COMPAQ LTE Lite 4/25C
COMPAQ LTE Lite/25C
COMPAQ LTE Lite/25E
Personal Computers

User's Guide

COMPAQ

System Information Record

COMPAQ LTE Lite
Family of Personal Computers

This card is for recording information helpful to your Authorized COMPAQ Reseller should you ever need to have your computer serviced. Please fill out this card and keep it for future reference.

Date Purchased _____

Authorized Reseller _____

Serial Number (on back of the computer) _____

Model _____ Amount of Memory _____

Serial Numbers of Options*:

Option _____

Serial Number _____

Option _____

Serial Number _____

Option _____

Serial Number _____

Option _____

Serial Number _____

Option _____

Serial Number _____

*Modem, Memory Expansion Boards, etc.

DOCUMENTATION SURVEY

Please help us provide quality documentation by completing and returning this form.

1. Overall rating of the documentation:

   ____Excellent ____Satisfactory ____Fair ____Poor

2. Does the documentation contain all the information you need? _____

   If not, what information is missing? _____

   _____

3. Were you able to set up and operate the computer using the documentation? _____

   If not, why? _____

4. Are there enough illustrations? _____

5. How would you rate the information in the *User's Guide*?

   ___Too technical ___Just right ___Not technical enough

   Explain: _____

6. What part of the *User's Guide* do you use the most?

   _____

7. How would you rate the information in the *EZ Help Online Library*?

   ____Too detailed ____Just right ____Not enough detail

   Explain: _____

8. Is the *EZ Help Online Library* easy to use? _____

   If not, explain _____

9. Which will you use most:

   ___*User's Guide* (hard copy) ___*EZ Help Online Library*?

10. Additional Comments: _____

    _____

(Optional)

Name _____

Company _____

Address _____

Tape

Please do not staple

Tape
[P]

Fold here

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 400 HOUSTON, TX

POSTAGE WILL BE PAID BY ADDRESSEE

COMPAQ COMPUTER CORPORATION
ATTN: PC Marketing Comm. 120710
P O BOX 692000
HOUSTON TX 77269-9976

NOTICE

The information in this guide is subject to change without notice.

COMPAQ COMPUTER CORPORATION SHALL NOT BE LIABLE FOR TECHNICAL OR EDITORIAL ERRORS OR OMISSIONS CONTAINED HEREIN; NOR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE FURNISHING, PERFORMANCE, OR USE OF THIS MATERIAL.

USER'S GUIDE

COMPAQ LTE Lite 4/25C, COMPAQ LTE Lite/25C, and COMPAQ LTE Lite/25E

Personal Computers

First Edition (November 1992)
Part Number 142363-001

Compaq Computer Corporation

FEDERAL COMMUNICATIONS COMMISSION NOTICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Compaq Computer Corporation may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods to maintain compliance with FCC Rules and Regulations.

CANADIAN NOTICE

This equipment does not exceed the Class B limits for radiated emissions as described in the Radio Interference Regulations of the Canadian Department of Communications.

AVIS CANADIEN

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numeriques de la Classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

GERMAN NOTICE

The COMPAQ Series 2810 Family of Personal Computers, when combined with the Enhanced Keyboard or Enhanced II Keyboard from Compaq, Video Graphics Color Monitor, Video Graphics Monochrome Monitor, COMPAQ 1024 Color Monitor, Reduced Emissions Video Graphics Color Monitor, or QVision Family of Color Monitors, meet the requirements of ZH 1/618 (German Safety Regulations for Display Work Places in the Office Sector). The installation guides included with the monitors provide configuration information.

HINWEIS

Hiermit wird bescheinigt, daß die Compaq 2810 Serie in Übereinstimmung mit den Bestimmungen der BMPT-AmtsblVfg 243/1991 funk-entstört ist. Der vorschriftsmäßige Betrieb mancher Geräte (z.B. Meßsender) kann allerdings gewissen Einschränkungen unterliegen. Beachten Sie deshalb die Hinweise in der Bedienungsanleitung.

Dem Bundesamt für Zulassungen in der Telekommunikation wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf die Einhaltung der Bestimmungen eingeräumt.

JAPANESE NOTICE

この装置は、第二種情報装置（住宅地域又はその隣接した地域において使用されるべき情報装置）で住宅地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会(VCCI)基準に適合しております。
しかし、本装置をラジオ、テレビジョン受信機に近接してご使用になると、受信障害の原因となることがあります。
取扱説明書に従って正しい取り扱いをして下さい。

AIRLINE TRAVEL

Use of electronic equipment aboard commercial aircraft is at the discretion of the airline.

CONTENTS

Chapter 3
USING THE KEYBOARD AND EasyPoint TRACKBALL

Chapter 4
POWER CONSERVATION AND BATTERY PACK

Chapter 5
SECURITY FEATURES

Chapter 6
OPTIONAL EQUIPMENT

Chapter 7
INSTALLING AN OPERATING SYSTEM AND APPLICATION SOFTWARE

Chapter 8
DIAGNOSTIC AND SUPPORT SOFTWARE

Chapter 9
ENHANCING MEMORY PERFORMANCE WITH COMPAQ UTILITIES

HOW TO USE THIS GUIDE

The *COMPAQ LTE Lite 4/25C, COMPAQ LTE Lite/25C, and COMPAQ LTE Lite/25E User's Guide* is a comprehensive reference document that contains procedures you need to help you get started and use your computer.

The COMPAQ LTE Lite Family of Personal Computers provide the power and convenience you need and the quality you can depend on in notebook computers. Each COMPAQ LTE Lite model is packed with an array of useful features and provides powerful 486SL or 386SL performance to support word processing, spreadsheets, project management, or field automation application requirements.

If you are an experienced user, you may want to use the quick setup instructions in Chapter 1, "Getting Started." If you haven't set up a computer before, use the more detailed instructions beginning on page 1-3 of Chapter 1. Even if your Authorized COMPAQ Reseller has installed options or application software for you, read through this *User's Guide*. The more you know about your computer, the easier it will be to use its features and power.

SYMBOLS AND CONVENTIONS

The following format conventions distinguish elements of the text throughout the guide:

- Key names appear in a boldface type looking very much the way they appear on the actual keyboard. For example, **Home**, **End**, **Backspace**, **Tab**.
- When keys must be pressed at the same time, the action is represented by the key names and the plus (+) symbol. For example, **Ctrl+Alt+Delete**.
- The names of files are presented in uppercase, italic type as shown here: *FILENAME*.
- The names of commands or directories are presented in uppercase type as shown here: COMMAND or DIRECTORY. Commands that are to be entered at the system prompt are shown on a separate line.

- When you are asked to type something without pressing the **Enter** key, you are directed to "type" the information.
- When you need to type information and press the **Enter** key, you will be directed to "enter" the information.

The following words and symbols mark special messages throughout this guide:

WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.

CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

IMPORTANT: Text set off in this manner presents clarifying information or specific instructions.

NOTE: Text set in this manner presents commentary, sidelights, or interesting points of information.

GETTING STARTED

The COMPAQ LTE Lite Family of Personal Computers is designed with either powerful 386SL or 486SL performance and an array of standard features that make notebook computing easier. These features include a bright VGA display; a keyboard with desktop functions and isolated, inverted-T cursor-control keys; power conservation features to maximize battery life; and an online help program to get you started faster.

In this chapter, you'll learn how to get started by installing and charging your battery pack and configuring your computer.

Before you begin, check to be sure you've removed everything from the packing box. In addition to this guide, you need the following items to set up your computer:

- AC Adapter
- Battery Pack
- Any application software you want to install

Your COMPAQ LTE Lite Personal Computer comes preinstalled with an operating system: Microsoft MS-DOS as published by Compaq. If you will be using a different operating system, you must also have the operating system diskettes and accompanying documentation.

QUICK SETUP STEPS

The following procedures summarize the steps needed to set up your COMPAQ LTE Lite Personal Computer. These steps are recommended for the experienced user. A more detailed procedure for the less experienced user is also provided in this section.

NOTE: If you are installing internal options, do so now. Refer to Chapter 6, "Optional Equipment," as well as the installation guide included with your option for instructions on how to install it in your computer.

1. Insert the battery pack into the battery compartment with the light on the battery pack to the left front.
2. Plug the AC Adapter into a properly grounded 3-prong outlet.
3. Connect the AC Adapter to the connector on the rear of the computer.
4. Leave the computer turned off.
5. Charge the battery pack for about an hour before using it for the first time.

   Fast charging begins automatically when the AC Adapter is connected. The fast charge light on the battery pack remains on until the battery pack is fully charged.
6. Connect external devices, such as the External Numeric Keypad, mouse, or printer, to the computer. Refer to Chapter 6, "Optional Equipment."
7. Turn on the computer.
8. The system displays a screen asking which language of MS-DOS, Microsoft Windows, and which language keyboard you will be using. Follow the instructions on the screen.
9. DO NOT interrupt power to the computer until you receive the message that the installation is complete.
10. Press the **Enter** key. The system restarts and displays the Windows desktop.

SETUP STEPS FOR THE FIRST TIME USER

This section offers more detailed setup instructions intended for the new user.

What Do I Need to Get Started?

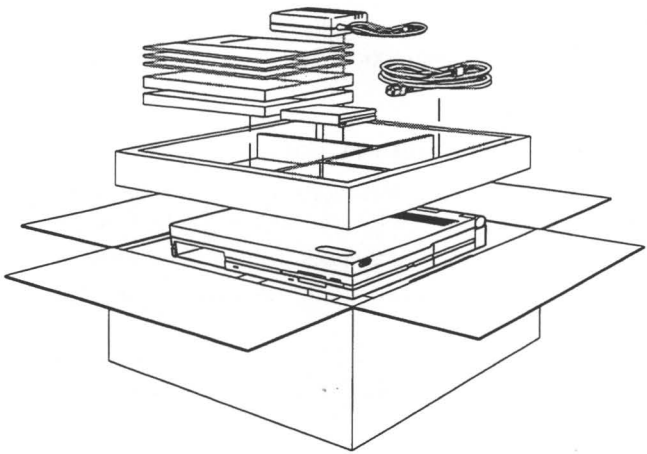
In addition to this book, you need the following items to set up your computer:

- AC Adapter
- Battery Pack
- Any application software you want to install

Your COMPAQ LTE Lite Personal Computer comes preinstalled with an operating system: Microsoft MS-DOS as published
by Compaq. If you will be using a different operating system, you must also have the operating system diskettes and accompanying documentation.

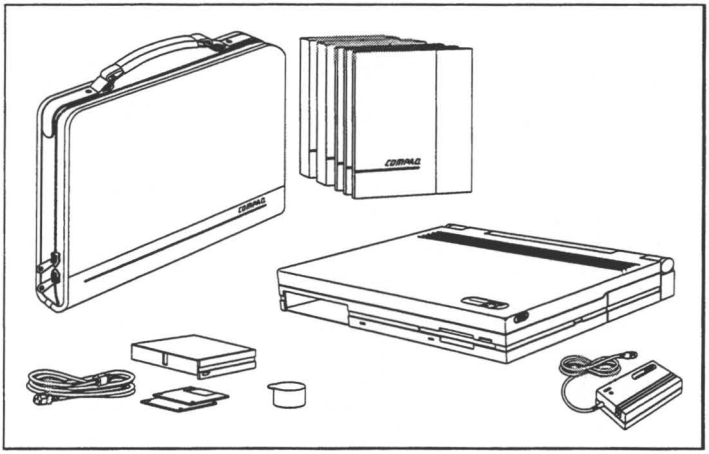
Unpacking the Computer

1. Unpack the computer, AC Adapter, and battery pack.



Unpacking the Computer

2. Check to be sure you've removed everything from the packing box including the trackball removal tool.



Contents of Packing Box

The packing box contains several items that you will not need at this time. This includes diskettes which have MS-DOS, Windows, *EZ Help Online Library*, COMPAQ User Programs, and Diagnostics. With the exception of Diagnostics, this software is preinstalled on your computer. The diskettes should be stored in a safe place in the event any of the software has to be reloaded.

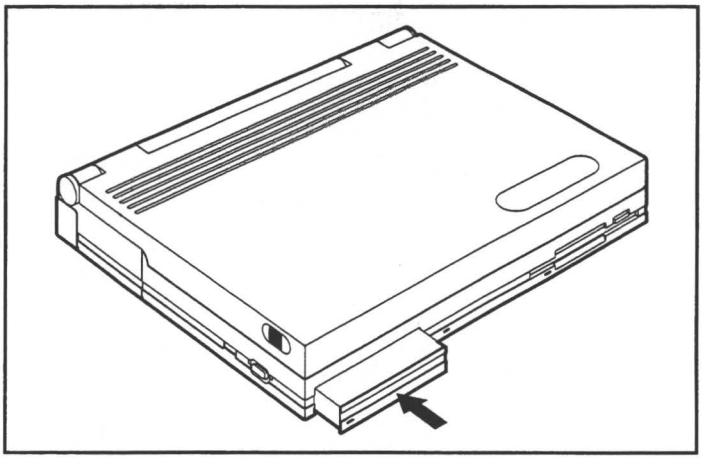
Installing the Battery Pack

The following instructions for the Battery Pack and AC Adapter apply to all models of the COMPAQ LTE Lite Family.

To install the battery pack, follow these steps:

1. Remove the temporary cardboard cover from the battery compartment.
2. Insert the battery pack into the battery compartment with the light on the battery pack to the front left.

3. Push the battery pack in until it locks in place.



Inserting the Battery Pack

Connecting the AC Adapter

IMPORTANT: Use the AC Adapter rather than the battery pack when you first set up your computer. A low battery condition could interrupt the process.

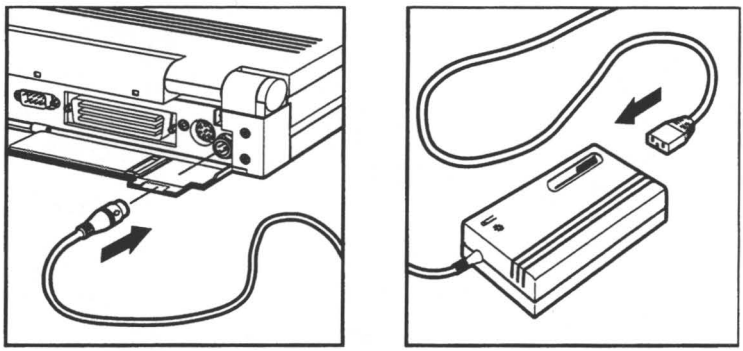
To connect the AC Adapter to the computer, follow these steps:

1. Connect the AC power cord to the AC Adapter.

WARNING: This equipment is designed for connection to a grounded (earthed) outlet. The 3-prong grounding type plug is an important safety feature. To avoid risk of electric shock or damage to your equipment, do not disable this feature.

2. Plug the AC power cord into a grounded AC outlet. As with most portable electrical equipment, the outlet should be easily accessible and located near the computer.
3. Open the connector cover on the rear panel.
4. Connect the AC Adapter cable to the AC Adapter connector on the rear panel.

5. Leave the computer turned off.



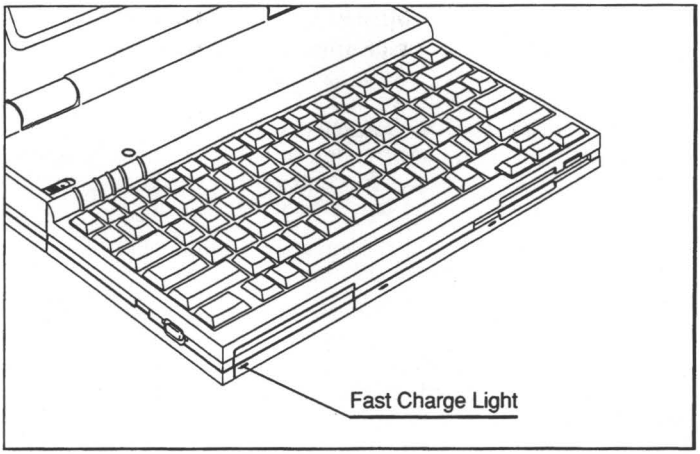
Connecting the AC Adapter

NOTE: For information on power cord requirements, refer to Appendix D, "Power Cord Set Requirements," in this guide.

Charging the Battery Pack

The battery pack must be charged before it is used for the first time. It takes approximately 1 hour to charge the battery pack with the computer turned off and 1.5 to 2 hours with the computer turned on.

Fast charging begins automatically when the AC Adapter is connected to the computer and the AC outlet. The charge light on the battery pack remains on until the battery pack is fully charged. If you install a battery pack that is already fully charged, the fast charge light turns on momentarily to indicate battery status, then turns off.



Fast Charge Light on the Battery Pack

It's always a good idea to keep the battery pack in the computer when you're using it with AC power. This supplies the battery pack with a constant trickle charge and helps ensure that you'll have a fully charged battery pack when you need it to operate the computer.

To operate the computer using battery power, disconnect the AC Adapter. Refer to the battery information card for more information.

SETTING UP

Your COMPAQ LTE Lite Personal Computer comes preinstalled with Microsoft MS-DOS as published by Compaq, Microsoft Windows and a language translator for English, French, Spanish, German and Italian. Since you will be using only one language version of MS-DOS and Windows, the language translator translates the operating system and Windows into the language you'll be using.

Your computer also comes preinstalled with support software utilities and device drivers.

When you turn on the computer, the configuration process begins. If the system displays a screen that requires input from you, and you are unsure what is required, press the **F1** key which is located on the top row of your keyboard (**F1** is the help key.)

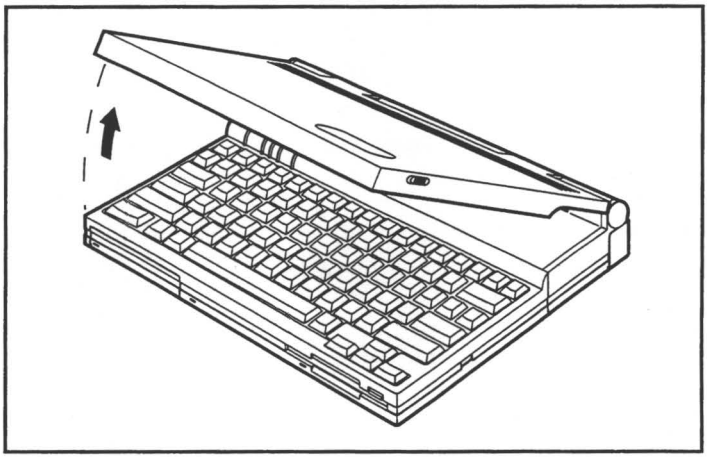
1. If you are installing internal options, such as additional memory, do so now. Refer to the installation guide included with your option for instructions on installing it in your computer.

CAUTION: AC power must be disconnected when internal options are installed.

2. Connect any external devices, such as the External Numeric Keypad, mouse, or printer, to the connectors on the rear panel. Refer to Chapter 6, "Adding Options and Connecting Peripherals," for instructions on how to connect external options.

Your computer comes with a mouse/trackball driver preinstalled for the EasyPoint trackball. This driver will also operate with a two-button Microsoft-compatible mouse.

3. Pull the two side latches forward and raise the display.



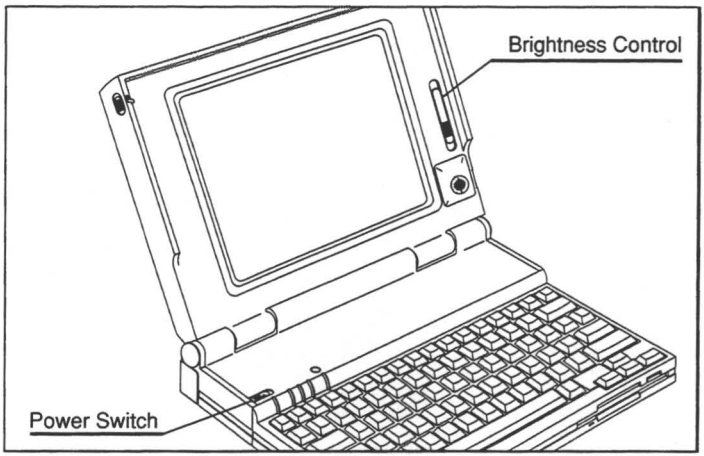
Raising the Display

4. Connect the AC Adapter.

CAUTION: It is important that power to the computer not be interrupted during the software configuration process. Use the AC Adapter during the configuration process.

5. Turn on the computer by sliding the power switch to the right, then releasing it.

6. Adjust the display brightness as needed.



Turn on the Computer and Adjust the Brightness

7. When the system displays a list of languages, press the arrow key until the language version you will be using is highlighted, and press the **Enter** key.
8. The screen displays a list of keyboards. Press the arrow key until the keyboard version you will be using is highlighted, and press the **Enter** key.

   NOTE: If you accidentally choose the wrong language or keyboard, you can restore these files from the diskettes provided with your computer.
9. Enter the correct time and date.
10. Review your selections. Before the computer begins translating software and configuring the software you have chosen, you are given a chance to change your selections.
11. Once you have accepted your selections by pressing the **Enter** key, the system displays the "Installation In Process" screen.

CAUTION: Do nothing further until the system displays the "Installation Complete" screen.

12. When the system displays the "Installation Complete" screen, press the **Enter** key. The system restarts, displaying the Windows Setup Program.
13. The Windows Setup Program prompts you for the following:
    - Your name
    - The name of your company if you are using the software for business purposes
    - The type of printer you will be using
14. When the Windows Setup Program is complete, press the **Enter** key. The computer restarts and displays the Windows Desktop.
15. At this point, if you have installed optional hardware, it is necessary to run the SETUP program.

RUNNING THE SETUP UTILITY

1. Decide which version of the SETUP utility you want to use:
    - **The SETUP utility on the Diagnostics diskette** contains help screens and is recommended for someone unfamiliar with the procedure of setting up a computer for the first time.
    - **The internal version of the SETUP utility,** which is stored in the read only memory (ROM) of the computer, may be more appropriate for someone who is familiar with setting up a new computer.

SETUP on the Diagnostics Diskette

IMPORTANT: Use the AC Adapter rather than the battery pack when you first setup your computer and install the software. A low battery condition could interrupt the process.

To run the SETUP utility on the Diagnostics diskette, follow these steps:

1. Insert the Diagnostics diskette into drive A.
2. Turn on the computer by sliding the power switch to the right, then releasing it.
3. Adjust the display brightness as needed.

   If a message is displayed that options are not set, press the **Enter** key.

If an error message is displayed, refer to Appendix A, "Post Error Messages," for an explanation of the message and the action recommended to resolve it.

4. If you are running SETUP for the first time, or have replaced the auxiliary battery, enter the date and time. (The time is entered in a 24-hour format.)
5. Press the **F4** key to configure your computer.

   NOTE: If you are unfamiliar with this utility and need more information, press the **F1** key to access the help system.
6. Follow the instructions on the screen. Initially, it's easiest to select the menu item that configures the computer with default settings. As you become more familiar with your system, or your needs change, you can rerun SETUP and modify the default configuration.
7. When the configuration is correct, press the **F3** key.
8. Select "Yes" to save the configuration.
9. Remove the Diagnostics diskette and restart the computer by pressing the **Enter** key.

Internal SETUP

IMPORTANT: Use the AC Adapter rather than the battery pack when you first setup your computer and install the software. A low battery condition could interrupt the process.

To run the internal version of SETUP, follow these steps:

1. Turn on the computer.

   The cursor momentarily displays in the upper-left corner of the screen, then displays in the upper-right corner of the screen.
2. When the cursor is displayed in the upper-right corner of the screen, press the **F10** key at once.

IMPORTANT: If the internal version of SETUP does not begin after you press the **F10** key, restart the computer by pressing the **Ctrl** + **Alt** + **Delete** keys. Then repeat the process starting with step 2.

3. Select the language desired–English, French, German, or Spanish.

   The System Configuration Summary is displayed.
4. Press the **F4** key to configure your computer.

5. Follow the instructions on the screen. Initially, it's easiest to select the menu item that configures the computer with default settings. As you become more familiar with your system, or your needs change, you can rerun SETUP and modify the default configuration.
6. Press **Esc** to return to the System Configuration Summary.
7. Press the **F3** key, then select the option to exit and save changes.
8. The computer will restart using your new configuration.

Testing the Computer

Test the system by following these steps:

1. Insert the Diagnostics diskette into drive A.
2. Turn on the computer. If it's already on, restart the system by pressing the **Ctrl** + **Alt** + **Delete** keys.
3. Select the option to test or inspect the computer from the main menu.
4. Select the option to test the computer.
5. Follow the instructions on the screen.
6. Verify that the TEST utility correctly detected the installed devices.
7. Follow the instructions on the screen as the diagnostic tests are run on the computer and installed devices.
8. When the testing is complete, exit to the Diagnostics menu, then exit the utility.
9. Remove the Diagnostics diskette and restart the computer by pressing the **Enter** key.

If the computer should ever malfunction, run the TEST utility and record the error messages; then contact your Authorized COMPAQ Reseller.

USER PROGRAMS AND *EZ HELP ONLINE LIBRARY*

User Programs are utilities and device drivers that optimize system performance. The *EZ Help Online Library* provides quick access to information about how to use the computer and some of its software. User Programs and *EZ Help Online Library* diskettes are located in this documentation set; however, this software is preinstalled on your computer.

- To access the online documentation if you are not using Microsoft Windows:
  1. Go to the system prompt and enter:

     HELP

  2. Select a book from the Book List and press the **Enter** key.
- To access the online documentation using Microsoft Windows preinstalled by Compaq:
  1. Select the EZ Help icon to access the online documentation.
  2. Select a book from the Book List and press the **Enter** key.

If you must reinstall User Programs and *EZ Help Online Library* on your hard disk, use the diskettes. If you are unsure how to install this software, refer to Chapter 7, "Installing an Operating System."

INSTALLING APPLICATION SOFTWARE

An application software program performs a specific task, such as database management, word processing, financial management, or graphic illustration. It is unlike system software or operating systems, which maintain and organize the system.

Each application program usually includes its own installation program or has documentation that lists the computer requirements and explains the procedures to install the application. Before installing the application, read the documentation that came with it to be sure your computer meets disk space, memory, operating system, or display requirements.

CREATING A COMFORTABLE WORK ENVIRONMENT

Lighting, furniture, posture, and other work conditions may affect the way you feel and how effectively you work. By arranging these elements to meet your needs, you may be able to minimize fatigue and discomfort. While setting up your new computer, take time to evaluate your work environment.

The suggestions included in this section are designed to help you find ways to work more comfortably and effectively. However, only you can determine the best working environment for your work.

This section offers tips on the following topics:

- Placement of input devices
- Viewing angle of the display
- Furniture and posture
- Lighting
- Vision care
- Work habits

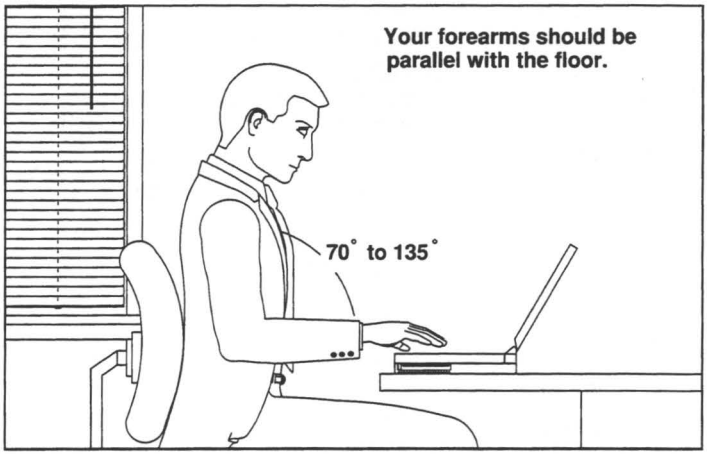
CAUTION: It is in your best interest to set up a comfortable work environment to avoid discomfort or injury.

Placement of Input Devices

Input devices, such as a trackball, mouse, or numeric keypad, should be positioned so that your arms and hands are in a relaxed, comfortable, and natural position. If you are using an external mouse or an external keyboard, place it in a comfortable position at your workstation.

- Select a work surface that is large enough to hold the computer equipment and any additional items required for your work.
- Position the keyboard directly in front of you. This makes it possible to type with your shoulders relaxed and your upper arms hanging freely at your sides.
- Adjust the height of your chair or work surface so your forearms form approximately a right angle with your upper arms.

- Minimize bending your wrist, and keep your elbows near your body.
- If you are using a mouse or external keypad, be sure to allow enough room for free, unhindered movement.



Position the Computer Keyboard to Avoid Muscle Strain

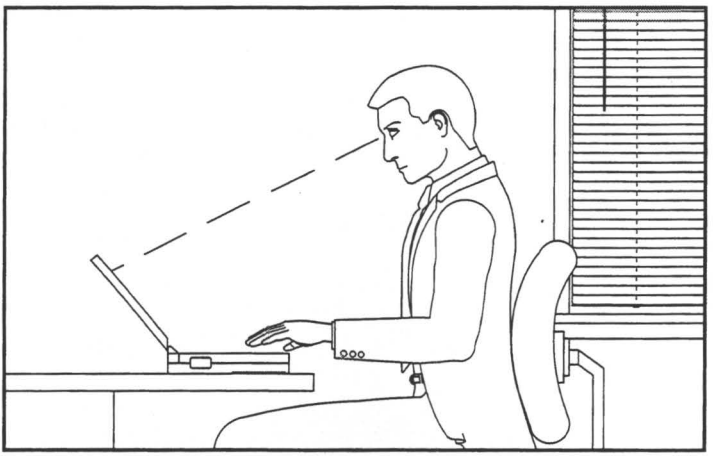
NOTE: For maximum comfort, use an external keyboard, external mouse, or other pointing device when the computer is installed in the Desktop Expansion Base.

Viewing Angle of the Display

If you place the display in the proper position and at the right angle, you will reduce eye strain as well as muscle fatigue in your neck and shoulders. If you are using the EasyPoint trackball, be sure the display is positioned to avoid arm strain.

Consider the suggestions listed below when determining how to position the display:

- Place the display directly in front of you at a comfortable viewing distance.
- While seated, be sure that the top of the display is no higher than eye level. If the display is too high, you may want to move your computer to another location.
- Position the display to avoid sources of glare or any bright reflections.
- Use the tilting feature of your display to find the best position. You may want to tilt the display back slightly so that the screen meets your gaze.
- Use the display's brightness control to improve character and image quality.
- If you use a document holder, locate it at the same level and viewing distance as the display.



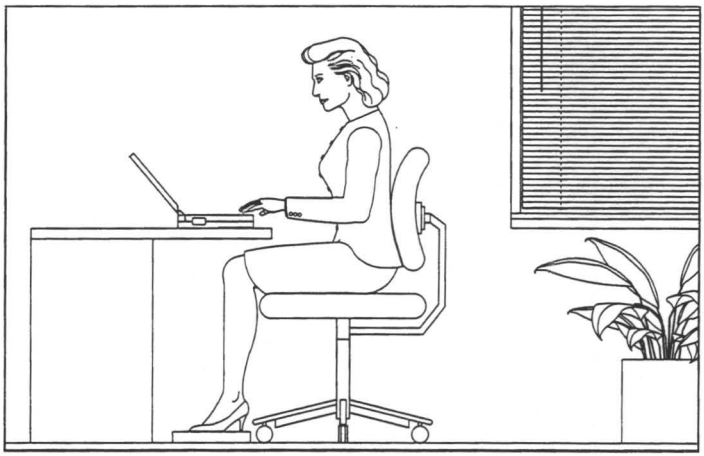
Correct Placement of the Display Increases Your Comfort

Furniture And Posture

Adjust your furniture to meet your needs for comfort. If the table is adjustable, move it to the proper height. If it is not adjustable, then arrange the chair to suit your needs.

A properly adjusted chair can add to your comfort by supporting good posture. Remember the following when you select and arrange your chair:

- Be sure that your chair is the proper height. You should be able to maintain your proper arm position and place your feet on the floor. Your knees should be at the same level as your hips or slightly higher. Use a footrest if your chair is too high for your feet to rest firmly on the floor.
- When seated, avoid pressure along the underside of the thigh (near the knee) and the back side of the lower leg. Your knees should be slightly higher than your hips.
- Position the backrest so that your lower back is supported while you sit at the workstation.
- Adopt a relaxed, upright working posture and let the chair support you. Avoid slouching forward or leaning backward too far.
- Place your work materials within easy reach.

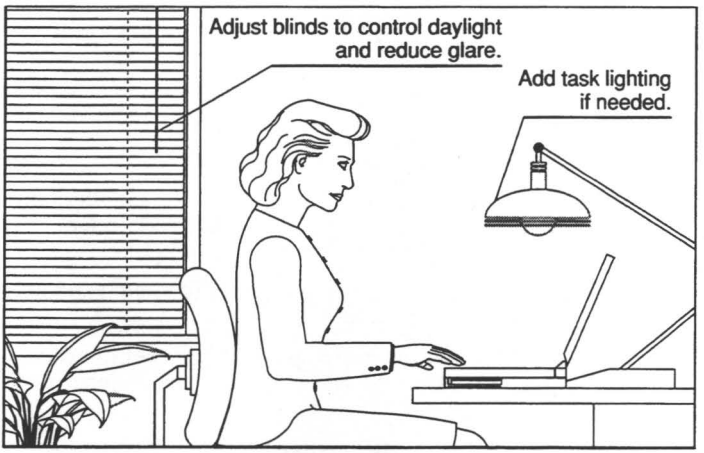


Good Posture and an Adjustable Chair Increase Your Comfort

Lighting

Correct lighting adds to your work effectiveness and comfort. Lighting should be arranged to support the type of work you do most often. For example, if most of your work is done sitting in front of the computer, then you should consider the following factors when arranging your lighting:

- If possible, position the equipment or sources of light so that glare or bright reflections on the display are minimized.
- If your office has windows, use blinds, shades, or drapes to control the amount of daylight in the room. Try locating the computer so that the side of the display faces the windows. This may help to minimize glare on the screen.
- Position the computer so that the display is between the rows of overhead lights to avoid glare.
- Combine the general and task lighting for your lighting needs, but avoid bright light sources in your field of vision.
- Use indirect lighting to avoid bright spots on the display.



An Appropriate Level of Light Makes Work Easier

Vision Care

When working at your computer for long periods of time, your eyes may become irritated and fatigued. Special attention should be given to vision care.

- Take frequent breaks and rest your eyes.
- Keep your glasses, contact lenses, and the display clean.
- If you use a glare filter, clean it according to the instructions.
- Have your eyes examined regularly by a vision care specialist.

Work Habits

The placement of furniture, office equipment, and lighting are not the only factors that determine how you feel at the end of a work day. Your work habits are also very important. Remember to do the following:

- Work in a relaxed, natural position. Avoid any awkward postures that may lead to muscular discomfort.
- Vary your tasks during the day so that you don't sit in one position for several hours.
- Alter your sitting posture frequently to reduce muscle fatigue.
- Avoid prolonged periods of forceful typing.
- Take periodic breaks when you work at your computer for prolonged periods. You may find that frequent, short breaks are of greater benefit than fewer, longer breaks.
- Stand up and take a few minutes to stretch and exercise several times a day.
- Examine your work habits and the types of tasks you perform. Break up the routine and try to perform a variety of tasks throughout the day.
- Be sensitive to the environment in which you are using notebook, laptop, or portable computers as application of these recommendations could vary based on the particular environment.

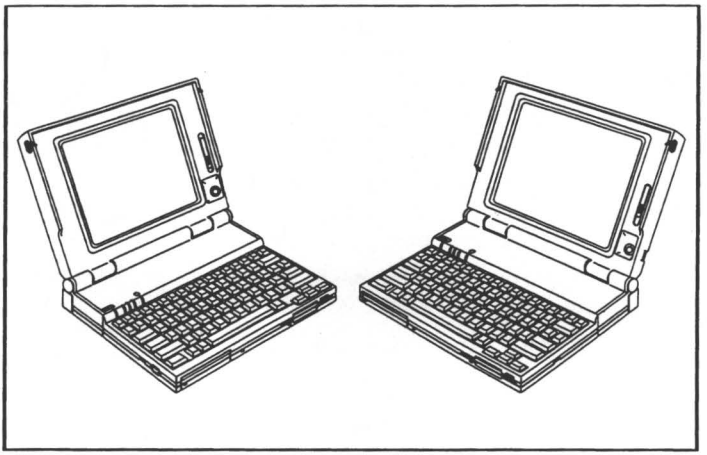
Summary

Many factors in our work environment determine whether we work efficiently and in a manner that promotes good health and safety. By occasionally evaluating the types of elements described in this chapter, it is possible to create a comfortable, healthy, and efficient environment.

For Further Information

If you would like more information about arrangement of work space and equipment, look for the topic "ergonomics" in your local library.

INTRODUCING THE COMPUTER



COMPAQ LTE Lite/25C and COMPAQ LTE Lite/25E

Designed for maximum portability, the COMPAQ LTE Lite Family of Personal Computers provides all the features you expect from full-function notebook computers. You'll find the following particularly useful:

- Hibernation feature that saves your place in your application and turns off the computer automatically. When the computer is turned back on, this placemarker capability returns you to the exact place you were working.
- PWRCON utility that helps you use the available battery power with efficiency so that you'll have more time to work before changing the battery pack or recharging it. The COMPAQ LTE Lite 4/25C and COMPAQ LTE Lite/25E also have Advanced Power Management which can provide additional battery life.
- A battery gauge that shows you how much battery operating time remains. You can display it with a hotkey and leave it in a corner of the screen as a reminder.
- Simultaneous display capability that lets you see your work on the internal display and, at the same time, show it as a presentation on an external monitor.

- Auxiliary battery that lets you change the primary battery pack without turning off the computer or losing your place in the application.
- MultiLock security features that allow you to protect information stored on the computer. It's also possible to secure the computer physically to prevent it from being stolen.
- Inverted-T keyboard layout with separate **Home**, **End**, **PgUp**, and **PgDn** keys as well as special feature hotkeys.
- *EZ Help Online Library* that provides easy access to information about how to use the computer, MS-DOS, and User Programs.

