

EPSON[®]

Setup Guide



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

Beim Anschluß des Computers **an die** Netzversorgung **muß sichergestellt** werden, **daß** die Gebäudeinstallation mit einem 16 A **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 manual, 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. **Débrancher** l'ordinateur de toute sortie **murale** avant le nettoyage. **Utiliser un** chiffon humide; ne jamais utiliser **un** nettoyeur liquide ou une bonbonne aerosol.
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 events **dans** le 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 survoltage, 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 **électricien** 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** branches dans le cordon **n'excède** en aucun temps les ampères du cordon de rallonge. La **quantité totale** des **appareils** branches **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 cette manual, 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 note au niveau de sa performance.

Contents

Introduction

Chapter 1 *Setting Up Your System*

1	Choosing a Location	1-2
2	Removing the Protective Card	1-3
3	Connecting a Monitor	1-4
4	Connecting a Printer or Other Device	1-7
	Using the Parallel Port.	1-7
	Using the Serial Ports	1-9
5	Connecting the Keyboard	1-10
6	Connecting the Mouse	1-11
7	Connecting the Power Cord	1-13
8	Turning On the Computer	1-14
	Where To Go Next	1-15

Chapter 2 *Running the SETUP Program*

	Starting the SETUP Program	2-2
	Setting the Date and Time	2-4
	Setting the Diskette Drive(s)	2-4
	Setting the Video Display Type	2-5
	Setting the Self Test Error Level	2-6
	Setting the Cache	2-7
	Setting the Shadow RAM	2-7
	Setting the Password (Security) Options	2-9
	Changing or Deleting a Password	2-10
	Setting the Hard Disk Drive(s)	2-11
	Hard Disk Drive Types	2-12
	Defining Your Own Drive Type	2-14

Checking System Memory 2-15
Setting the Booting Sequence 2-15
Setting the Virus Warning 2-16
Setting the NumLock Boot Status 2-17
Setting the Bus Control Options 2-17
Setting the I/O Control Options 2-19
Setting the Cache/DRAM Control Options 2-21
Saving Your Settings and Exiting SETUP 2-22
Post-SETUP Procedures 2-23

Appendix A Using Memory

Types of Memory A-1

Introduction

This manual explains how to set up your Epson® computer. Chapter 1 provides simple instructions for setting up your system and connecting peripheral devices such as the monitor, mouse, and printer.

Chapter 2 describes how to run the SETUP program to define your computer's configuration. Do this before you use your computer. If you change the configuration later, you will need to run it again.

After you set up your system and run SETUP, you can install your operating system and software. (For general installation guidelines, see the Read This First card that came with your computer.)

For information on using system memory, see Appendix A.

Note

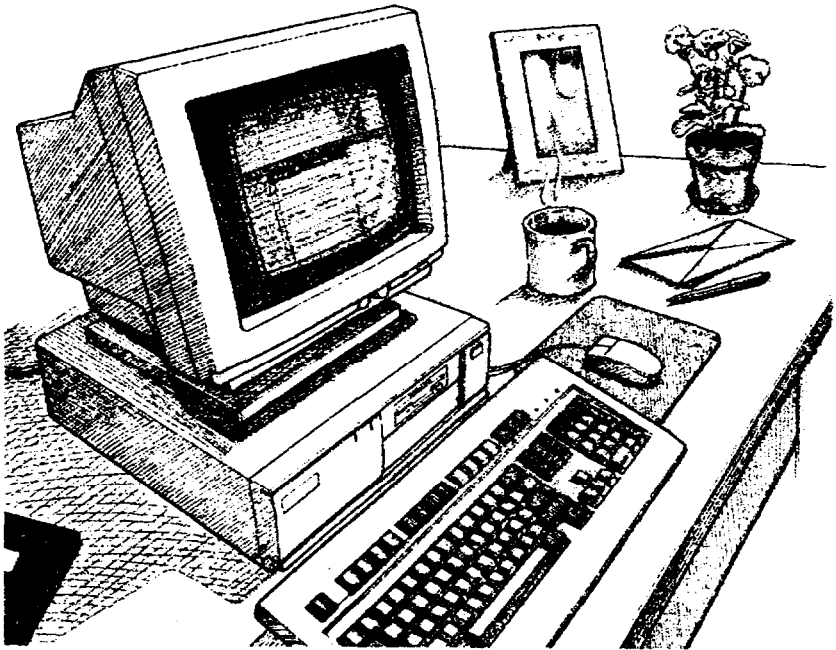
If your computer has already been configured, you don't need to run SETUP or install any software. Just set it up as described in Chapter 1 and turn it on.

For complete information about using your computer, see the *User's Guide*.

Chapter 1

Setting Up Your System

To set up your computer, follow the eight steps in this chapter. You may want to open this manual's back cover foldout so you can refer to the illustrations identifying the different parts.



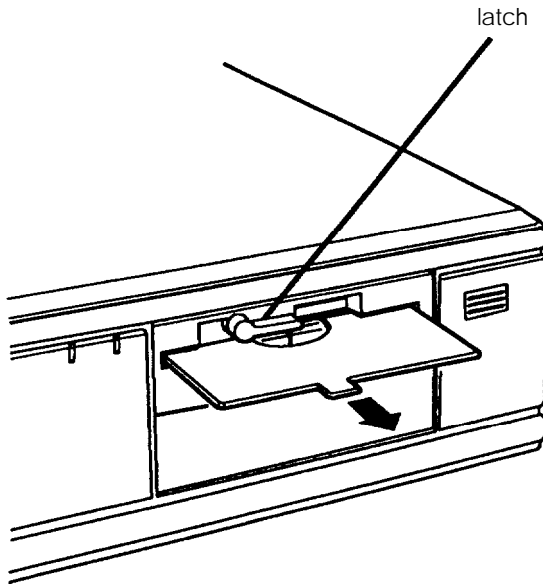
1 *Choosing a Location*

When selecting a place to set up your system, choose a safe, convenient location that provides the following:

- ❑ A flat, hard surface. Surfaces like beds and carpets attract static electricity, which can erase data on your disks, damage the computer's circuitry, and prevent proper ventilation.
- ❑ Good air circulation. Leave several inches of space around the computer so air can move freely.
- ❑ Moderate environmental conditions. Select a cool, dry area and protect your computer from extremes in temperature, humidity, dust, and smoke. Avoid direct sunlight or other sources of heat.
- ❑ No electromagnetic interference. Do not place your system too close to any electrical device, such as a telephone or television, which generates an electromagnetic field.
- ❑ Appropriate power source. Connect all your equipment with the appropriate power cords for the power source in your area. If you are operating the computer in a country other than the one in which you purchased it, see "Power Source Requirements" in Appendix A of the *User's Guide* for a list of the cords you should use.

2 *Removing the Protective Card*

If you have a 5.25-inch diskette drive, there is a protective card in the diskette slot. To remove it, lift the latch up to release the card; then pull it out.



