. Slide the contrast switch down to lighten the **contrast** between the background and foreground, or up to darken it.



Using the Trackball

The trackball in the upper right corner of your ActionNote is a built-in pointing device very similar to a mouse. You can use it with most software applications that support pointing devices. Inside your application, use the trackball to move the cursor, select text or objects, cut and paste, or choose menu items.



Roll the trackball with your thumb and place your index finger on the right button. The cursor moves in response to the direction of the ball: up, down, left, or right.

You can press the right button and hold it down while you move the trackball to “drag” objects around the screen. Like the mouse, you can “doubleclick” the right button (press it twice quickly) to make menu selections or block text.

The lower button is sometimes used by programs written for a two-button mouse. See your application program documentation for information.

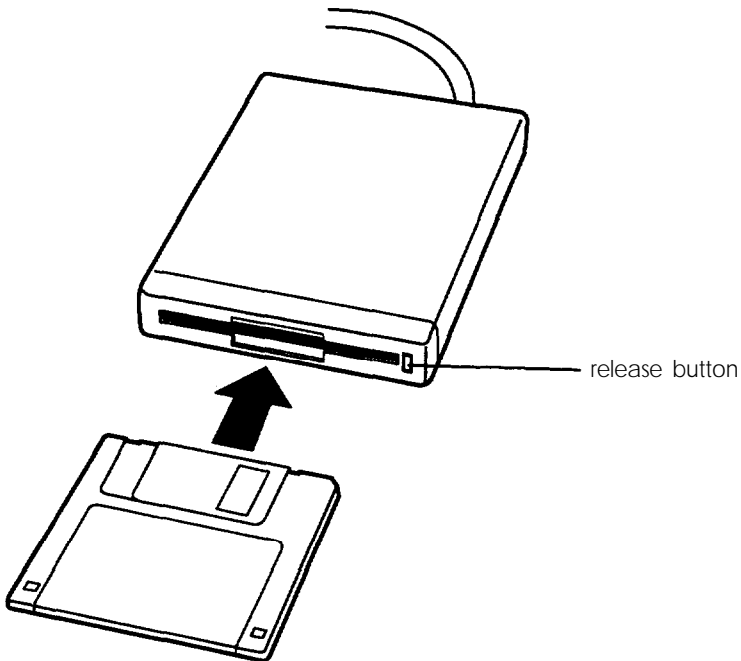
Using Diskettes

Be sure to purchase highquality diskettes to ensure reliability. For the 3.5-inch, 1.44MB, external diskette drive, you **can** use either of the following types of diskettes:

- ❑ 720KB, double-sided, doubledensity (usually labelled 2DD)
- ❑ 1.44MB, double-sided, highdensity (labelled 2HD).

Inserting and Removing Diskettes

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



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

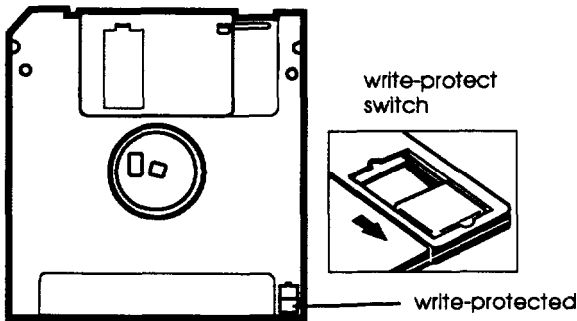
Caution

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 turn off 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 will see an error message.

To write-protect a diskette, turn it over so you are looking at the underside. Slide the switch in the lower right corner toward the outer 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 diskettes. Make backup (working) copies of all diskettes that contain programs, such as your operating system 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.

You'll probably use your hard disk to store the programs and data files you use regularly. Keep backup copies of all these files on diskettes.

You can copy your data in several ways. See your 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 supports one 3.5-inch external 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 MS-DOS copies the data from its memory to the target 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" on page 3-15.)

Using a Hard Disk

The removable hard disk in your computer 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.
- ❑ Never remove the hard disk drive when the computer is on.

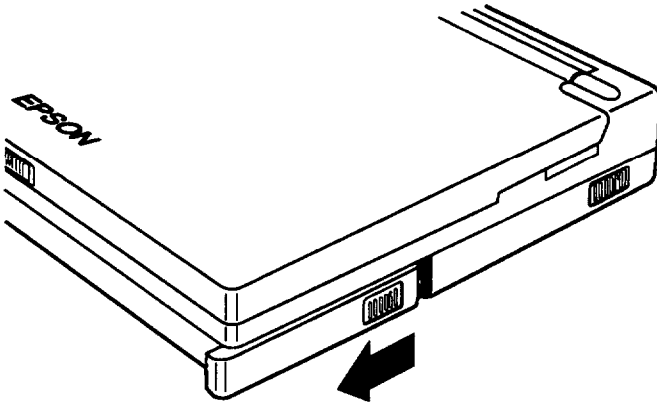
Backing Up the Hard Disk

Although the hard disk is very reliable, be sure to back up 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.

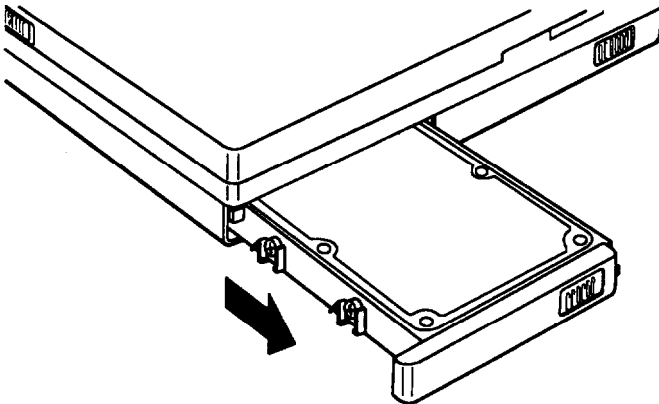
Removing and Insetting the Hard Disk

You can easily remove and replace the hard disk drive in your computer. This is useful for sharing the computer among several people, keeping data confidential, or managing very large programs.

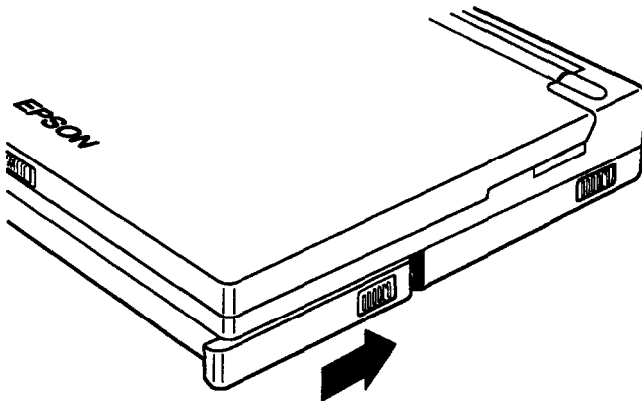
To remove the hard disk drive, slide it to the left as far as it will go. (You'll feel it ease away from the case.)



Then pull the drive straight out of the computer.



To insert the drive, slide it straight into the compartment as far as it will go; then slide it to the right until you feel it snap into place.



Caution

Use only the appropriate Epson hard disk drives. Inserting an incompatible drive could damage your system.