While they have many similarities, the personal computers in the COMPAQ LTE Lite Family differ in the following areas:

- Microprocessor subsystem
- Cache memory
- Memory expansion
- Display
- Hard drive support

This chapter describes the standard features of the COMPAQ LTE Lite Family and explains the differences between them as they arise.

KEYBOARD

The COMPAQ LTE Lite Family has a 79-/80-key keyboard with special feature hotkeys providing easy access to special notebook functions. The layout includes:

- Isolated cursor-control keys
- Separate screen-control keys
  - **Home** key
  - **End** key
  - **PgUp** key
  - **PgDn** key
- Six special feature hotkeys for quick access to:

  –Reverse/normal video

  –Internal/external/simultaneous display

  –Speaker volume control

–QuickLock/QuickBlank

–Power conservation levels

–Battery gauge

NOTE: The reverse video hotkey is not applicable to a color display.

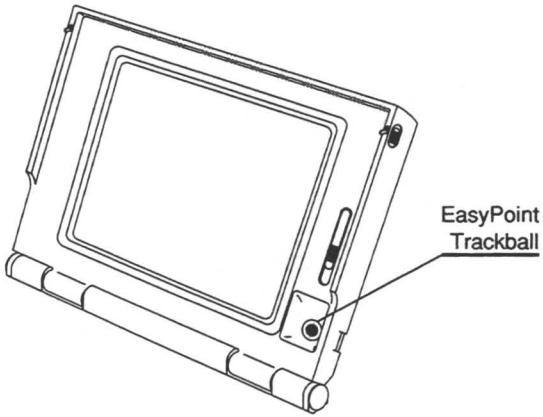
- 12 function keys
- 101-/102-key keyboard compatibility
- Standard spacing between keys
- **Caps Lock**, **Scroll Lock**, and **Num Lock** lights to show on/off status
- Embedded numeric keypad with cursor- and screen-control capabilities
- **Fn** key that activates the hotkeys and accesses the embedded numeric keypad

Keyboard Layout (U.S. English)

For detailed information about using the keyboard, hotkeys, and embedded numeric keypad, refer to Chapter 3, "Using the Keyboard and EasyPoint Trackball."

EasyPoint TRACKBALL

The built-in EasyPoint trackball is always ready to use and eliminates the need to carry a mouse when traveling. It is easy to use and provides mouse functions in all software that supports a Microsoft-compatible mouse.



EasyPoint Trackball

The trackball is designed for single-handed operation, both for cursor movement and button selection. If you grasp the right side of the display, your thumb operates the trackball and your fingers operate the mouse buttons on the back of the display. The upper button functions as the left mouse button and the lower button functions as the right mouse button. These functions may be changed using the mouse/keyboard icon in the Windows Control Panel group. Refer to Chapter 3, "Keyboard and EasyPoint Trackball," for more information.

DISPLAYS

Active Matrix Color VGA Display

The COMPAQ LTE Lite/25C and COMPAQ LTE Lite 4/25C have a thin-film transistor (TFT) color VGA display that features:

- VGA-, EGA-, and CGA-compatibility with 256 colors out of a 4,096 palette
- An evenly lit, nonglare screen measuring 8.4 inches (213 mm) diagonally
- Adjustable brightness
- High contrast
- Adjustable viewing angle
- Simultaneous display capability (accessible via hotkey)
- Screen save feature

Active Matrix Black and White VGA Display

The COMPAQ LTE Lite/25E has an active matrix, thin-film transistor (TFT) black and white VGA display that features:

- VGA-, EGA-, and CGA-compatibility
- Eight primary gray shades, 16 high-resolution shades of gray, or 64 low-resolution shades of gray.
- An evenly lit, nonglare screen measuring 9.5 inches (241 mm) diagonally
- Adjustable brightness
- High contrast
- Adjustable viewing angle
- Simultaneous display capability (accessible via hotkey)
- Screen save feature

Active Matrix Display

The TFT active matrix display has 307,200 pixels (640 x 480) to provide VGA resolution. Transistors are used at each pixel to accurately define any of the 256 colors or 64 shades of gray that may be displayed at once.

Placing up to a million transistors on the display surface requires tremendous manufacturing sophistication. Because of the complexity of thin-film transistor (TFT) active matrix display technology, it is possible to see spots, called "on-pixels," appear on the screen. The visibility of the "on-pixels" varies depending on the software environment. Evaluate your computer display using your own software. These "on-pixels" will in no way affect the quality of your display.

Graphics Standards Support

Both Active Matrix Displays are compatible with graphics software supporting Video Graphics Adapter (VGA), Enhanced Graphics Adapter (EGA), and Color Graphics Adapter (CGA) standards. The Active Matrix Color Display supports these graphic standards with a 640 x 480 or 320 x 200 resolution in 256 colors. The Active Matrix Black and White Display has a 320 x 200 resolution in 64 shades of gray and 640 x 480 resolution in 16 shades of gray. The systems also support these standards on optional external video graphics color or monochrome monitors.

Display Options

As part of the installation procedures, many applications require that you select a display option. To receive maximum benefit from your Active Matrix Display, choose the VGA option if it is listed; if it is not, then choose the EGA option rather than CGA, unless the application operates only in the CGA mode.

Extended Text

Extended Text is a feature that alters the way text is displayed in order to fill the screen so that the blank areas at the top and the bottom of the screen are eliminated. This feature is available on the COMPAQ LTE Lite/25E and COMPAQ LTE Lite 4/25C.

The Extended Text feature is useful in text mode, or non-graphical, applications. If you are only using Windows applications, you won't need Extended Text.

Using Extended Text

There are two forms of Extended Text: Text 1 and Text 2.

- Text 1 duplicates blank lines so the text fills the screen, but the size of the characters is unchanged.
- Text 2 literally stretches the characters vertically so the same number of lines fill the screen, but the words are larger.

To activate or inactivate extended text, use the following key sequence:

Fn + T

The **Fn** + **T** key sequence is a 3-way toggle. It goes from OFF to Text 1 to Text 2. Using this toggle, you can easily turn off extended text temporarily if you are running an application that uses the full screen, such as 50-line text mode.

Extended Text Default

Your computer is set with Disabled as the extended text default. Unless you change the default, extended text will not be active when you first turn on your computer. If you want Text 1 or Text 2 in use when the computer is first turned on, you can change the default through the SETUP utility. For information on running the SETUP utility, refer to Chapter 8, "Diagnostic and Support Software."

ADAPT

ADAPT enables you to adjust the colors on the color display or the gray scales on the black and white display, thereby improving the readability of text and graphics. ADAPT also allows you to change cursor size and enable or disable the screen save feature. Refer to the "User Programs" section of the *EZ Help Online Library* for additional information on the ADAPT utility.

Screen Save

The screen save feature works under battery or AC power. After a predetermined period of inactivity, the screen clears; however, it restores with any keyboard, speaker, or communications activity. The inactivity timeouts vary depending on the level of power conservation selected. The preset values range from 2 to 5 minutes, however, you can modify these default values from 1 to 31 minutes through the utilities listed in the following table:

Modifying Screen Save Timeouts

Utility	Reference
SETUP utility PWRCON icon	Chapter 8, "Diagnostic and Support Software"
ADAPT utility	User Programs section of the *EZ Help Online Library*

When the computer is on but not in use, a blank screen may be the result of screen save or a power conservation condition. For more information, refer to Chapter 4, "Power Conservation," and Chapter 12, "Troubleshooting."

MICROPROCESSOR SUBSYSTEM

The microprocessor subsystem consists of the microprocessor, a socket for a coprocessor or an integrated coprocessor, cache memory or integrated cache memory, and a real-time clock/calendar. Descriptions of the microprocessor subsystem in each computer follow.

Microprocessor

The COMPAQ LTE Lite/25C and COMPAQ LTE Lite/25E have a 25-MHz 386SL microprocessor. The COMPAQ LTE Lite 4/25C has a 25-MHz 486SL microprocessor. Both microprocessors are designed specifically for battery-powered products and incorporate a sophisticated power management system architecture, which is transparent to operating systems and applications.

386SL Microprocessor

The 386SL microprocessor maintains compatibility with 386 and 286 microprocessors to ensure that hardware and software developed for them are compatible with the 386SL microprocessor.

The 386SL microprocessor operates at 32 bits-per-CPU cycle while supporting 16-bit external operation. The complementary high-speed metal oxide semiconductor (CHMOS) microprocessor features an integrated Industry Standard Architecture (ISA) bus controller, memory controller, and a cache controller.

486SL Microprocessor

The 486SL microprocessor is a 3.3 volt, low-power chip. It operates at 32 bits-per-CPU cycle and supports a 32-bit memory bus size. The complementary high-speed metal oxide semiconductor (CHMOS) features an integrated numeric coprocessor, cache, and ISA bus controller.

Cache

The capabilities of both microprocessors are enhanced with a cache design that allows fast interaction between the microprocessor and frequently used memory. The COMPAQ LTE Lite 4/25C has 8 Kbytes of internal cache. The COMPAQ LTE Lite/25C and COMPAQ LTE Lite/25E have 64 Kbytes of four-way set-associative cache.

Coprocessor

A coprocessor speeds numeric calculations for math-intensive applications, such as CAD/CAE and spreadsheet operations, by doing calculations that otherwise would be done by the microprocessor. The COMPAQ LTE Lite 4/25C has an integrated coprocessor. The COMPAQ LTE Lite/25C and COMPAQ LTE Lite/25E have a coprocessor socket for the installation of an optional 387SL or 387SX coprocessor.

Real-Time Clock/Calendar

The real-time clock/calendar maintains system configuration information as well as the date and time. A separate battery furnishes power to the real-time clock/calendar. This battery should be changed approximately every 1 1/2 to 2 years by an Authorized COMPAQ Reseller.

CAUTION: Change the real-time clock/calendar battery approximately every 1 1/2 to 2 years. If this battery runs down between Hibernation and restoration, the information will be lost.

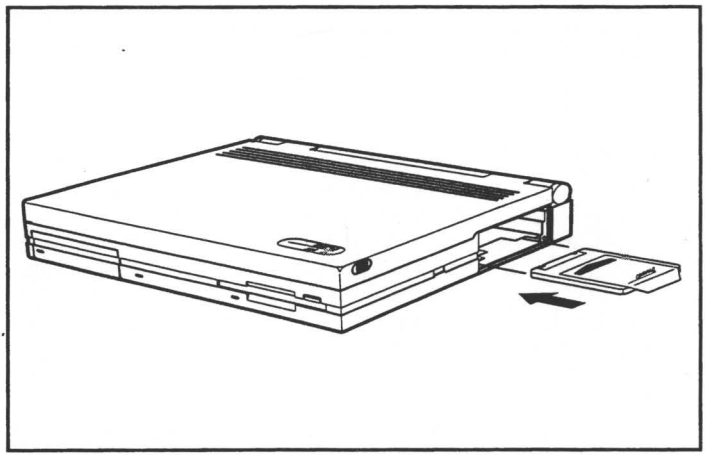
MEMORY

Standard Memory

The computer comes with four megabytes of enhanced page random access memory.

Memory Expansion

Memory can be increased up to 20 megabytes by adding an optional memory card. The COMPAQ LTE Lite 4/25C supports 32-bit memory expansion cards. The COMPAQ LTE Lite/25C and COMPAQ LTE Lite/25E support 16-bit memory expansion cards. To install an optional memory option card, insert the card (label-side up) into the bottom slot in the options compartment. Be sure it is seated securely.



Slot for an Optional Memory Card

For more information about installing an optional memory card, see the installation guide included in the memory card option kit.

NOTE: The COMPAQ LTE Lite 4/25C requires a 32-bit memory card, which is available in 4-,8-, or 16-megabyte. The COMPAQ LTE Lite/25C and COMPAQ LTE Lite/25E require 16-bit memory cards, which are available in 2, 4-,8-,or 16-megabyte.

Expanded and Extended Memory

The computer supports the Lotus/Intel/Microsoft Expanded Memory Specification (LIM/EMS) Version 4.0 as well as the eXtended Memory Specification (XMS) Standard Version 3.0.

For more information about expanded memory, extended memory, and configuring memory for software applications, refer to Chapter 9, "Enhancing Memory Performance," in this guide.

POWER SUPPLIES

The computer operates on DC power from either an internal battery or external power source.

Internal Power

The computer comes standard with a Nickel Metal Hydride (NiMH) Power Smart Pack and unique power conservation features that can be used to increase battery operating time. A NiCd Power Smart Pack is optional equipment. The following battery operating times are based on typical usage, a standard factory configuration, and no options installed.

System	Battery Operating Time
COMPAQ LTE Lite 4/25C	2 - 3 Hours
COMPAQ LTE Lite 25C	2 - 2.5 Hours
COMPAQ LTE Lite 25E	3 - 4 Hours

Having an extra battery pack on hand allows you to extend the operating time of the computer when the primary battery pack runs low.

By displaying the battery gauge in the corner of the screen while you work, you'll know when to make the switch from one battery pack to another. The battery gauge provides an accurate reflection of battery time remaining within 10 minutes. You will also receive a series of warnings (beeps and blinking lights) reminding you to save your data and change the battery pack.

An internal auxiliary battery lets you change battery packs without having to turn off your computer or reload the application software. However, you must first place the computer in Standby before changing battery packs.

For more information on the battery pack and power conservation, refer to Chapter 4, "Power Conservation and Battery Pack."

External Power

The computer also comes with an AC Adapter that converts the AC power from a standard electrical outlet to the DC power that the computer requires. The AC Adapter plugs directly into the computer allowing you to use the computer and charge the battery at the same time. Three other devices also allow you to work and charge the battery at the same time. These are available as optional equipment:

- Desktop Expansion Base
- Automobile Adapter
- QuickConnect

POWER CONSERVATION FEATURES

PWRCON Utility

The PWRCON power conservation utility lets you take full advantage of the battery power available while using it in the most efficient way possible. PWRCON decreases the power consumption of various computer components and turns off others not in use to give you more battery operating time. For example, power conservation can slow the microprocessor and dim the display after a preset time of inactivity, and turns off the diskette drive or hard drive when it isn't being used.

There is nothing complicated about using PWRCON. When you first operate your computer on battery power, you'll be operating under the medium level of power conservation, which is the default. If you want to operate even more efficiently, select the high level of power conservation by using the **Fn + F7** hotkeys. Three levels of power conservation are preset (high, medium, and drain) and available with the hotkeys. You can set a fourth, "custom," level yourself by selecting the PWRCON icon in the Compaq Utilities group or by typing PWRCON at the system prompt.

Hibernation

Hibernation saves your place in your applications and automatically turns the computer off. Once enabled, Hibernation is automatically activated after a preset time of inactivity or when the battery reaches a critically low condition. It can also be activated manually by pressing the **Fn** and standby button. When the computer is turned back on, this placemarker capability returns you to the exact place where you were working.

Advanced Power Management (APM)

The COMPAQ LTE Lite 4/25C and COMPAQ LTE Lite/25E are designed with a power management system called Advanced Power Management (APM). APM allows applications, operating systems, and the computer's basic input/output system to work together to reduce power consumption in your computer. APM increases your productivity by extending battery pack operating time without sacrificing performance. For the most part, you are unaware that APM is conserving power.

To learn more about power conservation, its many features, and how you can use it to your advantage, refer to Chapter 4 for details.

MultiLock SECURITY

The MultiLock security features provide multiple levels of security for your computer and the information stored on it. It's also possible to secure the computer physically. For information about how to establish and use the following security features, refer to Chapter 5, "Security Features."

Password Controls

A series of password controls prevents unauthorized access to the system:

- **Power-On Password** prevents unauthorized access to the system when the computer is turned on.
- **Setup Password** is available on the COMPAQ LTE Lite/25E and COMPAQ LTE Lite 4/25C. It protects your system configuration by preventing unauthorized access to the SETUP program without the password.

- **QuickLock/QuickBlank** disables the keyboard/mouse interface and EasyPoint trackball without exiting the application you're using. You may also choose to "blank" the screen at the same time. A password reactivates the computer.
- **Keyboard Password** sets a different, temporary password to unlock the keyboard and (if set) to return information to a cleared screen.
- **DriveLock** is a security feature available on the COMPAQ LTE Lite/25C Model 84 that prevents unauthorized access to information on the hard drive even if the drive is removed from the computer. DriveLock is a powerful security feature that should be used with extreme care.

Diskette Drive Disable

You can further secure the COMPAQ LTE Lite 4/25C or COMPAQ LTE Lite/25E system by disabling the diskette drive. This means no one can use the diskette drive until it is reenabled using the SETUP utility. To prevent unauthorized users from reenabling the diskette drive, you can protect the SETUP program with a password. Refer to Chapter 5, "Security Features," for instructions on disabling the diskette drive.

Asset Management Provision

The computer features an asset management provision that provides the serial number of the computer. This number can be displayed using the SETUP utility. Refer to Chapter 8, "Diagnostic and Support Software."

Physical Restraint

The computer features a slot on the left side that accommodates a special cable and lock making it possible to physically secure the computer to furniture in the workplace. This option, the MicroSaver Security System, model 64068, is manufactured by Kensington and is available at Authorized Compaq Resellers worldwide.

In addition, the computer can be locked into the optional Desktop Expansion Base.

MASS STORAGE DEVICES

The internal mass storage devices provide optimum performance, convenient storage, and portability.

Each computer comes with a high-density, 3 1/2-inch 1.44-megabyte diskette drive and a hard drive. Hard drive capacity varies from model to model. To determine the size of your hard drive, at the system prompt, type:

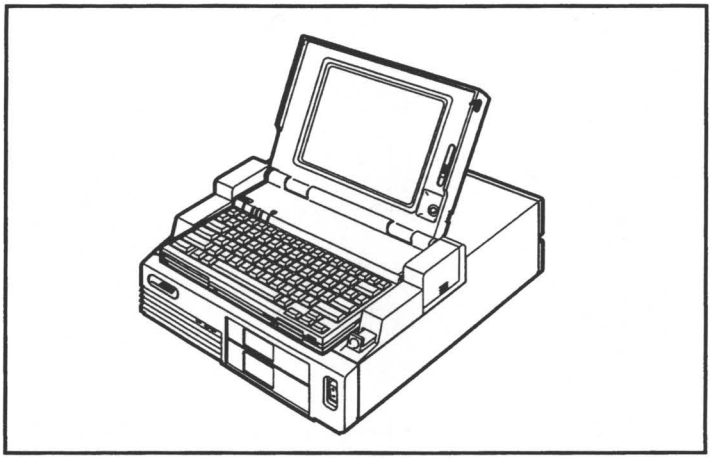
```
CHKDSK
```

Additional Storage Capacity

Desktop Expansion Base

When operating in the optional Desktop Expansion Base, the computer supports two of the following additional mass storage devices; however, only one hard drive can be installed:

- 3 1/2-Inch 1.44-Megabyte Diskette Drive
- 5 1/4-Inch 1.2-Megabyte Diskette Drive
- 5 1/4-Inch 360-Kbyte Diskette Drive
- 84-Megabyte Hard Drive
- 120-Megabyte Hard Drive
- 210-Megabyte Hard Drive
- 60-Megabyte Tape Drive with compression
- 80-/120-Megabyte Tape Drive with compression

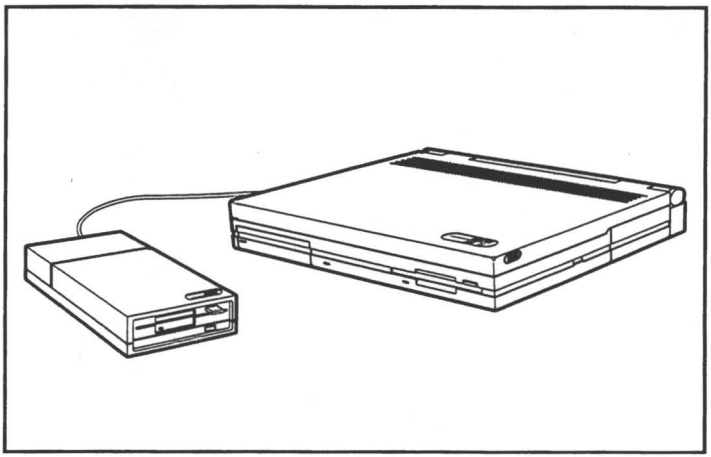


Computer in the Desktop Expansion Base

External Storage Module

With the addition of the optional External Storage Module, the computer supports one of the following additional mass storage devices:

- 5 1/4-Inch 1.2-Megabyte Diskette Drive
- 5 1/4-Inch 360-Kbyte Diskette Drive
- 80-/120-Megabyte Tape Drive with compression
- 60-Megabyte Tape Drive with compression



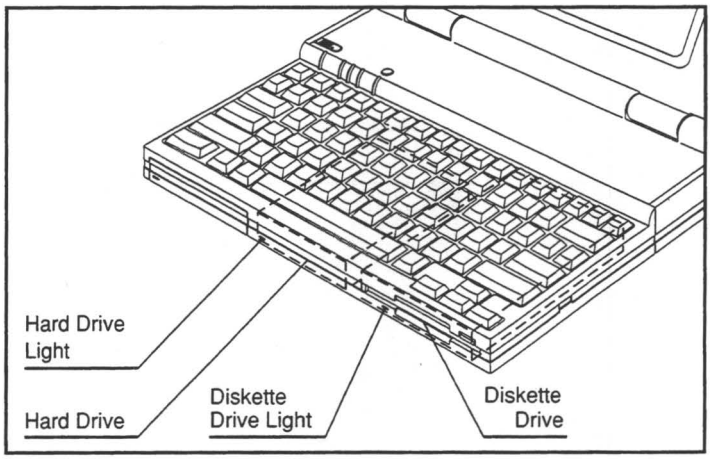
Computer with an External Storage Module

NOTE: Before an External Storage Module can be connected, you must connect an External Options Adapter to the 198-pin External Options connector on the back of the computer.

Refer to Chapter 6, "Optional Equipment," or the applicable instruction guide for more information on the Desktop Expansion Base and External Storage Module.

Physical Drives

There are two physical drive positions and each drive has a light that turns on to indicate drive activity.



Internal Drive Positions

Logical Drives

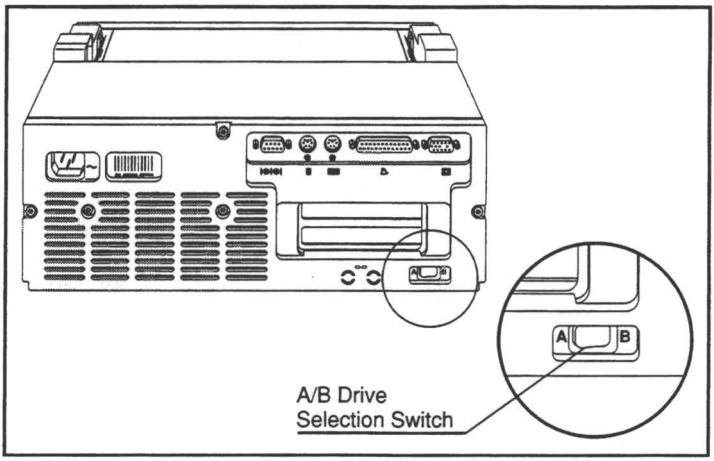
Each physical drive has at least one logical drive designation, a letter of the alphabet, which tells a program where information is stored. The diskette drive is designated as physical drive A and the hard drive is usually designated as logical drive C. If you have additional hard drives, they use subsequent letters.

A hard drive can be divided (or partitioned) into one or more logical drives, depending on its capacity and the operating system being used. The operating system treats a logical drive like an independent physical drive. For example, if a hard drive is divided into three logical drives C, D, and E, each will be treated by the operating system as a separate physical drive. For a more complete discussion of logical drives and partitions, refer to your MS-DOS documentation.

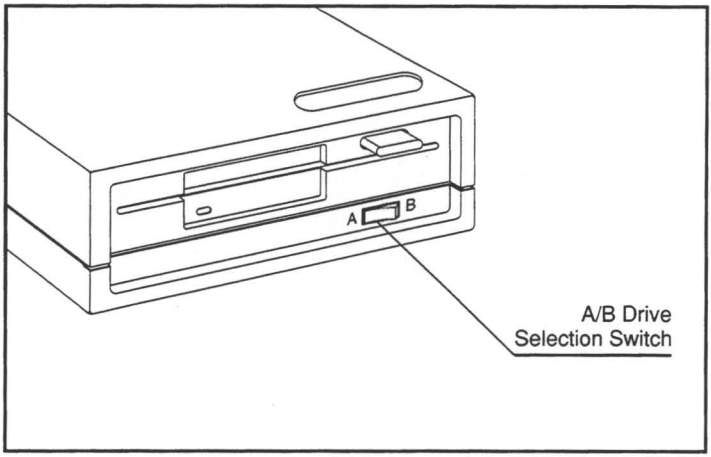
A diskette drive installed in either the optional Desktop Expansion Base or External Storage Module is usually designated as physical drive B. Most often, you will start the system from drive C, the hard drive in the computer, making the diskette drive designation merely a matter of preference.

Some programs, however, contain an operating system or a startup procedure on a diskette. These are called "bootable" diskettes, and a bootable diskette must be loaded from logical drive A.

If you want to use a bootable diskette in either the Desktop Expansion Base or External Storage Module, you must change the diskette drive designation. This can be accomplished by changing the drive selection switch on the expansion device from B to A, and the diskette drive designations change accordingly.



Drive Selection on the Desktop Expansion Base



Drive Selection on the External Storage Module

Lights

When a drive is being accessed, the drive light turns on to indicate activity as shown in the following table:

Mass Storage Device Lights

Mass Storage Device	Light Color	Media
Diskette drive	Orange	720-Kbyte diskette (double density)
	Green	1.44-MB diskette (high density)
Hard drive	Green	Hard disk (any capacity)

Refer to the instruction guide for information on mass storage device lights and external storage capacities on the Desktop Expansion Base and External Storage Module.

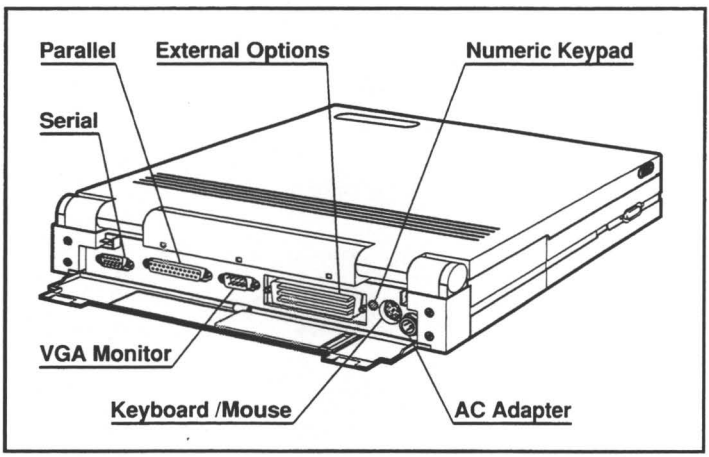
EXTERNAL CONNECTORS

The external connectors located on the back of the computer (behind the pull-down connector cover) provide interfaces for a range of external devices, including a printer, VGA monitor, keyboard, mouse, Auto Adapter, CD-ROM drive, External Storage Module, and Desktop Expansion Base. A communications connector, located inside the options compartment, allows the internal installation of an optional modem or serial interface board.

When the external connectors are not being used, keep the connector cover closed to protect against a discharge of static electricity and possible damage to the computer.

For convenience, you can add the QuickConnect option, which attaches to the back of your computer and has interfaces for the same external devices as your computer—as well as two more. When you travel with your computer, you can simply detach QuickConnect, which remains in your office with the external devices connected. When you return, you have to make only one connection to hook up all your peripheral equipment.

For more information about connecting optional equipment, refer to Chapter 6 or to the documentation that accompanies the option. For connector pin assignments, refer to Appendix C, "Connector Pin Assignments." For more on electrostatic discharge, refer to Appendix E, "Electrostatic Discharge."



External Connectors

EZ HELP ONLINE LIBRARY

The *EZ Help Online Library*, preinstalled on your hard drive, provides easy access to information on how to use the computer. It includes information about User Programs utilities and device drivers, frequently used MS-DOS commands, and procedures for using the computer and connecting optional equipment. The EZ Help program provides cross-reference links, search, browse, and index features.

You can use the keyboard, mouse, or trackball to move within the EZ Help program.

- To access the online documentation if you are not using Microsoft Windows, follow these steps:

  1. Go to the system prompt and enter:

     HELP

  2. Select a book from the Book List and press the **Enter** key.

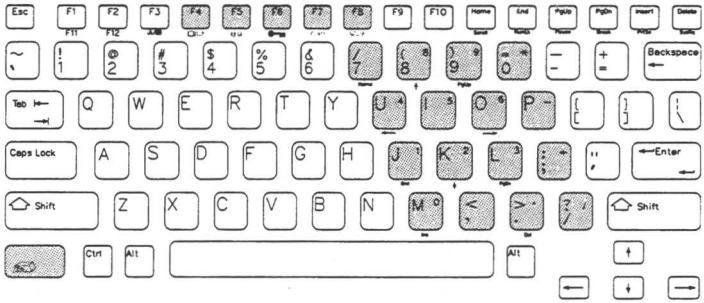
- To access the online documentation using Microsoft Windows preinstalled by Compaq:

  1. Select the Compaq Utilities group.
  2. Select the EZ Help icon to access the online documentation.
  3. Select a book from the Book List.

USING THE KEYBOARD AND EasyPoint TRACKBALL

While the keyboard for the COMPAQ LTE Lite Family is fully compatible with the larger 101-/102-key keyboards, it also provides specific notebook features, including:

- **Fn** key
- Special feature hotkeys
- Embedded numeric keypad



Keyboard Layout (U.S. English)

This chapter explains how to use the EasyPoint trackball and keyboard, particularly the **Fn** key, the hotkeys, and the embedded numeric keypad. It also includes information about using an external keyboard and explains how to use key combinations, rather than MS-DOS commands, to accomplish some routine tasks.

Some of the key combinations may differ slightly on computers with national keyboards (those with vertical **Enter** keys). Refer to the *Keyboard Reference* card supplied with each of these computers for the alternate graphics symbols produced by the **AltGr** key.

FN KEY

Use the **Fn** key to access secondary key functions. Secondary functions are available on those keys that are blue on the front. For example:

- Press the **Fn** key, then any key from **F3** to **F8**, (**F4** to **F8** on the COMPAQ LTE Lite/25C and COMPAQ LTE Lite 4/25C), and you activate one of the special feature hotkeys.
- Use the **Fn** key in conjunction with the **F1** or **F2** key to access the **F11**- or **F12**-key function.
- Use the **Fn** key with the **T** and toggle through the Extended Text modes on the COMPAQ LTE Lite/25E and COMPAQ LTE Lite 4/25C.
- Press the **Fn** and **End/NumLk** keys simultaneously to activate the embedded numeric keypad.

The **Fn** key affects other keys only while it is being pressed. As soon as it is released, it becomes inactive.

HOTKEYS

When used in conjunction with the **Fn** key, six hotkeys (five hotkeys on the COMPAQ LTE Lite/25C and COMPAQ LTE Lite 4/25C) provide direct access to the following functions:

- Reverse/Normal Video (**Fn + F3**)

NOTE: The reverse video hotkey is not applicable to a color display.

- Internal, external, or simultaneous display (**Fn + F4**)
- Speaker volume control (**Fn + F5**)
- QuickLock/QuickBlank (**Fn + F6**)
- PWRCON levels (**Fn + F7**)
- Battery gauge (**Fn + F8**)

NOTE: The hotkeys are not available on an external keyboard, although some of the functions they provide can be accomplished through specific key combinations, which are described later in this chapter.

The hotkey functions can be disabled by running the SETUP utility on the Diagnostics diskette.

Popup Windows

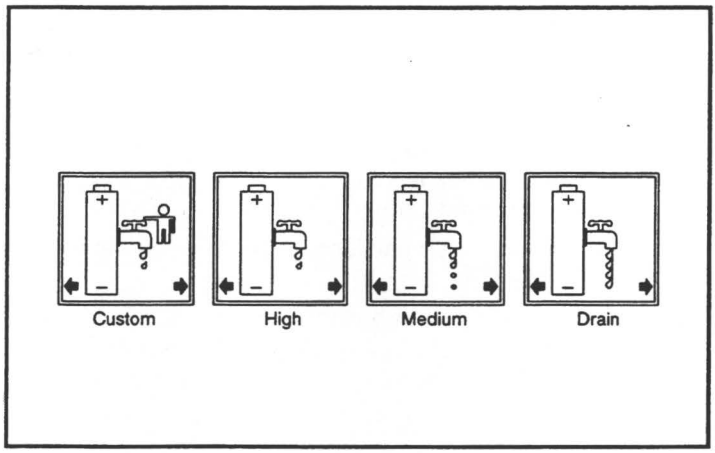
In addition to providing direct access to special features, three of the hotkeys (**Fn + F5**, **F7**, and **F8**) display popup windows that provide information or assistance visually. Once displayed, these popup windows remain on the screen until you reenter the hotkey sequence.

Speaker Volume Popup Window (Fn + F5)

Use the left and right arrow keys while the speaker volume popup window is displayed to turn up or turn down the volume. Use the down arrow key to test the volume.

Once you have set the volume, press **Fn + F5** again to remove the popup window from your display, so that you can use your arrow keys as cursor keys.

PWRCON Popup Window (Fn + F7)

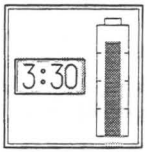


Within the PWRCON popup window, you can use the left and right arrow keys to move from one PWRCON level to another. While only one level is shown at a time, the image changes as you move from one level to the next.

Once you have set the PWRCON level, press **Fn + F7** again to remove the popup window from your display so that you can use your arrow keys as cursor keys.

For more information about setting a custom level of PWRCON, refer to Chapter 4, "Power Conservation."

Battery Gauge Popup Window (Fn + F8)



The battery gauge provides a visual reminder of the battery operating time remaining in hours and minutes. You may choose to leave it displayed in a corner of the screen.

Popup Window Size and Location

You can control the size and screen location of the popup window by typing PWRCON at the system prompt or through the PWRCON icon in the Compaq Utilities group. To do so, complete the following steps:

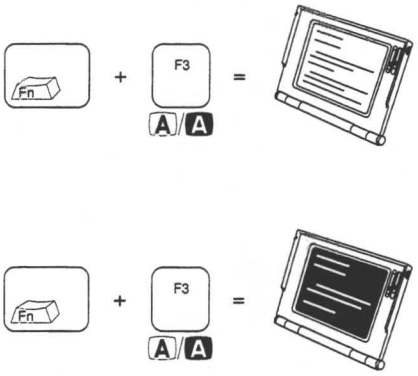
1. From the Windows Desktop, select the Compaq Utilities group.
2. Select the PWRCON icon.
3. Select the popup window option.
4. Set the size and location of the popup window.

   You will see the size and location change as you select new information.
5. When the size and location are the way you want them, select OK.
6. Save your settings or changes.

NOTE: The popup windows can be displayed *only* on the notebook computer display and not on an external display.

Reverse Video (Fn + F3)

It's simple to switch from normal to reverse video and back again with the following hotkey combination:



Reversing Video

NOTE: The reverse video hotkey is not applicable to a color display.

You also can switch to reverse video by using specific key sequences in MS-DOS. (See "MS-DOS Functions" later in this chapter.)

Simultaneous Display (Fn + F4)

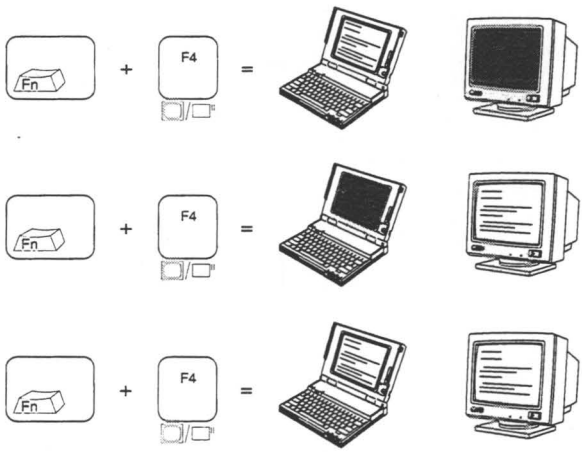
When your computer is connected to an external display, it's possible to display both screens simultaneously. Or, you may switch from one display to the other.

When you turn on the notebook computer with an external display already attached (and turned on), both screens will display simultaneously.

The internal display supports up to 640 x 480 resolution. If the internal display shows gibberish, you may have the external display set to 800 x 600 resolution. If you are using 800 X 600 resolution on the external display, do not toggle back to the computer's internal display.

NOTE: If the notebook computer is closed, only the external screen displays, even if they are connected as described in the preceding paragraph.

To switch from one to the other and back again to simultaneous display, use the following hotkey combination (three-way toggle) as shown in the following illustration:

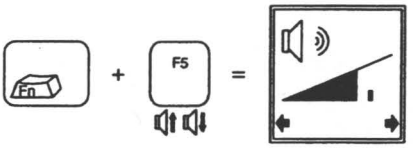


Simultaneous Display

NOTE: You also can use key combinations to switch back and forth between the computer display and an external display. (See "MS-DOS Functions" later in this chapter.)

Speaker Volume Control (Fn + F5)

This hotkey combination displays a popup window that lets you raise, lower, test the sound, or turn off the speaker volume entirely. If you decide to turn off the volume, be aware that you are turning off *all* computer sounds including warning beeps.



Adjusting Speaker Volume

Use the arrow keys as follows to adjust the speaker volume:

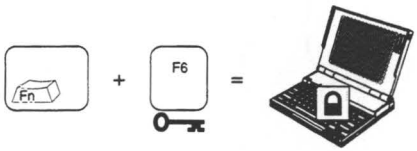
- Press the left arrow key to lower or turn off the volume.
- Press the right arrow key to increase the volume.
- Press the down arrow key to test the sound level.

