p-cad

From ACCEL Technologies, Inc.

Master Designer

Version 8.5

Getting Started

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Contents

About This Manual

The *Getting Started* manual introduces the P-CAD printed circuit board design system. It includes how to use the mouse and keyboard, how to enter and exit P-CAD, an overview of the P-CAD modules, and information on how to use P-CAD screens.

This manual is for use after P-CAD is installed. The *Installation Guide* explains how to install P-CAD.

To use P-CAD, you must be familiar with the basic commands in your operating system.

The *Getting Started* manual consists of one chapter, three appendixes, and an index.

Chapter 1	"Getting Started" explains how to start P-CAD and how to create design directories, describes the directory structure and the P-CAD screen, introduces the user interface, and explains how to exit P-CAD.

Conventions

This manual uses the following conventions:

! or →	Connects commands. Commands following the arrow appear on submenus. For example File!Load or File→Load
*	One or more characters can occupy the asterisk's position. Also known as a wildcard.
.	In text, introduces a procedure that explains how to do a task.
Ctrl-F	Press the keys simultaneously.
↵	The return key. Press this key after typing data in a data entry box or on a message line or to accept a default. You can click left in many P-CAD tools instead of pressing ↵.
Enter	Indicates you need to press ↵ after typing data.
Spacebar	The space bar. You can use this key to digitize a point within the drawing area.
italics	Indicates variable characters.
boldface	Indicates characters you enter from the keyboard; for example Enter **sheet7** in the data entry box.
boldface italics	Indicates variable characters you enter from the keyboard; for example Enter ***filename*** in the data entry box.
Click left	Press and release the left button (button 1) on the mouse.

Click middle	Press and release the middle button (button 2) on the mouse.
Click right	Press and release the right button (button 3) on the mouse. If you are using a two-button mouse, press **Ctrl** and button 2 simultaneously to clickright.
Cycle	Click left repeatedly on a cycle box until the item you want is selected. A cycle box is indicated by ◊.
Select	Move the cursor to an item or point and press ↵, **spacebar**, or click left.

Getting Started 1

P-CAD is designed to give you the power and flexibility to create electronic circuit designs and PCB (printed circuit board) layouts from start to finish. The system consists of a schematic capture subsystem, a PCB layout subsystem with interactive placement, automatic router tools, and utilities for specialized design needs. The system is virtually unlimited in the number of components, nets, pins, and schematic sheets it supports.

P-CAD runs on DOS and UNIX platforms. (See the *Installation Guide* for descriptions of supported hardware.) You need to be familiar with the basic commands in the platform you're using.

To get started in P-CAD, you need to

- understand how to use P-CAD in a DOS Environment
- understand how to use P-CAD in a UNIX Environment
- know how to start P-CAD
- know what to do the first time you use P-CAD
- know how to add existing directories and files
- know how to interact with the system by using the mouse and the keyboard
- understand the P-CAD screens
- use the P-CAD utility and graphics editor screens
- know how to exit P-CAD

Using P-CAD in a DOS Environment

When you use P-CAD in a DOS Environment, you need to know

- the directory structure
- how to run P-CAD on a DOS network

Understanding the P-CAD Directory Structure in DOS

When you install the P-CAD software on a DOS machine, the Autoloader program creates the P-CAD directory structure under the root directory. This structure is shown in Figure 1-1.

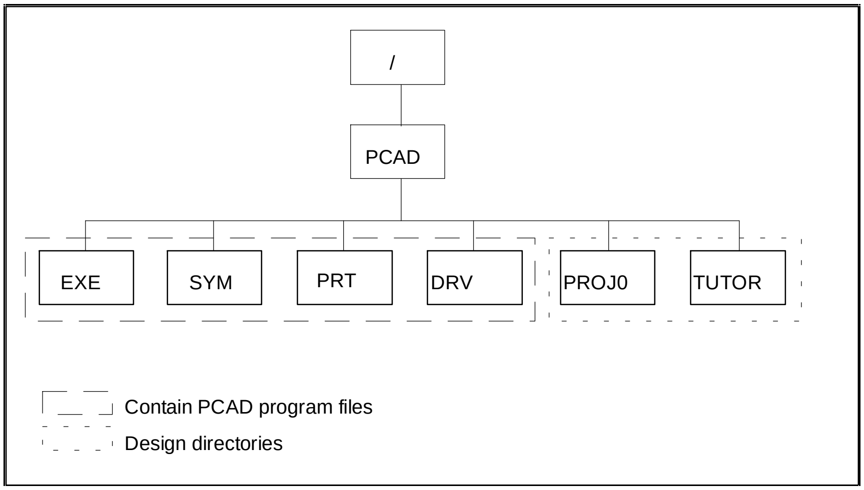

Figure 1-1. P-CAD Directory Structure on a DOS System

Table 1-1 shows what is in each of the directories created by the Autoloader program.