Caution

Never turn on your computer with a protective card in the diskette slot. You could damage the diskette drive.

If you have a second 5.25-inch diskette drive, be sure to remove the card from it also.

Save the protective card. If you transport your computer later, insert the card to protect the drive's read/write heads during shipping.

3 *Connecting a Monitor*

The way you connect your monitor to the computer depends on the type of monitor you have. If you have a VGA monitor (or a multifrequency monitor with an analog connector), you can connect it to the computer's built-in VGA port as described below. If you have any other type of monitor (or if you want to install a display adapter card to control your monitor), see Chapter 2 of the *User's Guide*.

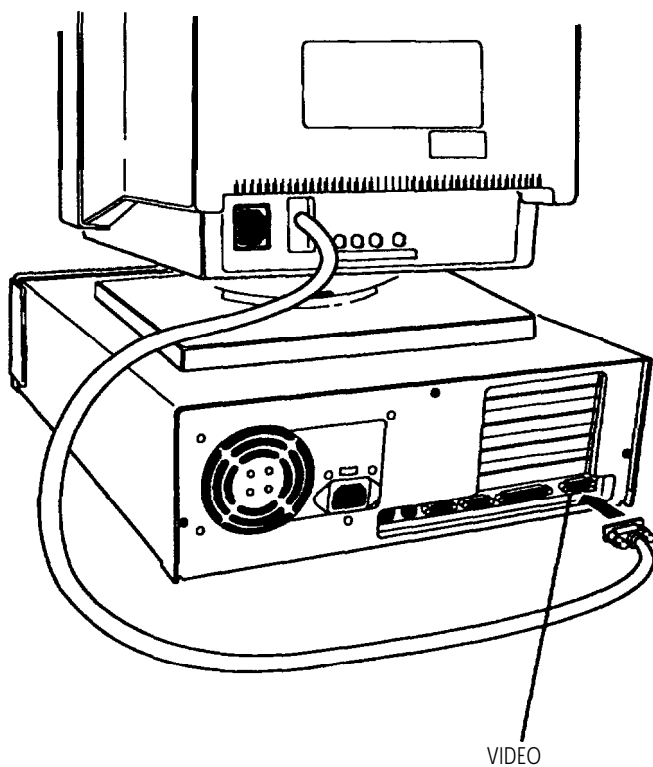
Note

If a manual was provided with your monitor, refer to those instructions along with the ones below.

Follow these steps to connect your VGA monitor to the built-in VGA port on the computer:

1. Place your monitor on top of or near the computer. Turn the monitor and computer around so the backs are facing you.
2. There should be two cables provided with your monitor: the monitor cable (to connect it to the computer) and the power cable (to connect it to a power source). On most monitors, the monitor cable is permanently attached to the monitor, as shown in the illustration on the next page. If your monitor does not have an attached cable, connect the cable to it now. (See your monitor manual for instructions.)

3. Examine the connector on the monitor cable and line it up with the **VIDEO** port on the computer. Then insert the connector into the port, as shown below.

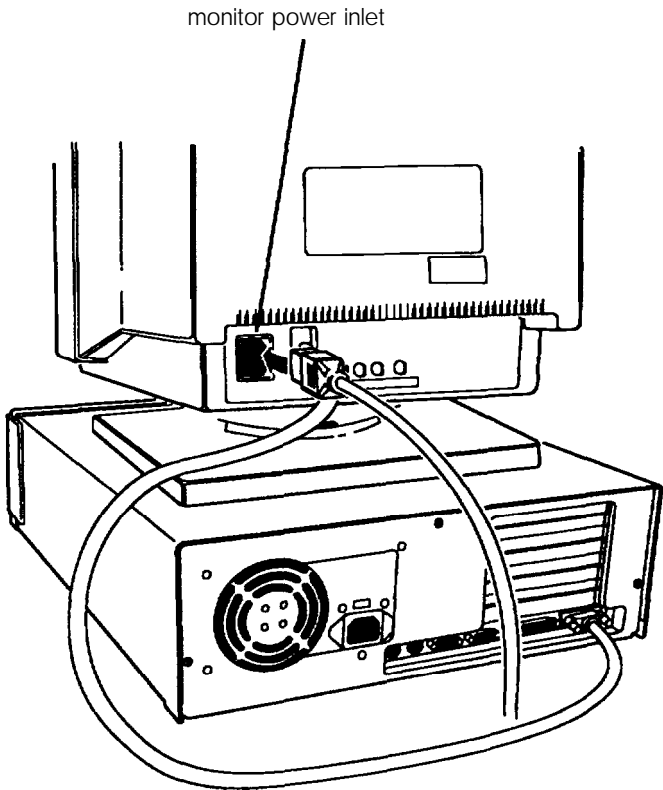


Caution

To avoid damaging the connector, be careful not to bend the pins when inserting it.

4. If the connector has retaining screws, tighten them.

5. Plug the monitor power cord into the monitor's power inlet, as shown below.



6. Plug the other end of the power cord into an appropriate grounded (earthed) electrical outlet.

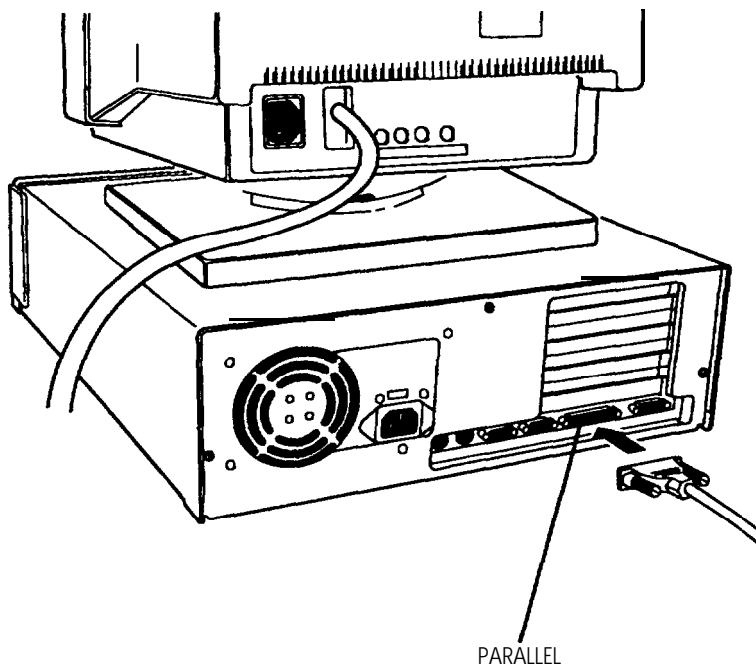
4 *Connecting a Printer or Other Device*

Your computer has one parallel and two serial ports. To connect a printer or other peripheral device, follow the instructions below.