To remove the popup window from the display, repeat the hotkey sequence, **Fn + F5**, so that you can use your arrow keys as cursor keys.

NOTE: This hotkey combination *cannot* be accessed from an external keyboard. No alternate keys are available through MS-DOS.

QuickLock/QuickBlank (Fn + F6)

This hotkey combination prevents unauthorized access to the computer while you're away from it. While in an application, you can use this hotkey to disable the keyboard, the keyboard/mouse interface and EasyPoint trackball, as well as "blank" the screen. However, you must have already set a power-on or keyboard password and enabled the QuickLock/ QuickBlank feature through the SETUP utility for it to work.

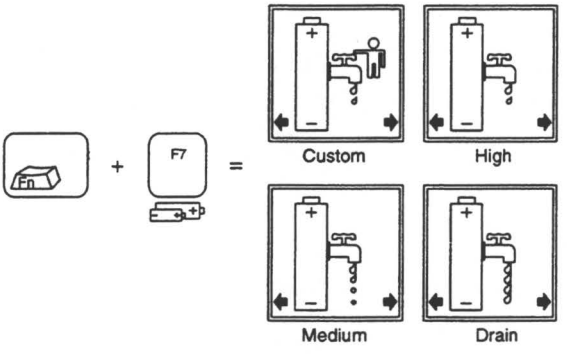


Initiating QuickLock/QuickBlank

To unlock the computer and restore the display, enter your preset password.

PWRCON Levels (Fn + F7)

This hotkey sequence makes changing from one level of PWRCON to another quite simple.



Selecting a PWRCON level

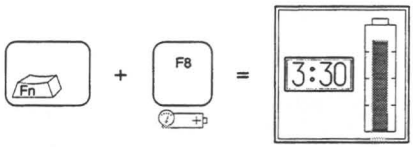
Use the left and right arrow keys to move from the current level of PWRCON to either the custom, high, medium, or drain level of conservation. Notice that the popup window changes accordingly. The medium level is the default. When you turn on the computer, it uses the default level.

Repeating the hotkey sequence (**Fn + F7**) removes the popup window from the display, so that you can use your arrow keys as cursor keys.

For more information about setting a custom level of PWRCON, refer to Chapter 4, "Power Conservation."

Battery Gauge (Fn + F8)

This hotkey displays a battery gauge that shows you how much battery operating time remains in hours and minutes. You'll also see how much energy remains in the battery pack. This value is based on the battery power you're using at a particular moment.



Displaying the Battery Gauge

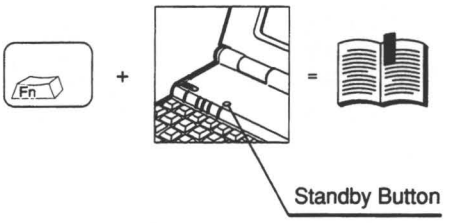
The battery gauge can be displayed only on the notebook computer screen and accessed only from the computer keyboard.

Battery operating time varies with the application you are using, the options you have installed, your level of power conservation, and whether other PC components are on or off.

The time remaining on the battery gauge is based on the amount of power you are consuming right now. The gauge cannot "predict" how much power you will be consuming in a few minutes. For instance, if your system goes into Standby or System Idle, the remaining time will increase. So, the actual operating time you have left will change as subsystems go in and out of power saving modes.

Hibernation

Once you have enabled Hibernation (through the PWRCON icon in Windows) and allocated the necessary memory, you can initiate it with the following hotkey combination:



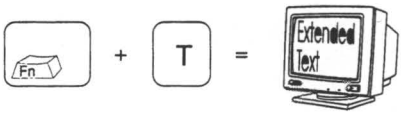
Initiating Hibernation

Turning on the computer again brings it out of Hibernation and right back to the place you left in the application(s). For more information on Hibernation, as well as other power conservation features, refer to Chapter 4, "Power Conservation."

Extended Text

The Extended Text feature is available on the COMPAQ LTE Lite/25E and COMPAQ LTE Lite 4/25C. It is used to change the way text is displayed in text mode, or non-graphical, applications. If you are only using Windows applications, you won't need Extended Text. For details on using Extended Text, refer to Chapter 2, "Introducing the Computer."

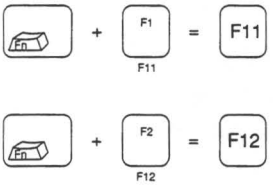
- Text 1 duplicates blank lines so the text fills the screen, but the size of the characters is unchanged.
- Text 2 literally stretches the characters vertically so the same number of lines fill the screen, but the characters are larger.
- Disabled.



Using Extended Text

F11/F12 Key Functions

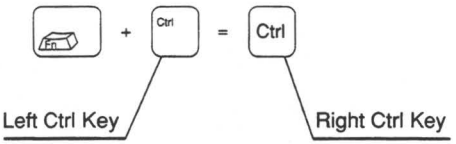
Because some software applications require **F11** and **F12** key functions, you can duplicate these functions on the notebook computer with the following hotkey combination:



Activating F11 and F12 Key Functions

Right Ctrl Key Function

Some applications also require the function of a right **Ctrl** key. The following hotkey combination can be used to access the right **Ctrl** key function:



Activating the Right Ctrl Key Function

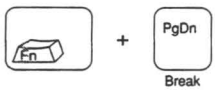
MS-DOS FUNCTIONS

You can use keys on an external keyboard or the computer keyboard for performing any of the following MS-DOS functions:

- Stopping an operation
- Adjusting the keyclick volume
- Echo printing
- Initiating QuickLock/QuickBlank
- Restarting the system
- Reversing the video
- Switching the displays

Stopping an Operation

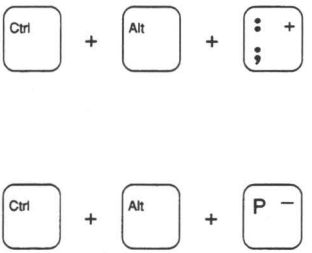
To stop an operation in progress, you can press the **FN** and **PgDn** keys. This key combination only applies to MS-DOS applications, it does not stop operations in Windows.



Stopping an Operation

Adjusting Keyclick Volume

To raise or lower the keyclick volume, use the following key combinations:



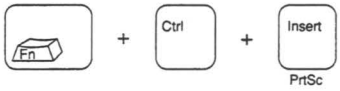
Adjusting Keyclick Volume

NOTE: On the computer keyboard, keyclick volume must be set using the keys in the embedded numeric keypad or the external numeric keypad. On an external keyboard, the keyclick must be set using **+/-** keys in the numeric keypad.

You also adjust the keyclick volume when you adjust the speaker volume using the **Fn + F5** hotkeys.

Echoing Printing

Using the following key combination, you can toggle between starting and stopping line-by-line printing from the screen (echoing text from the screen):



Printing from the Screen

CAUTION: Be sure to attach a printer before using this operation. Doing otherwise interrupts interaction with the system and can result in loss of information.

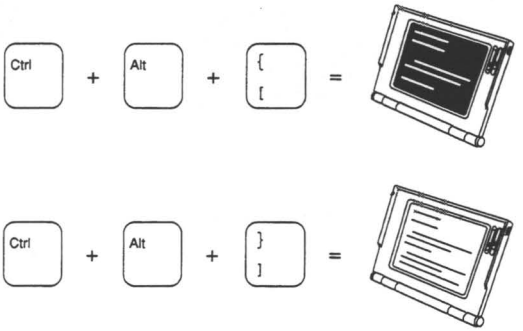
Restarting the System

To restart the system, use the following key combination:

Restarting the System

Reverse Video

Use the following key combination to reverse the video or change from light characters on a dark background to dark characters on a light background and back again:



Reversing the Video

Although the key combination works on the computer keyboard, you'll probably find the hotkeys (**Fn + F3**) more convenient. Remember that the hotkeys do not work from an external keyboard.

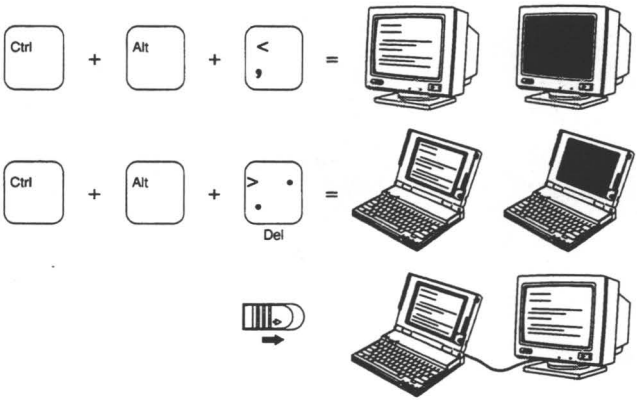
NOTE: Reverse video is not applicable to a color display.

Switching Displays

With the COMPAQ LTE Lite Family, it is possible to use the computer display and an external display simultaneously. Merely have the external display connected to the back of the computer (and turned on) when you turn on the computer.

The internal display supports up to 640 x 480 resolution. If the internal display shows gibberish, you may have the external display set to 800 x 600 resolution. If you are using 800 x 600 resolution on the external display, do not toggle back to the computer's internal display.

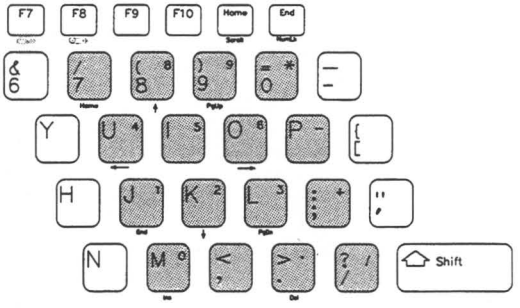
If you want to switch between the displays, use the hotkeys (**Fn + F4**) on the computer keyboard or the following key combination on the external keyboard:



Switching Displays

EMBEDDED NUMERIC KEYPAD

The embedded numeric keypad consists of 16 keys inside the primary keyboard.



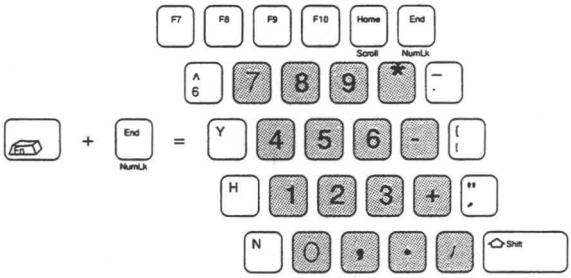
Embedded Numeric Keypad Location

The embedded numeric keypad functions in three ways:

- As part of the keyboard operation
- As a numeric keypad
- As cursor- and screen-control keys

Accessing the Embedded Numeric Keypad

You can access the embedded numeric keypad by pressing the **Fn** + **End/NumLk** keys simultaneously. This enables the num lock function and turns on the num lock light. When the num lock light is on, the embedded numeric keypad is active.



Accessing the Embedded Numeric Keypad

The **Fn** + **Shift** keys activate certain functions within the embedded numeric keypad. These are shown in the following table:

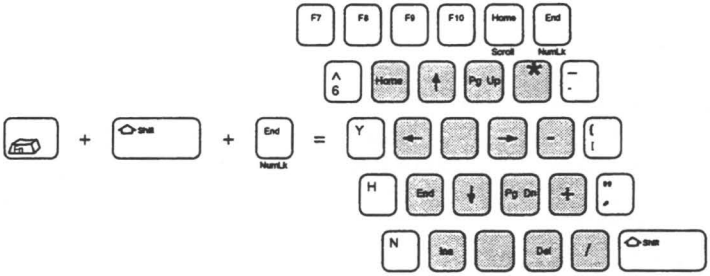
Accessing Embedded Numeric Keypad Functions

When NumLk is:	Press:	To:
Off	Fn + End/NumLk	Enable the embedded numeric keypad (numbers only) and turn on the num lock light.
On	Fn + End/NumLk	Disable the embedded numeric keypad and turn off the num lock light.
On	Fn*	Temporarily enable the keyboard.
On	Fn + Shift*	Temporarily enable the uppercase alphabet of the keyboard.
On	Shift*	Enable cursor control keys.
Off	Fn	Enable cursor control keys.
Off	Fn + Shift*	Temporarily enable the numbers on the embedded numeric keypad.

* Press and hold the key during the entire operation. When the key is released, the keyboard reverts to its original status.

Accessing Cursor- and Screen-Control Functions

Access the cursor- and screen-control functions within the embedded numeric keypad as shown:



Accessing Cursor- and Screen-Control Functions

When the cursor- and screen-control functions are active, the arithmetic functions (*, -, +, /) are also active.

The functions of the **Fn** + **Shift** keys depend on whether the embedded numeric keypad is active or inactive. The following table explains the differences:

Accessing Cursor- and Screen-Control Functions

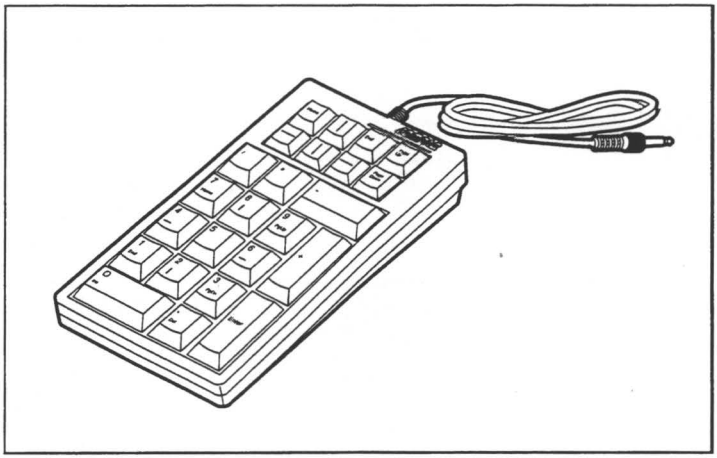
When NumLk is:	Press:	To:
On	Shift*	Temporarily enable the cursor- and screen-control keys within the embedded numeric keypad.
Off	Fn	Temporarily enable the cursor- and screen-control keys within the embedded numeric keypad.

*Press and hold the key during the entire operation. When the key is released, the keyboard reverts to its original status.

Some operations require that you use cursor- and screen-control functions in the standard keyboard rather than those in the embedded numeric keypad. For example, to restart the system with the **Ctrl** + **Alt** + **Delete** key combination, you must use the **Delete** key in the upper-right corner of the keyboard instead of the **Del** key in the embedded numeric keypad.

EXTERNAL NUMERIC KEYPAD

If your work involves many number-intensive applications, you may want to use an optional external numeric keypad that connects to the back of the computer. The keypad provides full-sized keys, a traditional "feel," and complete access to all the functions in the built-in keyboard.

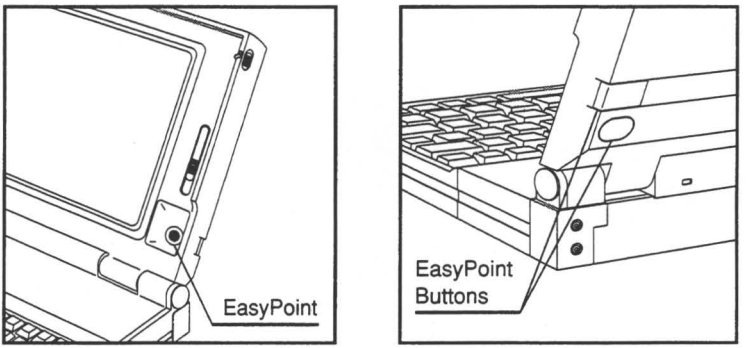


External Numeric Keypad

For information on connecting the external numeric keypad to the computer, refer to Chapter 6, "Optional Equipment."

EasyPoint TRACKBALL

The EasyPoint trackball is an integrated pointing device that eliminates the need to carry a mouse when traveling. It allows the performance of mouse functions in all software that supports a Microsoft-compatible mouse.



EasyPoint Trackball

The EasyPoint trackball is designed for single-handed operation, both for cursor movement and button selection. If you grasp the right side of the display, your thumb operates the trackball and your fingers operate the mouse buttons on the back of the display. The upper button functions as the left mouse button and the lower button functions as the right mouse button.

EasyPoint Trackball Configuration

The trackball is preconfigured at the factory and is ready to use. Some options, such as reversing upper and lower button function, can be changed using the mouse/trackball icon in the Control Panel group in Windows.

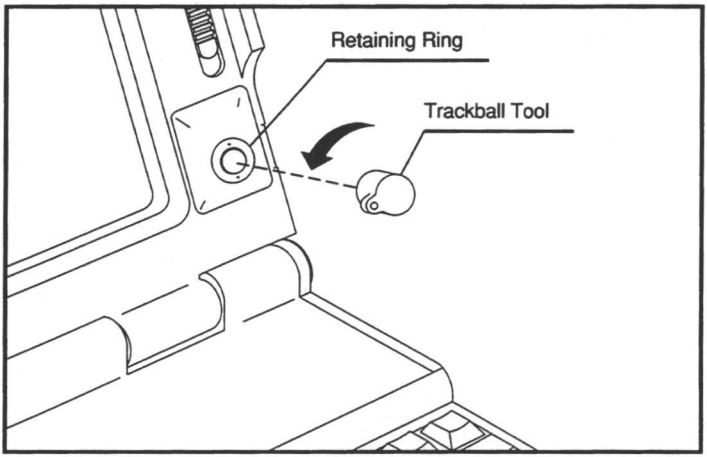
The trackball is a serial device, and uses one of the available serial ports. Compaq recommends you set the trackball up as either COM1 or COM2 (default is COM2) for compatibility with major software packages.

Hardware configuration can be changed using the SETUP utility, which is discussed in Chapter 8, "Diagnostic and Support Software." If an external pointing device is detected when the computer is turned on, the EasyPoint trackball is automatically disabled and the external device is used.

Trackball Cleaning

Occasionally, it may be necessary to clean the trackball. The following steps are used to clean the trackball:

1. Tilt the display backward until it is in a horizontal position.



Cleaning the Trackball

2. Position the trackball removal tool over the retaining ring.
3. Rotate the retaining ring about 1/8 of a turn counter-clockwise until it is loose and can be removed.
4. Tilt the display forward so that the trackball falls out into your hand.
5. Clean the trackball with a tissue or any *dry* cloth. Do not use solvents or wet wipes.
6. If there is debris on the rollers, gently remove it.
7. Insert the trackball back into its cage.
8. Position the retaining ring, aligning the notches. Using the removal tool, turn the ring clockwise until it snaps into place.

POWER CONSERVATION AND BATTERY PACK

This chapter includes information about how power conservation works, explains some of its key elements–timeouts, Hibernation, Standby, and System Idle–and provides information for setting custom power conservation parameters.

This chapter also explains how to use the AC Adapter to supply power to the computer and charge the battery pack. Efficient use of the battery pack is key to computer performance and portability. This chapter provides guidelines for using the battery pack and tells how to make the most of the available battery power.

SAVING BATTERY POWER

Your computer employs a sophisticated combination of methods to save battery power. Advanced Power Management (APM) is installed on the COMPAQ LTE Lite 4/25C and COMPAQ LTE Lite/25E and conserves power without any action from you. In addition, the PWRCON utility is on all COMPAQ LTE Lite Personal Computers and includes several features you can customize for your special needs. However, the amount of battery operating time you can expect depends on the applications you are running and your system configuration.

UNDERSTANDING POWER CONSERVATION

Power conservation extends battery operating time. A built-in feature, power conservation works automatically when the computer is operating under battery power. Power conservation monitors the activity of key computer components, such as the hard drive, processor, display, and keyboard. When a component is inactive for a specific period of time (called a timeout), power conservation reduces the flow of power to that component by shutting it off or slowing it down to conserve battery power. For example, the timeout preset for hard drive inactivity is two minutes. If a software application does not access information on the drive for two minutes, the drive shuts down until it is accessed again.

The following battery operating times are based on typical usage, a standard factory configuration, and with no options installed.

System	Battery Operating Time
COMPAQ LTE Lite 4/25C	2 - 3 Hours
COMPAQ LTE Lite/25C	2 - 2.5 Hours
COMPAQ LTE Lite/25E	3 - 4 Hours

The actual battery operating time you will get depends a great deal on how you use power conservation features on your hardware configuration and on your usage. Options such as a coprocessor or additional memory, as well as software applications that are disk-intensive affect battery operating time. The PWRCON utility offers four easy-to-select power conservation settings that are provided to help maximize battery operating time.

PWRCON Utility

Four PWRCON levels are preset, but you can customize the fourth level using any of the following methods:

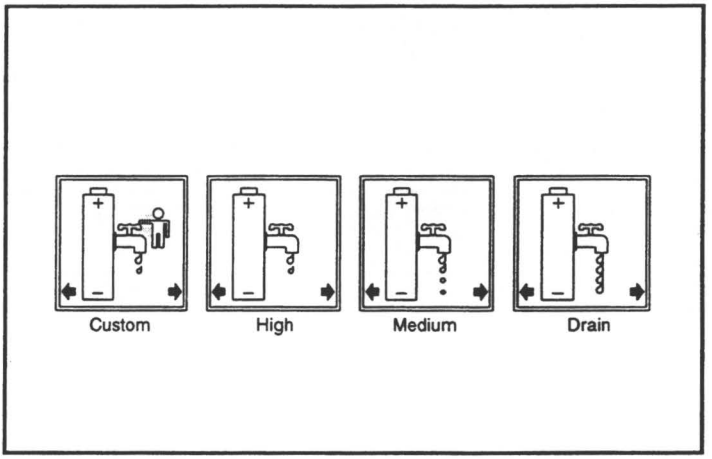
- SETUP utility
- PWRCON icon in the Windows Compaq Utilities group.
- PWRCON command from the system prompt

Instructions for running SETUP and PWRCON are in Chapter 8, "Diagnostic and Support Software."

Initially, the PWRCON level is set to medium, and the computer operates at that level until you change the setting. Because the hotkeys make it so easy to do, you shouldn't hesitate to select another level when you need it.

- **Medium**–the default, provides a balance between system performance and battery operating time.
- **High**–conserves the most energy of the three preset levels and, as a result, provides the maximum amount of battery operating time.
- **Drain**–makes discharging the battery pack easy because this level turns off PWRCON, and all components run at full speed.
- **Custom**–allows you to set your own PWRCON parameters so that your computer works efficiently in your environment.

Once you set your own parameters, the custom level becomes the default and, like the other levels, is available with the special feature hotkeys (**Fn** + **F7**).



PWRCON Levels

Power Conservation Settings

The levels of power conservation use a combination of time-outs and values to control a series of features. One level of power conservation slows the microprocessor, dims the display, and shuts down the hard drive when it's not being used. If inactivity continues, other power saving conditions also occur, such as screen save or Standby. The following table shows the preset values for these special conditions as well as the parameters for the main power conservation levels:

Power Conservation Level Settings

Feature	Medium	High	Custom	Drain
System Idle timeout	3 min	1 min	1-17 min	0
Standby timeout	10 min	5 min	1-17 min	0
Hard drive timeout	2 min	1 min	1-17 min	0
Screen save timeout	5 min	2 min	1-31 min	0
Display brightness	100 %	50 %	0-100 %	100 %
Processor speed (MHz)	25	12.5	3.1 - 25	25

Setting PWRCON Values

The power conservation values can be set or selected in several ways:

- **Hotkeys**–A fast and easy way to choose a preset level for a current work session using the keyboard. When the computer is turned off, the default level of PWRCON returns.
- **PWRCON–icon** An easy way to change the PWRCON level by selecting a preset level or customizing the level using the PWRCON icon in the Compaq Utilities group. For more information on the PWRCON icon, refer to Chapter 8, "Diagnostic and Support Software."
- **SETUP utility**–A way to change the PWRCON level by selecting a preset level or customizing the level by running the SETUP utility. For more information on the SETUP utility, refer to Chapter 8, "Diagnostic and Support Software."
- **PWRCON command**–A way to customize the PWRCON level by using PWRCON command parameters at the system prompt. For more information refer to the "User Programs" section of the *EZ Help Online Library*.

PROCESSING SPEEDS

Under certain circumstances, you may want to change the processing speed of your computer. For example, you can conserve battery power and increase battery operating time by slowing the processing speed. Or, you may need to change it to accommodate a particular software application.

When the computer is operating under external power, the speed for the microprocessor is set to HIGH, which allows the processor to operate at its maximum rate of speed.

When the computer is operating under battery power, the PWRCON level determines processing speed. This setting may be changed using the hotkeys or a MODE SPEED command at the system prompt. Hotkeys **FN + F7** and MODE SPEED are used for temporary settings. The speed returns to the default (medium or custom) when the computer is turned off.

However, if you want to change the default setting, use the Processing Speeds Option under the PWRCON icon in the Compaq Utilities group. For more information on selecting Processing speeds, refer to Chapter 8, "Diagnostic and Support Software."

Both the PWRCON hotkeys and the MODE SPEED utility are preinstalled on your hard drive.

The following table summarizes the processing speed options available:

Processing Speeds	
MODE SPEED:	
HIGH	25 MHz
FAST	12.5 MHz
COMMON	6.2 MHz

Processing speeds can be selected from preset values 1-50* using MODE SPEED *n* parameter:

- 1-12 = 3.1 MHz
- 13-25 = 6.2 MHz
- 26-38 = 12.5 MHz
- 39-50 = 25.0 MHz

*The processor operates at 3.1 MHz to 25 MHz depending on the value selected.

When you select the highest level of PWRCON with the **Fn** + **F7** hotkeys, you slow the processing speed automatically.

If you want to use the MODE SPEED command at the system prompt, type MODE SPEED followed by one of the following speeds:

MODE SPEED = HIGH

MODE SPEED = FAST

MODE SPEED = COMMON

MODE SPEED = *n* (where *n* is a number between 1 and 50. See the table above for associated speeds.)

STANDBY

Standby is a reduced power condition during which most of the computer components shut down so that the information in active memory can be retained and battery operating time extended. With a fully charged battery, your computer can be left on and in Standby for up to 80 hours. When the computer exits Standby, your information returns to the screen at exactly the point where Standby was initiated. More importantly, no information is lost.

NOTE: The computer cannot be switched into Standby when operating under an external power source such as the AC Adapter, Automobile Adapter, or Desktop Expansion Unit.

Initiating Standby

Standby is initiated in two ways: automatically by the computer system or by the user. When Standby is initiated, the following things happen:

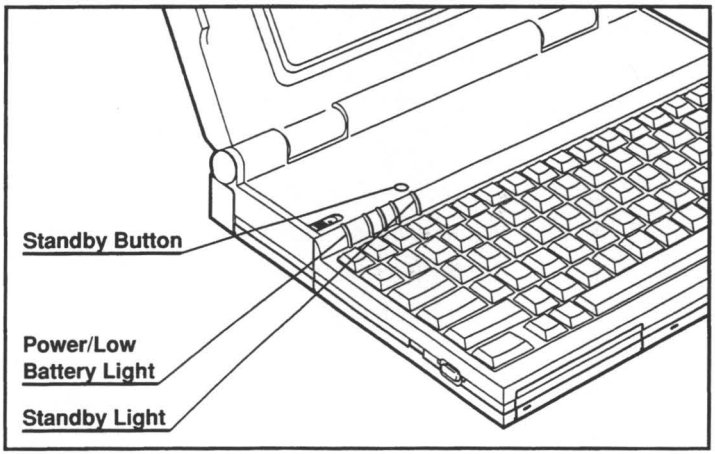
- The screen clears.
- The computer beeps once.
- The standby light begins to blink.
- The power/low battery light turns off.

System-Initiated Standby

- Begins after 10 minutes (default) of system inactivity during normal operations.
- Begins after 20 seconds of inactivity when the system has reached a critically low battery condition (Low Battery 2).

User-Initiated Standby

You can initiate Standby anytime to conserve battery operating life by pressing the standby button.



Computer in Standby

Auxiliary Battery

You'll find the Standby feature very convenient if you want to change battery packs while you're working. With the power demands of the computer dramatically reduced, a small auxiliary battery inside the computer can support the information and applications in active memory for about one minute so that you can change battery packs without losing your place or your information. Instructions for changing and charging your battery packs are included later in this chapter.

Exiting Standby

Any of the following causes the computer to exit Standby:

- Pressing the standby button.
- Connecting the AC Adapter (or other power source).
- Modem activity.

If Standby was initiated by a critically low battery, connect the computer to a power source before exiting Standby to ensure that no information is lost. In this case, either of the following allows the computer to exit Standby:

- Connecting the AC Adapter or Automobile Adapter to the computer and a power source
- Replacing the battery pack with one that is fully charged and pressing the standby button

When the computer exits Standby, several things happen:

- The computer beeps once.
- Your application reappears on the screen.
- The standby light turns off.
- The power/low battery light turns on.

At this point, you can continue working where you left off.

SYSTEM IDLE

System Idle is a reduced power condition that the system initiates during short periods of system inactivity before Standby initiates. The default timeout for System Idle is 3 minutes, while the default timeout for Standby is 10 minutes.

During System Idle, the following occurs:

- The display lighting dims.
- The processor speed slows.

Changes in the computer during System Idle are quite subtle. You may not even notice them. Normally, the changes occur while you're not using the computer, and any activity immediately restores the display brightness and processor speed to their original settings.

IMPORTANT: If you're using an application that is processor intensive, the system may initiate System Idle and slow the processing noticeably. If this occurs, use the PWRCON icon in the Compaq Utilities group, setting the System Idle timeout to zero.

HIBERNATION

Although turned on through the PWRCON icon in the Compaq Utilities group, Hibernation isn't just another power conservation feature. Once you enable Hibernation, it saves your place in your application and automatically turns off the computer. Hibernation can be activated manually or automatically if there is no computer activity for a period of time or the battery reaches a critically low condition (Low Battery 2). So, if you are away from your computer when the battery runs low, the system activates Hibernation to save your information. When you turn the computer on again, your applications are returned to the screen.

Hibernation can also be used like a placemarker, conveniently providing a way to mark your place in an application. It proves particularly useful when you're making a presentation away from your office. You can do all your preparation well in advance, mark your place with Hibernation, and be ready to present as soon as you arrive.

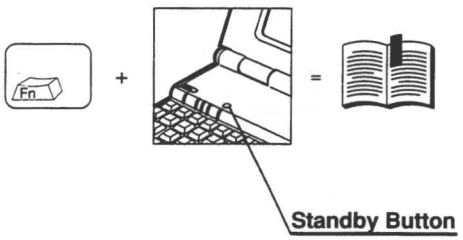
Enabling Hibernation

Before Hibernation can be initiated, it must be turned on using the PWRCON icon in the Compaq Utilities group. Doing so creates a file on the hard drive for the information in memory. The hard drive must have storage space equal to the amount of memory for this file. If there's not enough storage space on the hard drive to store the information, an insufficient disk space message is displayed.

Initiating Hibernation

Hibernation is initiated two ways: by the computer system or by the user. When Hibernation is initiated, the following occurs:

- The keyboard locks.
- The screen clears.
- All current information in memory is saved to the hard drive.
- The computer automatically turns off.



Initiating Hibernation

System-Initiated Hibernation

- Initiates after a specified period of time (timeout) in Standby.
- Initiates when the system reaches a critically low battery condition (Low Battery 2).

User-Initiated Hibernation

You can initiate Hibernation under battery power, by pressing the **Fn key + standby button.**

NOTE: Hibernation cannot be initiated when the computer is in the Desktop Expansion Base.

Exiting Hibernation

When you turn on the computer:

- The computer exits Hibernation.
- The information saved to the hard drive is returned to the screen at the point where Hibernation was initiated.
- The computer recognizes the same trackball or other pointing device you were using when Hibernation was initiated.

NOTE: To stop the restoration of the information, press the **Fn** + **Ctrl** + **Break** keys.

USING THE AC ADAPTER AND BATTERY PACK

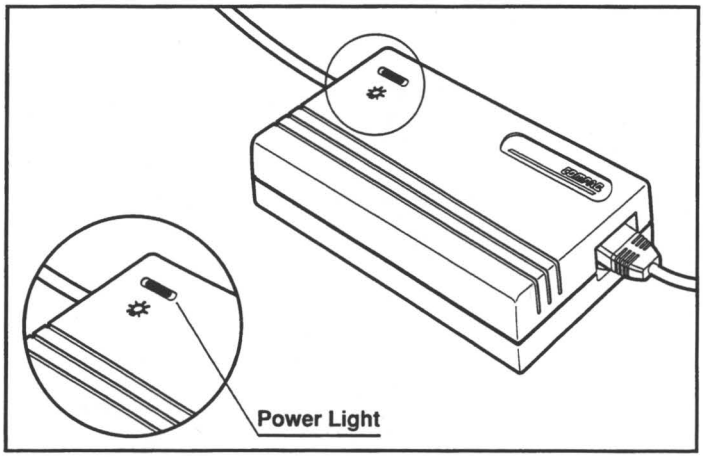
The computer operates on DC power from any of the following sources:

- AC Adapter, included with the computer
- NiMH Power Smart Pack, included with the computer
- Enhanced NiCd Power Smart Pack (optional equipment)
- Automobile Adapter (optional equipment)
- Desktop Expansion Base (optional equipment)

USING THE AC ADAPTER

The AC Adapter is a self-contained power supply that converts alternating current (AC) to the direct current (DC) required by the computer. It automatically determines line voltage from 100/120 to 220/240 volts.

When the AC Adapter is connected to the computer and a grounded AC outlet, it powers the computer and charges the battery pack–even while you're working. The green power light on the AC Adapter turns on to indicate that it's operating.



AC Adapter

In the following sections, you'll find information about:

- What happens when the AC Adapter charges the battery pack.
- How to connect the AC Adapter to the computer.
- How to connect the AC Adapter to the optional External Battery Charger.
- How to use the optional External Battery Charger.

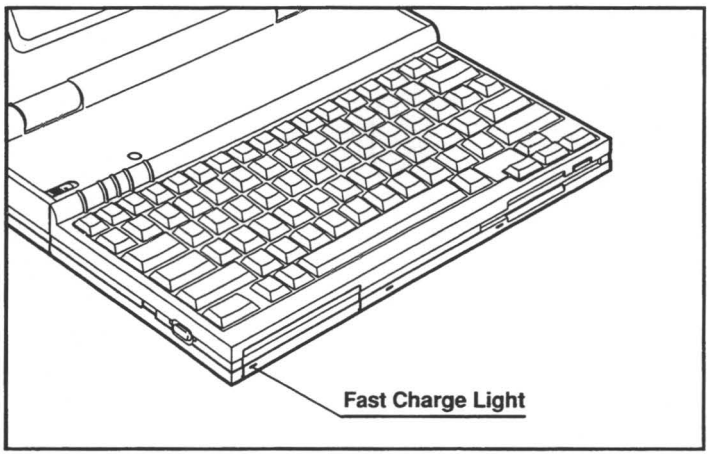
Charging the Battery Pack

The AC Adapter charges the battery pack in two ways–with a fast charge and a slower trickle charge.

Fast Charging

In fast charge, a rapid flow of current is delivered to the battery pack until the charge reaches 95 percent of capacity. The current then switches to a trickle charge. Fast charging a fully discharged battery pack takes about 1 hour if the computer is turned off and 1 1/2 to 2 hours if it is being used under typical operating conditions.

The orange fast charge light on the battery pack turns on when a fast charge begins and turns off when the battery reaches 95 percent capacity and switches to a trickle charge. If the battery pack is not fully charged. fast charging occurs anytime the AC Adapter is connected to the computer and an AC outlet.



Fast Charge Light on the Battery Pack

Fast charging may not occur if the battery pack is exposed to extremes of temperature for an extended period of time. Instead, the battery pack trickle charges until the temperature returns to normal. For more about battery pack temperature requirements, refer to "Storing the Battery Pack" later in this chapter.

Trickle Charging

Trickle charging, which is not affected by temperature, is much slower than fast charging. When the battery pack is almost fully charged, the current switches to trickle charge to protect the battery pack from a possible overcharge. As long as the AC Adapter is connected to the computer and to an AC outlet, the battery pack receives an ongoing trickle charge to "top" it off and keep it fully charged.

Connecting the AC Adapter to the Computer

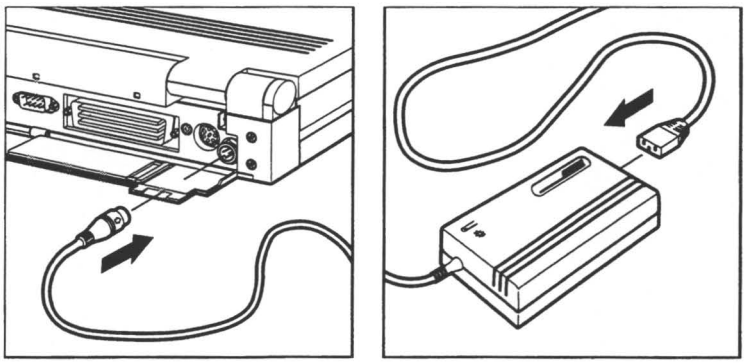
To connect the AC Adapter to the computer, follow these steps:

1. Connect the AC power cord to the AC Adapter.

> **WARNING:** This equipment is designed for connection to a grounded (earthed) outlet. The 3-prong grounding type plug is an important safety feature. To avoid risk of electric shock or damage to your equipment, do not disable this feature.

2. Plug the AC power cord into a grounded AC outlet. As with most portable electrical equipment, the outlet should be easily accessible and located near the computer.
3. Open the connector cover on the rear panel.
4. Connect the AC Adapter cable to the AC Adapter connector.

NOTE: You can change from battery power to the AC Adapter without turning off the computer or losing your information. The computer senses the change and readjusts accordingly.