Table 1-1. Directory Contents in DOS

Directory	***Contents***
EXE	All program (executable) files *(filename*.exe), font files (*filename*.fnt), screen definition files (*filename*.sdf), default configuration files (*filename*.cfg or .ctl), message files (*filename*.msg), default empty schematic and PCB template files (template.sch and template.pcb), and other system-related files.
SYM	All symbol library archives *(filename*.slb) and standard-size schematic sheets *(filename*.sch). (These files are used by the *Schematic Editor*, the schematic capture tool.)
PRT	All part footprint library files (*filename*.plb), standard PCB outlines (*filename*.pcb), and library cross-reference files (*filename*.fil). (These files are used by the *PCB Editor*, the printed circuit board layout tool.)
DRV	All device driver files selected during configuration (*filename*.drv) and protected mode drivers (*filename*.rex).
PROJ0	Initial project directory. (empty)
TUTOR	Tutorial files.

To keep track of all files related to a single project, you use design or project directories. A project directory is a DOS directory that contains the data files for a single design.

P-CAD comes with an empty project directory, PROJ0, which you can use to create a design. For example, your design might consist of two schematic sheets and a PCB layout. If these files were already created, your directory structure would look like Figure 1-2.

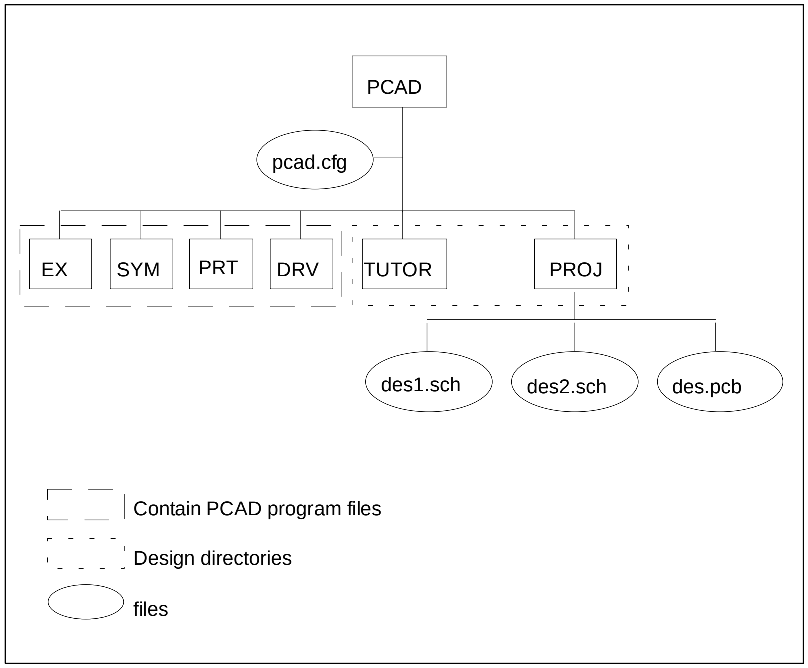

Figure 1-2. P-CAD DOS Directory Structure with the Tutor Design Files

Design directories are one level below the PCAD directory. You always start P-CAD one level above the design directory. Therefore in this example, you start P-CAD from the PCAD directory.

To keep track of all files related to a single project, you use design directories. A design directory is any DOS or UNIX directory that contains the data files for a single design. For example, if your design includes three schematic sheets and a PCB database, these four files would be in one design directory. (Any other files related to the design such as netlists, reports, and cross-reference files would also be in the directory.)

You place design directories one level below the PCAD directory.

Start P-CAD one level above the directory that contains your design files. For example, if you want to work on files in des1 or des2, start P-CAD from PCAD.

Running P-CAD on a DOS Network

When you run P-CAD on a DOS network, you can use the environment variable, PCAD_HOME, to make sure you always start P-CAD from the directory that contains the P-CAD configuration file. When the variable is in your autoexec.bat file, each time you start P-CAD, the system automatically changes to the directory containing the pcad.cfg file.