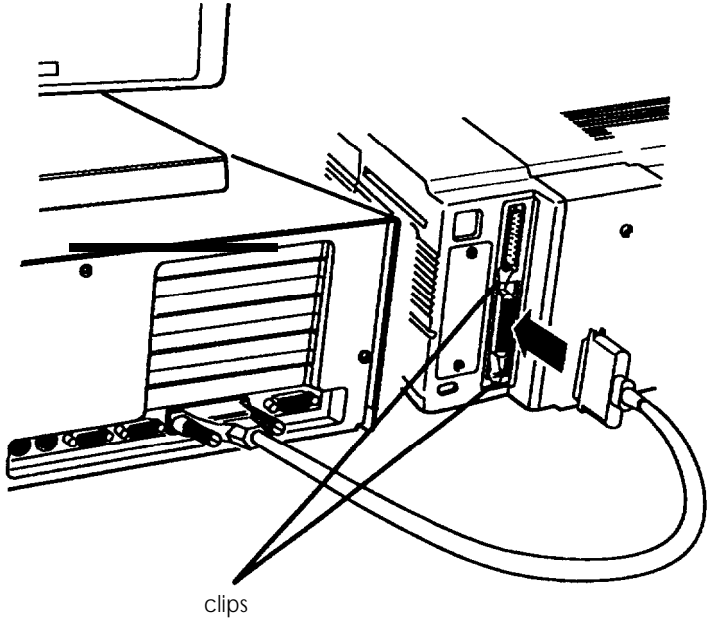
Using the Parallel Port

Follow these steps to connect a parallel printer to your computer:

1. Place the printer next to the computer so that the backs are facing you.
2. Align the connector end of the printer cable with the **PARALLEL** port, as shown below, and plug it in. If the connector has retaining screws, tighten them.



3. Connect the other end of the cable to the printer as shown below. To secure the cable, squeeze the clips at each side of the printer port and push them into place.

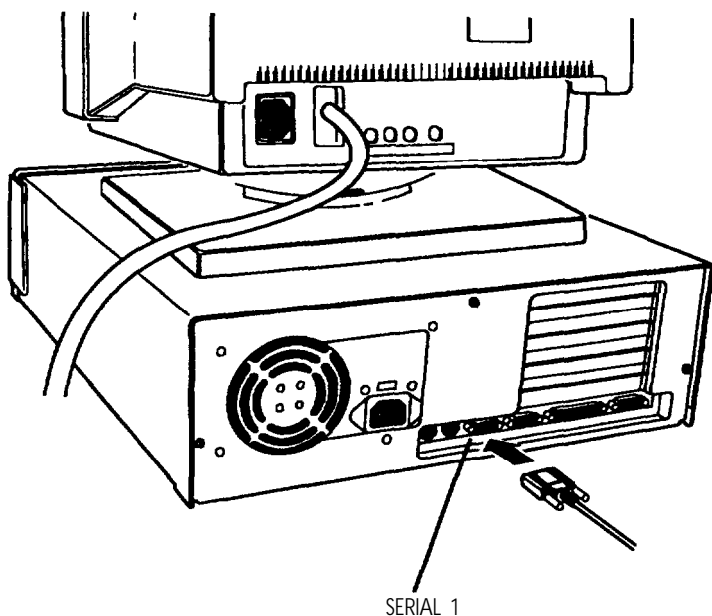


4. Plug the printer's power cord into an appropriate grounded (earthed) electrical outlet.

Using the Serial Ports

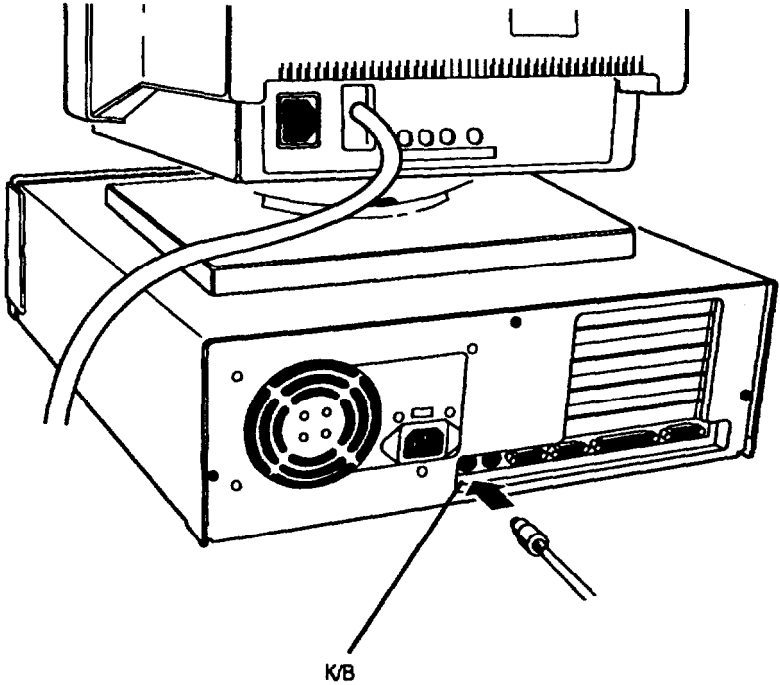
If you have a printer, a modem, or other peripheral device with a serial interface, you can connect it to one of the serial (RS-232C) ports on the back of the computer. These ports use a DB-9P connector, so be sure you have a compatible cable.

To connect a serial device, insert the connector into one of the ports, marked **SERIAL 1** and **SERIAL 2**. If you are connecting only one serial device, use the **SERIAL 1** port, as shown below.



5 Connecting the Keyboard

To connect the keyboard, hold the cable connector so the arrow on the connector faces up. Insert it into the port marked K/B, as shown below.



Caution

Although the connectors and ports for the keyboard and mouse are physically identical, they cannot be used interchangeably. Be sure to plug the keyboard connector into the keyboard (K/B) port.

You can change the angle of the keyboard by adjusting the legs on the bottom. Turn it over and flip each leg upward until it locks into place. It is important to select the best angle so you will prevent wrist fatigue. (You may even want to purchase a wrist pad--sold at computer stores--for further comfort.)

To lower the keyboard, press each leg back into its slot.

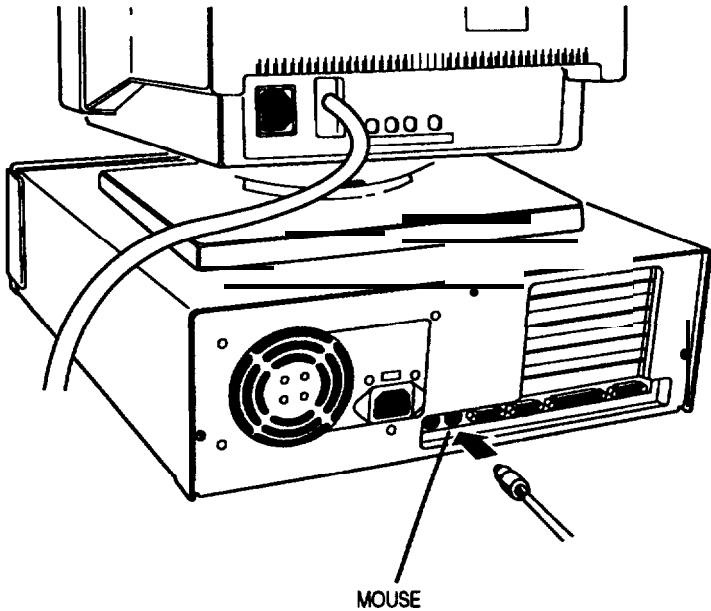
6 *Connecting the Mouse*

Your computer has an auxiliary port for an IBM® PS/2™ compatible mouse that uses a round, miniature DIN (6-pin) connector. If your mouse has this type of connector, you can connect it to the computer's built-in port.