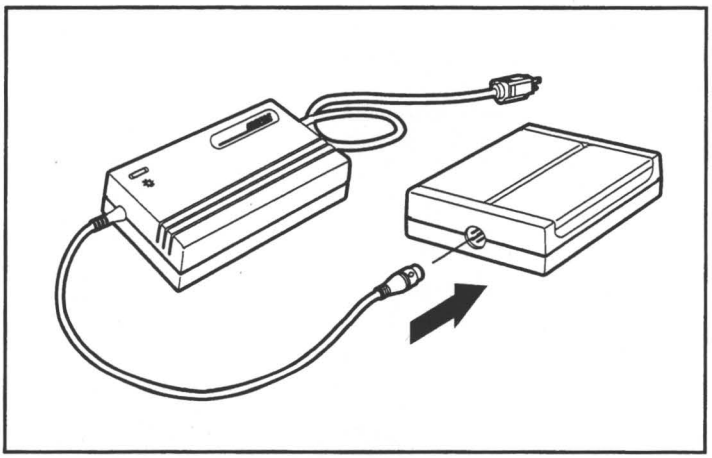
Connecting the AC Adapter

It's always a good idea to keep the battery pack in the computer when you're using it with AC power. This supplies the battery pack with a constant trickle charge and helps ensure that you'll have a fully charged battery pack when you need it to operate the computer.

Connecting the AC Adapter to the Battery Charger

The AC Adapter can also be used to power an optional External Battery Charger. To connect the AC Adapter to the battery charger, complete the following steps:

1. Insert the 3-pin connector on the AC Adapter cable into the External Battery Charger.
2. Connect the AC power cord to the AC Adapter.
3. Plug the AC power cord into a grounded 3-prong outlet. As with most portable electrical equipment, the outlet should be easily accessible and located near the computer.



Connecting the AC Adapter to the Battery Charger

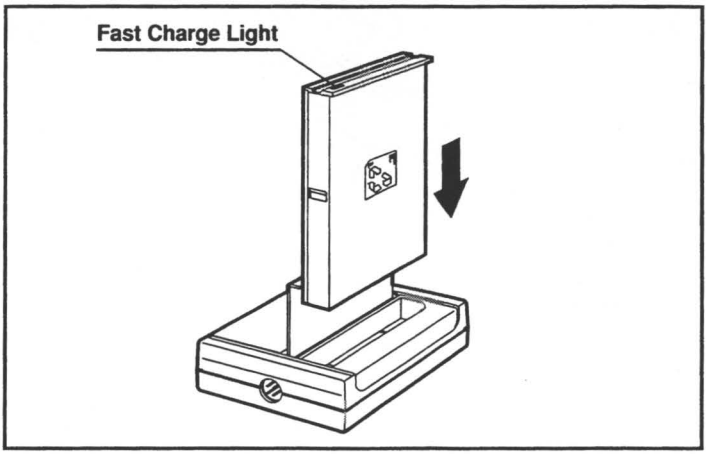
Using the Battery Charger

To charge a battery pack in the External Battery Charger, complete the following steps:

1. Lift one of the charging slot covers in the battery charger.
2. Insert the battery pack (NiMH or NiCd) into the charging slot.

   If the battery pack is inserted correctly, the fast charge light on the battery pack turns on and stays on until the battery pack is fully charged and ready to use.

   If you mistakenly insert a battery pack that is already fully charged, the fast charge light turns on momentarily to indicate the battery status, then turns off.
3. *Optional:* Insert a second battery pack (NiMH or NiCd) into the empty charging slot.



Inserting a Battery Pack into the Battery Charger

USING BATTERY POWER

The battery pack supplies internal power to the computer, making it truly portable. A NiMH battery pack comes with the computer and a NiCd battery pack is optional equipment. Either battery pack operates in any of the computers. This section concentrates on the battery pack and includes information about battery operating time, the battery gauge, battery storage, and resolving low battery conditions.

WARNING: Do not crush, puncture, incinerate or short external contacts. Do not attempt to open or service the battery pack.

NOTE: Disposal of a NiMH or NiCd battery pack should be done in accordance with local regulations or returned to Compaq by an established parts return method.

Increasing Battery Operating Time

Battery operating time varies depending on the system components, options, and applications being used. For example, under typical conditions, a fully charged battery pack in a COMPAQ LTE Lite/25E provides 3 hours of operating time. However, you can increase battery operating time in some computers by as much as 50 percent by controlling the energy required by the computer and the energy stored in the battery pack.

Minimize the Energy Required

To minimize the energy required by the computer, make the following practices routine:

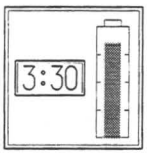
- Take advantage of the power conservation features available.
- Use the **Fn** + **F7** hotkeys to set the PWRCON level to "high." This adjustment increases operating time up to 50 percent under typical operating conditions.
- Use the PWRCON icon in the Compaq Utilities group or the SETUP utility to customize the PWRCON settings to work more efficiently with your applications. The amount of battery time you add depends on the values you select.

Maximize the Energy Stored

To maximize the energy stored in the battery pack, follow these guidelines:

- Completely discharge, then recharge the battery pack at least every 60 days. This improves overall battery performance and, as an added bonus, ensures the continued accuracy of the battery gauge.
- Keep a battery pack in the computer when you're using it with AC power. This supplies the battery pack with a constant trickle charge.
- Store the battery pack in a cool, dry place when it's not in use.

Ensuring Battery Gauge Accuracy



The battery gauge displays the operating time and percentage of battery power remaining. The time remaining increases or decreases depending on the demands of the application or operating system software on the various computer components. Under typical operating conditions, the battery gauge is accurate to within 10 minutes.

NOTE: If question marks are displayed in the battery gauge, the battery gauge is no longer accurate. To restore the accuracy of the battery gauge fully discharge and recharge the battery pack.

To ensure the accuracy of the battery gauge, complete the following cycle at least every 60 days:

1. Discharge the battery pack. Allow the computer to discharge over night or make the discharging process part of your everyday routine.

   NOTE: You don't have to stop your work to discharge the battery pack. Merely use the computer until the battery pack reaches Low Battery 2, then connect the computer to an external power source.

2. Fully recharge the battery pack.

Discharging the Battery Pack

To discharge the battery pack, following these steps:

1. Turn off the computer.
2. If connected, disconnect the AC Adapter (or other power source) from the computer.
3. Turn on the computer.
4. Use the **Fn** + **F7** hotkeys to turn off PWRCON by selecting the drain level from the popup window.
5. Leave the computer on until it discharges to at least Low Battery 2.

   If you'd prefer, just leave it on over night to discharge completely. The power/low battery light turns off when no charge remains.

Recharging the Battery Pack

Once the battery pack is discharged, complete the following steps to fully recharge it:

1. Connect the AC Adapter (or other power source) to the computer.
2. When the fast charge light on the battery pack turns off, the battery pack is fully charged.

Remember, it takes about 1 hour to fast charge the battery pack if the computer is turned off, and 1 1/2 to 2 hours if it is being used.

Resetting the PWRCON Levels

When the battery pack is recharged (and the fast charge light turns off), the PWRCON level may require resetting:

- If the battery pack was allowed to discharge fully, PWRCON returns to its default level.
- If the battery pack did not discharge below Low Battery 2, PWRCON remains set to drain and must be reset.

  Use the **Fn** + **F7** hotkeys to reset PWRCON to the level desired:

  - **Medium**–the default, provides a balance between system performance and battery operating time.
  - **High**–conserves the most energy of the three preset levels and, as a result, provides the maximum amount of battery operating time.
  - **Drain**–makes discharging the battery pack easy, because it turns off PWRCON.
  - **Custom**–allows you to set your own PWRCON parameters so that your computer works efficiently in your environment.

Storing the Battery Pack

Store the battery pack in a cool, dry place. High temperatures cause a battery pack to lose its charge more quickly, and excessive heat can reduce overall battery life. Use the following temperature ranges for battery pack storage:

NiMH	- 4° to 86°F	- 20° to 30°C
NiCd	- 4° to 122°F	- 20° to 50°C

Replacing the Battery Pack

The next two sections explain how to remove one battery pack and insert another while the computer is turned on and operating on battery power.

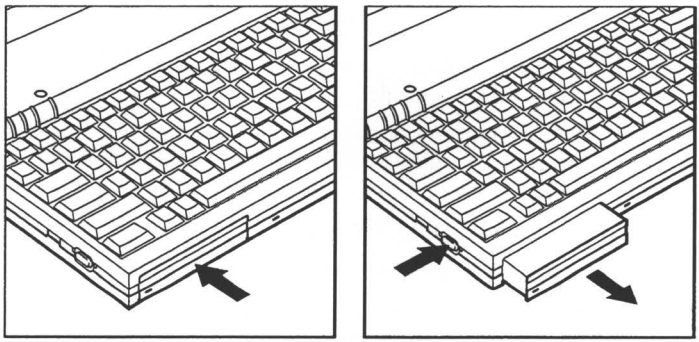
Removing the Battery Pack

To remove the battery pack, complete the following steps:

1. If the computer is on, initiate Standby by pressing the standby button.

   The screen clears, the standby light blinks, and the power/low battery light turns off.

CAUTION: Wait for the standby light to turn on before removing the battery pack. Then replace it within one minute. This prevents the possibility of losing information in memory when you initiate Standby to replace the battery pack.



Removing the Battery Pack

2. Press in on the front of the battery pack.

   The battery pack moves back slightly and stops.

3. Hold the battery pack in place and press the battery release button, which is on the left side of the computer.
4. Release pressure on the battery pack.

   The battery pack springs out.
5. Remove the battery pack.

Inserting a Fresh Battery Pack

CAUTION: To prevent the possible loss of the information in memory when the computer is in Standby, insert a charged battery pack within one minute of removing one.

To insert a fresh battery pack, follow these steps:

1. Insert the battery pack into the battery compartment. The fast charge light on the battery pack should be to the front left when you slide the battery pack into place.
2. If the computer is on, press the standby button to restore normal operation.

   The computer beeps, the standby light turns off, the power/low battery light turns on, and your information returns to the screen.
3. Continue with your work.

Low Battery Conditions

The computer recognizes two low battery conditions: Low Battery 1 and Low Battery 2.

To prevent the loss of information, it is important that you save whatever you are working on as soon as the computer enters a low battery condition. However, it is *not* always necessary to resolve a low battery condition immediately. With your information protected, you may choose to continue working.

Discharging the battery pack on a regular basis is essential to ensure the highest level of battery gauge accuracy and battery performance. Occasionally allow the computer to discharge the battery pack until it reaches Low Battery 2. At that point, you should resolve the low battery condition as directed in the following section.

Low Battery 1

The computer enters Low Battery 1 when the battery pack has approximately 6 percent of its charge remaining. When this occurs, you are alerted with the following signals:

- The power/low battery light flashes.
- The speaker beeps six times (unless the beeps are disabled or the speaker volume is turned down).

IMPORTANT: If the lights indicate a low battery condition but the speaker does not beep, the speaker volume may have been turned down or the beeps disabled. In either case, the lights continue to function to alert you to system conditions.

Beeps for low battery and Standby can be disabled through the PWRCON icon in the Compaq Utilities group or the SETUP utility. Low battery beeps can be turned off, along with all other beeps, when the speaker volume is turned down from the popup window with the **Fn** + **F5** hotkeys. For additional information, refer to the section on beeps later in this chapter or to Chapter 3, "Using the Keyboard and EasyPoint Trackball."

Low Battery 2

The computer enters Low Battery 2 when the battery pack has approximately 2 percent of its charge remaining. You are then alerted with the following signals:

- The speaker beeps rapidly 12 times.
- The power/low battery light flashes rapidly.

Low Battery Standby

When the computer is idle and in Low Battery 1 or 2 for a short time, it initiates Standby to conserve the remaining battery power.

System-Initiated Hibernation

If Hibernation is turned on, it initiates after a specified period of time in Standby or at Low Battery 2 and turns off the computer, protecting the information in memory and conserving the remaining battery power.

Discharged Battery

If the PWRCON feature is disabled and the battery pack discharges before you save your information, that information will be lost.

Resolving Low Battery Conditions

The following table contains descriptions of low battery and discharged battery conditions, applicable warnings, and recommendations for correcting these conditions if they occur.

Resolving Low Battery Conditions

Condition	Warning	Recommended Action
Low Battery 1 Approximately 6% battery charge remaining.	Speaker beeps 6 times. Power/low battery light flashes once a second.	When AC power is available: 1. Connect the AC Adapter to the computer. 2. Continue your work. When a charged battery pack is available: 1. Press the standby button. 2. Replace the battery pack. 3. Press the standby button. 4. Continue your work. If Hibernation is enabled, press the **Fn key + standby button** to initiate Hibernation until another power source is available. When neither AC Adapter nor charged battery pack is available: 1. Save your information. 2. Exit the application. 3. Turn off the computer until a power source is available.

NOTE: The speaker does not beep if it has been disabled or if the speaker volume has been turned down.

Resolving Low-Battery Conditions *Continued*

Condition	Warning	Recommended Action
Low Battery 1 Standby	Standby light begins to flash at a faster rate.	If AC power is available: 1. Connect the AC Adapter to the computer. The computer automatically exits Standby. 2. Continue your work. If Hibernation is enabled, press the **Fn key** + **standby button** to initiate Hibernation until another power source is available. If AC power is unavailable: 1. Press the standby button to exit Standby. 2. Save the data. 3. Exit the application. 4. Turn off the computer until power is available.
Low Battery 2 Approximately 2% of the battery charge remaining.	Speaker beeps 12 times. Power/low battery light and standby light flash twice a second.	Follow the recommendations for Low Battery 1.

NOTE: The speaker does not beep if it has been disabled or if the speaker volume has been turned down.

Resolving Low Battery Conditions *Continued*

Condition	Warning	Recommended Action
Low Battery 2 Standby	Power/low battery light and standby light flash 2 times a second until power is lost.	If AC power is available: 1. Connect the AC Adapter to the computer. The computer automatically exits Standby. 2. Continue your work. If AC power is unavailable: If Hibernation is enabled, press the **Fn key** + **standby button** to initiate Hibernation until another power source is available. Left unattended, the system initiates Hibernation, saves data, and turns itself off.
Discharged Battery No battery charge remaining.	Lights are turned off and there is no system activity.	Connect the AC Adapter or replace the discharged battery pack with one that is charged.

NOTE: The speaker does not beep if it has been disabled or if the speaker volume has been turned down.

Turning Beeps On or Off

You can turn warning beeps on or off with one of the following methods:

- **Hotkeys (Fn + F5)**–Turn off all computer beeps by turning the speaker volume down.
- **PWRCON icon**–Turn the low battery and Standby warning beeps either on or off from a window by selecting the PWRCON icon in the Compaq Utilities group.
- **SETUP utility**–Turn the low battery and Standby warning beeps off or on by running either the internal version of the SETUP utility or the SETUP utility on the Diagnostics diskette.
- **PWRCON command**–Turn the low battery beeps off or on using the command parameters at the system prompt.

For more information on the special feature hotkeys, refer to Chapter 3, "Using the Keyboard and EasyPoint Trackball," and for more about these utilities, refer to the Chapter 8, "Diagnostic and Support Software."

SECURITY FEATURES

The COMPAQ LTE Lite Family offers MultiLock security features that provide solutions for a variety of potential security problems. The following table identifies these features, their purposes, and how to establish them. More detailed descriptions and procedures for using the features are covered later in this chapter.

MultiLock Security Features

Feature	Purpose	How it is Established
Power-On Password	Prevents use of the computer until the password is entered.	SETUP utility
Setup Password	Prevents reconfiguration of the computer (use of the SETUP utility) until the password is entered. **NOTE:** Only Applicable to the COMPAQ LTE Lite/25E, and COMPAQ LTE Lite 4/25C	SETUP utility
DriveLock Password	Prevents use of the hard drive until the password is entered. **NOTE:** The DriveLock Password is only applicable to the COMPAQ LTE Lite/25C Model 84	SETUP utility
QuickLock/ QuickBlank	Disables the keyboard and keyboard/mouse interface, trackball, and clears the screen.	SETUP or KP utility
Keyboard Password	Prevents use of the keyboard and keyboard/mouse interface until the password is entered.	KP utility
Diskette Drive Disable	Prevents use of the diskette drive until it is reenabled through SETUP. **NOTE:** Only Applicable to the COMPAQ LTE Lite/25E, and COMPAQ LTE Lite 4/25C	SETUP utility
Network Server Mode	Permits the computer to operate securely unattended.	SETUP utility
Cable Lock Provision	Provides physical security	Hardware

SYNTAX FOR SECURITY PASSWORDS

Because the computer keyboard is designed to meet specific country requirements, the key characters vary slightly from one country keyboard to another. As a result, the syntax required to change or delete a security password also varies.

When you must change or delete a security password, substitute the appropriate character on your keyboard (listed in the following table) for the slash mark (/) shown in the examples on the following pages.

Keyboard Characters/Syntax		
Country Keyboard	**Main Keyboard**	**Embedded Numeric Keypad**
Belgian	=	/
Danish	-	/
French	!	/
French Canadian	e	/
German	-	/
Italian	-	/
Latin American	-	/
Norwegian	-	/
Spanish	-	/
Swedish/Finnish	-	/
Swiss	-	/
U.K. English	/	/
U.S. English	/	/
Japanese	/	/

POWER-ON PASSWORD

By establishing a power-on password, you can prevent anyone without the password from using your computer if they turn it on. When a power-on password is established, it must be entered each time the computer is turned on. A power-on password prevents unauthorized access to your information.

Establishing a Power-On Password

To establish a power-on password, complete the following steps:

1. Run the SETUP utility. If you have established a Setup password, you must enter it before you can make any changes using the SETUP utility.
   - If you are running the internal version of SETUP, select the language desired.
   - If you are using the version on the Diagnostics diskette, select the option to set up or change the configuration of the computer.
2. Press the **F4** key to change the configuration.
3. Select the password control option.
4. Select the power-on password option.
5. Follow the instructions on the screen for establishing the power-on password.

IMPORTANT: You cannot use the computer if you forget your power-on password. Therefore, Compaq recommends that you record your password and put it in a safe place.

NOTE: If you establish the same password for both the power-on and DriveLock passwords, you need to enter only one password when you turn on your computer. In addition, if you change or delete the power-on password, you also change or delete the DriveLock password.

6. Return to the Setup summary.
7. Select the option to exit the utility.
8. If you are using the diskette version of the SETUP utility, remove the diskette from the diskette drive.

Entering the Power-On Password

After you establish a power-on password, you must enter it each time you turn on the computer. To enter the power-on password, complete the following steps:

1. Turn on the computer.
2. When the power-on password prompt or key symbol  is displayed, enter your power-on password.

If a DriveLock password that is different from the power-on password has also been established, two prompts are displayed:

 prompt for the power-on password

 prompt for the DriveLock password

If both passwords are the same, only the  prompt is displayed.

If you enter the password incorrectly, a  prompt is displayed.

Enter your password again. After three unsuccessful attempts, you must turn the computer off then on again before you can continue.

Changing the Power-On Password

To change the power-on password, complete the following steps:

1. Turn on the computer.

    is displayed

2. Enter your current power-on password, type a slash (/), and enter your new power-on password twice as shown:

   current password/new password/new password

IMPORTANT: Type carefully; the characters you type do not appear on the screen.

NOTE: Remember, if the power-on password and DriveLock password are the same, changing the power-on password also changes the DriveLock password.

The new password takes effect the next time you turn on the computer.

Deleting the Power-On Password

To delete the power-on password, complete the following steps:

1. Turn on the computer.

    prompt is displayed.

2. Enter your current power-on password followed by a slash (/) as shown:

   current password/

NOTE: Remember, if the power-on password and DriveLock password are the same, deleting the power-on password also deletes the DriveLock password.

If You Forget Your Power-On Password

If you forget your power-on password, you cannot use the computer until the computer memory is cleared of the password. To do this it is necessary to disassemble the computer. Contact your Authorized COMPAQ Reseller for assistance.

NOTE: Clearing the computer memory of the power-on password does not clear the DriveLock password. Refer to the section in this chapter on the "DriveLock Password" for more information.

SETUP PASSWORD

You can protect your system configuration by establishing a setup password. Once this password is established, you cannot change the configuration until you enter the password.

NOTE: Applicable only to the COMPAQ LTE Lite/25E and COMPAQ LTE Lite 4/25C.

Establishing the Setup Password

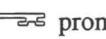
1. Run the SETUP utility.
   - If you are running the internal version of SETUP, select the language desired.
   - If you are using the version on the Diagnostics diskette, select the option to set up or change the configuration of the computer.
2. Press the **F4** key to change the configuration.
3. Select the option for password control.
4. Select the option for Setup Password.
5. Type the desired password, and press the Enter key. Type carefully because the password will not display as you type it. Retype the password, and press the Enter key.
6. Press the **Esc** key; and then press the **F3** key to exit and save your changes.

NOTE: This procedure can also be accomplished by using the SETUP utility on the Diagnostics diskette.

Using SETUP after Establishing the Setup Password

Once the setup password has been established, the configuration cannot be modified without using the setup password. The SETUP program can still be accessed from the Diagnostics diskette and viewed without the password.

1. To modify the configuration, turn on or restart the computer. Press the **F10** key immediately after the cursor moves to the upper-right corner of the screen. This occurs after the Power-On Self-Test (POST) runs and you hear two beeps.
2. The setup password

   s  prompt is displayed

3. Enter your setup password.

   If you enter the password incorrectly, a

   s  prompt is displayed.

   Enter your password again. After three unsuccessful attempts, you must turn the computer off then on again before you can continue.

4. Once you enter the password successfully, the System Configuration Summary is displayed. You can now modify the computer configuration by pressing the **F4** key.

Changing the Setup Password

To change the setup password, complete the following steps:

1. Turn on the computer. Run the SETUP utility.

   s  prompt is displayed

2. Enter your current setup password, type a slash (/), and enter your new setup password twice as shown:

   current password/new password/new password

IMPORTANT: Type carefully; the characters you type do not appear on the screen. The new password takes effect the next time you run the SETUP utility.

Deleting the Setup Password

To delete the setup password, complete the following steps:

1. Turn on the computer, and run the Setup Utility.

   s  prompt is displayed.

2. Enter your current setup password followed by a slash (/) as shown:

   current password/

If You Forget Your Setup Password

If you forget your setup password, you cannot reconfigure the computer until the computer memory is cleared of the password. To do this, it is necessary to disassemble the computer. Contact your Authorized COMPAQ Reseller for assistance.

DRIVELOCK PASSWORD

NOTE: The DriveLock password is applicable only to the COMPAQ LTE Lite/25C Model 84.

With a DriveLock password set, you can prevent unauthorized access to data on the hard drive even if the drive is removed from the computer. Because DriveLock is a powerful security feature, it should be used with discretion.

Determining Security Levels

You may choose from two levels of DriveLock security: High and Maximum. However, only the High level can be overridden if the established password is ever forgotten–then only with assistance directly from Compaq.

Should you forget the DriveLock password set at the Maximum level, you must reformat the disk. No override mechanism is possible, and data is irretrievable. Use the Maximum level only if your disk contains the most sensitive information.

If you establish a DriveLock password, it must be entered each time you turn on the computer.

Establishing the DriveLock Password

To establish the DriveLock password, complete the following steps:

1. Run the SETUP utility. If you have established a Setup password, you must enter it before you can make any changes using the SETUP utility.
   - If you are running the internal version of SETUP, select the language desired.
   - If you are using the version on the Diagnostics diskette, select the option to set up or change the configuration of the computer.
2. Press the **F4** key to change the configuration.
3. Select the password control option.
4. Select the DriveLock password option.
5. Follow the instructions on the screen for establishing the DriveLock password at either the High or Maximum security level.

CAUTION: If you forget the DriveLock password set at the Maximum level, you must reformat the disk that deletes all of your data. No override mechanism is possible, and data is irretrievable. Use the Maximum level *only* if your disk contains the most sensitive information.

IMPORTANT: You cannot use the computer if you forget your DriveLock password. Therefore, Compaq recommends that you record your password and put it in a safe place.

NOTE: If you establish the same password for both the power-on and DriveLock passwords, you need to enter only *one* password when you turn on your computer. In addition, if you change or delete the power-on password, you also change or delete the DriveLock password.

6. Return to the SETUP summary.
7. Select the option to exit the utility.
8. If you are using the diskette version of the SETUP utility, remove the diskette from the diskette drive.
9. Press the **Enter** key to establish the password and restart the computer.

IMPORTANT: When a DriveLock password is established, the computer cannot operate in the network server mode.

Entering the DriveLock Password

After you establish a DriveLock password, you must enter it each time you turn on the computer. To enter the password, complete the following steps:

1. Turn on the computer.
2. When the DriveLock prompt

    is displayed, enter your DriveLock password.

   If you have established both a power-on password and a DriveLock password, two prompts are displayed: the first symbol

    for the power-on password and the second

    for the DriveLock password.

   When both passwords are the same, only the power-on password prompt is displayed.

Power-On Password Prompt

Incorrect Password Prompt

DriveLock Password Prompt

DriveLock Unlock Prompt

If you enter your password incorrectly, a broken key symbol is displayed. Enter the password again. After three unsuccessful attempts, you must turn the computer off then on again before you can continue.

Changing the DriveLock Password

To change the DriveLock password, complete the following steps:

1. Turn on the computer.

    is displayed

2. Enter your current DriveLock password once and the new DriveLock password twice, typing a slash (/) between the passwords as shown:

   current password/new password/new password

IMPORTANT: Type carefully; the characters you type do not appear on the screen.

NOTE: Changing the DriveLock password does not change the power-on password even in situations where they are the same. Changing the DriveLock password does not affect the power-on password.

The new DriveLock password takes effect the next time you turn on the computer.

Deleting the DriveLock Password

To delete the DriveLock password, complete the following steps:

1. Turn on the computer.

   prompt is displayed

2. Enter your current DriveLock password followed by a slash (/) as shown:

   current password/

   OK is displayed

NOTE: The power-on password is not affected by the deletion of the DriveLock password even if the power-on and DriveLock passwords are the same. Only the DriveLock password is deleted.

Changing the DriveLock Security Level

To change the DriveLock security level, complete the following steps:

1. Turn on the computer.
2. When the is displayed, delete your current DriveLock password.
3. Run the SETUP utility (either the internal version or the version on the Diagnostics diskette) to establish a new DriveLock password with the security level desired. Refer to "Establishing the DriveLock Password" in this section for more information.

QUICKLOCK/QUICKBLANK

QuickLock/QuickBlank prevents unauthorized access to the computer until the password is entered. QuickLock disables the keyboard, keyboard/mouse interface, and trackball if enabled through SETUP. QuickBlank clears the screen. Both features work from within an application and may be initiated with the **Fn + F6** hotkey combination after a password is established and the feature enabled.

IMPORTANT: Either a power-on password or keyboard password must be established before QuickLock/QuickBlank can be enabled.

Enabling QuickLock/QuickBlank

To enable QuickLock/QuickBlank, complete the following steps:

1. Run the SETUP utility. If you have established a Setup password, you must enter it before you can make any changes using the SETUP utility.
   - If you are running the internal version of SETUP, select the language desired.
   - If you are using the version on the Diagnostics diskette, select the option to set up or change the configuration of the computer.
2. Press the **F4** key to change the configuration.
3. Select the QuickLock option.

NOTE: If you don't have a password set, you'll be prompted to set one.

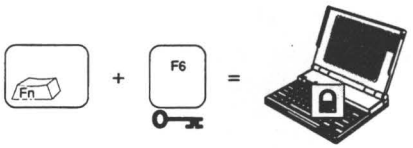
4. Follow the instructions on the screen for enabling QuickLock.
5. Follow the instructions on the screen for enabling QuickBlank.

NOTE: You may choose to enable QuickLock without enabling QuickBlank. If you want the QuickBlank feature sometime later, simply run the SETUP utility again.

6. Return to the Setup summary.
7. Select the option to exit the utility.
8. If you are using the diskette version of the SETUP utility, remove the diskette from the diskette drive.

Using QuickLock/QuickBlank

Once you've enabled the QuickLock/QuickBlank feature, you may activate it from anywhere in an application by using the hotkey combination shown in the illustration below:



Or you may use the **Ctrl** + **Alt** + **L** key sequence from an external keyboard.

You have only to enter the preset password (power-on or keyboard password) to reactivate the keyboard and return your application to the screen.

KEYBOARD PASSWORD

A keyboard password prevents use of the keyboard or mouse until the password is entered or until the computer is turned off.

If the QuickLock/QuickBlank feature is activated, the keyboard password may be used to unlock the keyboard and return the image to the screen.

Setting the Keyboard Password

The keyboard password can be set in several ways, depending on whether you've already established a power-on password. Instructions follow for how to set the keyboard password:

- When you've not set a power-on password.
- When you want the keyboard password to be the same as your power-on password.
- When you want the keyboard password to be different from your power-on password.

Keyboard Password Without a Power-On Password

You do not have to set a power-on password to set a keyboard password. The two passwords can be independent. However, a keyboard password remains in effect only as long as you have the computer turned on, while a power-on password remains in effect until it is changed or deleted.

To set a keyboard password, complete the following steps:

1. Go to the system prompt.
2. Enter

   KP

3. Follow the instructions on the screen to set the keyboard password, and select a letter or the QuickLock/QuickBlank key sequence ("L" is the default). Then select whether you want to clear the screen with QuickBlank when the keyboard is disabled.
4. Press the **Enter** key to establish both the keyboard password and **Ctrl** + **Alt** key sequence, which will be particularly useful from an external keyboard.

NOTE: When you establish the keyboard password, you simultaneously disable the keyboard and mouse.

To reenable the keyboard and mouse, type your password and press the **Enter** key.

IMPORTANT: When you turn off the computer, the keyboard password is cleared.

Keyboard Password To Be Same as Power-On Password

If a power-on password is already established, it can be used as the keyboard password. However, you must access the KP utility and complete the steps (described previously), to establish the password.

While the **Ctrl** + **Alt** key sequence works from the computer keyboard, you may use it most often from an external keyboard, which does not have the special feature hotkeys (**Fn** + **F6**). Use either key combination from the computer keyboard to disable the keyboard and keyboard/mouse interface or initiate QuickLock/QuickBlank with the **Ctrl** + **Alt** key sequence from an external keyboard.

Keyboard Password Different from Power-On Password

It is also possible to set the keyboard password to something other than the established power-on password. However, the keyboard password reverts to the power-on password when the computer is turned off. This means that the keyboard password can be set *only* for the current session.

To set a keyboard password that is different from your power-on password, complete the following steps:

1. Go to the system prompt.
2. Enter

   KP/C
3. Follow the instructions on the screen for setting the keyboard password and the associated **Ctrl** + **Alt** key sequence.
4. Press the **Enter** key to establish both the keyboard password and **Ctrl** + **Alt** key sequence.

NOTE: When you press the **Enter** key to establish the keyboard password, you simultaneously disable the keyboard and keyboard/mouse interface.

To reenable the keyboard and keyboard/mouse interface, type your password and press the **Enter** key.

IMPORTANT: When you turn off the computer, the keyboard password reverts to the power-on password.

Using the Keyboard Password

Once you've set a keyboard password, you can disable the keyboard and keyboard/mouse interface (or initiate QuickLock/QuickBlank if it is enabled) at any time by simply entering the **Ctrl** + **Alt** key sequence that you specified when you established the password or by using the **Fn** + **F6** hotkeys.

To re-enable the keyboard and the keyboard/mouse interface, simply type your keyboard password.

DISKETTE DRIVE DISABLE

You can further secure your system by disabling the diskette drive. The diskette drive can be disabled using the SETUP utility program. This means no one can use the diskette drive until it is reenabled using the SETUP utility. When the Diskette Drive is disabled, no one can use it to copy information to or from your hard drive.

To prevent unauthorized users from reenabling the diskette drive, you can password protect the SETUP program. Refer to the "Setup Password" section in this chapter.

NOTE: Applicable only to the COMPAQ LTE Lite/25E and COMPAQ LTE Lite 4/25C.

Disabling the Diskette Drive

1. Run the SETUP utility. If you have established a Setup password, you must enter it before you can make any changes using the SETUP utility.
   - If you are running the internal version of SETUP, select the language desired.
   - If you are using the version on the Diagnostics diskette, select the option to set up or change the configuration of the computer.
2. Press the **F4** key to change the configuration.
3. Select the option for Diskette Drive.
4. Select the Not Installed option from the Internal Diskette Drive screen, and press the **Enter** key.
5. Select the Not Installed option from the External Diskette Drive screen, and press the **Enter** key.
6. When the Diskette Drive Controller screen is displayed, select the Disabled option, and press the **Enter** key.
7. Press the **Esc** key to return to the System Configuration Summary, which shows "Diskette Drive...Disabled."
8. Press the **F3** key to exit and save your changes.

NOTE: To enable a diskette drive, follow the steps above, choosing Installed and Enable. If, after you reenable the drive, you get a controller error message, turn your system off and then turn it back on again to clear the message.

NETWORK SERVER MODE

While in the network server mode, the computer can operate securely as an unattended file server. The feature:

- Disables the keyboard, keyboard/mouse interface, and trackball.
- Allows the computer to start from the hard drive or remotely from the network server or host computer.
- Restarts the computer automatically after a power outage.

Before the network server mode can be enabled, a power-on password must be established because the power-on password also functions as the password for the network server mode.

Enabling the Network Server Mode

IMPORTANT: The network server mode cannot be enabled when a DriveLock password is established.

To enable the network server mode, complete the following steps:

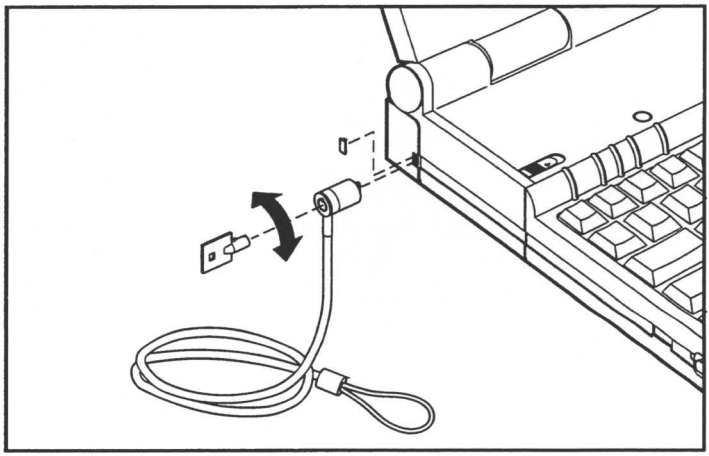
1. Run the SETUP utility. If you have established a Setup password, you must enter it before you can make any changes using the SETUP utility.
   - If you are running the internal version of SETUP, select the language desired.
   - If you are using the version on the Diagnostics diskette, select the option to set up or change the configuration of the computer.
2. Press the **F4** key to change the configuration.
3. Select the password control option.
4. Select the network server mode option.
5. Select the option to enable the network server mode.
6. Return to the Setup summary.
7. Select the option to exit the utility.
8. If you are using the diskette version of the SETUP utility, remove the diskette from the diskette drive.

Remember that the power-on password is the network server mode password.

CABLE LOCK PROVISION

Securing the computer (to something sturdy such as a desk) using the cable lock provision prevents someone from removing the computer. Your computer has a slot on the left side that can accommodate the MicroSaver Security System, manufactured by Kensington, which is optional. The MicroSaver Security System, model 64068, is available at Authorized COMPAQ Resellers worldwide.

The computer can also be locked into the optional Desktop Expansion Base.



Computer Secured with Cable Lock Provision

OPTIONAL EQUIPMENT

This chapter provides instructions for connecting many of the external equipment options.

The chapter also includes information about how to connect the AC Adapter that came with the computer, how to use the External Battery Charger and External Options Adapter, and how to connect an internal modem.

AVAILABLE OPTIONS

The COMPAQ LTE Lite Family has an extensive list of optional equipment available through your Authorized COMPAQ Reseller. These options include memory upgrades, convenience options, mass storage devices (external and internal hard drives, tape drives and diskette drives), modems, adapters and external monitors. Regulatory agency identification numbers (when applicable) for the following options are listed in Appendix F, "Regulatory Agency Identification Numbers."

Coprocessor/Memory for the COMPAQ LTE Lite/25C and COMPAQ LTE Lite/25E

- 387SL Coprocessor
- 2-Megabyte Memory Card
- 4-Megabyte Memory Card
- 8-Megabyte Memory Card
- 16-Megabyte Memory Card

Memory for the COMPAQ LTE Lite 4/25C

- 4-Megabyte 32-Bit Memory Card
- 8-Megabyte 32-Bit Memory Card
- 16-Megabyte 32-Bit Memory Card

Convenience Options

- QuickConnect
- Desktop Expansion Base
- External Storage Module
- External Battery Charger
- AC Adapter

- NiMH Power Smart Pack
- NiCd Power Smart Pack
- Automobile Adapter
- Briefcase
- Carrying Case
- External Numeric Keypad
- Enhanced Keyboard

Communications

- COMPAQ SpeedPAQ 144 Modem
- Enhanced 9600-bps Internal Modem (North America only)
- Internal Data + Fax Modem (North America only)
- Enhanced 2400-Baud Internal Modem
- Serial Interface Board

Adapters

- External Options Adapter
- CD-ROM Adapter

Mass Storage Devices

- 3.5-inch 1.44-Megabyte Diskette Drive[1]
- 5 1/4-inch 1.2-Megabyte Diskette Drive[1,2]
- 5 1/4-inch 360-Kbyte Diskette Drive[1,2]
- 84-Megabyte Hard Drive[1]
- 120-Megabyte Hard Drive[1]
- 210-Megabyte Hard Drive[1]
- 60-Megabyte Tape Drive with compression[1,2]
- 80-/120-Megabyte Tape Drive with compression[1,2]
- 60-Megabyte Tape Cartridge
- 80-Megabyte Tape Cartridge
- 120-Megabyte Tape Cartridge

[1] For use with the Desktop Expansion Base
[2] For use with the External Storage Module

Video

- Video Graphics Color Monitor
- Reduced Emissions VGA Color Monitor
- Video Graphics Monochrome Monitor
- QVision 150 Color Monitor
- QVision 170 Color Monitor
- COMPAQ 1024 Color Monitor
- QVision 1024/I Controller[1]

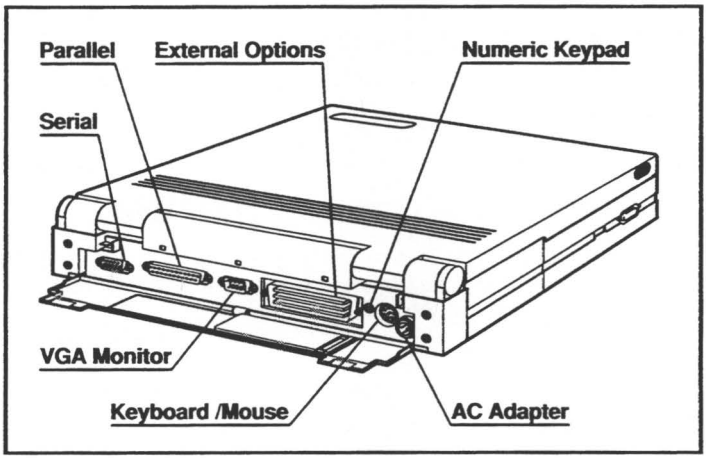
CONNECTING OPTIONAL EQUIPMENT

The following section provides instructions for connecting the selected optional, external equipment to the COMPAQ LTE Lite Family of Personal Computers:

- QuickConnect
- Automobile Adapter
- External Numeric Keypad
- External Keyboard
- Mouse
- External Storage Module
- Desktop Expansion Base
- CD-ROM Drive
- VGA Monitor
- Printer
- Modems

EXTERNAL CONNECTORS

The external connectors are located on the rear panel behind the connector cover.