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 2 for instructions.
- ❑ Close the cover or press **Fn** + **Delete** to place the computer in Suspend mode when you are not using it but you want to leave it turned on. (Open the cover or press the spacebar when you are ready to resume.) See “Using the Suspend Mode” in Chapter 4.

Using PC Cards

A PC card is a credit card-sized adapter for your personal computer designed to meet the PCMCIA (Personal Computer Memory Card International Association) version 2.0 universal standard for adding memory, storage, and interface capabilities to portable systems.

Your computer accepts Type I and Type II PC cards such as fax/modem cards, RAM cards, FLASH memory cards, and LAN (local area network) cards.

If you want to use PC cards with your system, be sure to see the PCREADME.TXT file on your Reference diskette. It provides information on installing a PC card driver and updating your CONFIG.SYS file. To access PCREADME.TXT from the DOS prompt, follow these steps:

1. Connect the external diskette drive as described in Chapter 1.
2. Log onto Drive A: and type the following command:

A:TYPE PCREADME.TXT | MORE

You can also use any text editor or word processing program to access this file.

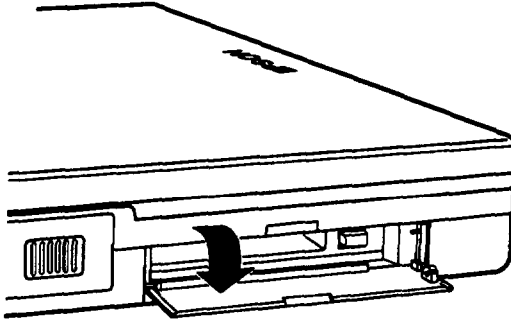
3. Follow the instructions in the file to load the PC card drivers and configure your system for the card.

Depending on the PC card you use, you may have to load additional socket services or card services software before it can work properly. You may also need to format the card before you can use it. See the documentation that came with the card for additional information for your specific card.

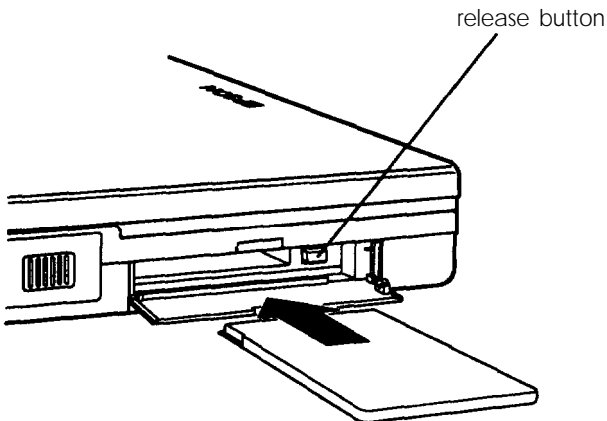
Inserting a PC Card

Follow these steps to insert a Type II PC card into the computer:

1. Open the PCMCIA slot cover on the right side of the computer by pulling down the notch at the top.



2. Insert the card into the slot as far as it will go. (A portion of the card may extend from the slot; this is okay.)

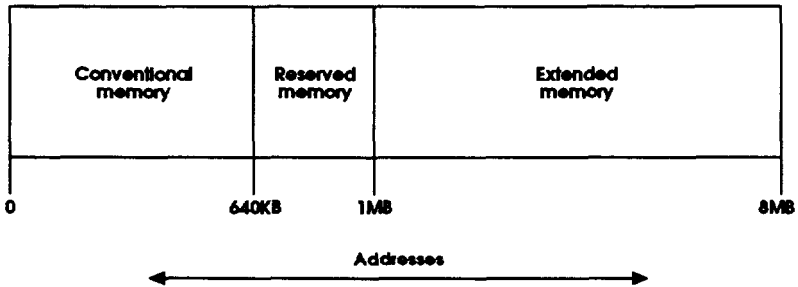


3. When you want to remove the card, press the release button to eject it.

Using Memory

Your computer can use up to 8MB of memory. This section describes how the memory in your computer works. Also be sure to see your operating system 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 1MB. 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 extended 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 1MB. 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 4

Powering the Computer

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

Using the AC Adapter

To conserve the battery, use the AC adapter whenever you have access to an electrical outlet. When the AC adapter is connected, it supplies power to the computer and recharges the battery.

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 B for specifications.

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

Using the Battery

The removable NiCad battery 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 computer. If you use a bright screen display and access the hard disk and diskette drive often, you consume more battery power and shorten the length of the charge.

The computer alerts you by flashing the low battery light when the battery is low. When you have only 1 to 3 minutes of battery power remaining, the system beeps loudly. If you have the AC adapter, you can connect it now and continue using the computer. Otherwise, save your work and exit your program to preserve any data.

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

Note

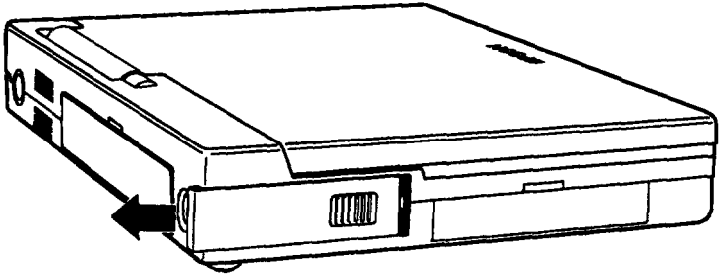
Use only the battery designed for use with the ActionNote (model number A880632).

Replacing the Battery

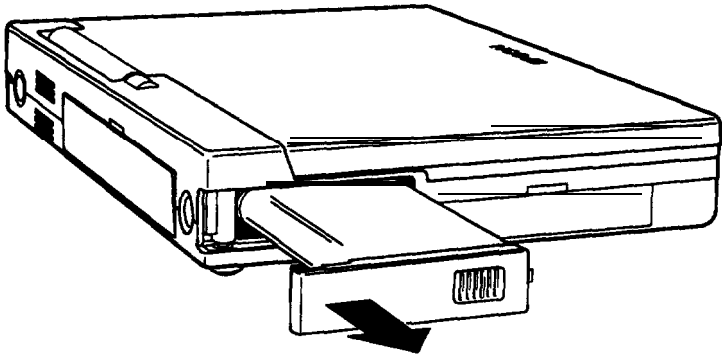
Follow these steps to replace the battery in the computer with a new one:

1. Complete your current activity.
2. Save your data and exit the program you are using.
3. Turn off the computer.

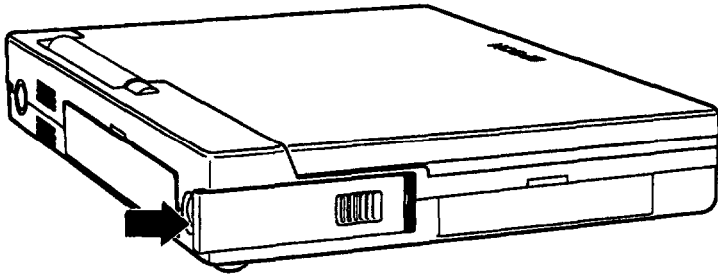
4. If the AC adapter is connected, disconnect it.
5. Turn the computer so that the left side is facing you.
6. Slide the battery to the left as far as it will go. (You'll feel it ease away from the case.)