Note

If your mouse requires a different interface port, you can connect it to the built-in serial port or install an option card that provides the interface. When your system loads the mouse driver, it will properly identify the location of your mouse.

To connect a mouse to the built-in mouse port, plug the connector into the port marked MOUSE, as shown below.



Caution

Although the connectors and ports for the mouse and keyboard are physically identical, they cannot be used interchangeably. Be sure to plug the mouse connector into the **MOUSE** port.

If your system has not already been configured, you may need to install a mouse driver. See your mouse manual for instructions.

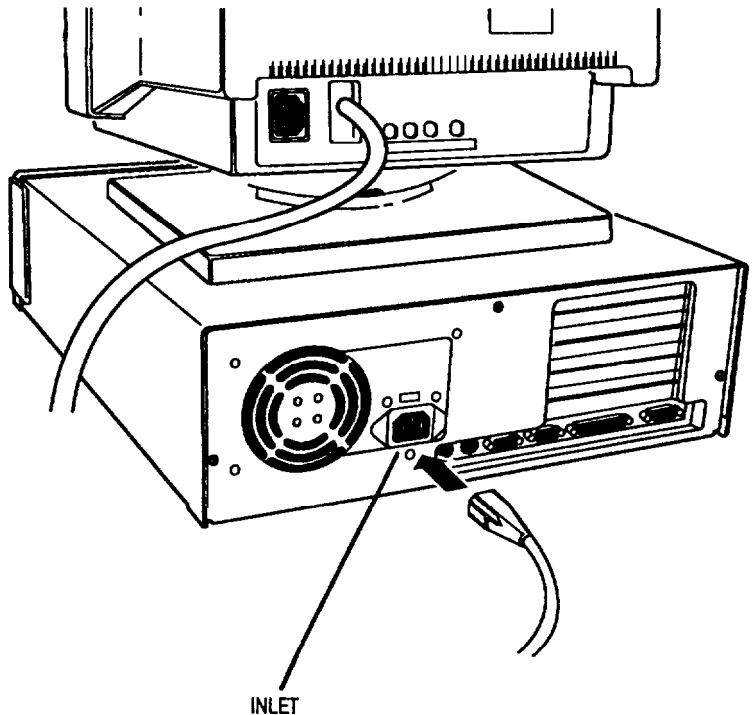
7 Connecting the Power Cord

Follow these steps to connect the power cord:

1. Plug the power cord into the AC power INLET on the back panel, as shown below.

WARNING

To avoid an electric shock, be sure to plug the cord into the computer before plugging it into the wall outlet.

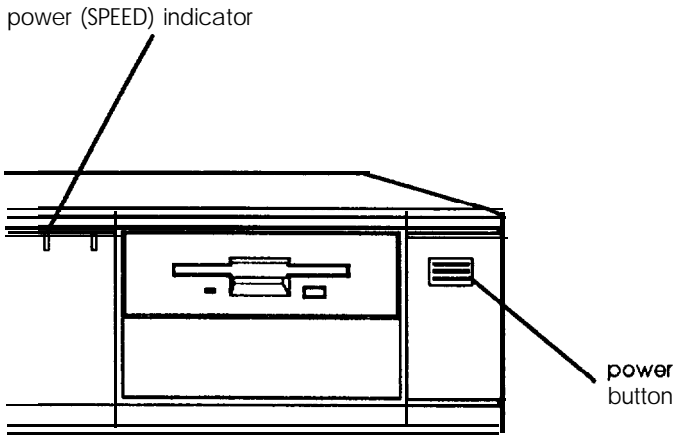


2. Plug the other end of the power cord into an appropriate grounded (earthed) electrical outlet.

8 Turning On the Computer

After you set up your system, you're ready to turn on the power. Follow these steps:

1. Turn your computer around so the front panel faces you and place your other system devices (monitor, printer, etc.) in a convenient arrangement.
2. Turn on the monitor, printer, and any other devices connected to the computer.
3. To turn on the computer, press the power button located on the right side of the front panel.



The power indicator on the left side of the front panel lights up. After a few seconds, the screen displays a count of the system memory, and then the computer performs its power-on diagnostics. This *is* a series of checks the computer runs each time you turn it on to make sure everything is working correctly.

4. If necessary, use the controls on your monitor to adjust the brightness and contrast until characters on the screen are clear and at a comfortable level of intensity. If your monitor has horizontal and vertical hold controls, you may need to use them to stabilize the display.
5. The screen displays the following prompt:

Press Del to start SETUP

Do not press any key yet; you just want to make sure the computer is working. This prompt appears every time you turn on your computer so you can run SETUP if necessary. After a few seconds, the prompt disappears.

If there is no operating system installed on your computer, you then see an error message. Ignore the message for now; once you install the operating system, you will not see this message. If MS-DOS[®] is already installed, you may see the command prompt (C : \) or the menu screen of a program such as Windows, if it has been configured to do this.

Where To Go Next

If your system is preconfigured, the only thing you need to do now is install any additional software and VGA device drivers you want to use. (See your application program manuals for instructions on installing software.) If you are using Microsoft Windows[®], be sure to install the appropriate VGA driver(s) for your monitor. See the *VGA Utilities Guide* for instructions. Then see Chapter 1 of the *User's Guide* for important information about operating your computer.

If your system is not preconfigured, follow the instructions in Chapter 2 to run the SETUP program. Guidelines at the end of Chapter 2 tell you what to do next.

Chapter 2

Running the SETUP Program

The first time you use your computer, you need to run the SETUP program to define how your system is set up. You may need to run it again later if you change your configuration.

The SETUP program is stored in the computer's read-only memory (ROM), so you can run it any time you turn on or reset your computer. SETUP lets you verify or change the following:

- Current date and time
- Type of diskette drive(s) installed
- Type of video display adapter you are using
- Self test error level
- Cache
- Shadow RAM and additional extended memory usage
- Password feature
- Type of hard disk drive(s) installed
- System memory
- System booting sequence
- virus warning
- NumLock** setting for system startup
- Bus control options
- I/O control 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 reboot the computer, it checks the settings, and if it discovers a difference between the information in the CMOS RAM and its actual hardware configuration, it prompts you to run SETUP. You see a message such as the following:

**FLOPPY DISK TYPE IS SET INCORRECTLY OR
DRIVE ERROR**

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

Press **F1** to continue or **Del** to start **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 **Del** to start **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 the computer and try again.