External Connectors

IMPORTANT: In addition to the following procedures in this guide, refer to the documentation accompanying the optional equipment you are connecting for more detailed instructions.

QuickConnect

QuickConnect option is a convenience device which attaches to the back of your computer and has connectors for the same external devices as your computer and more. When you travel with your computer, you can simply detach QuickConnect which remains in your office with the external devices connected. For instance, if you regularly use an external keyboard or keypad with your computer, attach them to QuickConnect rather than to your computer. When you return to your office, you have to make only one connection to be connected to all your peripheral devices.

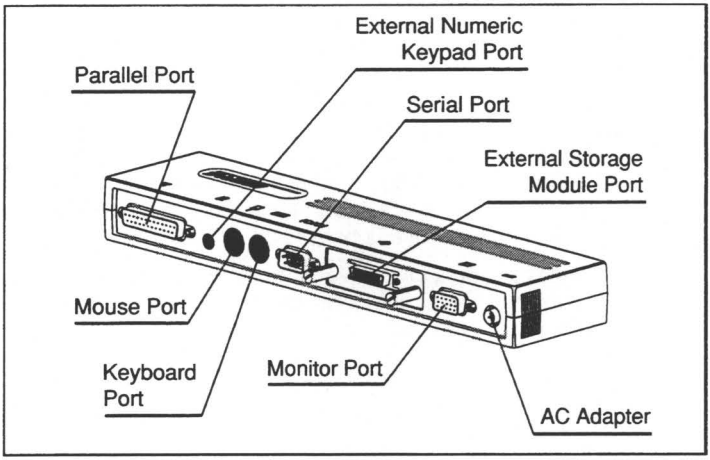
Once the connector cover is opened on the back of your computer, the QuickConnect fits onto the external options, 198-pin connector.

Installing QuickConnect

1. Turn the computer off and close the display.
2. Turn off any peripheral devices.
3. With the COMPAQ logo on QuickConnect facing up, connect the peripheral devices to QuickConnect.

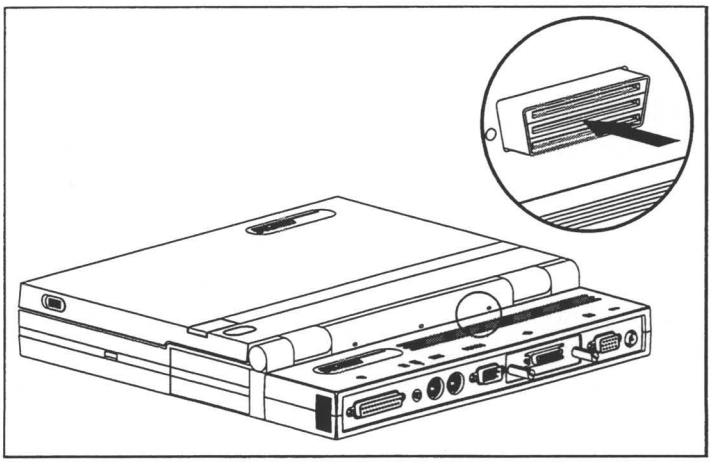
The following options can be attached to QuickConnect:

- Serial Devices (such as a serial printer or serial mouse)
- Parallel Devices (such as a parallel printer)
- External Numeric Keypad
- External Keyboard
- Mouse or trackball
- External Storage Module
- AC Adapter
- VGA Monitor



QuickConnect External Connectors

4. Slide open the small door on the connector cover.
5. Attach QuickConnect to the 198-pin connector on the rear panel. Make sure it is firmly seated.
6. QuickConnect can be further secured by tightening the thumbscrews.



Attaching QuickConnect to the Computer

7. Turn on the peripherals and then turn on the computer.

CONNECTING THE AC ADAPTER

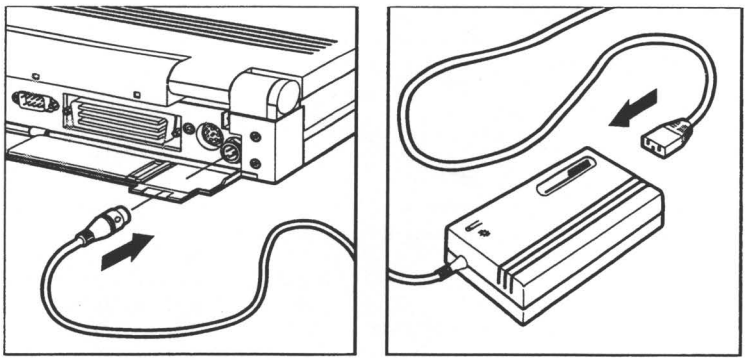
To connect the AC Adapter (included with the computer), complete the following steps:

1. Connect the AC power cord to the AC Adapter.

> **WARNING:** This equipment is designed for connection to a grounded (earthed) outlet. The 3-prong grounding type plug is an important safety feature. To avoid risk of electric shock or damage to your equipment, do not disable this feature.

2. Plug the AC power cord into a grounded AC outlet. As with most portable electrical equipment, the outlet should be easily accessible and located near the computer.
3. Open the connector cover on the rear panel.
4. Connect the AC Adapter cable to the AC Adapter connector on the rear panel.
5. Turn on the computer, if it's not already on.

NOTE: You can change from battery power to the AC Adapter without turning off the computer or losing data by completing the steps above.

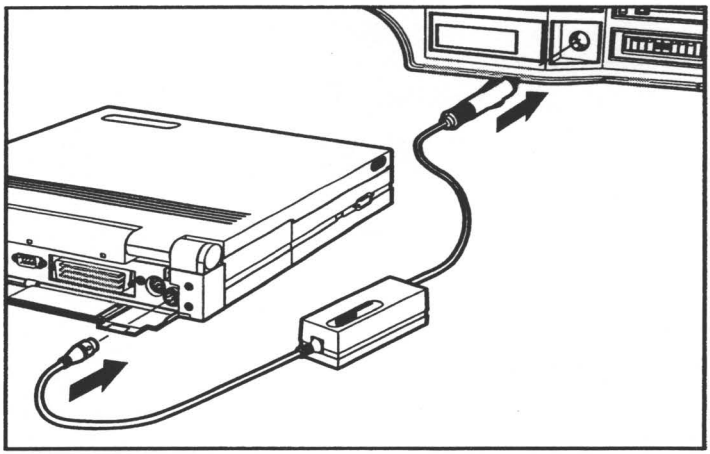


Connecting the AC Adapter

CONNECTING AN AUTOMOBILE ADAPTER

To connect an Automobile Adapter to the computer, complete the following steps:

1. Turn on the vehicle engine.
2. Open the connector cover on the rear panel.
3. Insert the 3-pin connector on the Automobile Adapter cable into the AC Adapter connector on the rear panel.
4. Remove the cigarette lighter from its socket.
5. Insert the other connector on the Automobile Adapter cable into the cigarette lighter socket.
6. Turn on the computer, if it's not already on.



Connecting an Automobile Adapter

NOTE: You can also connect the Automobile Adapter to an External Battery Charger and fast charge up to two battery packs while you're on the road.

CAUTION: Leaving the computer on for an extended time when the vehicle engine is turned off may deplete the vehicle battery.

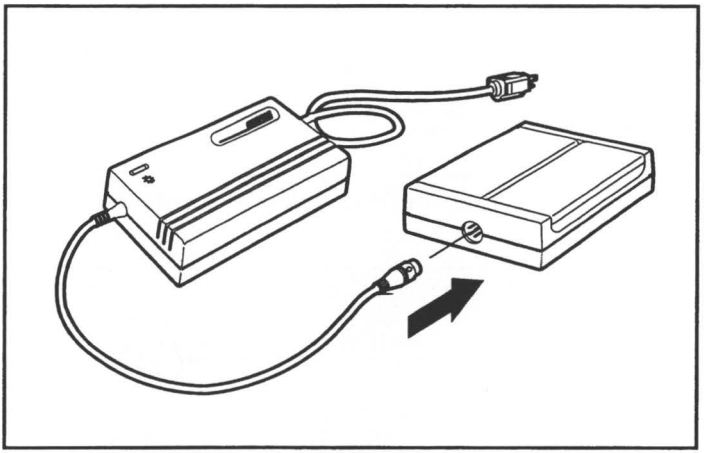
CONNECTING AN EXTERNAL BATTERY CHARGER

The External Battery Charger available for the COMPAQ LTE Lite Family allows you to fast charge up to two battery packs sequentially. The battery charger may be powered by either the AC Adapter or the Automobile Adapter. The following paragraphs explain how to connect the battery charger to either power source and how to insert a battery pack into the unit.

Connecting the Battery Charger to the AC Adapter

To connect the battery charger to the AC Adapter, complete the following steps:

1. Insert the 3-pin connector on the AC Adapter cable into the External Battery Charger
2. Connect the AC power cord to the AC adapter.
3. Plug the AC power cord into a grounded 3-prong outlet. As with most portable electrical equipment, the outlet should be easily accessible and located near the computer.

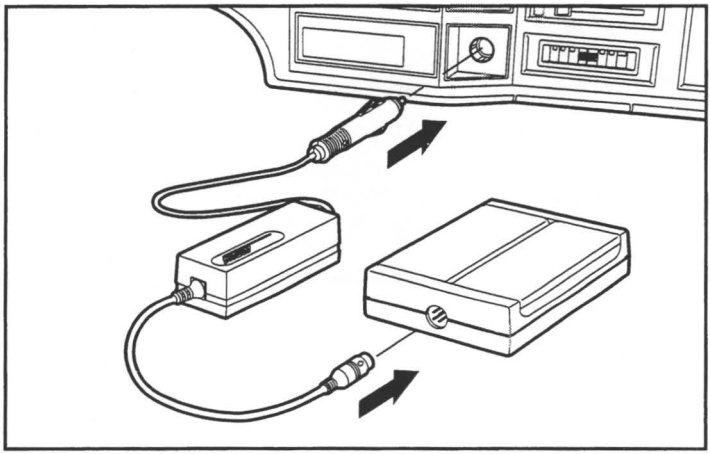


Connecting the Battery Charger to the AC Adapter

Connecting the Battery Charger to the Automobile Adapter

To connect the battery charger to the Automobile Adapter, complete the following steps:

1. Turn on the vehicle engine.
2. Insert the 3-pin connector on the Automobile Adapter cable into the battery charger.
3. Insert the other connector on the Automobile Adapter cable into the vehicle cigarette lighter socket.



Connecting the Battery Charger to the Automobile Adapter

CAUTION: Leaving the battery charger on for an extended time when the vehicle engine is turned off may deplete the vehicle battery.

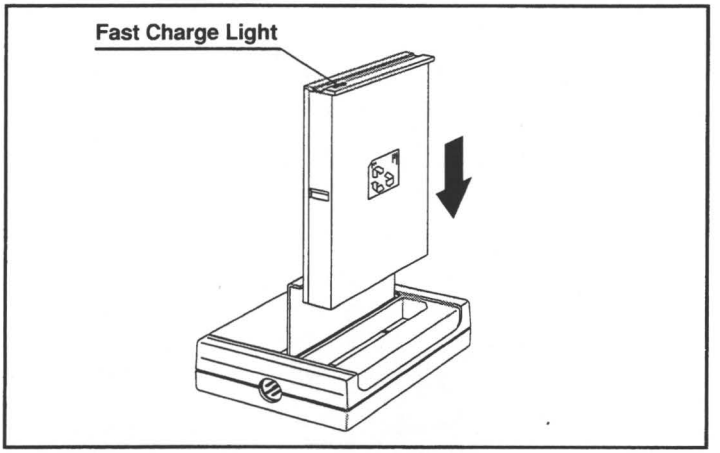
Inserting a Battery Pack into the Battery Charger

To insert and charge a battery pack in the External Battery Charger, complete the following steps:

1. Lift one of the charging slot covers in the battery charger.
2. Insert the battery pack (Nickel Metal Hydride or Nickel Cadmium) into the charging slot.

   Optional: Insert a second battery pack into the empty charging slot.
3. If the battery pack is inserted correctly, the fast charge light on the battery pack turns on and stays on until the battery pack is fully charged.

   If the battery pack in already fully charged, the light turns on momentarily, then turns off.



Inserting a Battery Pack into the Battery Charger

CONNECTING AN EXTERNAL NUMERIC KEYPAD

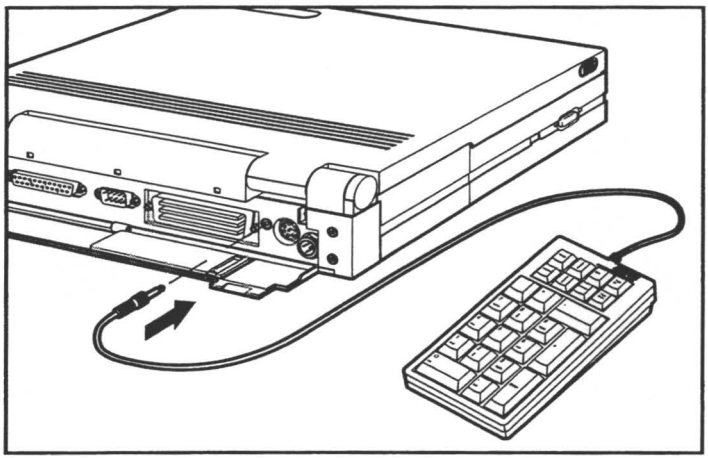
To connect an External Numeric Keypad, complete the following steps:

> **CAUTION:** To prevent damage to the computer, turn off the computer before connecting or disconnecting the External Numeric Keypad.

1. Turn off the computer.
2. Open the connector cover on the rear panel.
3. Connect the numeric keypad cable to the numeric keypad connector on the computer.
4. Turn on the computer.

   The embedded numeric keypad in the computer keyboard is automatically disabled.
5. Press the **Fn** + **End** keys to activate the numeric keypad.

   The Num lock light on the computer turns on.



Connecting an External Numeric Keypad

CONNECTING AN EXTERNAL KEYBOARD

Either an external enhanced keyboard or a mouse (or other pointing device) can be connected to the keyboard/mouse connector on the rear panel.

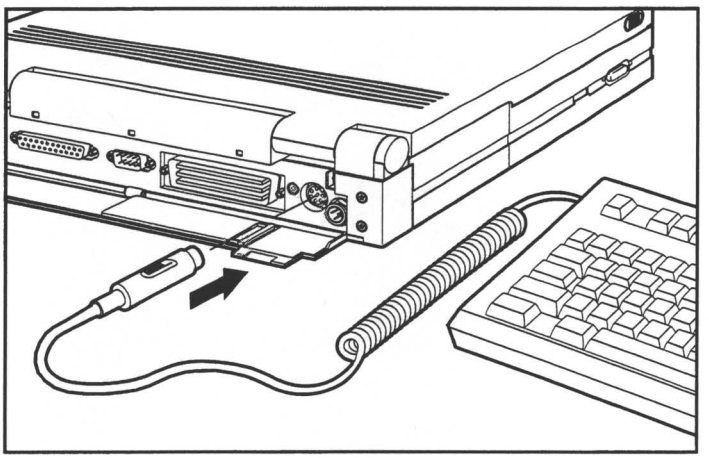
So that an external keyboard and a mouse can be connected to the computer at the same time, the keyboard can also be connected in another way: through the optional External Options Adapter. The adapter connects to the external options connector on the computer and provides a second connector for the keyboard.

IMPORTANT: The mouse cannot be connected to the computer through the External Options Adapter; it must be connected directly to the computer.

When You Want To Use Only the Keyboard

To connect an external keyboard, complete the following steps:

1. Turn off the computer.
2. Open the connector cover on the rear panel.
3. Connect the keyboard cable to the keyboard/mouse connector on the computer.
4. Turn on the computer.



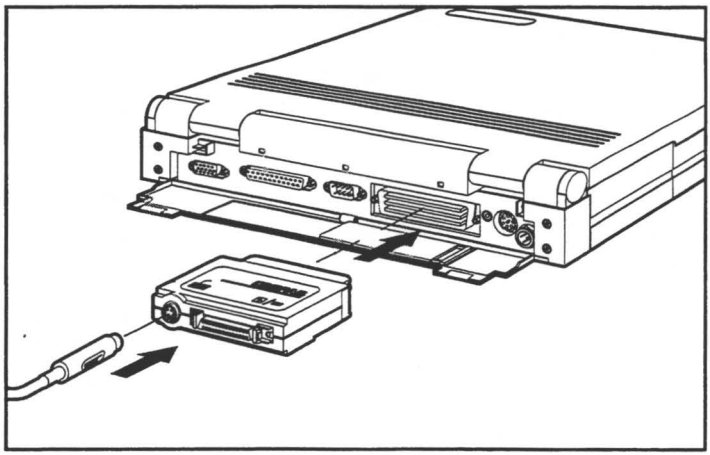
Connecting an External Keyboard

When You Want To Use Both a Keyboard and a Mouse

To connect a keyboard and a mouse simultaneously, complete the following steps:

1. Connect the keyboard cable to the optional External Options Adapter.
2. Open the connector cover on the rear panel.
3. Connect the External Options Adapter to the external options connector on the rear panel. Be sure to press firmly to ensure proper connection.
4. Connect the mouse to the keyboard/mouse connector on the rear panel of the computer. Connecting a mouse disables the EasyPoint trackball.
5. Turn on the computer.

NOTE: In addition to an external keyboard, you also can connect an External Storage Module to the computer by using the External Options Adapter.



Connecting an External Options Adapter and Keyboard

CONNECTING A MOUSE

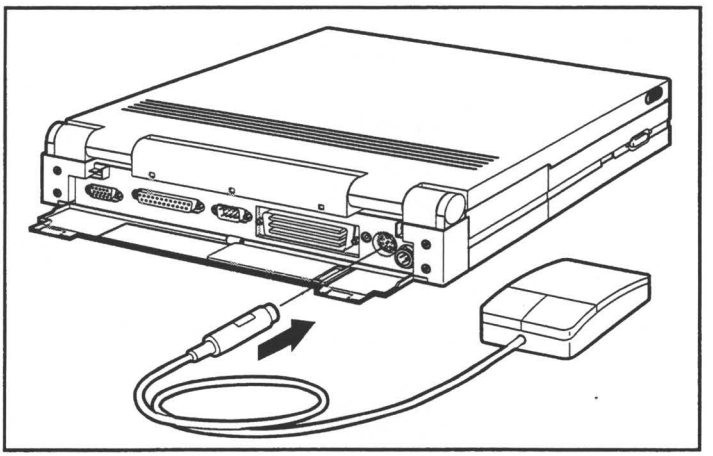
To connect a mouse, complete the following steps:

1. Turn off the computer.
2. Open the connector cover on the rear panel of the computer.
3. Connect the mouse to the keyboard/mouse connector.

NOTE: You can connect a serial mouse, which has a D-shaped 9-pin connector, to the serial connector on the rear panel or, if a serial interface board is installed, to the serial board.

NOTE: Connecting a Microsoft-compatible mouse disables the EasyPoint trackball.

4. Turn on the computer.



Connecting a Mouse

Preinstalled Mouse Driver

Your computer comes preinstalled with Microsoft Windows and a mouse driver. If you are using a Microsoft compatible mouse, you should not have to install an additional mouse driver. Some mice are not completely Microsoft compatible. If your mouse does not function correctly with the preinstalled driver, you may need to install the software that came with the mouse.

Refer to Chapter 12, "Troubleshooting," for recommended COM port configuration.

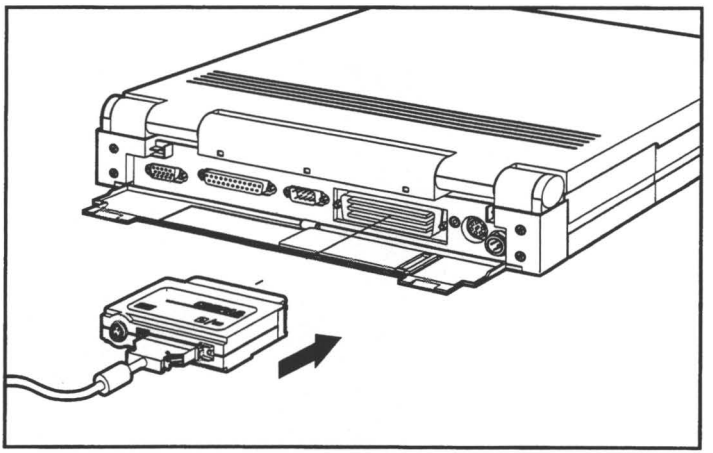
Installing the Mouse Software

The mouse needs a software device driver for it to operate. The driver comes on a diskette included with the mouse when you purchase it. Refer to the documentation accompanying the mouse for instructions on installing the mouse driver and configuring your computer.

CONNECTING AN EXTERNAL STORAGE MODULE

The External Storage Module can be connected to the computer only through the External Options Adapter. To connect them both, complete the following steps:

1. Turn off the computer.
2. Open the connector cover on the rear panel.
3. Connect the cable from the External Storage Module to the 28-pin connector on the External Options Adapter.
4. Connect the External Options Adapter to the 198-pin external options connector on the rear panel. Be sure to press firmly to ensure proper connection.
5. Turn on the computer.
6. Run the SETUP utility the first time you connect the External Storage Module. For instructions, refer to Chapter 8, "Diagnostic and Support Software."



Connecting an External Storage Module

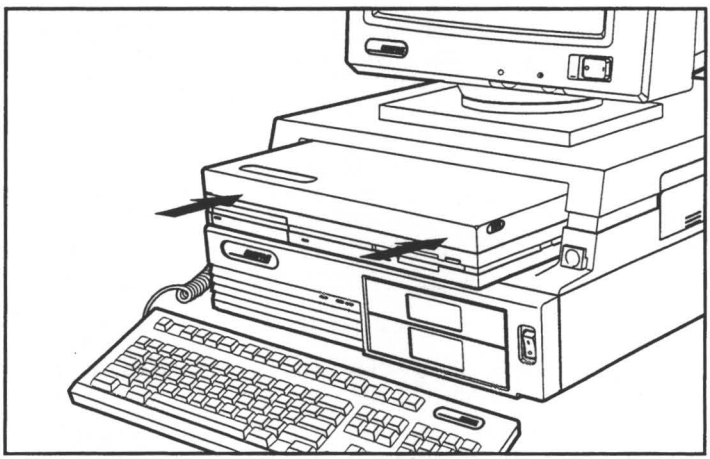
CONNECTING A DESKTOP EXPANSION BASE

To connect a Desktop Expansion Base, complete the following steps:

1. Turn off the expansion base.
2. Turn off all external equipment connected to the expansion base.
3. Turn off the computer and close the display.
4. Slide open the door in the connector cover on the rear panel.
5. Slide the computer straight into the expansion base, putting equal pressure on both sides of the computer until it is fully seated in the 198-pin connector on the expansion base.
6. If a diskette drive is installed in the expansion base and you want the computer to boot from that drive, set the drive selection switch on the rear panel of the expansion base to A.
7. Turn on all external equipment connected to the expansion base.
8. Turn on the expansion base.
9. If you are not using an external monitor, open the display.

IMPORTANT: After the computer is connected, do not turn it on. The expansion base supplies power to the computer and charges the installed battery pack.

10. Run the SETUP utility the first time you install the computer in the Desktop Expansion Base. For instructions, refer to Chapter 8, "Diagnostic and Support Software."



Connecting the Desktop Expansion Base

CONNECTING A CD-ROM DRIVE

If you want to connect a CD-ROM drive to the computer, you must first connect a CD-ROM Adapter to the external options connector. To connect them both, complete the following steps:

1. Turn off the computer.

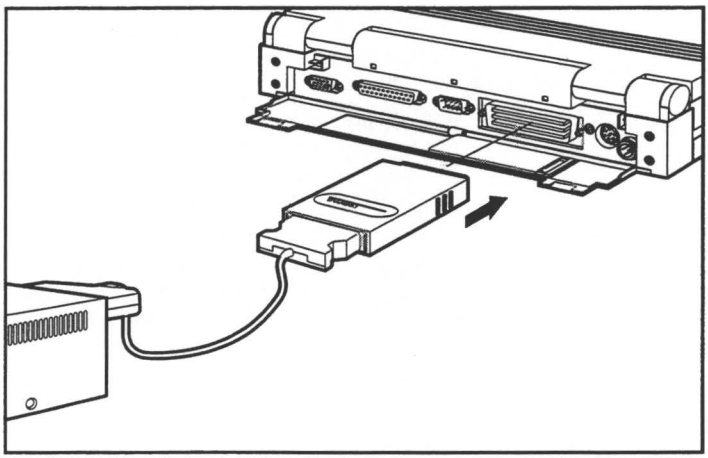
CAUTION: Static electricity can damage the components of the CD-ROM Adapter. Before touching the CD-ROM Adapter, be sure that you are discharged of static electricity by briefly touching a grounded object.

Additionally, to prevent the possibility of damage to the computer from electrostatic discharge, always connect the cable to the CD-ROM Adapter and to the external CD-ROM drive before connecting the adapter to the computer.

2. Be sure the CD-ROM drive is turned off.
3. Connect the smallest connector on the CD-ROM Adapter cable to the CD-ROM Adapter.
4. Connect the free end of the CD-ROM Adapter cable to the CD-ROM drive.
5. Open the connector cover on the rear panel.
6. Plug the CD-ROM Adapter into the external options connector.

IMPORTANT: To ensure that the computer recognizes the CD-ROM drive, turn on the CD-ROM drive before turning on the computer.

7. Turn on the CD-ROM drive.
8. Turn on the computer.
9. Install the CD-ROM software. Refer to the documentation accompanying the CD-ROM Adapter option kit for instructions on installing the software drivers and utilities.



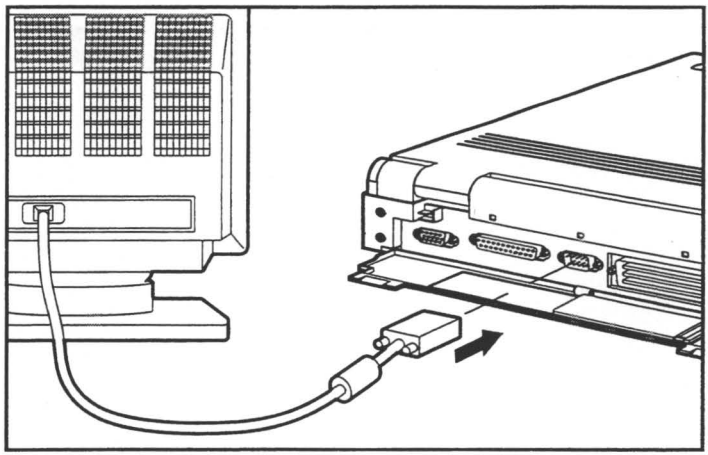
Connecting a CD-ROM Drive

CONNECTING A VGA MONITOR

To connect an external VGA monitor, complete the following steps:

1. Turn off the monitor, if it is on.
2. Turn off the computer, if it is on.
3. Open the connector cover on the rear panel.
4. Plug the monitor signal cable into the VGA monitor connector on the computer.
5. Plug the monitor power cord into a grounded AC outlet.
6. Turn on the monitor.
7. Turn on the computer.

NOTE: With this sequence, both the computer display and external monitor will turn on simultaneously. If you want to turn one of them off, toggle the **FN** + **F4** hotkeys to switch between them or return to a simultaneous display. For more information on the hotkeys, refer to Chapter 3, "Using the Keyboard and EasyPoint Trackball."



Connecting an External VGA Monitor

CONNECTING A PRINTER

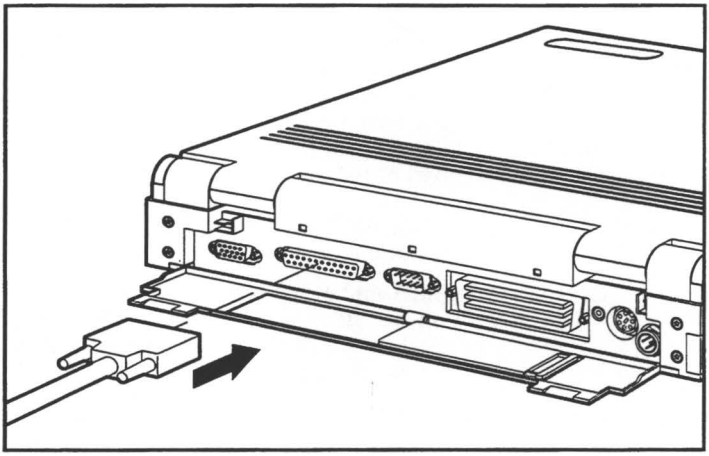
The way a printer is connected depends on the way it receives data: through either a parallel interface or a serial interface. (An interface is an information interchange path through which the computer and an external device communicate or interact.) Most printers have a parallel interface, however, some printers use either method of receiving data.

To connect a printer, complete the following steps:

1. Turn off the computer.
2. Plug the printer-end of the printer signal cable into the printer. (You can visually determine which connector plugs into the printer by choosing the one that matches the connector on the printer.)
3. Open the connector cover on the rear panel.
4. Depending on the type of printer you are connecting, plug the printer signal cable into either the parallel connector or the serial connector on the rear panel. (A connector adapter may be required to connect a serial printer.)

NOTE: If you are using a modem, it may be necessary to disable either the modem or the trackball prior to connecting a serial printer. Refer to the printer installation procedure to determine if your printer can be fully supported on COM3. If it cannot, you will need to disable either the modem or the trackball and reassign the COM port to the 9-pin connector using SETUP. Refer to Chapter 12, "Trouble-shooting," for recommended COM port configuration.

The following illustration shows a parallel printer signal cable being plugged into the parallel connector.



Connecting a Parallel Printer

5. Plug the printer power cord into a grounded AC outlet.

IMPORTANT: To ensure that the computer recognizes the printer, turn on the printer before you turn on the computer.

6. Turn on the printer.
7. Turn on the computer.

Setting Printer Configuration Switches

Some printers have internal switches for certain operating modes. The factory (default) switch settings are standard for most situations and may not need to be changed. Refer to the documentation accompanying the printer to see if it contains internal switches and if you need to change the default settings to satisfy your printing requirements.

Choosing Printer Support Through Application Software

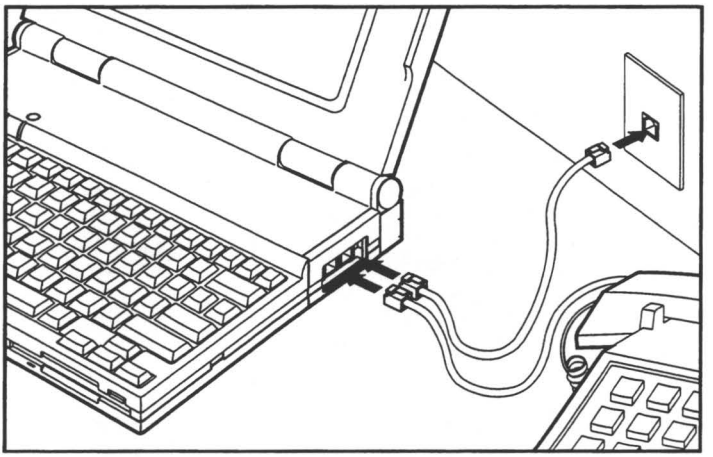
Application software comes with software device drivers for many kinds of printers. You must choose your printer, special printer capabilities, and connection (such as LPT for parallel printers or COM for serial printers) through your applications for the printer to operate. Consult both your printer and software applications instructions for information on supporting the printer through your applications.

CONNECTING A MODEM

U.S. and Canada

These instructions are for all North American modems, except The COMPAQ SpeedPaq 144 Modem. Refer to the section on connecting The COMPAQ SpeedPaq 144 Modem later in this chapter.

1. Connect the RJ11 telephone cord (included with the modem) to either telephone jack on the modem, then connect the other end of the cord to the telephone wall jack.



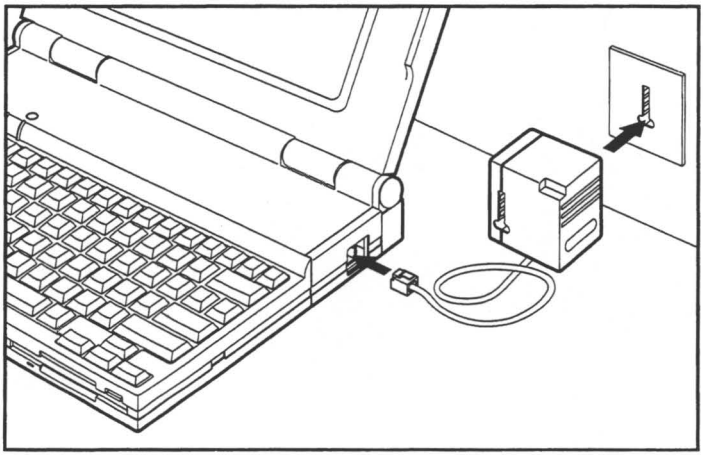
Connecting a Modem for use in U.S. and Canada

2. Connect a standard telephone to the remaining jack on the modem so that you can use the telephone when the modem is not active.
3. Install the appropriate software. Refer to the documentation included with the modem for instructions on installing the software drivers and utilities.

France (International Modem)

These instructions are for all international modems, except The COMPAQ SpeedPaq 144 Modem. Refer to the section on connecting The COMPAQ SpeedPaq 144 Modem later in this chapter.

1. Connect the DAA cable to the jack on the modem.
2. Connect the DAA line interface to the telephone wall jack.



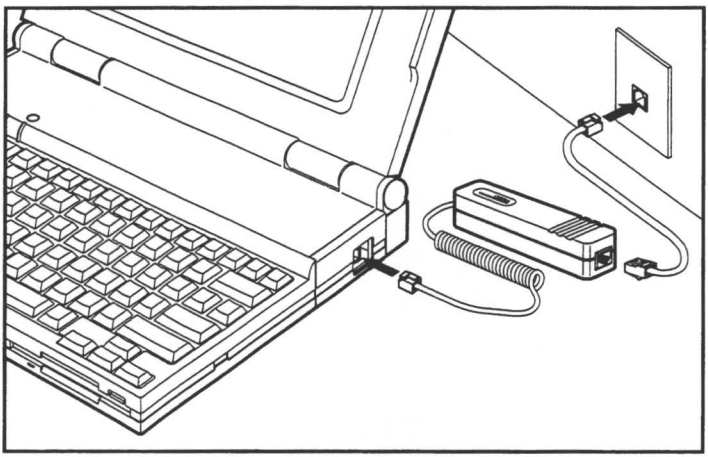
Connecting an International Modem for Use in France

3. Install the appropriate software. Refer to the documentation included with the modem for instructions on installing the software drivers and utilities.

Outside the U.S., Canada and France (International Modem)

These instructions are for all international modems, except The COMPAQ SpeedPaq 144 Modem. Refer to the section on connecting The COMPAQ SpeedPaq 144 Modem later in this chapter.

1. Connect the DAA cable to the jack on the modem.
2. Connect the telephone line cord to the DAA line interface jack, then to the telephone wall jack.



Connecting an International Modem for use Outside the U.S., Canada and France

NOTE: COMPAQ provides a rear plug on the telephone line cord that can be used in some countries to connect a standard telephone.

3. Install the appropriate software. Refer to the documentation included with the modem for instructions on installing the software drivers and utilities.

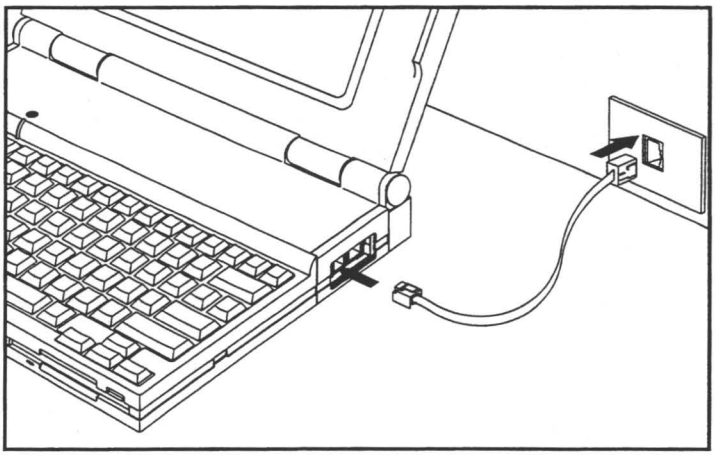
Connecting a COMPAQ SpeedPAQ 144 Modem

Your COMPAQ SpeedPAQ 144 Modem comes standard with an internal DAA which is designed to work with the phone system in the country where you purchased your modem. If you use your modem outside the country where you purchased it, you will need an external DAA.