7. Grasp the edge of the battery and pull it straight out of the computer.



8. Insert the replacement battery into the compartment as far as it will go and slide it to the right until it snaps into place.



Note

When you replace the battery, make sure the new one is fully charged; otherwise you may run out of power unexpectedly.

Recharging the Battery

The battery that comes with your system is rechargeable. You may need to charge the battery before using it for **the first time**, and you must charge it when it runs out of power.

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

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

It takes approximately 1½ hours to charge a completely discharged battery when the computer is off. If you use the system while the battery is recharging, it can take up to 6 hours. If the battery still has some charge left when you start charging, the time will be less.

If you have additional batteries, it is a good idea to keep them fully charged so you can replace the battery in your computer when it runs low. This is especially useful if you are travelling and run the computer only off the battery; an extra battery or two extends the length of time you can power the computer without the AC adapter.

Rechargeable batteries like the one supplied with your ActionNote have a charge “memory.” If you frequently start to recharge the battery before it runs out completely, it starts to “remember” this discharge level. When you use it again, it may stop supplying power at that level.

To reduce the memory effect and extend the life of your battery, you should let it discharge completely whenever possible before recharging it. If you use the computer every day, you should completely discharge the battery at least once a week.

If you find that over time the battery is losing its charge sooner, the life of the battery may be reaching its end. Try letting the battery discharge completely; then recharge it. If this fails, you may need to replace it with a new battery.

Note

When your battery will no longer recharge, 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, and you have approximately 8 to 12 minutes of power left, the low battery light starts to flash. Immediately before the battery runs out, the computer starts beeping. At this point you have only approximately 1 to 3 minutes to save your data. If the battery runs out suddenly, you will lose any data you have not saved.

If you are close to a power source, connect the AC adapter to avoid an interruption in your work.

If you don't have your AC adapter with you, follow these steps:

1. Complete your current activity as quickly as possible.
2. Save your data.
3. Exit the program you are using.
4. Turn off the computer.
5. If you have a spare charged battery, you can install it now. See "Replacing the Battery" on page 4-2.

Caution

Make sure you turn off the computer before replacing a battery. Removing the battery when the computer is turned on causes the computer to restart, and any data not saved to disk is lost.

If you do not have another battery, you need to wait until you have the AC adapter to continue using your computer. Then see "Recharging the Battery" on page 4-4.

Using the Suspend Mode

The Suspend mode provides an efficient way to save battery power. There are three ways to enter Suspend mode:

- ❑ Close the computer cover.
- ❑ Press **+ Fn** + **Delete**. (Press the spacebar to resume.)
- ❑ Set the Power Management options in SETUP.

An easy way to enter Suspend mode is to close the computer's cover. The Suspend light on the computer comes on. When you open the cover, the Suspend light goes out and you can resume activity immediately.

You can also press **Fn** + **Delete** to enter Suspend mode and temporarily stop system activity when you do not need to use your computer for short periods of time. The Suspend light lights up and the screen goes dark. The computer suspends power to its components and devices but continues to supply power to the RAM. (If you are not going to use the computer for a longer time-20 minutes or so-turn it off.) To resume activity, press the spacebar. The computer resumes normal operation at the point at which you suspended it.

If you want to set regular suspend intervals, you can set the Power Management timeout options in SETUP. When you enable these options, the computer automatically enters Suspend mode if you have not used it for the specified period of time. When you are ready to resume activity, press the spacebar.

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 set timeout periods for your system and/or hard disk drive so you don't waste power. For instructions on running SETUP, see chapter 2.

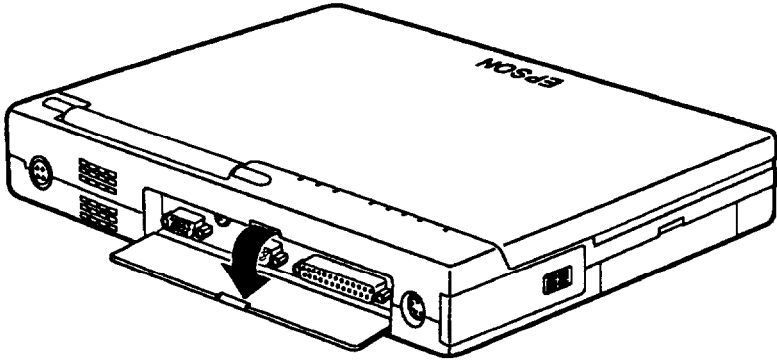
Connecting Optional Devices

This chapter shows you how to connect these optional devices to your computer:

- ❑ External monitor
- ❑ Parallel printer
- ❑ Serial device
- ❑ External keyboard, keypad, mouse, or other pointing device
- ❑ 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. To access any of these ports, open the port cover by pulling down on the notch at the top. The EXT KB port is on the far right, next to the battery.



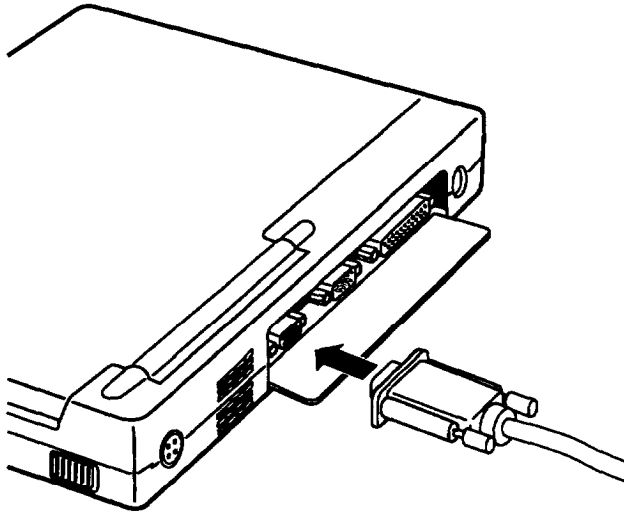
Connecting an External Monitor

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.

Note

An external monitor draws more battery power than the LCD screen. For best results, power your system with the AC adapter when you connect a monitor.

See Chapter 6 for details on using the VGACONF utility, which allows you to enhance the display characteristics of your LCD and/or external monitor.

Connecting a Parallel Printer

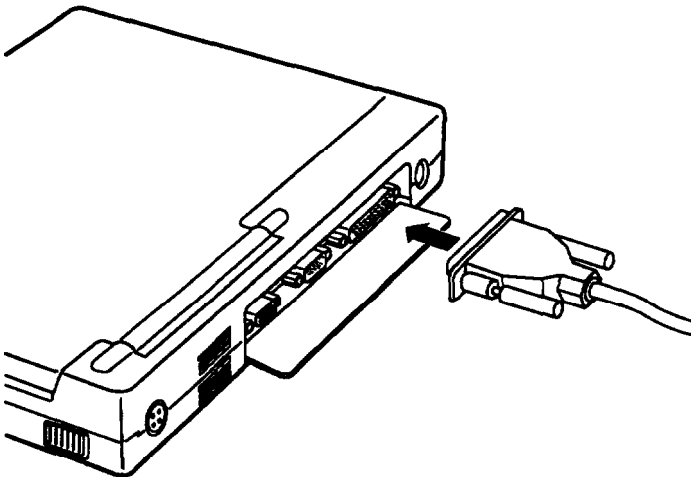
You can use the **PRINTER** port to connect a parallel device, such as a Centronics®-compatible printer. Before connecting a printer, check the manual that came with it to see if you need to change any of its settings.