When you press **Delete**, you'll see the first SETUP screen.

Note

If you are using a monochrome monitor and 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
Alt F1	Displays a help screen describing some of the keys you can use with the program
F1	Displays a help screen describing the option currently selected
F2	Changes screen colors; if you have a color monitor, pressing this key changes the display from color to monochrome or monochrome to color
F10	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
↵ or 5 (on numeric keypad)	Moves the cursor to the next option window
Pg Up	Displays the Options Page
Pg Dn	Displays the Status 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. 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 - keys to modify the date or tune. You can also type numbers into the fields that accept numbers. Change the tune using a 24-hour clock. For example, 5 pm. would be 17.

Setting the Diskette Drive(s)

Your system probably came with one diskette drive installed and you may have another drive of a different size or capacity. The SETUP menu offers five possible selections for your diskette drives (A and B):

- 360KB, 5.25-inch
- 1.2MB, 5.25-inch
- 720KB, 3.5-inch
- 1.44MB, 3.5-inch
- None.

Check the settings for both drives and correct them if necessary. (If you have only one diskette drive, select None for drive B.)

Setting the Video Display Type

The Video option lets you define the type of adapter you are using for your primary display. If you connected your monitor to the computer's built-in VGA port, select EGA/VGA. If you installed an optional video card, follow the guidelines in the table below to select the correct adapter type.

Video display type options

Select	If
EGA/VGA	You connected your monitor to the built-in VGA port or you installed a VGA or enhanced graphics adapter (EGA) card
CGA40	You installed an optional color graphics adapter that is set to 40-column CGA mode
CGA80	You installed a color graphics adapter (CGA) or a multi-mode graphics adapter (MGA) attached to a color monitor; be sure to set the color/mono switch on the MGA card to color
MONO	You installed a monochrome display adapter (MDA), an MGA, or a Hercules® MGA attached to a monochrome monitor; be sure to set the color/mono switch on the MGA card to mono

. Default setting

For a composite color monitor, such as a color television with a video input, try selecting *CGA 80*. If the monitor's resolution is poor, run *SETUP* again and select *CGA 40*.

If you have two display adapters of different types, select the setting for the one you want to be your primary display adapter. The other one is your secondary adapter.

If you installed an EGA display adapter card, or another type of card that you want to be the primary display adapter, you must set jumper J6 on the main system board to position 2-3 to disable the built-in VGA interface.

If you install one type of display adapter card and then change the adapter (from VGA to CGA or vice-versa), you also may need to set jumper J5. If you have two types of cards, set the jumper to match the adapter controlling your primary display. See Chapter 2 in the User's Guide for instructions on changing jumper settings and the manual that came with your monitor for additional information.

Setting the Self Test Error Level

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

If your computer is running without a keyboard or 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	It
All Errors*	You want your system to stop booting if it encounters any errors during the self test
No Errors	You don't want your system to stop booting, even if it encounters errors during the self test
All But Keyboard	You want your system to stop booting if it encounters any error except a keyboard error during self test
All But Diskette	You want your system to stop booting if it encounters any error except a diskette drive error during self test
All But Diskette/ Keyboard	You want your system to stop booting if it encounters any error except either a diskette drive error or a keyboard error during self test

Default setting

Setting the Cache

Your computer comes with an 8KB internal memory cache built into the microprocessor. The SETUP program allows you to disable or enable the internal cache, as shown in the following table.

Cache options

select	If
internal Cache	You want to use your system's internal cache
Disabled	You do not want to use the internal cache

It is best to leave the cache enabled so your system performs most efficiently.

Setting the Shadow RAM

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

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 an option card (such as a SCSI card) that locates its RAM in one of these areas.

The Shadow options let you choose what to place in the shadow RAM area.

Shadow RAM options

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

Default setting

If you want to use any but the default settings for the system or video shadow RAM, you must change the Video and System cacheable settings on the Status page in addition to changing the Shadow RAM option here. Use the following table to set your Shadow RAM feature.

Valid shadowing options

Options page	Status-page	
Shadow option	Video cacheable option	system cacheable option
Disabled	Disabled	Disabled
System only	Disabled	Enabled
Video only	Enabled	Disabled
System & video	Enabled	Enabled

See page 2-21 for more information on setting the Video and System cacheable options.

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. The menu at the bottom of the screen now contains the following prompt:

<Enter> to Set/Change Password

3. Press .
4. You'll see the following prompt in a window at the center of the screen:

Enter Password:

5. 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.

6. As you exit the SETUP program, make sure you 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 **Disabledoption**.

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 select the type of hard disk drive(s) installed in your computer. If you have two hard disk drives, the first one is C and the second one is D. Be sure to choose the correct setting for both drives.

Follow these guidelines:

- If your system does not have a hard disk, select **None** for drives C and D. If you have only one hard disk drive, select **None** for drive D.
- If your computer came with an Epson 80MB hard disk drive (or if you installed this drive yourself), select number **24** for drive C.
- If your computer came with an Epson 120MB hard disk drive (or if you installed this drive yourself), select number **39** for drive C.
- If your computer came with an Epson 240MB hard disk drive (or if you installed this drive yourself), select number **34** for drive C.
- If you have installed another type of hard disk drive, you need to select the drive type number that matches your drive. See “Hard Disk Drive Types” below.

Note

It is a good idea to check the drive type number on your disk drive before entering the type number, just to make sure it is correct.

Hard Disk Drive Types

The following table lists the types of standard hard disk drives you can use. Check this table and the documentation supplied with your hard disk to find the correct type number for your drive. If none of the types listed matches your drive, see "Defining Your Own Drive Type" on page 2-14.

Hard disk drive types

Type no.	Size* (In MB)	Cylinders (CYL)	Heads (HDS)	Sectors (SEC)	Precomp zone	Landing	Drive name/ manufacturer
1	10	306	4	17	128	305	
2	20	615	4	17	300	615	ST-225, ST-4026, WD-93024
3	30	615	6	17	300	615	ST-138At
4	62	940	8	17	512	940	
5	46	940	6	17	512	940	
6	20	615	4	17	norm	615	CP-3024, ST-125, ST-125A, ST-325A
7	30	462	8	17	256	511	
8	30	733	5	17	none	733	ST-4038
9	112	900	15	17	none	901	
10	20	820	3	17	none	820	
11	35	855	5	17	none	855	
12	49	855	7	17	none	855	
13	20	306	8	17	128	319	
14	42	733	7	17	none	733	
15							- reserved -
16	20	612	4	17	0	663	
17	40	977	5	17	300	977	CDC 94205-51, CP-3044 †, CP-2044 †, 7040 †, 8051A †
18	56	977	7	17	none	977	
19	59	1024	7	17	512	1023	CP-2064
20	30	733	5	17	300	732	MK-133FA
21	42	733	7	17	300	732	MK-134FA, ST-157A †
22	30	733	5	17	300	733	
23	10	306	4	17	0	336	