Using a Standard Telephone Connection

To connect the modem to a standard telephone wall jack, complete the following steps:

1. Connect the telephone cord included in the option kit to the standard RJ11 telephone jack on the modem. The RJ11 telephone jack is the smaller of the two jacks on the modem.
2. Connect the other end of the cord to the telephone wall jack.

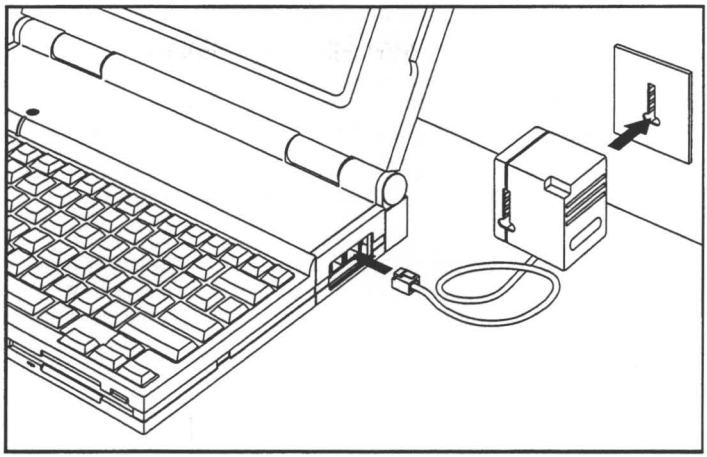


Connecting the Telephone Cord

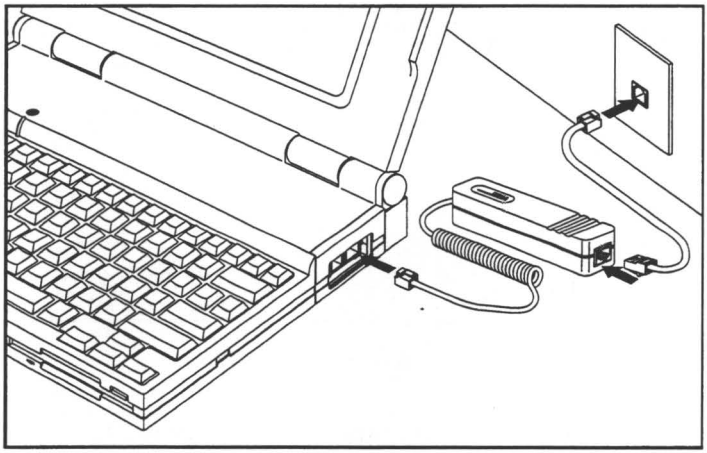
Using the Travel Feature

The COMPAQ SpeedPaq 144 Modem offers a travel feature that allows you to use external DAAs for other countries when you are traveling. To connect the modem to an external DAA, complete the following steps:

1. Connect the DAA to the RJ45 jack on the modem. The RJ45 jack is the larger of the two jacks on the modem.
2. Connect the telephone cord to the telephone jack on the DAA.
3. Connect the other end of the telephone cord to the telephone wall jack.



Connecting the Modem to an External DAA for France

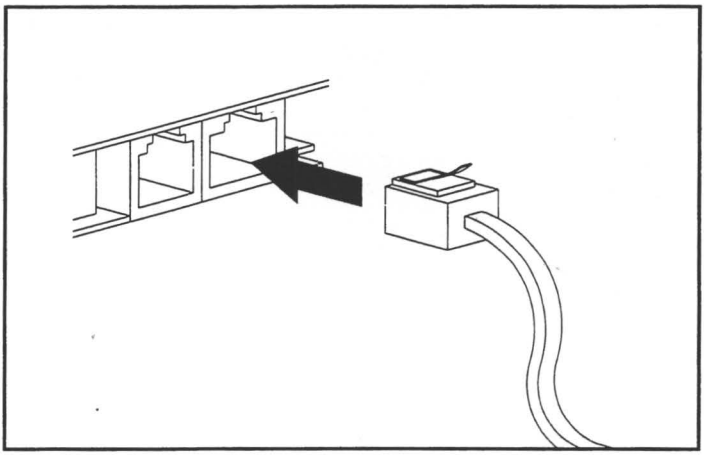


Connecting the Modem to an External DAA for other countries

Using Cellular Direct Connection

The Cellular Direct Connection allows you to connect the COMPAQ SpeedPaq 144 Modem to a cellular phone for use in North America and the United Kingdom. To connect the modem to a cellular telephone, complete the following steps:

1. Connect the cellular telephone cord to the RJ45 jack on the modem. The RJ45 jack is the larger of the two jacks on the modem.
2. Connect the cellular phone cord to the appropriate connector on your cellular phone. See the instructions that came with your cellular phone and cellular phone cord for more information.



Connecting the Modem to a Cellular Phone

INSTALLING AN OPERATING SYSTEM AND APPLICATION SOFTWARE

This chapter explains how to install an operating system and application software. Your computer already has MS-DOS and Windows, preinstalled. These instructions are included in the event you have to reinstall MS-DOS.

NOTE: FASTART for installing MS-DOS was designed for use with MS-DOS Version 3.31 or greater as published by Compaq.

WHAT IS AN OPERATING SYSTEM?

An operating system is a program that controls the flow of information in the computer from the diskette or hard drive to computer memory, and from computer memory back to the diskette or hard drive. It instructs the computer on how to interact with the hardware and software.

An operating system does the following:

- Directs all input (keyboard, mouse, trackball) and output (monitor, printer) devices, which are commonly referred to as "external devices."
- Allows you to install and start programs.
- Controls the operation of the computer when you use application software, such as word processors, databases, and spreadsheets.
- Manages data storage and system memory.

The COMPAQ LTE Lite family can use several operating systems at the same time, including:

- MS-DOS
- OS/2

The COMPAQ LTE Lite 4/25C can also use the UNIX operating system.

In determining which operating system you will use for your computer, consider the following:

- What operating system your applications require
- The type and amount of available software supported by the operating system
- What user interface you prefer
- The ability to run more than one application at a time, or to multitask

The System Prompt

The system prompt identifies the area on the screen where you type system commands, the command line. The default system prompt is the current drive letter followed by a colon, for example C:\. The system prompt can be changed using the PROMPT command.

Entering MS-DOS commands at the system prompt is not the only way to enter commands. You also can use an interface, such as the MS-DOS Shell. However, you must have MS-DOS Version 4.0 (or a later version) to use the shell.

The *CONFIG.SYS* File

The MS-DOS or OS/2 operating systems accesses the *CONFIG.SYS* file every time the computer is turned on or restarted.

The *CONFIG.SYS* file provides the operating system with important configuration information. Without the *CONFIG.SYS* file, the system could not complete the startup sequence. The *CONFIG.SYS* file also provides the system with device drivers (special programs) for any external devices that are installed.

The installation program usually creates the *CONFIG.SYS* file with default configuration values. While many programs will work with these default values, it may be necessary to edit or change them to accommodate a particular application. Refer to the operating system documentation for information about editing the *CONFIG.SYS* file.

The *AUTOEXEC.BAT* File

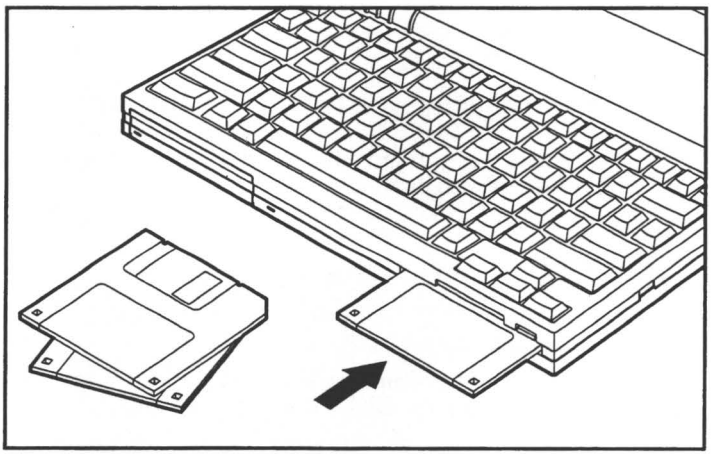
A batch file is one that contains a series of commands. When commands are placed in a batch file, they execute automatically each time the file is run. You aren't required to type the sequence of commands every time you want to use them.

The *AUTOEXEC.BAT* file is a special MS-DOS batch file that executes each time the computer is turned on or restarted. The *AUTOEXEC.BAT* file provides information for MS-DOS sessions. Use the *AUTOEXEC.BAT* file to start certain programs each time you start the operating system. Refer to the operating system documentation for more information on using this file.

The *AUTOEXEC.BAT* file preinstalled on your computer automatically starts Windows every time you turn on your computer. If you do not want Windows automatically started, you must change your *AUTOEXEC.BAT* file.

INSTALLING AN OPERATING SYSTEM

You must install an operating system before you can install any other software, and most operating systems have a utility to assist in the installation process. Your computer comes pre-installed with MS-DOS. Use the following instructions if you need to reinstall MS-DOS.



Installing an Operating System

Using FASTART To Install MS-DOS

MS-DOS as published by Compaq includes an installation and configuration utility called FASTART. FASTART simplifies the procedures to prepare, or initialize, the computer for MS-DOS, User Programs DOS support software, and *EZ Help Online Library*.

NOTE: User Programs is a collection of utilities from Compaq designed to increase computer performance. Refer to Chapter 8, "Diagnostic and Support Software," for more information on these utilities.

FASTART allows you to do the following:

- Partition and format the hard drive.
- Copy MS-DOS files to the hard drive
- Copy the utilities and *EZ Help Online Library* from the User Programs DOS support diskettes to the hard drive.
- Create the *AUTOEXEC.BAT* and *CONFIG.SYS* files.
- Configure MS-DOS and User Programs utilities for the computer.

If you already have MS-DOS, User Programs DOS support, and *EZ Help Online Library* installed, FASTART allows you to update these programs easily with the latest versions. FASTART also provides a quick and easy way to change the *AUTOEXEC.BAT* and *CONFIG.SYS* files without using a text editor.

To install FASTART, complete the following steps:

1. Insert the FASTART diskette that came in the MS-DOS package into drive A.
2. Turn on the computer. If it's already on, restart the system by pressing the **Ctrl** + **Alt** + **Delete** keys.
3. Select AUTOMATIC or CUSTOM installation:
   - The AUTOMATIC method does the work for you by defining the partitions and configuration.
   - The CUSTOM method lets you make the decisions in defining the partitions and configuration.
4. Follow the instructions on the screen to install MS-DOS, User Programs support software and *EZ Help Online Library*.

(The computer restarts after installation is completed.)

Installing OS/2 (Optional)

The installation program included with OS/2 sets up OS/2 on the computer. To use the installation program, complete the following steps:

1. Insert the OS/2 Program/Install diskette into drive A.
2. Turn on the computer. If it is already on, restart the system by pressing the **Ctrl** + **Alt** + **Delete** keys.
3. Work through the installation program by following the instructions on each screen.

Using MS-DOS and OS/2 on the Same Drive

It is possible to install MS-DOS and OS/2 on the same hard drive so that you can use whichever operating system you need at any time. For information on how to set up your computer for both OS/2 and MS-DOS, refer to your OS/2 documentation.

INSTALLING AN APPLICATION

An application software program performs a specific task, such as database management, word processing, financial management, or graphic illustration. It is unlike system software or an operating system, which maintain and organize the system.

Each application program usually includes its own installation program or has documentation that explains the procedures required to install the application. Before you install the application, however, you should have certain information available and be able to answer the following questions:

- How much disk space is required for the application?
- How much random access memory (RAM) is required to run the application?
- What type of memory does the application use? Expanded or extended?
- What operating system (MS-DOS, OS/2) is required?
- What type of monitor and video board is required?
- What printers are supported by the application?
- Are any other programs required to run the application?

During the installation process on MS-DOS systems, some applications will attempt to update your *AUTOEXEC.BAT* and *CONFIG.SYS* files. These applications will also update the *CONFIG.SYS* file to configure memory in the best way to run the application. However, it may not be the best way for running your other applications. While the new application may want all expanded memory, another application may require extended memory. If you make the change for the new application–which may run quite well–another application that was already installed may not run at all after the configuration change.

To access an application from any directory on the hard drive, edit the *AUTOEXEC.BAT* or *CONFIG.SYS* files to add the directory of the application to the PATH statement. The PATH statement is in the *AUTOEXEC.BAT* file with MS-DOS and in the *CONFIG.SYS* file with OS/2.

Remember to restart your computer (by pressing the **Ctrl** + **Alt** + **Delete** keys) after making changes to either the *CONFIG.SYS* or the *AUTOEXEC.BAT* file. Refer to the documentation that came with the application for specific installation and configuration procedures.

DIAGNOSTIC AND SUPPORT SOFTWARE

This chapter discusses the utilities and device drivers that are available for use with your computer. The most commonly used utilities and device drivers are preinstalled on your system.

COMPAQ UTILITIES

The utilities that accompany the COMPAQ LTE Lite Family verify the proper operation of the computer, allow you to set custom features, and aid in troubleshooting. This chapter explains how to use five of the utilities: SETUP, TEST, UPCU, PWRCON, and Cursor Enhancement. Chapter 9, "Enhancing Memory Performance," explains how to use the memory utilities.

NOTE: These utilities were designed for MS-DOS Version 3.31 or later as published by Compaq.

The SETUP and TEST utilities are on the Diagnostics diskette, and the SETUP utility is also in ROM.

PWRCON can be accessed through icons in the Compaq Utilities group inWindows. PWRCON can also be run from a system prompt. Cursor Enhancements can be run from Mouse/Trackball icon on the Windows Control Panel.

The following utilities are preinstalled on the hard drive, and can also be found on the User Programs MS-DOS Support Diskette:

- ADAPT
- CACHE
- CEMM
- HELP
- HIMEM
- KEYB
- KP
- MODE ADDRCOMx
- MODE EXTERNAL
- MODE INTERNAL
- MODE MEMCACHE
- MODE SCREENSAVE
- POWER.EXE
- PWRCON
- README
- RUNHI
- VDISK

Before You Begin

Use the AC Adapter with the computer during these procedures rather than battery power. A low battery condition could initiate Standby and interrupt the program.

You have the option of setting several security features, including special passwords, when running the SETUP utility. Before you choose to do so, you may want to review Chapter 5, "Security Features," in this guide for more information. It is also possible to change power conservation parameters through the SETUP utility. However, it is easier to set power conservation parameters using the PWRCON icon in the Compaq Utilities group. Before making any changes, refer to Chapter 4, "Power Conservation," for a review of the power conservation features.

If you are configuring a new Desktop Expansion Base, follow the instructions in the documentation accompanying the Desktop Expansion Base for information about connecting the computer to the Desktop Expansion Base, turning on the system (computer and Desktop Expansion Base), running the SETUP utility, and getting the hard drive in the Desktop Expansion Base ready to use.

NOTE: When you are using any of the utility programs, if the system displays a screen that requires input from you, and you are unsure what is required, press the **F1** key which is located on the top row of your keyboard. **F1** is the help key.

SETUP Utility

The COMPAQ LTE Lite Family features an internal version of the SETUP utility that is stored in the read only memory (ROM) of the computer. This means that you can run SETUP without the Diagnostics diskette, which is helpful if you find yourself away from the office and need to run SETUP. However, the internal version of SETUP does not include the help features available on the diskette.

Each computer uses a battery-powered memory device to store the current date and time and the system configuration. The configuration usually includes information about the available memory, the microprocessor, the type and size of the mass storage devices, as well as similar information about other hardware that may be installed. The SETUP utility enters this information into that memory device.

You should run the SETUP utility in the following instances:

- To establish security controls
- To set system configuration features, including:
  - Parallel interface control
  - Serial interface control
  - Hard drive control
- To change the system configuration, which is necessary when you add or remove any optional hardware
- To change default settings for many computer features
- When a system configuration error is detected during the Power-On Self-Test (POST)
- If you have replaced the hard drive, run SETUP before loading software
- To view the asset management number

Running the SETUP Utility

1. Decide which version of the SETUP utility you want to use.

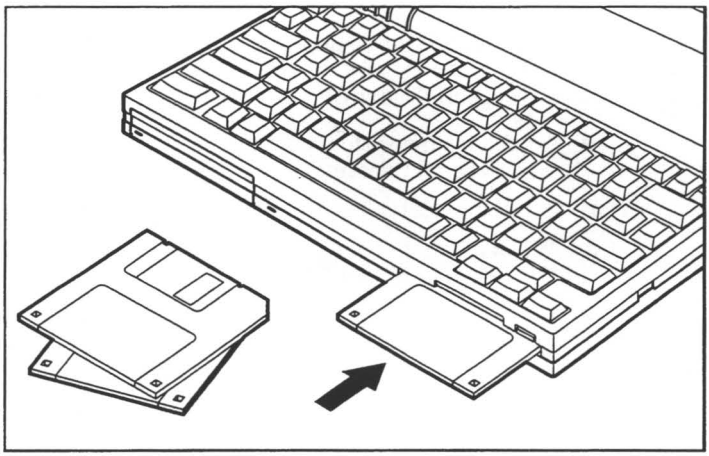
- **The SETUP utility on the Diagnostics diskette** contains help screens and is recommended for someone unfamiliar with the procedure of setting up a computer for the first time.
- **The internal version of the SETUP utility,** which is stored in the read only memory (ROM) of the computer, may be more appropriate for someone who is familiar with setting up a new computer.

SETUP on the Diagnostics Diskette

IMPORTANT: Use the AC Adapter rather than the battery pack when you first setup your computer and install the software. A low battery condition could interrupt the process.

To run the SETUP utility on the Diagnostics diskette, follow these steps:

1. Insert the Diagnostics diskette into drive A.
2. Turn on the computer by sliding the power button to the right, then releasing it.



Inserting the Diagnostics Diskette

3. Adjust the display brightness as needed.

   A message may be displayed notifying you that options are not set; press **Enter**.

   If an error message is displayed, refer to Appendix A, "Post Error Messages," for an explanation of the message and the action recommended to resolve it.

4. If you are running SETUP for the first time, or have replaced the auxiliary battery, enter the date and time. The time is entered in a 24-hour format.
5. Press **F4** to configure your computer.

   NOTE: If you are unfamiliar with this utility and need more information, press the **F1** key to access the help system.
6. Follow the instructions on the screen. Initially, it's easiest to select the menu item that configures the computer with default settings. As you become more familiar with your system, or your needs change, you can rerun SETUP and modify the default configuration.
7. When the configuration is correct, press the **F3** key.
8. Select "YES" to save the configuration.
9. Remove the Diagnostics diskette and restart the computer by pressing the **Enter** key.

Internal SETUP

IMPORTANT: Use the AC Adapter rather than the battery pack when you first setup your computer and install the software. A low battery condition could interrupt the process.

To run the internal version of SETUP, follow these steps:

1. Turn on the computer.

   The cursor momentarily displays in the upper-left corner of the screen, then displays in the upper-right corner of the screen.

2. When the cursor is displayed in the upper-right corner of the screen, press the **F10** key at once.

IMPORTANT: If the internal version of SETUP does not begin after you press the **F10** key, restart the computer by pressing the **Ctrl** + **Alt** + **Delete** keys. Then repeat the process starting with step 2.

3. Select the language desired–English, French, German, or Spanish.

   The System Configuration Summary is displayed.

4. Press the **F4** key to configure your computer.
5. Follow the instructions on the screen. Initially, it's easiest to select the menu item that configures the computer with default settings. As you become more familiar with your system, or your needs change, you can rerun SETUP and modify the default configuration
6. Press **Esc** to return to the System Configuration Summary.
7. Press the **F3** key, then select "Exit and Save Changes."
8. The computer will restart using your new configuration.

Test Utility

The TEST utility determines if the various computer components installed are recognized by the system and functioning properly. Running TEST is optional but advisable after installing or connecting a new device.

IMPORTANT: The SETUP utility must be run before running the TEST utility. Refer to the previous section, "Running the SETUP Utility."

Running the Test Utility

To load and run the TEST utility, complete the following steps:

1. Turn on any external devices that have ON/OFF switches.
2. Insert the Diagnostics diskette into drive A.
3. Turn on the computer. If it is already on, restart the system by pressing the **Ctrl + Alt + Delete** keys.

   The green power light on the computer turns on.

   If an error message is displayed, refer to Appendix A, "Post Error Messages," for an explanation of the message and the action recommended to resolve it.

   The Diagnostics menu is displayed.
4. Select the option to test or inspect the computer from the menu.

   The Test or Inspect Computer menu is displayed.
5. Select the option to test the computer.

   A test option menu is displayed.
6. Select the option to view the device list.

   A list of the hardware devices that are installed in the system is displayed.

7. Verify that the TEST utility correctly detected the devices installed:

   NOTE: This utility does not detect all non-COMPAQ expansion boards.

   - If the list is correct, select OK and go on to step 8.

     The test option menu is displayed again.

   - If the list is incorrect, be sure that any new devices are installed properly. If the devices are installed properly and you still have an incorrect device list, call your Authorized COMPAQ Reseller.

8. Select one of the following from the test option menu:

   - **Quick Check Diagnostics** This option runs a quick, general test on each device with a minimal number of prompts. If errors occur, they are displayed when the testing is complete.
   - **Automatic Diagnostics** This option runs an unattended, maximum testing of each device with minimal prompts. You can choose how many times to run the tests, to stop on errors, or to print or file a log of errors.
   - **Prompted Diagnostics** This option allows maximum control over the device testing process. You can choose attended or unattended testing, decide to stop on errors, or choose to print or file a log of errors.

9. Follow the instructions on the screen as the diagnostic tests are run on the devices.

   When the testing is complete, the test option menu is displayed again.

10. Exit to the Diagnostics menu, then exit the utility.

    When the **Exit This Utility** message is displayed:

    a. Remove the Diagnostics diskette from drive A.

    b. Press the **Enter** key to restart the computer.

If the computer should ever malfunction, run the TEST utility and record the error message numbers; then contact your Authorized COMPAQ Reseller.

User Programs for MS-DOS

This section provides instructions for upgrading or configuring the User Programs files on your hard drive with the User Programs Configuration Utility (UPCU). User Programs for MS-DOS were preinstalled on your computer. If you must reinstall User programs, use FASTART and refer to Chapter 7, "Installing an Operating System and Application Software."

The following features are provided by UPCU:

- A tutorial on how to use UPCU.
- The ability to change your memory configuration.

To configure User Programs utilities with UPCU, complete the following steps:

1. Insert the User Programs MS-DOS Support Diskette into drive A.
2. At the system prompt, enter

   A:\INSTALL

   The main menu appears with a list of various operations you can perform.
3. Select the operation you want, and follow the instructions on the screen.

For instructions on configuring memory utilities, see Chapter 9, "Enhancing Memory Performance."

Processor Speed

All COMPAQ LTE Lite Personal Computers have a default operating speed. When the computer is operating under battery power, the PWRCON level determines processing speed. This setting may be changed using the PWRCON hotkeys, **FN + F7**; however, the speed change is temporary and returns to the default (high) when the computer is turned off.

If you want to change the default setting, use the Processing Speeds Option under the PWRCON icon in the Compaq Utilities group.

1. To change processor speed, select the Compaq Utilities group.

2. Select the PWRCON icon.
3. Select the option to set power conservation parameters, then the option to set custom conservation.
4. Select Processor Speed.
5. Select your setting.
6. Select OK.
7. Select the option to save and exit.

PWRCON

PWRCON allows you to change certain power conservation settings for COMPAQ battery-operated personal computers. When you use power conservation timeout settings, you set the amount of time that a system device remains inactive before the device is turned off. For example, if you set 15 minutes for your screen, the screen blanks if you do not use the mouse or keyboard for 15-minutes.

If a system device is turned off due to inactivity, it is turned on again when you use it. For example, if the hard drive is turned off because of inactivity, it will turn back on as soon as it is accessed. Using the PWRCON command, you can change the inactivity timeout values whenever necessary. When you change the inactivity timeout values, they remain in effect even after you turn off or restart the computer.

Except for screen timeouts, inactivity timeouts occur only when the system is running under battery power. The screen timeout is in effect under AC power as well as under battery power.

1. To change power conservation settings, select the Compaq Utilities group.
2. Select the PWRCON icon.

   Using the PWRCON icon, you can do the following:

   - Disable timeouts for system devices, the hard drive, and the screen.
   - Set the timeout values for system devices, the hard drive, and the screen to the default values.

- Set the number of minutes of inactivity before Standby is initiated.
- Set the number of minutes of inactivity before the hard drive shuts down.
- Set the number of minutes of inactivity for the keyboard and mouse before the screen shuts down.
- Turn warning beeps on or off.
- Set the number of minutes of idle system time until the clock rate of the system is decreased to conserve power.
- Set the number of hours of system inactivity or Standby operation until the machine automatically shuts down or activates Hibernation.
- Set the system processor speed.
- Set the volume of the system speaker.
- Set the maximum brightness of the internal display.
- Select level of power conservation for specified parameters. Levels are high, medium, drain, and custom.
- Set the screen coordinates where the hotkey popups appear and at what size they are displayed.
- Display battery status.

3. Be sure to select OK after making any changes and before closing the window.

Refer to the *EZ Help Online Library* for information on running PWRCON from the MS-DOS prompt.

POWER.EXE

POWER.EXE is used to reduce power consumption when MS-DOS applications are running. POWER.EXE is an Advanced Power Management (APM) driver for MS-DOS applications that is preinstalled on your system and helps conserve battery operating time.

Cursor Enhancement

Cursor Enhancement is a feature that enables you to change the size and shape of the mouse cursor when you are using Windows. Once changed, your cursor choice is active until you change it or exit Windows.

1. To change the cursor appearance, select the Control Panel group in Windows.
2. Select the Mouse/Trackball icon.
3. Select the cursor option.
4. Select the size, orientation, and other characteristics you want.
5. Select OK
6. Close the window.

COMPAQ DEVICE DRIVERS

Device drivers are programs that extend the capabilities of the operating system by enabling it to work with specific hardware and software. The device drivers described in this section enhance the performance of COMPAQ computers.

Most of the COMPAQ device drivers are preinstalled on your computer. They are also on one of the support diskettes that came with your computer. The following is a partial list of the software programs or operating systems for which device drivers are available:

- Microsoft Windows (Mouse/trackball driver and video drivers)

  NOTE: These drivers are designed for Microsoft Windows Version 3.0 or greater.
- Autodesk Version 10 and 11 products (video drivers)
- MS-DOS (for example, EXMEM, CACHE, VDISK)
- OS/2 (video and device drivers)

Video Driver

The video driver that comes standard on your computer supports a pixel resolution of 640 x 480.

Microsoft Windows Device Drivers

The Windows device drivers enable certain applications to take full advantage of the integrated video graphics system. Graphics operations, such as menu scrolling, pop-up menus, and pull-down menus, have improved performance with these COMPAQ drivers.

Graphics Display Drivers For Microsoft Windows

The User Programs diskette for Windows support contains COMPAQ graphics display drivers for COMPAQ VGA controllers. Most of these have hardware features designed to accelerate common windowing functions. The COMPAQ drivers make use of these features and optimize performance. In addition, for those products that offer pixel resolutions and color choices beyond the VGA standard (640 x 480 with 16 colors), the COMPAQ drivers are needed to make these available under Windows. The CPQSETUP program shows which options are available for your specific system and guides you through the appropriate configuration options. Refer to Chapter 10, "Reinstalling Software" for instructions on using CPQSETUP.

DAC Mode Option

The digital-to-analog converter (DAC) Mode determines the total range of colors from which you can select for your VGA internal display. In 6-bit mode, applications can select 256 colors from a total of more than 256 thousand colors. In 8-bit mode, applications can select 256 colors from a total of more than 16 million colors.

Compaq provides drivers for COMPAQ VGA systems which support both 6- and 8-bit DAC resolution modes. The 6- and 8-bit modes refer to the number of bits that can be loaded into each of the red, blue, and green (RGB) values of the DAC.

The 6-bit mode is provided in the drivers for COMPAQ 256-color VGA systems since a large number of VGA and other high resolution systems accept only 6-bit DAC values from their pass-through connectors. Using 6-bit mode allows COMPAQ 256-color systems to be used concurrently with other 6-bit systems.

NOTE: COMPAQ personal computers supporting 256 colors on an internal display require the 6-bit DAC setting.

The DACMODE option is set by the CPQSETUP program.

Before You Install Video Device Drivers

Before installing the COMPAQ video driver for use with Windows, you must run CPQSETUP. CPQSETUP determines which video driver (if any) you can install.

IMPORTANT: If you are upgrading to a later version of the installed display driver, use CPQSETUP. Do not use the Windows SETUP program.

The CPQSETUP program can replace the existing display driver with the COMPAQ driver for your system and configure the driver for you. CPQSETUP allows you to either manually select choices for all driver configuration options or use default settings. For instructions on running CPQSETUP, refer to Chapter 10, "Reinstalling Software."

Mouse Drivers

Many applications today have mouse support included. However, that does not always mean that you can load the program and a mouse will work. You may first have to install a mouse driver that comes with the mouse and add a command to your *AUTOEXEC.BAT* file. Next, you must remember to connect the mouse to the rear of the system unit. The type of mouse you purchase will determine if you plug the mouse into a serial connector or into the keyboard/mouse connector. Refer to the section, "Connecting a Mouse," in Chapter 6, "Optional Equipment," for more information.

Refer to the documentation that came with the mouse for installation instructions.

NOTE: A mouse/trackball driver for the EasyPoint trackball was preinstalled at the factory. This mouse driver is Microsoft-compatible. If you must reinstall the mouse driver for use in Windows applications, refer to Chapter 10, "Reinstalling Software."

Installing a Mouse Driver for MS-DOS

The Mouse/Trackball diskette has a mouse driver for use with mouse-based MS-DOS (non Windows) applications. Use the following steps to install the MS-DOS mouse driver:

1. Insert the Mouse/Trackball diskette in drive A.
2. At the C:\ prompt, type:

   A:\INSTALL
3. Follow the instructions on the screen.
4. After the installation is complete, you can run the tutorial to learn basic mouse or trackball skills. To run the tutorial, at the C:\ prompt, type

   MTUTOR

ENHANCING MEMORY PERFORMANCE WITH COMPAQ UTILITIES

This chapter provides information about configuring memory so that your applications can run faster and more efficiently taking advantage of all your system memory.

This chapter provides an overview of the memory utilities and a description of how each functions so that you can choose which memory utilities best suit your specific applications. Actual instructions on installing and configuring the memory utilities can be found in the User Programs section of the *EZ Help Online Library*.

WHAT IS MEMORY-RESIDENT AND NONRESIDENT SOFTWARE?

Any program currently running on the computer is considered memory-resident. When the program stops running, the memory it occupied is normally released back to the operating system for other programs to use. Terminate-and-stay-resident (TSR) software is memory-resident software that does not release memory back to the operating system when it stops running. The TSR stays in memory in a dormant state until it is activated.

Since the TSR remains in memory, you can access it with just a keystroke combination–even if another program is in use. For example, you may be working in a word processing program and want to check your schedule on a TSR scheduling program. With the TSR, you simply press a key and the TSR displays on the screen while the word processing package continues to stay in memory.

When device drivers and TSRs are loaded in base memory, they are loaded at the lowest available address space. Each device driver or TSR uses the next available address space until base memory is full. Device drivers and TSRs occupy memory even when they are not being used. This memory remains unavailable to other programs until the device driver or TSR is removed from base memory.

Caution should be taken in using TSRs with MS-DOS because generally they both require the same base memory. Because MS-DOS runs in real mode–an operating mode that allows a program to have a definite storage location in memory–it cannot prevent one program from using the memory of another, which can result in a system crash. Protected mode operating systems can protect programs that are running simultaneously from invading each other's memory space.

Another reason for using TSRs with caution is the amount of memory they use in an MS-DOS environment. If, for example, you have an application that requires 640 Kbytes to run, and you have only that amount of memory available, then you cannot load a TSR into base memory. You can, however, load the TSR into upper memory using a User Programs utility called RUNHI. Refer to the section, "Configuring Memory for Your Applications," in this chapter for a description of RUNHI.

ENHANCING MS-DOS PERFORMANCE

This section provides information about certain User Programs utilities that can help you get the best possible performance from your computer. It also provides information on how memory caching and COMPAQ device drivers can increase computer performance. The following table provides an overview of the utilities for MS-DOS and other software.

Utilities to Optimize Computer Performance

Utility	Description
CACHE	Decreases the time it takes for applications to access data from the hard drive.
CEMM	Lets MS-DOS applications use additional EMS memory.
EXMEM	Provide EMS and XMS memory management on the COMPAQ LTE Lite/25C and COMPAQ LTE Lite/25E while operating in real mode. Provides XMS memory management on the COMPAQ LTE Lite 4/25C

Continued

Utilities to Optimize Computer Performance *Continued*	
HIMEM	An extended memory manager that lets MS-DOS applications use extended memory (XMS memory).
RUNHI	Lets you load and run device drivers and TSRs in memory between 640 and 1024 Kbytes, freeing base memory.
VDISK	Creates a disk drive in memory (a virtual disk) that speeds up data access.
Windows device drivers	Improves performance of Windows when used with the video graphics system for graphic operations.

Configuring Memory For MS-DOS Applications

Before you can configure memory for an application, you should first have some understanding of the basic types of memory and how memory is used by the computer.

System memory falls into two categories:

- Read only memory (ROM)
- Random access memory (RAM)

ROM

A ROM chip is nonvolatile, or permanent, meaning that the information stored in ROM cannot be lost when you turn off the computer.

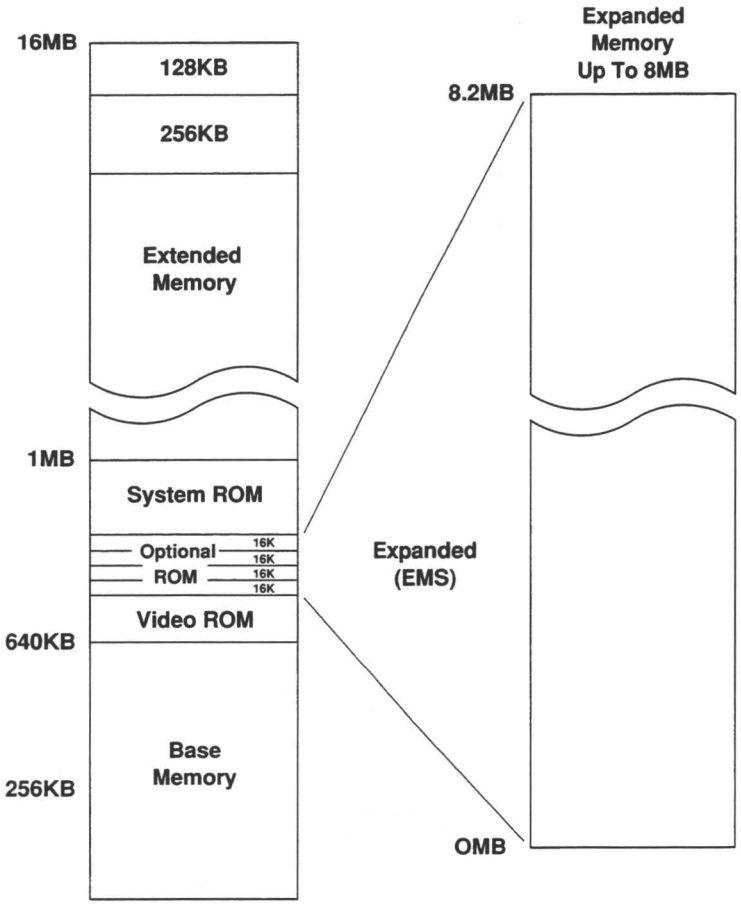
ROM is used to store programs and data that never change, like information specific to the computer hardware. For example, BIOS (Basic Input/Output System) and the power-on self-test (POST) are often stored in ROM. The internal version of the SETUP utility is stored in ROM on the COMPAQ LTE Lite Family.

RAM

Unlike ROMs, data can be written into as well as read from each RAM storage location. RAM storage is also volatile; data is not retained when the computer is turned off, that is, unless it is saved to a storage media (diskette, hard drive, or tape).

RAM is the area the computer uses to run applications. For example, when you want to run a word processing program, it is read off the disk, placed into RAM, and executed. All reference to memory in this chapter refers to RAM, unless otherwise stated.

The content of RAM is not permanent and will be lost when you turn off the computer, unless you save the information to a storage media.



System Memory

Base Memory Area

Base memory, or conventional DOS memory, is located between 0 and 640 Kbytes. MS-DOS uses some of this memory to operate and the rest to run MS-DOS applications.

Upper Memory Area

The Upper Memory Area ranges from 640 to 1024 Kbytes. System hardware, such as video buffers and system ROM, use upper memory.

Since the need to run several programs simultaneously has increased, hardware devices and software utilities have been created that allow MS-DOS to use available sections of upper memory. With these utilities, you can load device drivers and TSRs into upper memory. This frees base memory for use by other programs, such as word processors and databases. The RUNHI utility for MS-DOS provides the ability to use upper memory.

High Memory Area

Memory beyond the first megabyte is called extended memory, and the first 64-Kbyte section of extended memory is called the High Memory Area (HMA). All other memory is called the Extended Memory Area (EMA).

The High Memory Area can be used for portions of system files, which frees base memory for other programs. The HIMEM utility and EXMEM utility on the User Programs diskettes manage this memory area for MS-DOS.

IMPORTANT: EXMEM has been preloaded on your system and is configured in your *CONFIG.SYS* file.

Extended Memory Area

Memory beyond the High Memory Area is called the Extended Memory Area. Because extended memory has a higher address range than most MS-DOS applications, such applications cannot generally use extended memory. To access this memory, the system must switch to one of two different modes, protected or virtual.