Note

If you are using an external diskette drive, you'll have to disconnect it before you can connect a printer to this port. You cannot use both devices at the same time.

Follow these steps to connect a parallel printer:

1. Place the printer in a convenient location near your computer.
2. Make sure both the computer and printer are turned off.
3. Disconnect the external diskette drive, if connected.
4. Connect the printer cable to the **PRINTER** port.



5. If the connector has retaining screws, tighten them by hand or with a screwdriver.
6. 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.
7. Connect the printer's power cable to a grounded (earthed) electrical socket.
8. Now run `SETUP` as described in Chapter 2 to set the `Parallel` option to `Ext printer`.

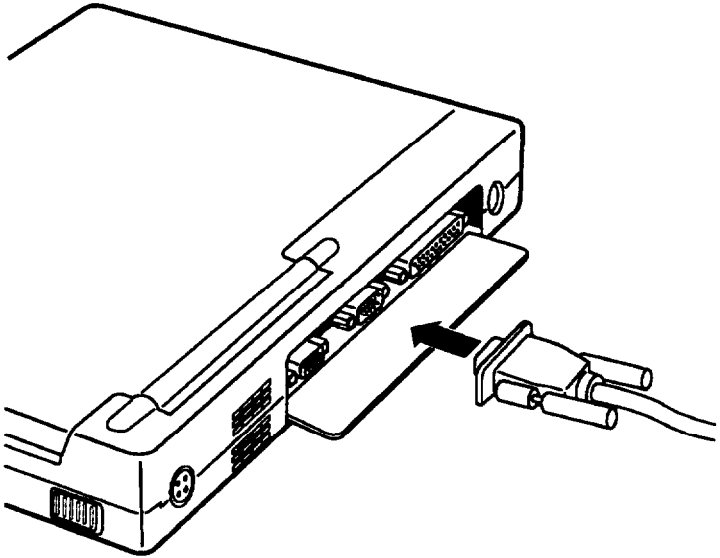
Connecting a Serial Device

You can use the **COM 1** port to connect serial devices such as a serial printer or plotter. You could also connect a modem or mouse.

Follow these steps to connect a serial device:

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

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



3. If the connector has retaining screws, tighten them.
4. Connect the other end of the cable to the serial device.
5. If the serial device has a power cable, connect it 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** port is 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

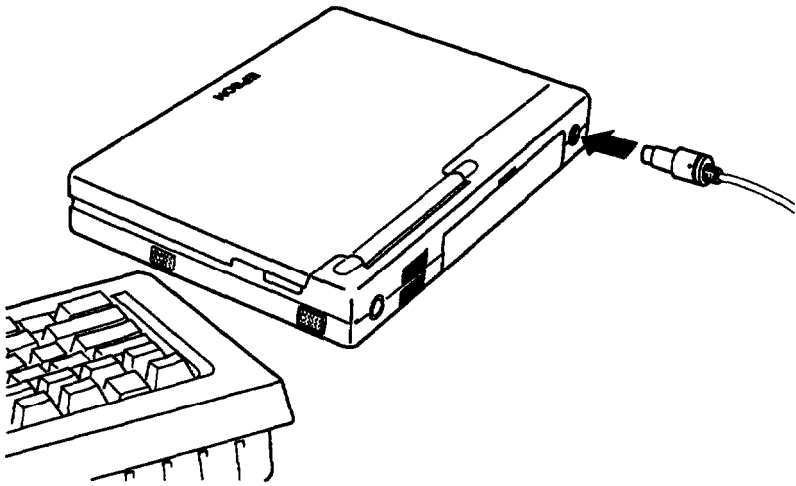
You can use the EXT KB port to connect a variety of PS/2-compatible pointing devices, including an external keyboard or keypad. You can also connect the mouse adapter to this port and then connect a PS/2 mouse or other pointing device. The adapter has two ports, **which allow you to connect** both a pointing device and an external keyboard at the same time. Connect each device as described in the following sections.

Note

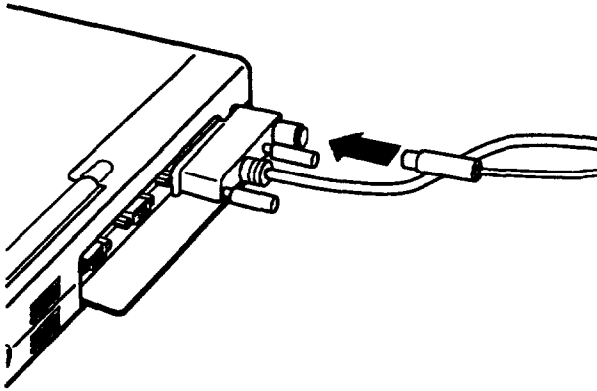
If you are using an external diskette drive, use the 6-pin port on the back of its connector cable to connect a PS/2 device.

Connecting an External Keyboard or Keypad

If you are typing text or entering numbers for extended periods of time, you may want to connect an optional external keyboard or keypad. You connect either of **these** devices directly to the EXT KB port on the computer, as shown below.



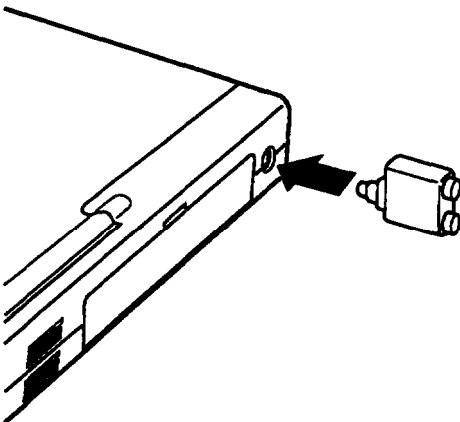
If an external diskette drive is connected to the computer, plug the keyboard connector into the 6-pin port on the back of the drive connector cable, as shown below.



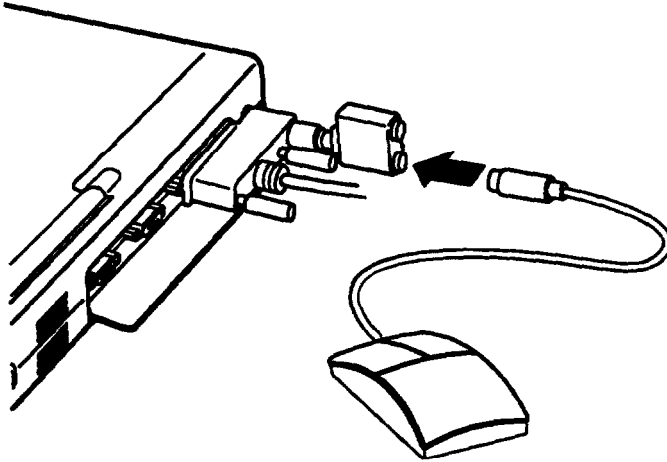
Connecting a Mouse or Other Pointing Device

You can connect a PS/2-type mouse or other pointing device to your computer using **the special adapter** included **with your system**. Follow these steps:

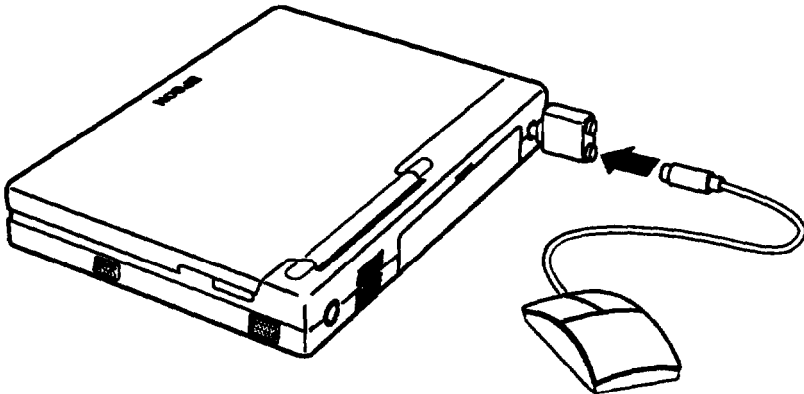
1. Connect the adapter to the EXT **KB** port.



If an external diskette drive is connected to the computer, connect the adapter to the 6-pin port on the back of the drive's connector cable, as shown below.



2. Connect the pointing device plug to the lower connector on the adapter.



Note

You can also connect an external keyboard to the second port on the adapter. However, note that connecting several devices will quickly drain the battery, so you may want to use the AC adapter to power the computer if you connect more than one device.

before you can use the mouse or other pointing device with your applications, you may need to install the special software driver that came with it. See the documentation supplied with **the** device for instructions.

Installing a Memory Module or a Numeric Coprocessor

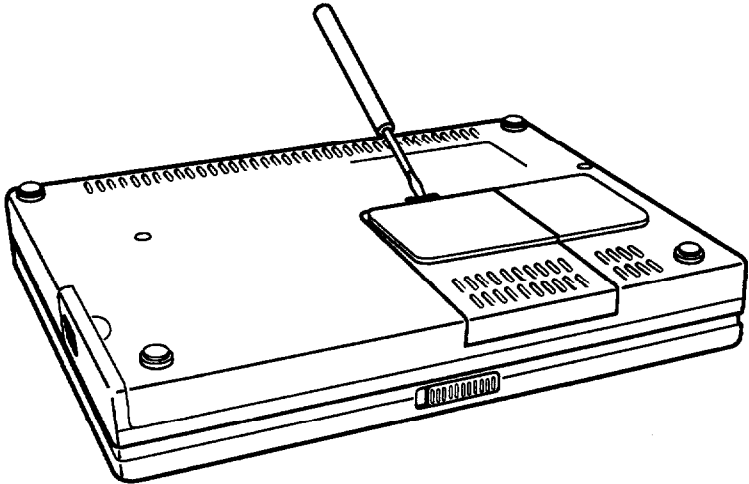
The sections below describe how to add a memory module to your computer and install a numeric coprocessor. To access the sockets for these options, you need to remove the access cover on the bottom of the computer.

Removing the Access Cover

To remove **the** access cover, follow these steps:

1. Make sure the computer is turned off.
2. Disconnect all cables from the ports and connectors **on the** back of the computer.
3. Close the screen and turn the computer upside down with the front facing you.

4. Insert a small flathead screwdriver in the notch on top of the cover to release it from the case. Then lift it off and set it aside in a safe place.



Installing a Memory Module

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

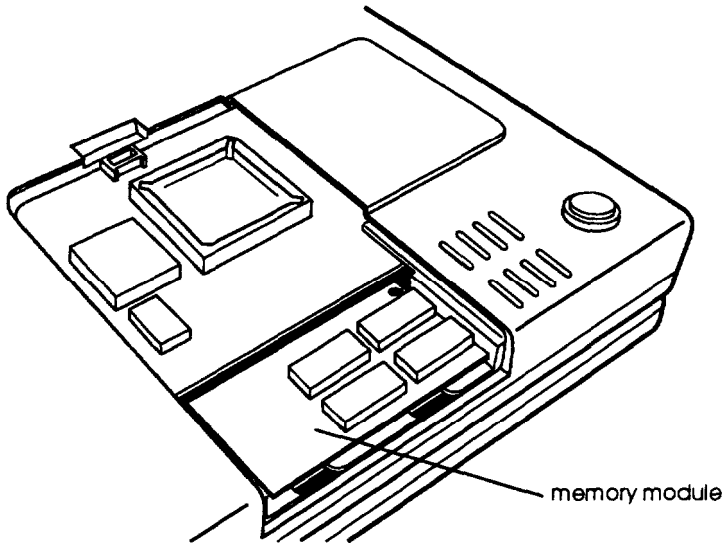
Note

If your system came with a 2MB memory module already installed, and you want to increase the memory to 8MB, you need to remove the 2MB module and replace it with a 6MB module.

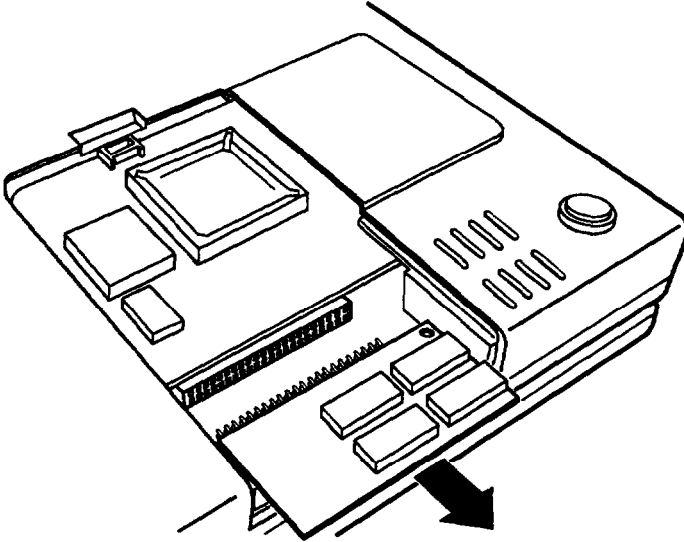
Follow these steps to install a memory module:

1. Remove the access cover as described on page 5-11.
2. If there is no memory module installed, go to step 4.

If a memory module is installed (as shown below) and you need to remove it, go to step 3.

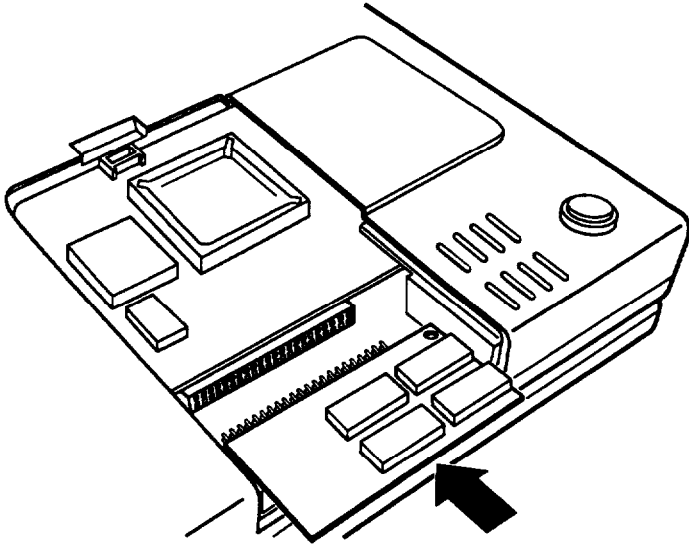


3. Gently disconnect the module from its socket by sliding it toward the front of the computer, as shown below. Then lift the memory module out of the computer and store it safely in case you need to use it again.