Hard disk drive types (continued)

Type no.	Size* (in MB)	Cylinders (CYL)	Heads (HDS)	Sectors (SEC)	Precomp	Landing zone	Drive name/ manufacturer
24	81	903	4	46	none	902	CP-30084 †
25	100	776	8	33	none	775	CP-3104
26							- reserved -
27	40	698	7	17	300	732	
28	40	976	5	17	488	977	
29							- reserved -
30							- reserved -
31	42	732	7	17	300	732	
32	42	1023	5	17	none	1023	
33	116	901	5	53	none	900	LPS120AT †
34	234	723	13	51	none	722	LPS240AT †
35	124	934	16	17	none	933	MK2124FC
36							-reserved-
37	202	683	16	38	none	682	CP-3204F
38	81	548	8	38	none	547	CP-2084
39	115	761	8	39	none	760	CP-30104
40	81	980	10	17	none	979	7080A, MK2024FC
41	84	1022	5	34	none	1022	CDC 94216-106 (ESD)
42	89	1022	5	36	none	1022	CDC 94216-106
43	68	1024	8	17	512	1023	1325, 3085, LAN64, XT1085, NDR1085
44	137	828	10	34	none	828	MK-156F
45	42	1024	5	17	512	1023	
46	40	615	8	17	128	618	
47							-resewed-
48							- user defined -
49							- user defined -

* Actual size when formatted may be slightly different than the size listed on the drive label

† Hard disk drive supported in translate mode

‡ Epson drives

Defining Your Own Drive Type

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

1. With the cursor on the drive you are defining, press **[←]** until you come to drive type 48 or 49.
2. Press **[→]** to move the cursor into the parameter fields.
3. Type in the appropriate values from the table below 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 when you run the HDSIT program)

Press I-1) 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 4MB 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 first screen displays the total memory available and the amount of memory contained in each of the following:

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

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 checks drive A 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 NumLock Boot Status

The **NumLock Boot Status** option allows you to select the **initial state** of the num lock function when you turn on or reset your system. When num lock is off, the keypad controls cursor movement. If num lock is on, the keypad types numbers. You can also change the num lock function by pressing the  key. An indicator light on the keyboard shows when this function is turned on.

You can select **On** or **Off** for the **NumLock Boot Status** option; the default setting is on

Setting the Bus Control Options

The Bus Control options determine how your system handles data processing. Your system default settings have been selected to provide the most efficient operation; however, you may want to change certain settings to optimize the performance of your configuration.

The following table lists the possible optional settings.

Bus control options

Bus control option	Setting	Description
ISA Command Delay	Normal*	Allows your system to run at its fastest speed
	Extended	Provides a delay to correct timing problems you may have when your system contains a slower option card
ISA Wait State	Normal*	Uses 0 wait states, providing the fastest processing
	Extended	Provides a wait state for when you are accessing slower option cards or diskette drives
I/O Recovery Time	Enabled	Provides compatibility with slower memory, for instance, with some slower LAN cards
	Disabled*	Allows your system to access memory at its fastest speed
Extended ALE	Enabled	Works with the I/O recovery time to provide compatibility with slower memory
	Disabled*	Allows your system to access memory at its fastest speed
Decouple Refresh	Enabled	DRAM operation continues during ISA bus refresh
	Disables	DRAM operation is stopped during ISA bus refresh; this system uses a fast ISA bus so you'll want to keep this option disabled

- Default setting

Setting the I/O Control Options

The I/O control options let you change the settings for the following built-in interface ports:

- Parallel
- serial1
- serial2
- Hard disk drive controller (IDE)
- Diskette drive controller (FDC).

You may need to change these settings if you install an interface on an option card. The following table lists the possible settings.

I/O control options

I/O control option	Setting	Description
COM1 Select	Enabled*	Enables the COM 1 serial port
	Disabled	Disables the COM 1 serial part
COM2 Select	Enabled*	Enables the COM2 serial part
	Disabled	Disables the COM2 serial part
Parallel Port Address	03BCH	Sets the parallel port address to 03BCH
	0378H*	Sets the parallel port address to 0378H
	0278H	Sets the parallel port address to 0278H
	Disabled	Disables the parallel port

I/O control options (continued)

I/O control option	Setting	Description
IDE Select	Enabled	Uses the Internal hard disk controller
	Disabled	Disables the internal hard disk controller
FDC Select	Enabled*	Uses the internal diskette drive controller
	Disabled	Disables the internal diskette drive controller

- Default setting

Note

If you want Serial Port 2 to be the primary port, you must disable COM1 and enable COM2 here.

Setting the Cache/DRAM Control Options

Your system can use some of its reserved memory as extended memory and still allow shadowing of both the system and video BIOS. Depending on the options you select, you can make 0, 256, or 384KB of additional extended memory available.

Three Cache/DRAM Control Options on the Status page of the SETUP program work together with the Shadow option on the Options page to determine what shadowing, if any, is enabled for your system. These options also control how much extra extended memory you have available.

The following table identifies the available options and the effect they have on your system's extended memory.

Cache/DRAM control options

256/384 relocate setting	Shadowing	Increase In extended memory
Disable	Enabled or Disabled	0KB
Enable	Enable	256KB
Enable	Disable	384KB

See page 2-8 for information on using the Shadow RAM feature.

The **DRAM Timing** option is also available through the Cache/DRAM control options. The default for this option is Fast. Keep this option set to Fast to maximize your system's data retrieval performance.

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 when your computer is rebooting 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 manuals to install the software on your computer.

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 manuals for instructions.

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

If you are going to install Microsoft Windows, be sure to also install the Windows VGA driver(s) as appropriate for your monitor. See the *VGA Utilities Guide* for instructions.

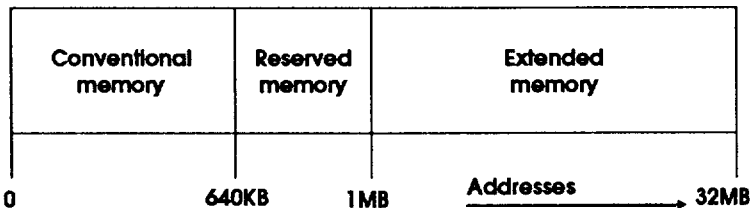
Appendix A

Using Memory

Your computer comes with 4MB of memory, and you may have installed additional memory. This appendix describes how the memory in your computer works and gives guidelines for using the appropriate memory manager program to control your memory.

Types of Memory

A computer's memory is divided into three types: conventional, reserved, and extended. The diagram below 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 (also called base memory) is memory that the operating system 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 addressable memory in the range 640KB to 1MB. Normally, a video card or option card must provide the physical RAM for these addresses. The system can enhance its performance by using 128KB of this extra memory as shadow RAM. Some of the remaining memory may be available; see Appendix A of the User's Guide for information on how your computer uses this memory.