Several different methods of accessing extended memory exist. For example, many applications use DOS extenders that allow MS-DOS applications to access extended memory using the protected mode. DOS extenders are often built into memory-intensive MS-DOS applications, such as spreadsheets and desktop publishing systems. The EXMEM and HIMEM utilities manage this memory area.

Other methods of accessing extended memory are explained fully in the *MS-DOS Reference Guide*. Also refer to the documentation that came with your application to see if it uses extended memory. You can access extended memory using the User Programs utilities: CACHE, VDISK, EXMEM, CEMM, and HIMEM.

Expanded Memory

Because expanded memory does not physically reside in system memory address space, a memory manager (EXMEM or CEMM, for example) is needed to access it. Nor does expanded memory physically reside in the 640-Kbyte address space. Expanded memory can be accessed through sections of available upper memory using the Lotus/Intel/Microsoft Expanded Memory Specification (LIM EMS). EXMEM and CEMM adhere to this specification.

Using EMS Version 3.2, MS-DOS applications can access expanded memory through a 64-Kbyte section of upper memory called a page frame. The page frame consists of four 16-Kbyte sections of memory. Each section is called an EMS page. Using EMS Version 4.0, the EMS 3.2 page frame still exists, but MS-DOS applications can also access memory through additional EMS pages.

Mapping memory through EMS pages makes it available for use by MS-DOS applications. To map memory, a computer needs a memory manager, such as EXMEM or CEMM.

What Memory Type Does Your Application Require?

To find out which memory type your application requires, look at the documentation that came with the application. If it recommends using either expanded or extended memory and you have a COMPAQ LTE Lite/25C or COMPAQ LTE Lite/25E, use EXMEM. It provides expanded memory as well as extended memory. If you have an COMPAQ LTE Lite 4/25C, and need XMS memory, use EXMEM; if you need EMS memory, use CEMM.

The following is a description of each of the memory utilities that are available on the User Programs diskette:

EXMEM

The EXMEM utility was designed specially for the COMPAQ LTE Lite computers.

EXMEM expands the 640-Kbyte memory limit imposed by MS-DOS allowing applications to use more memory. EMS memory provided by EXMEM is accessed while in real mode, which means increased system performance. EXMEM also supports extended memory and adheres to the XMS standard. By loading EXMEM, you may not need any other memory manager, HIMEM or CEMM, for example.

EXMEM takes extended memory and can map it into upper memory, creating Upper Memory Blocks (UMBs). These UMBs may then be used by MS-DOS applications. EXMEM does not require any additional memory hardware.

On the COMPAQ LTE Lite/25C and COMPAQ LTE Lite/25E, EXMEM supports EMS, XMS and UMB memory. On the COMPAQ LTE Lite 4/25C, EXMEM supports XMS and UMB memory.

IMPORTANT: EXMEM has been preloaded to your system and is listed in your *CONFIG.SYS* file.

CEMM

The COMPAQ Expanded Memory Manager (CEMM) is a utility that extends the 640-Kbyte memory limit imposed by MS-DOS and allows MS-DOS applications to use more memory. This utility is useful when you want to load a large application or run more than one program at the same time.

When used in conjunction with HIMEM, CEMM supports the eXtended Memory Specification (XMS) to provide upper memory and access to extended memory in virtual mode. CEMM takes this extended memory and can map it into upper memory, creating Upper Memory Blocks (UMBs). These UMBs may then be used by MS-DOS applications.

HIMEM

The HIMEM utility allows MS-DOS programs to access extended memory using the eXtended Memory Specification (XMS) Version 3.0. It allows MS-DOS programs to use the high memory area (HMA) and the Upper Memory Blocks (UMBs).

RUNHI

The RUNHI utility optimizes the way the system uses memory by loading and running device drivers and terminate-and-stay-resident (TSR) programs in upper memory (640 to 1024 Kbytes). Normally, MS-DOS applications use base memory, and system hardware devices use upper memory. RUNHI loads programs, such as CACHE and VDISK, in available sections of upper memory, allowing MS-DOS to use base memory for additional applications.

Using RUNHI you can do the following:

- Use programs that are too large to run in available base memory.
- Increase the memory available for other applications.
- Speed up the time it takes for large programs to operate and access data.
- Use programs you could not run previously because of memory limitations.
- Link upper memory to base memory so that MS-DOS applications can access upper memory automatically.

Decreasing Access Time

The following utilities, CACHE and VDISK, will improve system performance by decreasing the time it takes to access data in memory or from a disk drive.

CACHE

The disk CACHE utility can improve system performance by decreasing the time it takes for applications to access data from the hard drive. Applications that require several disk reads, such as data retrieval from databases, can improve performance when CACHE is used.

Queued writes is a disk CACHE feature that significantly speeds up memory applications. This feature allows you to write new data to your system without having to wait for disk writes to occur.

VDISK

VDISK allows you to use a portion of the computer memory as a disk drive. These disks are referred to as virtual disks (VDISKs) and are much faster than mechanical disk drives as they operate at the speed of the computer memory. The VDISK can be created in base, extended, or expanded memory. VDISKs provide the same function as RAM drives. Any files on the VDISK are lost when power to the computer is interrupted. Therefore, any data that is to be retained must be stored on a physical diskette or hard drive before turning off or resetting the computer.

You must install the *VDISK.SYS* device driver in the *CONFIG.SYS* file to set the size of the virtual disk.

Memory Configuration Examples

Examples are presented here to help you set up your *CONFIG.SYS* file using eight or four megabytes of standard memory. Examples are set up according to the type of applications you may be running and is only a suggestion on how you could configure memory.

Example One

If you are using a spreadsheet and a database, you may set up the memory configuration of your system by editing the *CONFIG.SYS* file to include the following lines:

```
DOS = HIGH

DEVICE=C:\DOS\EXMEM.EXE C:\DOS\RAM 2560

DEVICE=C:\DOS\RUNHI.EXE C:\DOS\VDISK.SYS
3072 /E:8

DEVICE=C:\DOS\RUNHI.EXE C:\DOS\CACHE.EXE
2560 /EXT
```

Each line of the previous file is explained below:

- DEVICE=C:\DOS\EXMEM.EXE RAM 2560 – Manages the use of expanded and extended memory by applications. It allows programs to access extended memory using the XMS. Programs can also use EMS memory via EMS. It loads EXMEM and specifies that EXMEM create Upper Memory Blocks. It sets the amount of expanded memory provided by EXMEM to 2560 Kbytes. Any available area not used by system ROM is also used for UMB space.
- DEVICE=C:\DOS\RUNHI.EXE C:\DOS\VDISK.SYS 3072 /E:8 – Loads VDISK into upper memory using the RUNHI command with a virtual disk size of 3072 Kbytes in extended memory (/E). The 8 represents the maximum number of sectors to transfer to extended memory at one time.
- DEVICE=C:\DOS\RUNHI.EXE C:\DOS\CACHE.EXE 2560 /EXT – Loads CACHE into upper memory using the RUNHI command with a disk cache of 2560 Kbytes in extended memory (/EXT).

Example Two

If you have a 386-or 486-based system with four megabytes of memory, you may set up the memory configuration of your system by editing the *CONFIG.SYS* and *AUTOEXEC.BAT* files to include the following lines:

CONFIG.SYS

```
DOS=HIGH
DOS=UMB
DEVICE=C:\DOS\HIMEM.EXE
DEVICE=C:\DOS\CEMM.EXE RAM 1024
DEVICEHIGH=C:\DOS\VDISK.SYS 1024/E:8
DEVICEHIGH=C:\DOS\CACHE.EXE 1024/EXT
```

AUTOEXEC.BAT

```
LOADHIGH YOUR TSR
```

Replace the *your TSR* with the name of the terminate-and-stay-resident program you want to load. You could load DOSKEY using LOADHIGH.

Each line of the previous file is explained below:

- DOS=HIGH – Loads MS-DOS into the high memory area (HMA)
- DOS=UMB – Allows programs to be loaded into upper memory with LOADHIGH or DEVICEHIGH.
- DEVICE=C:\DOS\HIMEM.EXE – Manages the use of extended memory by applications. It allows programs to access extended memory using the XMS.
- DEVICE=C:\DOS\CEMM.EXE RAM 1024 – Loads CEMM and specifies that CEMM may extended memory into upper memory creating Upper Memory Blocks. Sets the amount of extended memory that CEMM will provide as expanded memory to 1024 Kbytes. CEMM also creates the high memory area.
- DEVICEHIGH=C:\DOS\VDISK.SYS 1024/E:8 – Loads VDISK into upper memory with a virtual disk size of 2048 Kbytes in extended memory. The 8 represents the maximum number of sectors to transfer to extended memory at one time.

- DEVICEHIGH=C:\DOS\CACHE.EXE 1024/EXT – Loads cache into upper memory with a disk cache of 1024 Kbytes in extended memory.
- LOADHIGH *YOUR TSR* – Loads the TSR that you specify in the parameter *your TSR* into upper memory each time you turn on or reset your system. This could be the DOSKEY program.

REINSTALLING SOFTWARE ON THE HARD DRIVE

If you need to reinstall all of the software on your hard drive, use the diskettes included with the computer and the following procedures.

DISKETTE REQUIREMENTS

You need the following diskettes:

- FASTART, Version 5.0 or higher
- MS-DOS system
- User Programs MS-DOS Support, with *EZ Help Online Library*
- User Programs Microsoft Windows Support
- Mouse/Trackball
- Microsoft Windows

INSTALLATION PROCEDURES

Reinstall your software in the following order:

- Run SETUP and TEST
- MS-DOS
- MS-DOS Support Software
- *EZ Help Online Library*
- Windows
- Mouse/Trackball diskette
- Windows Support Software (Run CPQSETUP)
- Applications

RUN SETUP and TEST

Before you install software, you must run SETUP to configure your computer. Although it is not necessary, you may also want to run TEST. SETUP and TEST can be found on the Diagnostics Diskette. Instructions for running SETUP and TEST can be found in Chapter 8, "Diagnostic and Support Software."

MS-DOS

MS-DOS should be installed using the FASTART diskette. Instructions for installing MS-DOS using FASTART are in Chapter 7, "Installing and Operating System and Applications Software."

USER PROGRAMS (MS-DOS SUPPORT)

When you install MS-DOS using FASTART, the program will automatically ask you to load the User Programs DOS Support diskette that has MS-DOS support.

EZ HELP ONLINE LIBRARY

When you install MS-DOS using FASTART, the program will automatically ask you to load the *EZ Help Online Library*.

MICROSOFT WINDOWS

The Windows diskettes supplied with your computer are different than the Windows program diskettes you would purchase in that they have COMPAQ-specific programs and icons. In addition to the standard Windows program, Compaq has added the following elements:

- A COMPAQ logo used during Windows startup.
- A Compaq Utilities group with README, *EZ Help Online Library*, and PWRCON icons.
- .PIF files for *EZ Help Online Library* and README.
- An addition to the Windows startup program that detects if the computer supports APM. If so, the APM icon is added to the Compaq Utilities group.

1. Insert the WINDOWS Disk 1 into the diskette drive.
2. Type

```
A:\SETUP
```

3. Follow the instructions on the screen. The instructions will prompt you for the remaining Windows diskettes as they are needed.

Your computer is configured to automatically display the Windows Desktop whenever the computer is turned on. In order to return to the MS-DOS system prompt, you must exit the Windows Desktop.

If you do not want Windows automatically loaded when you turn on the computer, you must change your *AUTOEXEC.BAT* file. See your MS-DOS documentation for instructions on changing this file.

MOUSE/TRACKBALL

Using the Mouse/Trackball diskette, install the support software, including Windows and MS-DOS mouse drivers. Two installation procedures are required to install both the Windows and MS-DOS mouse drivers.

1. Insert the diskette into the diskette drive.
2. From the Program Manager File pull-down menu, select the Run option.
3. In the command line box, type

   A:\WINSTALL

4. Select OK.
5. Follow the instructions on the screen.
6. Exit Windows.
7. At the system prompt, enter

   A:\INSTALL

8. Follow the instructions on the screen.

NOTE: Additional information on the mouse/trackball software is available using the *EZ HELP Online Library*.

WINDOWS SUPPORT

Install the Microsoft Windows support software, including the COMPAQ display driver, audio drivers, FastDisk drivers, and the Hibernation driver. For more information on Windows device drivers, refer to Chapter 8, "Diagnostic and Support Software."

This procedure uses the CPQSETUP program to create the *OEMSETUP.INF* necessary for Windows to run properly. Once the OEMSETUP.INF File is created, you must run the Windows SETUP program to load your COMPAQ device drivers.

1. Insert the User Programs Microsoft Windows Support diskette into the diskette drive.
2. At the A:\ prompt, enter

   CPQSETUP

   You are given the choice of having CPQSETUP install drivers for you, reconfiguring existing drivers, or creating the *OEMSETUP.INF* file on the User Programs diskette.
3. Choose the option to create the *OEMSETUP.INF* file.

   CPQSETUP creates the *OEMSETUP.INF* and other files on the User Programs Windows Support diskette needed by the Windows SETUP program. It does not install the driver.
4. Run the Windows SETUP program. Change from the A: drive to the C: drive, and follow the instructions in the Windows documentation to run the SETUP program.

   The System Information screen displays the computer type, display adapter, mouse, keyboard, and network adapter (if present).
5. Use the arrow keys to highlight the Display Adapter line, and Press the **Enter** key.

   A list of display drivers is displayed.
6. Select Other and press the **Enter** key.

   You are prompted to insert a diskette into drive A: and enter the path for the device driver files.
7. The User Programs Windows support diskette should still be in the A: drive.

8. Type

   A:\DISPLAY

   Depending on your system, one or more driver choices are displayed.

9. Select the driver you want to use and press the **Enter** key to continue with driver installation.

   NOTE: If only one choice is displayed, press the **Enter** key to continue with driver installation.

10. Type

    A:\DISPLAY

    After SETUP has copied the necessary driver and associated files, the System Information menu is displayed.

11. Press the **Enter** key to accept the configuration shown.

    SETUP prompts you for further actions as needed. The specific steps vary according to whether you are installing Windows or adding the graphics display driver to an existing Windows configuration.

APM Drivers

If you have a COMPAQ LTE Lite 4/25C or COMPAQ LTE Lite/25E, and you want to use Advanced Power Managment in Windows, you must also load the 2 APM drivers required by Windows.

Once windows is installed, you can load these drivers by using the setup program from your Windows subdirectory. Use the following instructions.

1. At the system prompt, type

   cd\windows

2. At the C:\Windows prompt, type

   setup

3. When the system configuration screen is displayed, select system type:MS-DOS with APM. Setup will then install the appropriate APM drivers.

APPLICATIONS

Once MS-DOS and Windows have been installed on your computer you can add application software. Follow the instructions that came with your application software.

TRAVELING WITH YOUR COMPUTER

This chapter contains guidelines for traveling with your computer and provides some routine care suggestions to keep it working properly and ready to go.

TRAVEL GUIDELINES

The computer is designed for portability. For safety and convenience when traveling, follow these guidelines:

- Before you leave on a trip, safeguard your data by backing it up onto diskettes or tape media.
- Take an extra backup copy of the data with you.
- Be sure *EZ Help Online Library* is installed.
- Do not travel with a diskette in the diskette drive.
- Do not travel with the computer turned on or in Standby.
- Initiate Hibernation before you leave, if you want the computer to turn on at a particular screen.
- Close and latch the display.
- Disconnect the AC Adapter and any external peripheral devices from the computer.
- Close the connector cover on the back of the computer.
- Take along an extra, fully charged battery pack or the AC Adapter.
- Hand-carry the computer. Do not check it with your luggage.
- Check with the airline if you plan to use the computer while flying. In-flight computer use is entirely at the discretion of the airline.
- Check local customs regulations before traveling internationally with the computer.
- When traveling internationally, purchase an AC power cord from an Authorized COMPAQ Reseller in the country where you'll be using the computer. These power cords are designed to meet the voltage and frequency requirements of each country.

- If you are traveling internationally, be sure you have the correct modem for the country you'll be visiting. Telephone line standards and protocols differ from country to country.

CAUTION: Do not use the converter kits sold for appliances to power the computer. See Appendix D "Power Cord Set Requirements," for information about power cord selection.

ROUTINE CARE

Although the computer requires little care, you can keep it in good condition and working properly by taking a few simple precautions:

- Always operate the computer with a battery pack installed, even when you're using external power. This will supply the battery with a constant trickle charge and ensure a fully charged battery pack the next time you turn on the computer.
- Discharge, then recharge the battery pack at least every 60 days to improve battery performance and increase the accuracy of the battery gauge. Refer to Chapter 4, "Power Conservation," for complete instructions.
- Keep the computer away from excessive moisture and extremes of temperature. Never expose the computer or AC Adapter to liquids or precipitation. For specific temperatures, refer to Appendix B, "Operating Specifications."
- To prevent possible damage to the display, do not place anything on top of the computer when it is closed.
- Occasionally wipe the exterior of the computer and the display with a soft, damp cloth (moistened *only* with water). Using soap or other cleaning products may discolor the finish or damage the display.
- Occasionally clean the trackball. Refer to Chapter 3, "Keyboard and EasyPoint Trackball," for instructions on cleaning the trackball.

TROUBLESHOOTING

This chapter provides information on how to identify and correct some common battery, screen, diskette, memory, and software problems. It explains several types of common messages that you may receive on the screen and includes instructions for running the INSPECT and TEST utilities, which are located on the Diagnostics diskette.

HELPFUL HINTS

If you encounter some minor problem with your computer or software application, go through the following checklist for possible solutions before running any of the diagnostic utilities:

- Is the computer connected to an external power source or does it have a fully charged battery installed?
- Is the computer turned on and the power light green?
- Are all cables connected properly and securely?
- Did you run the SETUP utility after you installed an option?
- Have you installed all the needed device drivers? For example, if you're using a mouse, has a mouse device driver been installed?
- Have you made all necessary changes to the *CONFIG.SYS* file?
- Have you have made all necessary changes to the *AUTOEXEC.BAT* file?
- Have you installed printer drivers for each application?
- Did the diskette drive contain a "nonbootable" diskette when you turned on the computer?

INTERPRETING MESSAGES ON THE SCREEN

Many times a message or prompt is displayed on the screen. However, a message does not necessarily mean that an error condition exists. It may be nothing more than an information message about what the computer is doing or a prompt reminding you to enter information or press a key.

The following are typical examples of information messages:

- A number may be displayed.

  It indicates the amount of memory in the computer.

- Backing up files to drive A :

  This indicates that MS-DOS is backing up a file to the diskette in drive A.

- Exit this Utility.

  This message prompts you to exit the utility, usually by following the additional instructions on the screen.

- A :> or A :

  This prompt indicates that you are working from drive A.

- C :> or C :

  This prompt indicates that you are working from the hard drive.

RUNNING THE DIAGNOSTIC UTILITIES

The INSPECT and TEST utilities, located on the Diagnostics diskette, should be used when you need to identify a problem with the operation of the computer. If you encounter an error condition, complete the following steps before running either of the diagnostic utilities:

1. Turn off the computer and all external devices.
2. Disconnect all external devices, unless there is a device you particularly want to test. You also may leave the printer connected if you want to use it to log error messages.
3. Connect the AC Adapter and use it with the computer during these procedures. A low battery condition could initiate Standby, or other power conservation features, and interrupt the program.

Running the INSPECT Utility

The INSPECT utility provides information about the system once it has been configured. INSPECT operates with MS-DOS and in the MS-DOS emulation mode of OS/2. The INSPECT utility provides information about the system operating environment, including:

- Contents of the operating system startup files
- Current memory configuration
- ROM version installed
- Type of processor and coprocessor
- Diskette and hard drives installed
- Active printer and/or communications interfaces
- Modem installed
- Asset Management number

You can use the INSPECT utility to display, print, or save this information. Your Authorized COMPAQ Reseller may ask you to run this utility to assist in analyzing the system. This information allows the Authorized COMPAQ Reseller to reproduce the same environment on another computer for testing.

Running INSPECT from the Hard Drive

Provided the operating system has been installed, (see Chapter 8, "Installing an Operating System"), copy the INSPECT utility from the Diagnostics diskette to the hard drive. Then complete the following steps:

1. Enter the following at the operating system prompt:

   ```
   INSPECT
   ```

   Operating environment information is displayed.
2. Scroll through the information.
3. Print or file the information.

Running INSPECT from the Diskette

To run INSPECT from the Diagnostics diskette:

1. Insert the latest version of the Diagnostics diskette into drive A.
2. Turn on the computer or restart it by pressing the **Ctrl** + **Alt** + **Delete** keys.

   The Diagnostics menu is displayed.
3. Select the option to test or inspect the computer.

   The test or inspect computer menu is displayed.
4. Select the option to inspect the computer.

   Operating environment information is displayed.
5. Scroll through the information.
6. Print or file the information.
7. Remove the diskette immediately after you press the keys to restart the computer. If you don't remove the diskette, the computer will again boot from the Diagnostics diskette and the diagnostics menu will be displayed again.

Running the TEST Utility

The TEST utility determines if the various computer components installed are recognized by the system and are operating properly. When you run the TEST utility, be sure to record the error message numbers; then contact your Authorized COMPAQ Reseller for assistance.

To run the TEST utility, complete the following steps:

1. Turn on any external devices that you want to test.
2. Insert the Diagnostics diskette into drive A.
3. Turn on the computer or restart it by pressing the **Ctrl** + **Alt** + **Delete** keys.

   The Diagnostics menu is displayed.
4. Select the option to test or inspect the computer from the menu.

   The Test or Inspect Computer menu is displayed.
5. Select the option to test the computer.

   A test option menu is displayed.

6. Select the option to view the device list.

   A list of the hardware devices that are installed in the system is displayed.

7. Verify that the TEST utility correctly detected the devices installed.

   NOTE: This utility does not detect all non-COMPAQ expansion boards.

   - If the list is correct, select OK and go on to step 8.

     The test option menu is displayed again.

   - If the list is incorrect, be sure that any new devices are installed properly. If you do not find an installation problem, call your Authorized COMPAQ Reseller.

8. Select one of the following from the test option menu:

   - **Quick Check Diagnostics** This option runs a quick, general test on each device with a minimal number of prompts. If errors occur, they are displayed when the testing is complete.
   - **Automatic Diagnostics** This option runs an unattended, maximum testing of each device with minimal prompts. You can choose how many times to run the tests, to stop on errors, or to print or file a log of errors.
   - **Prompted Diagnostics** This option allows maximum control over the device testing process. You can choose attended or unattended testing, decide to stop on errors, or choose to print or file a log of errors.

9. Follow the instructions on the screen as the diagnostics tests are run on the devices.

   When the testing is complete, the test option menu is displayed again.

10. Exit to the Diagnostics menu, then exit the utility.

    When the **Exit This Utility** message is displayed:

    a. Remove the Diagnostics diskette from drive A.

    b. Press the **Enter** key to restart the computer.

SOLVING MINOR PROBLEMS

While your computer is configured just for you, problems you encounter while working may not be unique. Eliminating the typical problems described in this section may save you time and money. If you do have a problem with your computer, consider the problems and possible solutions outlined in the following series of tables. You may discover something you can resolve easily for yourself. If the condition persists, contact your Authorized COMPAQ Reseller.

Solving Power Problems

Problem	Probable Cause	Solution(s)
Computer won't turn on.	Battery is discharged.	1. Charge the battery pack. 2. Replace the battery pack with a fully charged battery pack. 3. Connect the computer to an external power source (AC or automobile power).
	Computer is not connected to an external power source.	Connect external power equipment such as AC Adapter, Automobile Adapter, or Desktop Expansion Base.
	Cables to the external power source are unplugged.	Ensure that cables connecting the computer and the external power source are plugged in properly.
Computer doesn't automatically display the date and time.	RTC (Real-Time Clock) battery life is approximately 1.5 to 2 years, and may need to be replaced.	Contact your Authorized COMPAQ Reseller and have the RTC battery replaced.

Solving Power Problems *Continued*

Problem	Probable Cause	Solution(s)
Computer turned off while it was left unattended.	System initiated Hibernation.	Turn on the computer to return your information to the screen. If the battery charge is low, charge the battery pack.
Computer does not beep during the Power-On Self-Test (POST).	Speaker volume has been turned down.	Press the **Fn** + **F5** hotkeys and adjust the volume of the speaker. Test the volume of the speaker with the down arrow key.

Solving Battery Problems

Problem	Probable Cause	Solution(s)
Computer is beeping and lights are blinking.	Battery charge is low.	1. Charge the battery pack. 2. Replace the battery pack with a fully charged battery pack. 3. Connect the computer to an external power source (AC or automobile power). 4. Initiate Hibernation to conserve power until you can charge the battery pack or find another power source.
Computer lights blink to indicate low battery condition, but computer does not beep.	Low battery beeps were turned off.	Select the PWRCON icon and turn on the low battery warning beeps.
	Volume turned down too low.	Press **Fn + F5** and press the right arrow key to increase the volume.
Battery pack won't fast charge.	Battery pack was exposed to temperature extremes.	Allow time for the battery pack to return to room temperature.
Computer shut down and memory was lost when replacing the battery pack.	When the computer is in Standby, the battery pack must be replaced within one minute to prevent loss of information.	Wait until the standby light turns on before removing the battery pack. Insert another battery pack within one minute.

Solving Battery Gauge Problems

Problem	Probable Cause	Solution(s)
Battery gauge displays a question mark.	■ If your battery is new, the question marks will be displayed until the battery is fully charged. ■ The battery pack has been unused for five or more days. ■ You have done too many partial charges without a full charge.	Fully charge the battery pack until the orange light goes out.
Battery gauge appears inaccurate.	Battery pack needs to be completely discharged, then recharged every 60 days to maintain battery gauge accuracy.	Discharge, and recharge the battery pack.

Solving Diskette/Diskette Drive Problems		
Problem	**Probable Cause**	**Solution(s)**
Diskette drive light stays on.	Diskette is damaged.	Run CHKDSK on the diskette.
	Diskette is incorrectly inserted.	Remove diskette and reinsert.
	Software program is damaged.	Check the program diskettes.
Diskette drive cannot write to a diskette.	Diskette is not formatted.	Format the diskette. Type: Format A:
	Diskette is write-protected.	Use another diskette—one that is not write-protected.
	Writing to the wrong drive.	Check the drive letter in your path statement.
	Not enough space is left on the diskette.	Use another diskette to write the information.
Diskette drive cannot read a diskette.	Diskette is not formatted.	Format the diskette.
	Using the wrong diskette type for the drive type.	Use the correct diskette type required.

Solving Screen Problems

Problem	Probable Cause	Solution(s)
Characters are dim.	Power Conservation settings have not been established using SETUP.	Run SETUP and save settings.
	The brightness control is not set properly.	Adjust the brightness control.
	Computer initiated a System Idle because of system inactivity.	Press any key to relight the screen.
Characters dimmed and processing slowed while using an application.	Computer initiated System Idle because of system inactivity.	Set the System Idle timeout to zero by using the PWRCON icon custom option.
Screen is blank.	You may have a screen blanking utility installed.	Press any key. If the display reappears, then you have a screen blanking utility installed.
	Brightness needs adjusting.	Use the control on the display to adjust the brightness.
	Screen save was initiated.	Press any key or click the mouse to light the screen.
	System initiated a Standby condition.	Press the standby button to exit Standby.

Continued

Solving Screen Problems *Continued*

Problem	Probable Cause	Solution(s)
	System initiated a low battery Standby condition.	Charge the battery pack. Replace the battery pack with a fully charged battery pack. Connect computer to an external power source (AC or automobile power).
Garbled characters on the screen are mixed with text.	The *ANSI.SYS* driver is not in the *CONFIG.SYS* file.	Add the *ANSI.SYS* driver to the *CONFIG.SYS* file. Add the following line: DEVICE=C:\ANSI.SYS
Computer screen is blank and the screen on the external monitor displays information.	Display was switched to the external monitor.	Press the **Fn** + **F4** hotkeys to display information on the computer screen; press the hotkeys again to display information simultaneously.

Continued

Solving Screen Problems *Continued*

Problem	Probable Cause	Solution(s)
Garbled characters on internal display or flashing internal display when connected to external monitor.	Using 800 X 600 resolution on external display and toggled back to internal display which only supports 640 X 480 resolution.	Restart your computer. If simultaneous display is desired, use 640 X 480 resolution.
Computer screen and external monitor will not display information simultaneously.	External monitor was connected after the computer was turned on.	Turn the computer off and connect the external display. Turn the display on, then turn the computer on. Press the **Fn** + **F4** hotkeys to "toggle" through the three display possibilities.
	External keyboard is connected.	Disconnect external keyboard and restart.

Self-Test for a COMPAQ External Monitor

You can perform a "self-test" on an external VGA color or monochrome monitor without the monitor being connected to the computer. To do so, complete the following steps:

1. Turn off the monitor.
2. Turn off the computer.
3. Disconnect the monitor signal cable from the computer.
4. Turn on the monitor and allow it to warm up for one minute.

   The screen should be white. A narrow black border may also appear on the left and right sides of the display. Either of these displays indicates that the monitor is working properly.

Solving Keyboard/Numeric Keypad Problems

Problem	Probable Cause	Solution(s)
Embedded numeric keypad in computer keyboard is disabled.	Num lock function is not turned on.	Press the Fn + End keys to enable the Num Lock function and embedded numeric keypad.
Embedded numeric keypad is disabled and num lock function is on.	External Numeric Keypad is connected to the computer.	Disconnect the External Numeric Keypad from the computer.

Solving Printer Problems

Problem	Probable Cause	Solution(s)
Printer will not turn on.	The cables may not be connected properly or the printer is unplugged.	Ensure that the cables are properly connected and that the power plug is connected to the AC outlet.
Printer will not print.	Printer is not turned on.	Turn on the printer.
	Printer is not online.	Set the printer online.
	The device drivers for your application are not installed.	Install the correct printer drivers for your application.
	Printer that is set up for a network is not connected to the network.	Connect the printer to the network.
Printer is off line.	Paper tray is empty.	Fill the paper tray with paper. Select online.
Printer prints garbled information.	Correct printer drivers are not installed.	Install the correct printer driver.
	Cables are not connected properly.	Reconnect all cables.

Also, refer to the documentation that came with your printer for additional help in solving printer problems.

Solving Hardware Installation Problems

Problem	Probable Causes	Solutions(s)
A new device is not recognized as part of the computer system.	The SETUP utility has not been run to configure the new device.	Run the SETUP utility.
	Cable(s) of new external device are loose or power cables are unplugged.	Ensure that all cables are properly and securely connected.
	Power switch of new external device is not turned on.	Turn off the computer, turn on the external device, then turn on the computer to integrate the device with the computer system.

Solving Software Application Problems

Most software application or installation problems occur as a result of one or more of the following:

- The application was not installed correctly.
- The *CONFIG.SYS* file was not configured correctly.
- Memory was not allocated correctly.
- The *AUTOEXEC.BAT* file was not edited correctly.
- A conflict exists between applications.

Solving Software Application Problems

Problem	Probable Cause	Solution(s)
Mouse does not work.	Incorrect or no mouse device driver is installed.	Add the correct mouse command to the *AUTOEXEC.BAT* file. (MS-DOS applications require an MS-DOS mouse driver. Windows applications require a Windows mouse driver.)
Cannot use application from a specified directory.	The application has not been added to the PATH statement	Add application to the *AUTOEXEC.BAT* file.
Insufficient memory to run application.	Memory is not configured properly for the application.	Consult the application documentation for memory requirements and configure memory for those requirements.

Solving Memory Problems

Problem	Probable Cause	Solution(s)
"Out of Memory" message is displayed on the screen.	Memory configuration is not set up correctly.	Reconfigure memory.
Memory count during Power- On Self-Test (POST) is incorrect.	Optional memory card is installed incorrectly or is incompatible with the computer.	1. Ensure that the correct memory card has been installed and that it is installed correctly. 2. Run the SETUP utility.
Insufficient memory error during operation.	Too many TSRs are installed.	Delete any TSR applications that you do not need.
	System ran out of memory for the application.	Check the application documentation for memory requirements or add more memory to the computer.

Recommended Mouse Or Trackball Configuration			
	COM1	**COM2**	**COM3**
No External Mouse			
Option Slot Not Used	9-pin IRQ=4	trackball IRQ=3	not used
Option Slot Used	Option Slot IRQ=4	trackball IRQ=3	9-pin IRQ=15/10*
External Serial Mouse			
Option Slot Not Used	9-pin IRQ=3	not used	not used
Option Slot Used	Option Slot IRQ=4	9-pin IRQ=3	not used
External PS2 Mouse			
Option Slot Not Used	9-pin IRQ=4	not used	not used
Option Slot Used	Option Slot IRQ=4	9-pin IRQ=15/10	not used

*10 or 15 (15 is default)

SERVICE

For Compaq Customer Support and Authorized COMPAQ Reseller location, call:

- U.S. 1-800-345-1518 1-200-652-6672
- Canada 1-800-263-5868

Your Authorized COMPAQ Reseller is available to answer your questions, install optional equipment, and service your computer.

If you take the computer to your Authorized COMPAQ Reseller for service, remember to provide the power-on password, if it is set. If the DriveLock feature is set, back up your system, remove sensitive data, and clear the DriveLock password.

Record your Authorized COMPAQ Reseller's name, address, and telephone number on the System Information Record located in the back of this guide.

POST ERROR MESSAGES

An error message results if a problem is encountered during the Power-On Self-Test utility. This Power-On Self-Test utility runs automatically when the system is turned on.

Table A-1 lists the messages for POST, the audible (beep) message, probable cause, and recommended action.

Power-On Self-Test Messages

Message	Beeps*	Probable Cause	Recommended Action
101-ROM Error	1L,1S	ROM Checksum option	Contact Authorized COMPAQ Reseller.
101-I/O ROM Error	1L,1S	System ROM	Contact Authorized COMPAQ Reseller.
102-System Board or System Memory Failure	None	System module	Contact Authorized COMPAQ Reseller.
162-System Options Error	2S	Configuration error	Run SETUP.
162-System Options Not Set	2S	Configuration incorrect	Run SETUP.
163-Time & Date Not Set	2S	Invalid time or date configuration memory	Run SETUP.

* L = long beep; S = short beep

Continued

Power-On Self-Test Messages *Continued*

Message	Beeps	Probable Cause	Recommended Action
164-Memory Size Error	2S	Configuration Memory incorrect	Run SETUP.
167-RTC Lost Power	2S	Real-time clock/calendar battery	Contact Authorized COMPAQ Reseller to replace the clock/ calendar battery.
XXOOOY ZZ** 201-Memory Error	None	RAM failure	Contact Authorized COMPAQ Reseller.
XXOOOY ZZ**	None	RAM failure	Contact Authorized COMPAQ Reseller.
205-Memory Error	None	Cache Memory error	Contact Authorized COMPAQ Reseller.
301-Keyboard Error	None	Keyboard	Contact Authorized COMPAQ Reseller.
301-Keyboard Error or Test Fixture Installed	None	Keyboard	Contact Authorized COMPAQ Reseller.
303-Keyboard Controller Error	None	System module keyboard controller	Contact Authorized COMPAQ Reseller.
304-Keyboard or System Unit Error	None	Keyboard	Contact Authorized COMPAQ Reseller.

* L = long beep; S = short beep

** Beeps can be disabled by the user during the SETUP program.

Continued

Power-On Self-Test Messages *Continued*

Message	Beeps	Probable Cause	Recommended Action
601-Diskette Controller Error	None	Diskette Controller circuitry	1. Run Diagnostics. 2. Contact Authorized COMPAQ Reseller.
605-Diskette Drive Error	None	Mismatch in drive type	Run SETUP.
610-External Storage Device Failure - Hit F1 when ready	None	External Storage Module connected but turned off Expansion Base switches are not set correctly	Turn on external storage module or disconnect from the computer. Refer to the Desktop Expansion Base Installation and Operations Guide for proper swich settings.
702-Coprocessor Detection Error	None	Coprocessor problem; added or removed the coprocessor	1. Run SETUP. 2. Contact Authorized COMPAQ Reseller to check the coprocessor installation. 3. Replace the coprocessor.
1125-Internal Serial Port Failure	None	Defective internal port	Contact Authorized COMPAQ Reseller.
1150-Comm Port Configuration Error	2S	Added or removed modem, or second serial interface board	Run SETUP.

* L = long beep; S = short beep

Continued

Power-On Self-Test Messages *Continued*

Message	Beeps*	Probable Cause	Recommended Action
1771-Primary Disk Port Address Assignment	2S	The external primary fixed disk controller is detected on the bus, but the internal controller is not disabled	Contact Authorized COMPAQ Reseller.
1780-Disk 0 Failure	None	Fixed disk drive/format error	1. Run Diagnostics. 2. Contact Authorized COMPAQ Reseller.
1781-Disk 1 Failure	None	Fixed Disk drive/format error	1. Run Diagnostics. 2. Contact Authorized COMPAQ Reseller.
1782-Disk Controller Failure	None	Fixed disk drive controller error	1. Run Diagnostics. 2. Replace the drive.
XXOOOY ZZ Parity	None	Parity RAM failure	1. Run Diagnostics. 2. Contact Authorized COMPAQ Reseller.
Audible	1S	Power-on successful	None.
Audible	2S	Power-on successful	None.
(RESUME = F1 key)	None	As indicated to continue	Press F1 key.