4. Lower the new memory module straight down into the computer with the chip side up. Align its connector with the socket on the system board.

5. Carefully slide the module connector straight into the socket, as shown below. The connector pins 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.



6. Replace the access cover as described on page 5-17.

After you reassemble your computer, you need to run the SETUP program to make sure it recognizes the new amount of memory. As soon as you turn on the computer, it will prompt you to run SETUP because of the memory mismatch. See Chapter 2 for instructions.

If you later remove or change the memory module, be sure to run the SETUP program again.

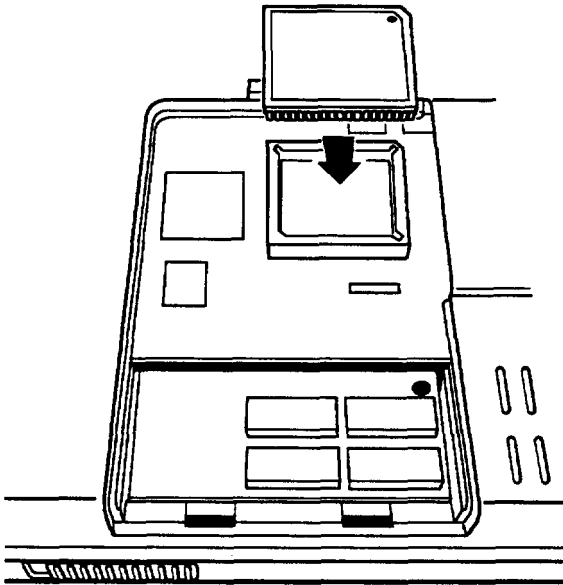
Installing a Numeric Coprocessor

Your computer has a socket for a numeric (math) coprocessor. You can install either a Cyrix Cx387SLC or an Intel 387SX/SL 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 access cover as described on page 5-11.
2. Place the coprocessor onto the socket so that the round indentation indicating pin 1 is in the upper right corner. Then press it down firmly.



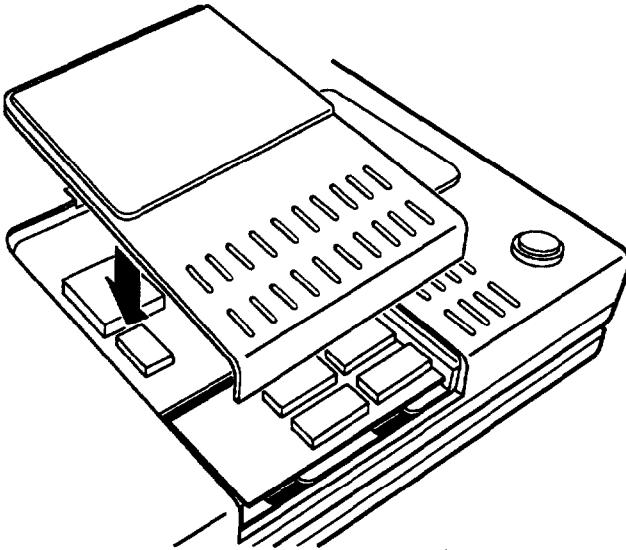
3. Replace the access cover as described in the next section.

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

Replacing the Access Cover

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

1. Turn the computer upside down with the front facing you.
2. Replace the access cover as shown below. Gently press down on it until you feel it snap into place.



3. Turn the computer right side up.
4. Connect any external devices you are using.

Chapter 6

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 64 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 unproved 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 (the external diskette drive).
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 when you load the program. For example, if you named your driver 100X60.SET, you would type the following and press **Enter**:

```
123 100X60
```

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 the external diskette drive.
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 800x600 (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. Insert the Reference diskette into the external diskette drive.
2. Log onto the WordPerfect directory on your hard disk. This directory is normally called WP51.
3. 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

4. Start WordPerfect.
5. To display the Setup menu, press **Shift** + **F1**.
6. Select Display by typing 2.
7. 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.
8. 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.
9. Select the desired resolution.
10. 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 one utility program, VGACONF, which is located in the UTILS directory. This utility allows you to change your system's default graphic configuration.

Note

You may want to copy this program to a directory on your hard disk for convenience; if so, log onto that directory before running the program.

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
```

3. Use **↑**, **↓**, **←**, or **→** to highlight the selection you want and press **Enter**. Then see the appropriate section below.

Display Status

The Display Status option displays the current VGACONF 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 mode
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 disable power saver mode
```

Press any key to return to the main menu.

Select Option

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 **↑**, **↓**, **←**, **→** to highlight the desired setting and press **Esc** to return to the SELECT OPTION menu.

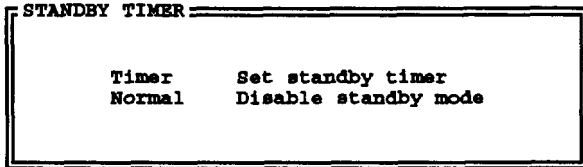
Some options are designed for a specific display mode: CRT, SimulSCAN, or panel. CRT mode refers to a VGA monitor connected to the VIDEO port; SimulSCAN refers to both the LCD screen and a VGA monitor; panel refers to the LCD screen on your computer. The following table shows the display modes available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

VGACONF options and display modes

Option	Display mode
Reverse	SimulSCAN, panel
Bold	Panel
Contrast enhancement	Panel
Expand	SimulSCAN, panel
Vertical position	Panel
Display	CRT, SimulSCAN, panel
Bus width	CRT, SimulSCAN, panel
Inhibit font	CRT, SimulSCAN, panel
Cursor	Panel
Rgb	Panel

Standby Timer

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 you 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 spacebar.

Quit

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 option names listed in the following table. If you enter two or more, separate the options with a space.

VGACONF parameters

Option name	Description
-? or -H	Display the help screen
-S	Display status information
-N	Disable 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 foreground enhancement
EXPAND	Enable expand mode
NOEXPAND	Disable expand mode
CENTER	Center the display on the screen
TOP	Align the display on the top of the screen
BOTTOM	Align the display on the bottom of the screen
PANEL	Switch the display to the LCD
CRT	Switch me display to the CRT (monitor)
SIMUL	Use the LCD and the CRT simultaneously
16BIT	Enable 16-bit operations
NO 16BIT	Force 8-bit operations

VGACONF parameters (continued)

Option name	Description
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

If you encounter a problem while using your computer, refer to this appendix. It provides 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
- ❑ External diskette drive problems
- ❑ Hard disk problems
- ❑ Software problems
- ❑ Printer problems
- ❑ PC card problems
- ❑ Mouse or pointing device problems
- ❑ External keyboard problems
- ❑ Memory module problems

- ❑ Numeric coprocessor problems
- ❑ CMOS battery problems.