Extended memory is memory with addresses in the range 1MB to the maximum system memory, and can be 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, protected mode MS-DOS applications.

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. This type of memory allows some MS-DOS applications to get around the 640KB limitation. You control expanded memory with a memory manager (such as EMM386.EXE), which enables the computer to use your extended memory as expanded memory.

For more information about your system's memory, see the "System Memory Map" in Appendix A of the User's Guide. For instructions on using your memory manager, see the documentation that came with it.

Note

Microsoft Windows comes with its own memory manager; be sure to install it if you use Windows and your system is not preconfigured. (See your Windows documentation for instructions.)

Index

A

- AC power inlet, 1-13
- Addresses, 2-19, A-1-2
- Air circulation, 1-2
- ALE, extended, 2-18
- Analog connector, 1-4
- Application programs, 1-15, 2-15-16, 2-23, A-2
- Auxiliary port, 1-11

B

- Base memory, 2-15, A-1
- Battery, 2-2
- BIOS, 2-7-8, 2-21
- Booting sequence, system, 2-1, 2-15-16
- Booting system, 2-6, 2-15-16, see also Turning on computer
- Boot sector, 2-16
- Built-in port, see Port
- Bus control options, setting, 2-1, 2-17-18

C

- Cable,
 - keyboard, 1-10
 - modem, 1-9
 - monitor, 1-4-5
 - mouse, 1-11-12
 - power, see Power cord(s)
 - printer, 1-7-8
 - serial device, 1-9
- Cache/DRAM control options, setting, 2-21
- Cache, setting, 2-1, 2-7
- Cards(s),
 - display adapter, 1-4, 2-1, 2-5-6, A-2
 - option, 1-11, 2-7, 2-18, 2-19, A-2
 - protective, 1-3
 - video, 1-4, 2-1, 2-5-6, A-2

- CGA (color graphics adapter), 2-5-6
- Changing password, 2-9-10
- Checking system memory, 2-15
- Choosing location, 1-2
- Clock, real-time, 2-4
- CMOS RAM, 2-2
- Color monitor, 2-3, 2-5-6
- Color television, 2-5
- COM1 and COM2 , 2-19-20
- Command prompt, 1-15
- Composite color monitor, 2-5
- Configuration, Intro-1, 2-1-2, 2-17, 2-22
- Connecting,
 - keyboard, 1-10-11
 - modem, 1-9
 - monitor, 1-4-6
 - mouse, 1-11-12
 - power cord(s), 1-2, 1-4, 1-6, 1-8, 1-13
 - printer, 1-7-9
 - serial device, 1-9
- Connectors,
 - analog, 1-4
 - keyboard, 1-10, 1-12
 - monitor, 1-5
 - mouse, 1-10, 1-12
 - printer, 1-7
 - serial device, 1-9
 - video, 1-5
- Controllers, disk drive, 2-19-20
- Conventional memory, A-1
- Cursor, 2-3, 2-17

D

- Date, setting, 2-1, 2-4
- DB-9P connector, 1-9
- Default settings, SETUP program,
 - booting sequence, 2-15
 - bus control, 2-17-18
 - cache, 2-7
 - I/O control, 2-19-20
 - num lock, 2-17
 - password, 2-9
 - security, 2-9
 - self test error level, 2-6
 - shadow RAM, 2-8
 - video display type, 2-5
- Defining drive type, see Diskette drive type(s) or Hard disk drive type(s)
- Delay, ISA command, 2-18
- Deleting password, 2-10
- Diagnostics, power-on, 1-14
- Disk drive controllers, 2-19-20
- Diskette boot sector, 2-16
- Diskette drive,
 - booting sequence, 2-15-16
 - controller, 2-19-20
 - protective card, 1-3
 - self test error level, 2-6
 - setting, 2-4
 - slower, 2-18
 - type(s), 2-1, 2-4
- Display adapter, 1-4, 2-1, 2-5-6, A-2
- DRAM, 2-18, 2-21
- Driver(s),
 - mouse, 1-11-12
 - VGA, 1-15, 2-23
- Drives, see Diskette drive or Hard disk drive

E

- EGA (enhanced graphics adapter), 2-5
- Electromagnetic interference, 1-2
- EMM386.EXE, A-2

- Environmental conditions, 1-2
- Error level, self test, 2-1, 2-6
- Error messages, 1-15, 2-2, 2-22
- Exiting SETUP, 2-3, 2-10, 2-22
- Expanded memory, 2-15, A-2
- Extended memory, 2-1, 2-15, 2-21, A-1-2

F

- FDC, 2-19-20
- FORMAT command, 2-16

H

- Hard disk drive,
 - booting sequence, 2-15-16
 - boot sector, 2-16
 - caching programs, A-2
 - controller, 2-19-20
 - defining your own drive type, 2-14
 - Epson hard disk drives, 2-11 setting, 2-11-14
 - type(s), 2-1, 2-11-14
 - type number, 2-11-13
- Heads, read/write, 1-3
- Help screen, SETUP, 2-3
- Hercules MGA, 2-5
- Highlight bar, 2-3
- HIMEM.SYS, A-2

I

- IDE, 2-19-20
- Indicator, power, 1-14
- Inlet, AC power, 1-13
- Installing operating system and software, Intro-1, 1-15, 2-22-23
- Interface, see Port
- Interference, electromagnetic, 1-2
- Internal cache, 2-7
- Internal drive controllers, 2-20
- I/O control options, setting, 2-1, 2-19-20
- I/O recovery time, 2-18

J

Jumper settings, 2-5-6

K

Keyboard,

- adjusting angle, 1-11
- cable, 1-10
- connecting, 1-10-11
- legs, 1-11
- num lock, 2-1, 2-17
- port, 1-10,1-12
- self test error level, 2-6
- SETUP function keys, 2-3

Keypad, 2-17

Keys, SETUP function, 2-3

L

LAN cards, 2-18

Leaving SETUP program, 2-22

LIM EMS, 2-15

Location, choosing, 1-2

M

Manager, memory, A-13

Map, memory, A-3

MDA (monochrome display adapter), 2-5

Memory,

- addresses, 2-19, A-1-2
- base, 2-15, A-1
- cache, 2-1, 2-7, 2-21
- CMOS RAM, 2-2
- conventional, A-1
- count, 1-14
- expanded, 2-15, A-2
- extended, 2-1, 2-15, 2-21, A-1-2
- LIM EMS, 2-15
- manager, A-1-3
- map, A-3
- RAM, 2-7-8, 2-15, A-2
- relocate setting, 2-21
- reserved, 2-15, 2-21, A-1-2
- ROM, 2-1, 2-7