* L = long beep; S = short beep

SPECIFICATIONS

This appendix provides physical, environmental, and performance specifications for the following COMPAQ LTE Lite Family of Personal Computers subsystems:

- System Units
- Active Matrix Color VGA Display
- Active Matrix Black and White VGA Display
- 3 1/2-Inch 1.44 Megabyte Diskette Drive
- Hard Drives
- Internal Power Supply
- AC Adapter
- Battery Pack

System Units		
Dimensions		
Depth	8.5 in	21.6 cm
Height	2.00 in	5.2 cm
Width	11.00 in	27.9 cm
Weight		
Model 209	6.5 lb	2.95 kg
Model 120*	6.5 lb	2.95 kg
Model 84*	6.5 lb	2.95 kg
Environmental Requirements		
Temperature		
Operating	50° to 104°F	10° to 40°C/Hr1**
Nonoperating	-4° to 140°F	-20° to 60°C/Hr1***
Relative Humidity (noncondensing)		
Operating	10 % to 90%	10% to 90%
Nonoperating	5% to 95%	5% to 95%
Shock and Vibrations		
Shock		
Operating	10 G, 11 ms, half sine	
Nonoperating	60 G, 11 ms, half sine	
Vibration		
Operating	0.25 G, 5-500 Hz/octave/min sweep	
Nonoperating	1.00 G, 5-500 Hz/octave/ min sweep	
Maximum Unpressurized Altitude		
Operating	10,000 ft	3,048 m
Nonoperating	40,000 ft	12,192 m
Heat Output	149 BTU/Hr (calculated maximum)	

* COMPAQ LTE Lite/25E is 6.4 lbs

** 10° C/Hr, 38.7° maximum wet bulb

** *20° C/Hr

Standalone (Battery) Power Requirements			
	COMPAQ LTE Lite/25C	**COMPAQ LTE Lite/25E**	**COMPAQ LTE Lite 4/25C**
Nominal Operating Voltage	12 VDC	12. VDC	12. VDC
Average Power	14.2 W	11.0 W	12.7 W
Peak Power	32.3 W	29.1 W	32.3 W

Active Matrix Color VGA Display		
	U.S.	**Metric**
Dimensions (image area)		
Height	5.10 in	130 mm
Width	6.35 in	171 mm
Diagonal Size	8.4 in	213 mm
Mounting	Internal	
Display	Edgelit Color Active Matrix	
Color Scales	256 colors	
Maximum Pixel Resolution	640 x 480	
Palette Size	4096 (640 x 480 resolution)	
Character Display	80/40 x 25	
Horizontal Frequency	31 kHz	
Vertical Frequency	60/70 Hz	
Display Inverter Board		
Operating Voltage	400 Vrms typical@ 4.0 W, 25° F	
Maximum Input Power	5.0 W	
Maximum Output Power	4.0 W	

Active Matrix Black and White VGA Display		
Dimensions (image area)		
Height	5.7 in	141 mm
Width	7.6 in	192 mm
Diagonal Size	9.5 in	241 mm
Mounting	Internal	
Display	Edgelit Black and White Active Matrix	
Gray Scales	16 in 640 x 480 resolution 64 in 320 x 200 resolution	
Maximum Pixel Resolution	640 x 480	
Character Display	80/40 x 25	
Horizontal Frequency	31kHz	
Vertical Frequency	60/70 Hz	
Display Inverter Board		
Operating Voltage	400 Vrms typical@ 2.0 W, 25° F	
Maximum Input Power	2.5. W	
Maximum Output Power	2.0 W	

Diskette Drive	
Diskette Size	3.5 in
Light Indicators	
Read/Write (high density)	Green
Read/Write (low density)	Orange
Capacity Per Diskette	
High Density	1.44 MB
Low density	720 K
Drives Supported	One
Drive Height	0.6 in (1.52 cm)
Drive Rotation (rpm)	300
Transfer Rate (bps)	
High density	500 K
Low density	250 K
Bytes Per Sector	512
Sectors Per Track	
High density	18
Low density	9
Tracks Per Side	
High density	80
Low density	80
Access Times (ms)	
Track-to-track	3/6
Average	94/174
Settling time	15
Cylinders	
High density	80
Low density	80
Read/Write Heads	2

	Hard Drives		
	209-MB	**120-MB**	**84-MB**
Standard Configuration	Model 209	Model 120	Model 84
Light Indicators	Green	Green	Green
Formatted Capacity Per Drive (MB)			
Physical	209.79	127.90	85.37
Logical	209	121.41	84.34
Drives Supported	One	One	One
Drive Height	.75 in 1.9 cm	.75 in 1.9 cm	.75 in 1.9 cm
Drive Size	2.5 in 6.35 cm	2.5 in 6.35 cm	2.5 in 6.35 cm
Drive Type	16	50	27
Transfer Rate (Mbit/sec)			
Interface	6.5	6.5	6.5
Sector Interleave	1:1	1:1	1:1
Bytes Per Sector	512	512	512
Number of Surfaces			
Physical	6	6	4
Logical	16	8	6
Access Times (ms) (Including Settling)			
Track-to-Track	5	5	5
Average	16	16	19
Maximum	27	27	40
Physical Cylinders	1530	1061	1097
Physical Read/Write Heads	6	6	4
Logical Cylinders	404	760	832
Logical Read/Write Heads	16	8	6

Internal Power Supply	
Input Requirements	
Input voltage	10 - 20 VDC
Standby	6.5 - 8.5 VDC
Input fuse	5.0 A (battery connection only)
Power Output	
Steady state	18 W
Peak	21 W
Cooling	Convection
VDC Output	
Nominal voltage	+5.075 VDC-
Current minimum	0.0A
Nominal continuous current maximum	3.5 A
Maximum peak current	4.1A
Regulation tolerance	+/- 0.15

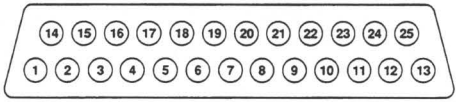
AC Adapter		
Dimensions		
Height	1.4 in	4.97 cm
Depth	3.3 in	8.38 cm
Width	5.3 in	13.46 cm
Weight	0.8 lb	0.36 kg
Power Supply		
Operating voltage	100-120/220-240 VAC	
Maximum output voltage	18V	
Maximum output current	2.5 A	
Maximum output power	35 W	
Operating current	0.8/0.4A	
Frequency	50/60 Hz	

NiMH Power Smart Pack		
Dimensions		
Height	.76	19.5 mm
Depth	5.63	142.8 mm
Width	3.77	95.8 mm
Weight	1.3 lb	2102 gr
Power Supply		
Nominal Open Circuit		
Voltage	12 VDC	
Capacity	2.2Ah	
Temperature Requirements		
Operating	50°F to 104°F	10° to 40°C
Nonoperating	-4°F to 86°F	-20°C to 30°C (no time limit)
	-4°F to 104°F	-20°C to 40°C (< 3 month)
	-4°F to 122°F	-20°C to 50°C (< 1 month)

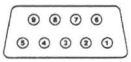
NiCd Power Smart Pack		
Dimensions		
Height	.76	19.5 mm
Depth	5.63	142.8 mm
Width	3.77	95.8 mm
Weight	1.3 lb	2102 gr
Power Supply		
Nominal Open Circuit		
Voltage	12 VDC	
Capacity	1.7Ah	
Temperature Requirements		
Operating	50°F to 113°F	10°C to 40°C
Nonoperating	-22°F to 122°F	-30°C to 50°C

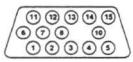
CONNECTOR PIN ASSIGNMENTS

Parallel Connector

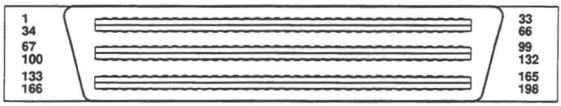


Pin	Signal
1	Strobe
2	Data Bit 0
3	Data Bit 1
4	Data Bit 2
5	Data Bit 3
6	Data Bit 4
7	Data Bit 5
8	Data Bit 6
9	Data Bit 7
10	Acknowledge
11	Busy
12	Paper Out
13	Select
14	Auto Linefeed
15	Error
16	Initialize Printer
17	Select In
18	Ground
19	Ground
20	Ground
21	Ground
22	Ground
23	Ground
24	Ground
25	Ground

Serial Connector		
Connector	**Pin**	**Signal**
	1	Carrier Detect
	2	Receive Data
	3	Transmit Data
	4	Data Terminal Ready
	5	Ground
	6	Data Set Ready
	7	Ready to Send
	8	Clear to Send
	9	Ring Indicator

External VGA Monitor		
Connector	**Pin**	**Signal**
	1	Red Analog
	2	Green Analog
	3	Blue Analog
	4	Not Connected
	5	Ground
	6	Ground Analog
	7	Ground Analog
	8	Ground Analog
	9	Not Connected
	10	Ground
	11	Not Connected
	12	Horizontal Synch
	13	Vertical Synch
	14	Vertical Synch
	15	Not Connected

External Options



Pin	Signal	Pin	Signal
1	Printer Select	19	CRT Vertical Sync
2	Printer Busy	20	Ground
3	Printer Data Bit 7	21	Serial-Data Terminal Ready
4	Printer Data Bit 5	22	Serial-Ring Terminal Ready
5	Ground	23	Serial Transmit Data
6	Printer Data Bit 3	24	Serial Clear-to-Send
7	Printer Data Bit 1	25	Ground
8	Printer Strobe*	26	Serial Receive Data
9	AC Powered Expansion Base	27	Serial Ready-to-Send
10	Battery Voltage	28	Serial Carrier Detect
11	Power Good Expansion Base	29	Serial-Data Set Ready
12	Standby	30	Ground
13	Mouse Data	31	DMA Acknowledge 2*
14	Battery Voltage	32	DMA Acknowledge 1*
15	CRT-Red Analog	33	DMA Acknowledge 0*
16	CRT-Green Analog	34	5 Volts Fused
17	CRT-Blue Analog	35	Printer Paper Out
18	CRT Horizontal Sync	36	Printer Acknowledge*
		37	Printer Data Bit 6

*Active Low

External Options *Continued*

Pin	Signal	Pin	Signal
38	Printer Data Bit 4	59	DMA Request 2
39	Ground	60	Ground
40	Printer Data Bit 2	61	DMA Request 0
41	Printer Data Bit 0	62	DMA Acknowledge 7*
42	Keypad Data	63	DMA Acknowledge 6*
43	Battery Voltage	64	Ground
44	Keyboard Clock	65	DMA Acknowledge 5*
45	Keyboard Data	66	DMA Acknowledge 3*
46	Mouse Clock	67	Expansion Base
47	Battery Voltage	68	Spare
48	Ground-CRT	69	Ground
49	Ground-CRT	70	Spare
50	Ground-CRT	71	Floppy Disk-Write Protect*
51	Ground-CRT	72	Floppy Disk-Write Data*
52	Ground-CRT	73	Ground
53	DMA Request 1	74	Floppy Disk-Step*
54	DMA Request 7	75	Floppy Disk-Track 0*
55	DMA Request 6	76	Reset
56	Ground	77	Ground
57	DMA Request 5	78	System Data Bit 15
58	DMA Request 3	79	System Data Bit 14

*Active low

External Options *Continued*

Pin	Signal	Pin	Signal
80	System Data Bit 13	103	Ground
81	Ground	104	Printer Initialize*
82	System Data Bit 12	105	Floppy Disk-Write Gate*
83	System Data Bit 11	106	Floppy Disk-Read Data*
84	System Data Bit 10	107	Ground
85	Ground	108	Power On*
86	System Data Bit 9	109	Expansion Device Connected*
87	System Data Bit 8	110	I/O Error Check*
88	System Data Bit 7	111	Ground
89	System Data Bit 6	112	System Address Bit 4
90	Ground	113	System Address Bit 5
91	System Data Bit 5	114	System Address Bit 6
92	System Data Bit 4	115	Ground
93	System Data Bit 3	116	System Address Bit 7
94	Ground	117	System Address Bit 8
95	System Data Bit 2	118	System Address Bit 9
96	System Data Bit 1	119	Ground
97	System Data Bit 0	120	System Address Bit 10
98	Ground	121	System Address Bit 11
99	DMA Terminal Count	122	System Address Bit 12
100	5 Volts Fused	123	System Address Bit 13
101	Printer Auto Line Feed	124	Ground
102	Printer Error*	125	System Address Bit 14

*Active low

External Options *Continued*

Pin	Signal	Pin	Signal
126	System Address Bit 15	144	Bus Ready
127	System Address Bit 16	145	Ground
128	Ground	146	I/O Read Control*
129	System Address Bit 17	147	I/O Write Control*
130	System Address Bit 18	148	ISA Bus Clock
131	System Address Bit 19	149	Ground
132	Ground	150	Address Latch Enable
133	Printer Select In*	151	DMA Cycle Indicator
134	Floppy Disk-Boot	152	Unlatched Address Bit 17
135	Floppy Disk-Low Density Media*	153	Ground
136	Floppy Disk Direction In*	154	Unlatched Address Bit 18
137	Ground	155	Unlatched Address Bit 19
138	Floppy Disk Index*	156	Unlatched Address Bit 20
139	Floppy Disk-Disk Change*	157	Unlatched Address Bit 21
140	Floppy Disk Head Select	158	Ground
141	Ground	159	Unlatched Address Bit 22
142	Spare	160	Unlatched Address Bit 23
143	No Wait States*	161	System Address Bit 0

*Active low

External Options *Continued*

Pin	Signal	Pin	Signal
162	Ground	181	Byte High Enable*
163	System Address Bit 1	182	Refresh*
164	System Address Bit 2	183	Ground
165	System Address Bit 3	184	Interrupt Request 15
166	Floppy Disk Drive Select*	185	Interrupt Request 14
167	Floppy Disk Low Density*	186	Interrupt Request 12
168	Reserved	187	Ground
169	Floppy Disk Ext Floppy Connected	188	Interrupt Request 11
170	Floppy Disk Tape Select*	189	Interrupt Request 10
171	Ground	190	Interrupt Request 9
172	Floppy Disk Motor*	191	Interrupt Request 7
173	16-Bit I/O Cycle*	192	Ground
174	Low Memory*	193	Interrupt Request 6
175	Ground	194	Interrupt Request 5
176	Memory Read Control*	195	Interrupt Request 4
177	Memory Write Control*	196	Ground
178	16-Bit Memory Cycle*	197	Interrupt Request 3
179	Ground	198	Key
180	Bus Master Grab*		

*Active Low

External Numeric Keypad		
	Pin	**Signal**
	Shell	Ground
	1	Keypad Data

Keyboard/Mouse		
Connector	**Pin**	**Signal**
	1	Keyboard Data
	2	Mouse Data
	3	Ground
	4	+5 VDC
	5	Keyboard Clock
	6	Not Connected

POWER CORD SET REQUIREMENTS

The wide range input feature permits the computer to operate from any input line voltage from 100 to 270 VAC.

The power cord set (power cord) you received with your computer meets the requirements of the country where you purchased the system. If you use the computer in another country, you must use a power cord that meets the requirements of that country. For more information on power cord set requirements, contact your Authorized COMPAQ Reseller.

The following information explains the requirements for power cord set selection.

General Information

1. The cord set must be approved for the country where it will be used.
2. The appliance coupler (that is, the connector to the device itself, not the wall plug) must have a configuration for mating with a EN 60 320/IEC 320 appliance inlet (Standard Sheet C14).
3. The length of the cord set must be as follows:

   Minimum 6.50 ft. (2.0 m)

   Maximum 9.75 ft. (3.0 m)

U.S. and Canada

1. The cord set must be UL-Listed and CSA-Certified.
2. The minimum specifications for the flexible cord are:
   - No. 18 AWG
   - Type SV or SJ
   - 3-conductor
3. The cord set must have a rated current capacity of at least 10A.
4. The attachment plug must be an earth-grounding type with a NEMA 5-15P (15A, 125V) or NEMA 6-15P (15A, 250V) configuration.

Japan

1. All components of the cord set (cord, receptacle, and plug) must bear a "T" mark and registration number in accordance with the Japanese Dentori Law.
2. Following are the minimum specifications for the flexible cord:
   - .75mm^2 conductors
   - Type VCT or VCTF
   - 3-conductor
3. The cord set must have a minimum rated current capacity of 7A.
4. The attachment plug must be a two-pole, earth-grounding type with a Japanese Industrial Standard C8303 (15A, 125V) configuration.

Other Countries

1. The cord set fittings must bear the certification mark of the agency responsible for evaluation in a specific country. Acceptable agencies include:

BSI (United Kingdom)	OVE (Austria)
CEBEC (Belgium)	SEMKO (Sweden)
DEMKO (Denmark)	SETI (Finland)
EANSW (Australia)	SEV (Switzerland)
IMQ (Italy)	UTE (France)
KEMA (The Netherlands)	VDE (Germany)
NEMKO (Norway)	

2. The flexible cord must be of a HAR (harmonized) type H05VV-F 3-conductor cord with a minimum conductor size of .03 square inches (1.0 square millimeters).
3. The cord set must have a current capacity of at least 10A and a nominal voltage rating of 125 or 250 VAC, as required by each country's power system.

ELECTROSTATIC DISCHARGE

A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

Preventing Electrostatic Damage

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free work stations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Grounding Methods

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm +/- 10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heelstraps, toestraps, or bootstraps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.
- If you do not have any of the suggested equipment for proper grounding, have an Authorized COMPAQ Reseller install the part.

IMPORTANT: For more information on static electricity, or assistance with product installation, contact your Authorized COMPAQ Reseller.

Regulatory Agency Identification Numbers

Regulatory Agency Identification	
Option	**Identification Number**
AC Adapter	Series 2812
Automobile Adapter	Series 2814
CD-ROM Adapter	Series 2808
Desktop Expansion Base	Series 2815
COMPAQ SpeedPAQ 144 Modem	Series 2818
Enhanced 9600-Baud Internal Modem (North America only)	Series 2816
Enhanced 2400-Baud Internal Modem	Series 2805
External Battery Charger	Series 2813
External Numeric Keypad	Series 2697
External Storage Module	Series 2694
Internal Data + FAX Modem (North America only)	Series 2817
NiCd Power Smart Pack	Series 2811A
NiMH Power Smart Pack	Series 2811
Serial Interface Board	Series 2807

GLOSSARY

A

A/B drive selection switch

A switch on the rear panel of the Desktop Expansion Base and External Storage Module optional equipment. The switch designates the diskette drive in the expansion base or storage module as logical drive A or B. Logical drive A is the startup (or bootable) diskette drive. (For example, if the A/B drive selection switch is set to position A, then the diskette drive in the expansion base or storage module is drive A, and the diskette drive in the computer is drive B.)

AC Adapter

A self-contained power supply that converts alternating current (AC) to direct current (DC) required by the computer. The AC Adapter provides external power to the computer and simultaneously charges the battery pack. The AC Adapter also connects to an External Battery Charger, which provides AC power to fast charge up to two battery packs.

AC power

The alternating electrical current in an AC outlet.

Active Matrix Display

Display which is called active because transistors are used at each pixel, The TFT active matrix display has 307,200 pixels (640 X 480) to provide VGA resolution. Transistors are used at each pixel to accurately define any of the 256 colors or 64 shades of gray that may be displayed at once.

ADAPT	Advanced Display Attribute Programming Tool. A User Programs utility that changes how the text looks on the screen, sets the screen save timeout, and sets and locks the cursor size. Changes made with ADAPT are cleared when the computer is turned off or restarted.
APM (Advanced Power Management)	A power conservation feature that helps conserve battery power. APM can turn off the microprocessor between keystrokes.
ANSI.SYS	An MS-DOS device driver that specifies standard functions that change the display, control cursor movement, and reassign keys on the keyboard. (ANSI is an acronym for American National Standards Institute.)
AUTOEXEC.BAT file	A batch file that contains a series of commands that MS-DOS runs each time the computer is turned on or restarted. The *AUTOEXEC.BAT* file eliminates the need for entering these commands each time the computer is turned on or restarted. For example, the *AUTOEXEC.BAT* file often contains a PATH command that tells MS-DOS where to find the command files on the hard drive and a PROMPT command that sets the system prompt to show the current directory.

Automobile Adapter	Optional equipment that connects to the computer, providing vehicle battery power to the computer and fast charging the battery pack in the computer. The Automobile Adapter also connects to an optional External Battery Charger, providing vehicle battery power to fast charge up to two battery packs.
auxiliary battery	A battery that provides power to the computer during Standby so that the battery pack can be replaced without turning off the computer. The auxiliary battery provides power up to one minute.

B

base memory	The section of memory between 0 and 640 Kbytes where most MS-DOS applications run.
battery gauge	A popup window that displays operating time remaining in hours and minutes, and the percentage of battery power (in a bar graph) remaining. The popup window can be displayed from within an application by pressing the Fn + F8 hokeys. The battery gauge also can be displayed by running the PWRCON or SETUP utility.
bit	The smallest unit of information recognized by the computer.
bootable diskette	A diskette that contains part of an operating system or a start-up procedure required to start the computer from drive A.
byte	Eight bits treated as a unit and representing a character.

C

CACHE — A User Programs utility that improves system performance by decreasing the time it takes for an application to access data from the hard drive.

cache memory — An area of very fast static memory for storing data retrieved from main system memory. Data is temporarily stored in the cache memory in anticipation of future access by the microprocessor. If data requested by an application program is found in cache memory, the data is transferred directly to the microprocessor at a faster rate than it would be from main memory, thereby increasing overall system performance.

CD-ROM Adapter — An optional hardware device that connects the computer to an external CD-ROM drive.

CD-ROM drive — A high-density, read only memory, storage device that optically reads a compact optical disk. A single optical disk can hold billions of bytes of data.

CHKDSK — An MS-DOS command that checks a directory on a disk for errors. CHKDSK checks the files to ensure that they are recorded properly.

COM — A serial interface identifier; that is, COM1 and COM2.

CONFIG.SYS file
: A configuration file in the DOS directory that contains commands that affect how MS-DOS runs on the computer and communicates with other equipment. The commands in this file help define the computer configuration (or setup). Configuration commands are not typed at the keyboard. MS-DOS carries out the commands in the *CONFIG.SYS* file each time the computer is turned on or restarted, therefore, when a command in this file is changed, the computer must be restarted before the command takes effect.

configuration
: The type of hardware and software in a computer system.

configure
: To assemble a group of hardware devices and software programs into a system and adjust each component so that they work together to optimize computer operations.

coprocessor
: A supplementary microprocessor that does numeric computations in mathematics-intensive operations, thus removing the activity from the central microprocessor.

D

default
: A value used by a computer system unless the user alters it to use a different value.

Desktop Expansion Base	An optional hardware device that provides a means of expansion for the computer. The expansion base provides five standard interfaces for external devices and areas for installing industry-standard expansion boards and mass storage devices. It also provides external power to the computer and charges the battery pack in the computer.
device driver	Software that controls and communicates with system hardware. Device drivers, included with the operating system, must be added to the *CONFIG.SYS* file to optimize system operations.
diagnostics	The SETUP, TEST, and INSPECT utilities that configure the computer system, test for proper functioning of the components, and identify the configuration.
direct current (DC)	A nonalternating current that powers the computer. The AC Adapter converts alternating current to direct current required by the computer.
diskette	The removable media onto which the diskette drive writes and from which it retrieves information. A 3.5-inch diskette is a magnetic disk enclosed in a hard plastic container. A 5.25-inch diskette is a flexible magnetic disk enclosed in a protective sleeve. *Also called* floppy disk.

diskette drive	A mass storage device that reads information from, and writes information to, a diskette.
diskette drive disable	When the status of the diskette drive has been changed in SETUP from enable. A diskette cannot be used when it has a disable status.
diskette drive enable	When the status of the diskette drive has been changed in SETUP from disable. A diskette drive must have an enable status before the drive can be used.
DriveLock password	A security feature that prevents the use of the hard drive until a unique, preset secret word or code is entered. Two levels of DriveLock security are available depending on the sensitivity of the information: the Maximum level for which no override is available; the High level for which an override is available.
dynamic random access memory (DRAM)	A type of system memory that must be rewritten (or refreshed) every few milliseconds to retain valid information. *Contrast with* static RAM.

E

EasyPoint trackball	A built-in pointing device. The trackball was designed to eliminate the need to carry an external mouse when traveling. The trackball uses the COM1 or COM2 serial interface.

floppy disk

The removable media onto which the diskette drive writes and stores, and from which it retrieves, data. A 3.5-inch diskette is a magnetic disk enclosed in a hard plastic container. A 5.25-inch diskette is a thin flexible magnetic disk enclosed in a protective sleeve. *Same as* diskette.

G

graphics mode

An operating mode in which the display capability is not limited to the use of text characters or character sets. *Contrast with* text mode.

gray shades

The number of distinct shades that the computer is capable of displaying on a monochrome screen. The computer displays 64 shades of gray in 320 x 200 resolution.

H

hard drive

A mass storage device that reads from and writes to a rigid unremovable magnetic disk enclosed in a permanently sealed housing.

Hibernation

A condition that protects against the loss of information due to a discharged battery pack when the computer is left idle. During Hibernation, information in memory is saved to the hard drive, and power to the computer is turned off. When the computer is turned on, the information is restored at the point where Hibernation was initiated. Hibernation also can be used as a placemarker or to automatically turn the computer off to save battery power.

External Battery Charger
: An optional hardware device that connects to the AC Adapter or Automobile Adapter and fast charges two battery packs in 2 to 2.5 hours.

external device
: Hardware equipment connected to the computer that is used for input/output operations with the central processing unit.

External Options Adapter
: An optional hardware device that connects to the computer and provides a means to connect an optional external enhanced keyboard and External Storage Module.

External Storage Module
: An optional hardware device that connects to the computer to provide additional mass storage for the computer. The storage module holds a 5.25-Inch 1.2-Megabyte or 360-Kbyte Diskette Drive or an 80-/120-Megabyte or 60-Megabyte Tape Drive.

F

fast charge
: Depending on whether the computer is on or off, a 1- to 1 1/2-hour charge to the battery pack.

FASTART
: A COMPAQ utility that provides a quick and easy method of configuring the system, formatting and partitioning the hard drive, installing the operating system and COMPAQ User Programs utilities, and creating the *CONFIG.SYS* and *AUTOEXEC.BAT* files.

embedded numeric keypad	A section of the main keyboard that converts to a numeric keypad when the num lock function is turned on by pressing the Fn + End keys. It also contains cursor- and screen-control keys that are accessed by pressing and holding the Shift key when the num lock function is on.
error code	A number that references a hardware or software malfunction.
EXMEM	The User Programs memory manager utility that allows MS-DOS applications to access memory above 640 Kbytes at a high rate of speed, taking advantage of the capabilities of the 386SL chipset in the computer. EXMEM provides up to 9 megabytes of expanded and extended memory. With EXMEM, extended and expanded memory are accessed in real mode. EXMEM supports the Lotus/Intel/Microsoft Expanded Memory Specification (EMS) Version 4.0 and eXtended Memory Specification (XMS) Version 3.0.
expanded memory	Memory that MS-DOS applications can access between base memory (640 Kbytes) and 1 megabyte of memory and that is made available by memory manager software supporting the Lotus/Intel/Microsoft (LIM) Expanded Memory Specification (EMS) standard.
extended memory	Memory beyond the 1-megabyte boundary that MS-DOS applications cannot normally access and that is made available by memory manager software supporting the Lotus/Intel/Microsoft (LIM) eXtended Memory Specification (XMS) standard.

hotkeys	Keys (Fn + F3 through F8) that simplify performing special computer operations. The special hotkey features are activated by pressing the Fn key and the function key. Changes made by using the hotkeys are cleared when the computer is turned off or restarted. The function keys work as normally defined by application software when they are not used in conjunction with the Fn key.

I

icon	A graphic representation. In a Windows-based application, a graphic that serves as a reminder of the presence of a program, file, or information that is closed but available for access at any time.
INSPECT	A diagnostic utility that provides information about the operating environment once the computer is configured. It includes information about the operating system startup files, memory configuration, read only memory (ROM) version, processor and co-processor, diskette and hard drive, and communications devices and interfaces.
interface	An information interchange path that allows parts of a computer, multiple computers, and external equipment to communicate or interact. Also called port.
interface address	An input/output (I/O) port location assigned to a communications device.

K

Kbyte
One kilobyte. A unit of measure for storage capacity. The amount of storage equal to 1024 bytes.

keyboard password
A software security feature that disables the keyboard, keyboard/mouse interface, and mouse, and clears the screen (if desired) until a preset secret word or code is entered. The keyboard password is cleared when the computer is turned off or restarted.

kilobyte
A unit of measure for storage capacity. The amount of storage equal to 1024 bytes. *Same as* Kbyte.

KP
A User Programs utility that enables a keyboard password, which locks the keyboard, keyboard/mouse interface, and mouse until the keyboard password is entered. A keyboard password can be used in conjunction with QuickLock/QuickBlank so that the keyboard and mouse can be locked and the screen cleared without exiting an application.

L

LIM Standard
The Lotus/Intel/Microsoft Expanded Memory Specification developed to permit access to memory beyond the 640-Kbyte limit imposed by MS-DOS. The User Programs support software supports LIM Version 4.0.

logical drive
A portion of a mass storage device that is perceived and treated as an independent physical drive. A logical drive is designated by a drive letter that a computer program uses to identify where information is stored.

low battery	A condition under battery-powered operations in which the battery pack is nearing the end of its charge. Low Battery 1 is a condition in which approximately 6 percent of operating time remains. Low Battery 2 is a critically low battery condition in which approximately 2 percent of operating time remains.
LPT	A parallel interface identifier; that is, LPT1 through LPT3.

M

mapping	A process by which a system translates data from one coordinate system into a form useful on another coordinate system.
mass storage device	A mechanism that reads, writes, and stores programs and information (data) files. Mass storage devices include diskette drives, hard drives, and tape drives.
megabyte (MB)	A unit of measure for storage capacity: one million bytes when referring to hard drive capacity; 1,048,576 bytes when referring to system memory capacity.
memory	A storage device (computer chip or chips) in the computer into which instructions and other information (data) are entered and retrieved when needed for processing.
microprocessor	An electronic chip that is the main controller and data processor of the computer. *Also called* processor or CPU.

Microsoft Disk Operating System (MS-DOS)	The software that controls the execution of computer programs and that may also control input/output, scheduling, data management, and interaction with mass storage devices.
Microsoft Operating System/2 (MS OS/2)	The multitasking software that controls the execution of computer programs and that may also control input/output, scheduling, data management, and interaction with mass storage devices.
mode	A method the microprocessor uses to address, manage, and protect memory. Each mode contains a set of instructions that include which memory addresses the microprocessor can access. The mode the system operates in depends on the type of microprocessor in the computer. Three modes of operation exist: (1) real (8088, 8086, 286, 386, 486 microprocessors); (2) protected (286, 386, 486 microprocessors); and (3) virtual (386, 486 microprocessors).
MODE SCREENSAVE	A User Programs utility that sets the number of minutes of keyboard and mouse inactivity before the screen clears.
MODE SPEED	A User Programs utility that changes the computer operating speed if needed for compatibility with certain applications. The operating speed returns to the default speed when the computer is turned off or restarted. Several MODE SPEED settings can be set at the system prompt: High (25 MHz), Fast (6.25 MHz), and Common (6.25 MHz), or using the "n" parameter (25, 12.5, 6.25, or 3.12 MHz).

modem	A communications device that allows information to be exchanged between computers over telephone lines.

N

national keyboard	A keyboard with the ENTER key placed vertically in the keyboard layout.
network server mode	A software security feature that permits secure operation of the computer as an unattended file server. When the network server mode is activated, the computer keyboard is disabled, preventing unauthorized access of information.
Nickel Cadmium (NiCd) Power Smart Pack	An enhanced capacity, rechargeable battery, which supplies internal power to the computer when external power is unavailable. A fully charged battery pack supplies three hours of operating time under typical conditions using COMPAQ power conservation features.
Nickel Metal Hydride (NiMH) Power Smart Pack	A high capacity, rechargeable battery, which supplies internal power to the computer when external power is unavailable. A fully charged battery pack supplies three hours of operating time under typical conditions using COMPAQ power conservation features.
nonbootable diskette	A diskette that does not contain part of an operating system or a start-up procedure that is required to start the computer from drive A.

R

random access memory (RAM)

A storage device into which information is entered and retrieved. RAM does not retain information when the computer power is turned off.

read only memory (ROM)

A storage device for system instructions that retains information without power applied (or when computer power is turned off). It contains the Basic Input/Output System (BIOS), which is a collection of instructions and routines that helps the microprocessor work with the computer components. It also contains the Power-On Self-Test that is automatically run to check the computer components when the computer is turned on. Read only memory cannot be modified by the user.

real mode

An operating mode that 8088, 8086, 286, 386, and 486 microprocessors use to address the first megabyte of memory. In real mode, the memory address requested by an application program is the same as the physical address in memory. The EXMEM User Programs utility allows extended and expanded memory to use real mode.

restart

Resetting the system without turning off the computer power. The system is restarted by pressing the Ctrl + Alt + Delete keys. (Use the Delete key in the upper-right corner of the keyboard.) Information not saved before restarting the system is lost.

power conservation	The combination of hardware and software features designed to extend the operating time of the Power Smart Pack.
power-on password	A software security feature that permits computer operation only after entering a unique, preset, secret word or code.
Power-On Self-Test (POST)	A sequence of tests automatically run by the computer when it is turned on. The tests count and display the amount of memory and check the various system components.
processor	An electronic chip that is the main controller and data processor of the computer. *Same as* microprocessor, CPU.
PWRCON	A User Programs utility that sets power conservation parameters.

Q

QuickConnect	A convenience device which attaches to the back of the computer and has connectors for the same external devices as the computer, as well as two more.
QuickLock/ QuickBlank	A security hotkey feature that disables the keyboard and pointing device without exiting an application. With QuickLock, the application remains in view on the screen, but cannot be accessed through the keyboard. A password is required to reenable the keyboard. QuickBlank can be used in conjunction with QuickLock to blank the screen when the keyboard is disabled.

O

operating speed — The speed in megahertz (MHz) at which the system processes information. (Megahertz is a unit of measure of frequency.) *Also called* processor speed, system speed, CPU speed.

option — The internal or external hardware equipment (or device) that is added to a computer system to expand or enhance capabilities (for example, a modem, mass storage device, keyboard, monitor, or printer). *Also called* peripheral.

P

parallel interface — An information interchange link between two devices that transmits and receives data in a parallel manner; that is, one byte at a time using a separate data line for each bit.

path — An MS-DOS command that sets a search procedure for commands and batch files that are not in the current directory.

peripheral — An internal or external device that is added to a computer system to expand or enhance operations (for example, a modem, mass storage device, keyboard, monitor, or printer). *Also called* option.

port — An information interchange path that allows parts of a computer, multiple computers, and external equipment to communicate or interact. *Same as* interface.

RUNHI

A memory utility that loads device drivers and terminate-and-stay-resident (TSR) programs in upper memory and frees base memory so that it can be used by other applications.

S

screen save

A function that clears the screen after a specified period of keyboard, trackball, or mouse inactivity (called a timeout). It works when the computer is running either on external or battery power.

serial interface

An information interchange link between two devices that transmits and receives data in a serial manner; that is, a single wire transmitting data one bit at a time and another wire receiving data one bit at a time.

serial mouse

A type of mouse with a D-shaped 9-pin connector that plugs into the serial connector on the computer.

SETUP

The diagnostic utility that stores configuration information and sets the real-time clock/calendar. The SETUP utility is provided two ways: (1) installed in the computer read-only-memory (ROM) and (2) on the Diagnostics diskette. SETUP on the Diagnostics diskette contains help on the screen that is not available in the internal (ROM-based) SETUP.

Setup Password

A software security feature that permits changes to be made to the system configuration only after entering a unique, preset, secret word or code. The Setup Password is established using the SETUP Utility.

Standby	The condition in which the computer is inactive and uses the least amount of battery power by shutting down most of the computer components. Standby can be system- or user-initiated.
standby button	A button on the keyboard that the user presses to initiate and terminate Standby.
static memory	A type of memory that does not need to be periodically rewritten (or refreshed) by the microprocessor to retain valid information.
syntax	The relationship (or order) between characters or symbols or groups of characters or symbols independent of their meanings or use.
System Idle	A reduced power condition that the system initiates during short periods of inactivity. During System Idle, the display lighting dims and the operating (processor) speed is slowed. Any activity restores the original display and speed settings.
system management mode	A power conservation option in the SETUP utility which disables power conservation and the hotkey features, including the hotkey popup windows.
system prompt	A character or series of characters indicating that the operating system is ready to accept a command.

T

tape drive	A mass storage device that reads from and writes to a tape cartridge. In COMPAQ computers, this device backs up data from the hard drives.

terminate-and-stay resident (TSR) program	A program that loads into memory and can be activated when needed by pressing an associated key sequence. The program stays in memory, even if it is not being used, until the computer is turned off or restarted.
TEST	A diagnostic utility that determines if the computer components are recognized by the computer system and are functioning properly.
text mode	An operating mode that displays only the American Standard Code for Information Interchange (ASCII) character set on the screen. *Contrast with* graphics mode.
timeout	The amount of time in minutes of system or component inactivity before the computer shuts down the system or component to conserve battery power.
trickle charge	An ongoing charge to an almost fully charged battery pack by the AC Adapter. Trickle charge begins after the fast charge is complete.

U

upper memory

Unused memory between 640 and 1024 Kbytes that can be used for additional hardware or to access additional memory by using one of two interfaces: the Expanded Memory Specification (EMS) or the eXtended Memory Specification (XMS). The User Programs drivers and utilities, HIMEM, EXMEM, and CEMM, support these interfaces and permit MS-DOS applications to use the upper memory. The User Programs RUNHI utility loads the device drivers and terminate-and-stay-resident (TSR) programs into upper memory.

User Programs

COMPAQ utilities and device drivers that take advantage of the unique, advanced hardware features of the computer. These include utilities for memory management, power management, display attributes, and many others.

User Programs Configuration Utility (UPCU)

A program on the User Programs diskettes that assists in installing, up dating, and configuring User Programs files.

utility

A support software program that performs system maintenance tasks required by many of the programs using the system.

V

video graphics adapter (VGA)

A video graphics standard that supports 640 x 480 graphics resolution and 720 x 400 text resolution, displaying up to 256 colors simultaneously.

W

WCURSOR	A Microsoft Windows utility that enhances the appearance of the Windows cursor. WCURSOR operates on all COMPAQ computers that support Windows 3.0 or greater.
write-protect	A procedure for preventing a diskette or tape from being written to by a diskette drive.

INDEX

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

142363-001