If the suggestions here 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 press **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 appendix. 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, follow the steps in this section to find the problem. (Be sure to read Chapter 4 for complete 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 4 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 4.
3. If you have a second battery that is fully charged, replace the one in the computer with the charged one.

If you do not have a spare battery, you need to recharge the one in the computer. If you have the AC adapter with you, connect it to the computer to begin recharging the battery. (The battery light on the AC adapter blinks to indicate it is charging.) You can continue using the computer while the battery is being recharged.

4. If you replace the battery and the computer does not work properly, the new battery may not be fully charged. Use the AC adapter to 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 replace your battery with a new one.

If the computer does not work with the AC adapter, see “AC Adapter Problems,” below.

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.

AC Adapter Problems

If the computer does not work properly when the AC adapter is connected, check the power light on the adapter. 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-006) 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 timeout period for the system in the SETUP program. This turns off the screen automatically after a specified period of time has elapsed with no keyboard input. Press the spacebar to see if this restores the display. (See Chapter 2 for information about the Power Management options.)
3. The computer may just be in Suspend mode. Press the spacebar to resume activity.
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. Press **Fn** + **F5** to toggle between simultaneous display on both screens, the LCD only, or the monitor only.
5. If you are using the VGACONF utility, you may have selected the CRT or Panel setting; check your VGACONF settings. See Chapter 6 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. Press **Fn** + **F5** several times to toggle between simultaneous display on both screens, the LCD only, or the monitor only. Also check your VGACONF settings; see Chapter 6 for details.
4. Remove any diskette from the external diskette drive, 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. The computer may just be suspended. Press the spacebar to resume activity.
3. You may be able to resume activity by 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 but nothing happens, type it again and press **Enter**. If you type it wrong 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 2 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. If you think the external diskette drive may not be connected properly or the computer does not seem to recognize the drive, see “External Diskette Drive Problems” on the following page.
3. Are you using the right type of diskette for your drive? The external 3.5-inch drive can read either 720KB or 1.44MB diskettes.
4. 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.
5. Is the diskette formatted? A new diskette must be formatted before you can store data on it. See your operating system manual for instructions.

6. 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 MS-DOS COPY command to copy one file at a time.

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

External Diskette Drive Problems

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

1. Is the external diskette drive connected properly? Remove any diskette from the drive and turn off the computer. Make sure the connector is inserted firmly into the EXT KB and PRINTER port, and that the retaining screws are tightened to secure the connection. See Chapter 1 for instructions.
2. Are you using the Epson external diskette drive? Other drives may not work with your system.
3. Is your computer set to recognize the external diskette drive? Run SETUP as described in Chapter 2 to make sure the Parallel option is set to 1.44MB, 3.5".
4. 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. The problem may be with the diskette.

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

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 timeout for the hard disk in the SETUP program and it has timed out, the hard disk drive requires about 15 seconds to come back up to speed when you access it again.
3. Make sure you have formatted the hard disk correctly for the operating system you are using. See the instructions in your operating system manual.
4. Make sure the hard disk drive is inserted correctly. See Chapter 3 for instructions on removing and inserting the hard disk drive.
5. 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 drive.
2. Your computer can run at either High speed (33 MHz) or Low 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 3 for instructions.
3. If you have entered an MS-DOS command that you want to stop, there are special key commands 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 lock up the computer making it unresponsive to the keyboard. If your computer does not respond when you type on the 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 solves 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. Be sure to check that the printer has power and is correctly connected to the computer. See Chapter 5 for instructions on connecting a printer. (The printer manual also gives instructions on cable connections.)

If you have a parallel printer connected to the PRINTER port, make sure the Parallel option in SETUP is set to Ext printer.

If you have a serial printer or if you have problems feeding paper, check the printer manual for the correct DIP switch settings. If you are using MS-DOS, 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.

PC Card Problems

If you inserted a PC card in the PC card slot and you cannot access data on the card, follow these steps to solve the problem:

1. Make sure the card is the right type for your system. The ActionNote accepts Type I and Type II cards that conform to PCMCIA version 2.0.
2. Is the PC card inserted properly in the slot? Press the release button to remove the card; then try inserting it again. (Most cards have a label indicating which side goes up.) When the card is inserted correctly, the PC card light goes on. See Chapter 3 for instructions.

3. Is the card formatted? Some PC cards must be formatted before you can use them. See the documentation that came with the card for instructions.
4. Did you install the PC card driver from your Reference diskette? See the file named PCREADME.TXT on your Reference diskette for instructions.
5. Did you install any socket services software or card services software that came with the card? See the documentation included with your card for instructions.
6. If none of these solutions solves your PC card problem, contact the card manufacturer or call the Epson Connection for assistance.

Mouse or Pointing Device Problems

If you installed a mouse or other PS/2 compatible pointing device and it doesn't work properly, try these solutions:

1. Is the mouse or pointing device connected properly? Make sure you connected it to the adapter as described in chapter 5.
2. Did you install any necessary drivers and load them into your computer's memory? See the documentation that came with your device for instructions.
3. Did you run SETUP to disable the built-in trackball? See Chapter 2 for instructions.
4. If you are still having trouble, check the documentation that came with the device for troubleshooting information or contact the manufacturer for assistance.

External Keyboard Problems

1. Make sure the external keyboard is firmly connected to the correct port. You can connect it to the EXT KB port, the keyboard port on the adapter, or the 6-pin connector on the back of the external hard disk drive. See Chapter 5 for instructions.
2. If you think there is something wrong with the keyboard, consult the dealer from whom you purchased it, or call the Epson Connection for assistance.

Memory Module Problems

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

1. See if the SETUP program is displaying the correct amount of memory. See Chapter 2 for instructions.
2. Did you insert the memory module correctly? See “Installing a Memory Module” in Chapter 5.
3. Have you defined the memory properly in your CONFIG.SYS file? See “Using Memory” in Chapter 3 and your operating system 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.

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:

CMOS battery has failed

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

Appendix B

Specifications

This appendix lists the computer's specifications. It also includes the specifications for international power cables.

Main Unit

<i>CPU</i>	486SLC microprocessor; 33 MHz (and simulated 8 MHz) clock speed; 1 MHz in Suspend mode
<i>System memory</i>	2MB of DRAM soldered on main system board, expandable to 4MB or 8MB using a memory module; the first 640KB is conventional memory and 128KB is used for shadow RAM; the rest can be used as extended or expanded memory
<i>ROM BIOS</i>	128KB on a single one-time programmable ROM (includes system BIOS, VGA BIOS, and the SETUP program)
<i>Video RAM</i>	256KB, 80ns video memory on main system board; 256KB x 4 frame buffer
<i>Shadow RAM</i>	Shadowing of system and VGA BIOS, 128KB (at E0000 to FFFFF)
<i>Clock/calendar</i>	Real-time clock, calendar, and CMOS RAM for configuration; backed up by built-in Dallas clock chip (DS 1287)
<i>Numeric coprocessor</i>	Socket for optional Cyrix Cx387SLC or Intel 387SX/SL multifrequency numeric coprocessor