Memory,

- shadow RAM, 2-1, 2-7-8, 2-21, A-2
- system, Intro-1, 1-14, 2-7-8, 2-15, 2-21, A-1-3

types, A-1-3

Messages, error, 1-15, 2-2, 2-6, 2-22

MGA (multi-mode graphics adapter), 2-5

Modem, connecting, 1-9

Monitor,

- brightness, 1-15
- cables, 1-4-6
- CGA, 2-5-6
- color, 2-3, 2-5-6
- connecting, 1-4-6
- contrast, 1-15
- EGA, 2-5
- horizontal and vertical hold, 1-15
- monochrome, 2-3, 2-5
- multifrequency, 1-4
- port, VGA, 1-4-5, 2-5
- power cord, 1-4, 1-6
- screen colors, SETUP, 2-3
- VGA, 1-4-6, 2-5-6

Monochrome monitor, 2-3, 2-5

Mouse, 1-11-12

MS-DOS, 1-15, 2-15-16, A-2

Multifrequency monitor, 1-4

N

Num lock, 2-1, 2-17

O

Operating system,

- booting sequence, 2-15-16
- command prompt, 1-15
- installing, Intro-1, 1-15, 2-16, 2-22-23

loading, 2-2, 2-15-16

Option cards, 1-11, 2-7, 2-18, 2-19, A-2

Options page, 2-3, 2-8, 2-21

OS/2, A-2

P

Parallel port, 1-7-8, 2-19

Password, 2-1, 2-9-10

Port,

addresses, parallel 2-19

built-in VGA, 1-4-5, 2-5

keyboard, 1-10, 1-12

monitor, 1-4-5, 2-5

mouse, 1-11-12

parallel, 1-7-8, 2-19

primary, serial, 2-20

serial, 1-9, 2-19-20

VGA, built-in, 1-4-5, 2-5

VIDEO, 1-5

Post-SETUP procedures, 2-22-23

Power,

button, 1-14

cord(s), 1-2, 1-4, 1-6, 1-8, 1-13

indicator, 1-14

inlet, 1-6, 1-13

source, 1-2, 1-4

Power-on diagnostics, 1-14

Preconfigured system, Intro-1, 1-15

Primary display adapter, 2-5-6

Primary serial port, 2-20

Printer,

connecting, 1-7-9

parallel, 1-7-8, 2-19

serial, 1-9, 2-19-20

Programs, application, 1-15, 2-16,

A-2

Prompt, SETUP, 2-2

Protected mode, A-2

Protective card, 1-3

R

RAM (random access memory),

2-7-8, 2-15, A-2

Read This First card, Intro-1

Read /write heads, 1-3

Real-time clock, 2-4

Rebooting computer, 2-2, 2-10, 2-22

Refresh, decouple, 2-18

Removing protective card, 1-3

Reserved memory, 2-15, 2-21,

A-1-2

Resetting computer, 2-1-2, 2-17

Resolution, 2-5

ROM (read only memory), 2-1, 2-7

RS-232C, 1-9

S

Saving SETUP settings, 2-10, 2-22

Screen, see **Monitor**

SCSI card, 2-7

Secondary display adapter, 2-5

Security options, setting, 2-9-10

Self test, 2-2, 2-6, see also **Power-on diagnostics**

Self test error level, setting, 2-1, 2-6

Serial,

COM1 and COM2, 2-19-20

device, connecting, 1-9

ports, 1-9, 2-19-20

Setting up system, Intro-1, 1-1-15

Setup Access password, 2-9

SETUP program,

base memory, 2-15

booting sequence, system, 2-1,
2-15-16

bus control options, 2-1, 2-17-18

cache, 2-1, 2-7, 2-21

clock, real-time, 2-4

controllers, disk drive, 2-19-20

date, 2-1, 2-4

default settings, see **Default**

settings, **SETUP program**

disk drive controllers, 2-19-20

diskette drive type(s), 2-1, 2-4

display adapter, 2-1, 2-5-6

error level, self test, 2-1, 2-6

error messages, 2-2, 2-22

exiting, 2-3, 2-10, 2-22

expanded memory, 2-15

extended memory, 2-1, 2-15, 2-21

function keys, 2-3

- SETUP program,**
 - hard disk drive type(s), 2-1, 2-11-14
 - help screen, 2-3
 - internal cache, 2-7
 - internal drive controllers, 2-20
 - I/O control options, 2-1, 2-19-20
 - keys, function, 2-3
 - leaving the program, 2-22
 - memory, 2-1-2, 2-7-8, 2-15, 2-21
 - num lock, 2-1, 2-17
 - options page, 2-3, 2-8, 2-21
 - parallel port, 2-19
 - password, 2-1, 2-9-10
 - post-SETUP procedures, 2-22-23
 - prompt, 1-15, 2-2
 - RAM, 2-7-8, 2-15
 - real-time clock, 2-4
 - ROM, 2-1, 2-7
 - saving settings, 2-10, 2-22
 - screen, 2-3
 - security options, 2-9-10
 - self test error level, 2-1, 2-6
 - serial ports, 2-19-20
 - shadow RAM, 2-1, 2-7-8, 2-21
 - starting the program, 1-15, 2-2-3
 - status page, 2-3, 2-8, 2-21
 - system booting sequence, 2-1, 2-15-16
 - time, 2-1, 2-4
 - video display adapter, 2-1, 2-5-6
 - virus warning, 2-1, 2-16
- Shadow RAM, 2-1, 2-7-8, 2-21, A-2**
- SMARTDRV, A-2**
- Software, Intro-1, 1-15, 2-16, 2-22-23, A-2**
- SPEED indicator, 1-14**
- Status page, 2-3, 2-8, 2-21**
- Surface for computer, 1-2**
- System,**
 - Access password, 2-9-10
 - booting sequence, 2-1, 2-15-16
 - BIOS, 2-7-8, 2-21
 - cacheable option, 2-8
- System,**
 - memory, Intro-1, 1-14, 2-1-2, 2-7-8, 2-15, 2-21, A-1-3
 - memory map, A-3
 - preconfigured, Intro-1, 1-15
 - setting up, Intro-1, 1-1-15
 - shadow RAM, 2-7-8, 2-21
 - virus warning, 2-16
- T**
- Time, setting, 2-1, 2-4**
- Translate mode, 2-13**
- Transporting computer, 1-3**
- Turning on computer, 1-3, 1-14-15, 2-2, 2-17**
- Type, hard disk drive, 2-11-13**
- V**
- VDISK, A-2**
- VGA (video graphics array),**
 - display adapter, 1-4, 2-5-6
 - drivers, 1-15, 2-23
 - monitor, 1-4-6, 2-5-6
 - port, built-in, 1-4-5, 2-5
- Video,**
 - BIOS, 2-7-8, 2-21
 - cacheable option, 2-8
 - cards, 1-4, 2-1, 2-5-6, A-2
 - display type, setting, 2-5-6
 - monitor, see Monitor
 - port, 1-5
 - shadow RAM, 2-7-8, 2-21
- Virus warning, setting, 2-1, 2-16**
- W**
- Wait state, ISA, 2-18**
- Windows, 1-15, 2-23, A-2-3**