Controllers

<i>Diskette drive</i>	Built-in controller for one external 3.5-inch, 1.44MB diskette drive; supports 1.44MB and 720KB diskette formats
<i>Hard disk</i>	Built-in controller for removable internal hard disk drive
<i>Video</i>	Cirrus GD6410B 16-bit VGA controller fully backward compatible with CGA and EGA; supports standard monochrome LCD with maximum resolution of 640 x 480 with 64 gray scales, and external monitor with resolutions up to 800 x 600 x 16 colors; simultaneous LCD and CRT operation
<i>PCMCIA</i>	Databook [®] DB86082 PCMCIA version 2.0 controller; Type II connector; supports Type I and Type II memory and I/O cards
<i>Speaker</i>	Built-in ISA compatible speaker controller; internal

Interfaces

<i>External VGA</i>	15-pin, D-sub, female connector for external analog VGA or SVGA monitor
<i>Parallel</i>	Centronics-compatible; 25-pin, D-sub, female connector; standard g-bit parallel
<i>Serial</i>	RS-232C, programmable, asynchronous, 9-pin, D-sub, male connector

Pointing device or external keyboard 6-pin, mini-DIN connector for a PS/2-type pointing device or keyboard; keyboard supported directly, pointing device requires adapter

AC adapter DC input port for external AC adapter; 4-pin, mini-DIN connector

Input Devices

Trackball Built-in, two-button trackball

Keyboard 79/80 (US) keys; embedded numeric keypad and **F11** and **F12** keys; inverted T cursor control key layout

Mass Storage

Hard disk drive One removable 2½-inch internal hard disk drive

Diskette drive Optional external, 3.5-inch diskette drive; supports 1.44MB and 720KB diskette formats

Monochrome VGA LCD 640x480 dots x 64 shades of gray, 0.23 nun, 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; contrast ratio 18:1

Power Supply

AC adapter +12VDC (to computer), +16VDC (to battery charger) 2.4A continuous AC adapter with international voltage input, **47/63 Hz**

Battery Removable and rechargeable, internal AE-size NiCad battery pack; 9-cell, 9.6 volt, 1.7AH, 16.3W; minimum **2½ hours** battery life typical

Caution

Use only the ActionNote AC adapter (model number AP-006) and battery (model number A880632).

Physical Dimensions

<i>Height</i>	38 mm (1.5 in.)
<i>Width</i>	252 mm (10.0 in.)
<i>Depth</i>	190 mm (7.6 in.)
<i>Weight (with battery and hard disk drive installed)</i>	1.75 kg (3.85 lb)

Environmental Requirements

Temperature Operating: 5° to 40° C
 (41° to 104° 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
no&e** -35dB @ 1 meter


Altitude Operating: -61 to 3048 m
 (-200 to 10,000 feet)
 Non-operating: -261 to 9,090 m
 (-200 to 30,000 feet)

Caution

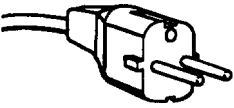
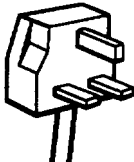
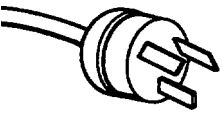

When travelling by airplane, bring your computer into the passenger compartment as carry-on luggage to prevent it from being stored in an unpressurized storage area.

Power Source Requirements

120 Volt power source requirements

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

240 Volt power source requirements

AC plug	Plug type	Reference standards	Power cord
	<p>Europe 240V. 10A to 16A</p>	<p>CEE 7/7 IEC 83 IEC 127 HD 21</p>	<p><HAR> 1.00mm² 300V.10A</p>
	<p>UK 240V. 10A</p>	<p>BS 1362 BS 1363A IEC 83 IEC 127 HD 21 EN 60 320-1 ASTA mark</p>	<p><HAR> 1.00mm² 300V. 10A</p>
	<p>Australia 240V. 10A</p>	<p>ASC112 IEC 127 HD 21</p>	<p><HAR> 1.00mm² 300V. 10A</p>
	<p>North America 240V. 15A</p>	<p>ANSI C73.20 NEMA 6-15-P IEC 83 UL 198.6</p>	<p>UL/CSA Listed Type SJT No. 18/3AWG 300V. 10A</p>

Glossary

387SX/SL

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/SL multifrequency numeric coprocessor.

486SLC

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

AC adapter

The device that converts AC voltage from a wall outlet into the proper DC voltage to power your computer. 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.

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* *Batch file*.

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.

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. For example, the SETUP program is contained in the computer's ROM BIOS.

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 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.

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).

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 a hard disk, a printer, and a PC modem card.

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.

Coprocessor

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

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 use them. 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. Your system can run at 33 MHz (High) or 8 MHz (Low). In Suspend mode, the CPU automatically runs at 1 MHz. Also called clock speed, execution speed, or operating speed.

Cursor

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

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*.

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. Your system supports a 3.5-inch external diskette drive.

Double-density

A type of diskette format. A 3.5-inch, double-density diskette has a capacity of 720KB.

Driver

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

Embedded numeric keypad

See Numeric keypad.

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 computer's keyboard to access alternate key functions for the embedded numeric keypad, the **F11** and **F12** keys, and the Suspend mode.

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.

Frame buffer

The portion of the computer's display memory that holds the contents of a single Screen image. The VGA controller on the ActionNote enables simultaneous dual Scan on the LCD screen and an external monitor.

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*

High-density

A type of diskette format. A 3.5-inch, high-density diskette has a capacity of 1.44MB.

Input/Output (I/O) port

See *Port*.

Integrated circuit

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.

LIM EMS 4.0

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

Main memory

The amount of memory in the computer below 1MB that is available to your operating system and application programs—usually 640KB. Also called base or conventional 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 1,048,576 bytes or 1024KB.

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.

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. Your computer supports PCMCIA Type II modem cards.

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 notebook computer.

Numeric coprocessor

See *Coprocessor*.

Numeric keypad

The embedded numeric keypad in the keyboard, which you can activate by pressing the  key.

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

A way of organizing communications between two pieces of computer equipment, in which the signals that make up 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 1`, the `A :` parameter tells the computer to format the diskette in drive A. See also *Stitch*.

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 MS-DOS must search through to locate a file. For example, the pathname for a file named `CONTRACT.TXT` in the `BUSINESS` subdirectory is `\BUSINESS\CONTRACT.TXT`.

PC card

These credit card-sized products provide a universal expansion capability across PC platforms. PC cards can emulate a storage device such as a hard disk, provide a fax/modem, or serve as a LAN adapter. Your system includes a PCMCIA Version 2.0 PC card slot which accepts Type I or Type II cards (up to 5 mm thick). See also *PCMCIA*.

PCMCIA

Personal Computer Memory Card International Association. This organization sets the technical standard of interchangeability for 68-pin PC cards among a variety of computer and other electronic products. Cards meeting the PCMCIA standard can be exchanged freely among several devices. See also *PC card*.

Text

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 each 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.

ROM

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 designated by a backslash (\). All other directories are subdirectories of the root directory, or of other subdirectories.

RS-232C

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

serial

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

SETUP

The program you run to define the configuration settings and power management options of your computer.

Shadow RAM

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

Subdirectory

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

Suspend mode

The power-saving mode our computer enters after you close the screen, press **Fn** + **Delete** or when 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 or VGACONF utility; if the hard disk or system is not accessed for the specified amount of time, the computer enters Suspend mode.

Utility program

A type of program designed to allow you to change computer settings and perform useful applications

VGA

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

Write

To record data on a disk.

Write-protect

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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