The line in the autoexec.bat file should look like:

SET PCAD_HOME=*pathname*

where *pathname* is the complete path to the directory containing the pcad.cfg. For example, if you want to point to the pcad.cfg file shown in Figure 1-2, assuming you're using drive C:, the autoexec.bat would contain the following line:

SET PCAD_HOME=C:\PCAD

Using P-CAD in a UNIX Environment

When you use P-CAD in a UNIX Environment, you need to know

- the directory structure
- how to manipulate screens in UNIX

Understanding the P-CAD Directory Structure in UNIX

When your system administrator installs the P-CAD software in a UNIX environment, the installation program will be located somewhere under the root directory. The installation program creates a directory structure under the directory in which the installation program resides. This structure is shown in Figure 1-3.

Table 1-2 shows what is in each of the directories created by the installation program.

Table 1-2. Directory Contents in UNIX

Directory	***Contents***
bin.aix/	AIX only. All program (executable) files, screen definition files, default configuration files, templates, and message files for IBM RS/6000 machines.
bin.sun4/	Sun only. All program (executable) files, screen definition files, default configuration files, templates, and message files for Sun machines.
libs/	The sym/ directory which contains all symbol library archives (filename.slb) and standard-size schematic sheet files (filename.sch). These files are used by the Schematic Editor, the schematic capture tool. The prt/ directory which contains all part footprint library archives (filename.plb) and standard PCB outlines (filename.pcb), and library cross-reference files (filename.fil). These files are used by the PCB Editor, the printed circuit board layout tool.
tutorial/	Tutorial files

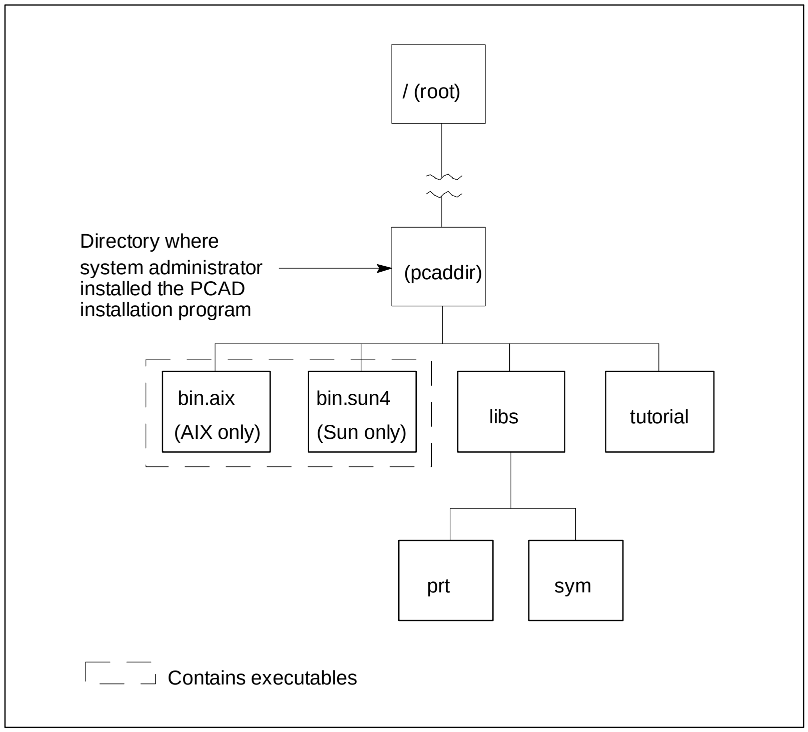

Figure 1-3. P-CAD Directory Structure in a UNIX Environment

To keep track of all files related to a single project, you use design directories. A design directory is a UNIX directory that contains the data files for a single design. For example, you might create a directory called pcad/ under your home directory and a directory called proj1/ under pcad/ as your design directory. In this design directory called proj1/ you create two schematic sheets, des1.sch and des2.sch, and a PCB layout, des.pcb. If these files were already created, your directory structure would look something like Figure 1-4.

Design directories are one level below the pcad/ directory. You always start P-CAD one level above the design directory. In this example, you start P-CAD from the pcad/ directory.

Manipulating Screens in UNIX

When you use UNIX, multiple screens or windows can appear on the terminal at the same time. To learn how to manipulate the windows, refer to the user guide for the GUI (graphic user interface) you're using on your system. You should be able to move the windows to different parts of the screen, move a window to the front of a stack of windows, resize, and open and close windows.

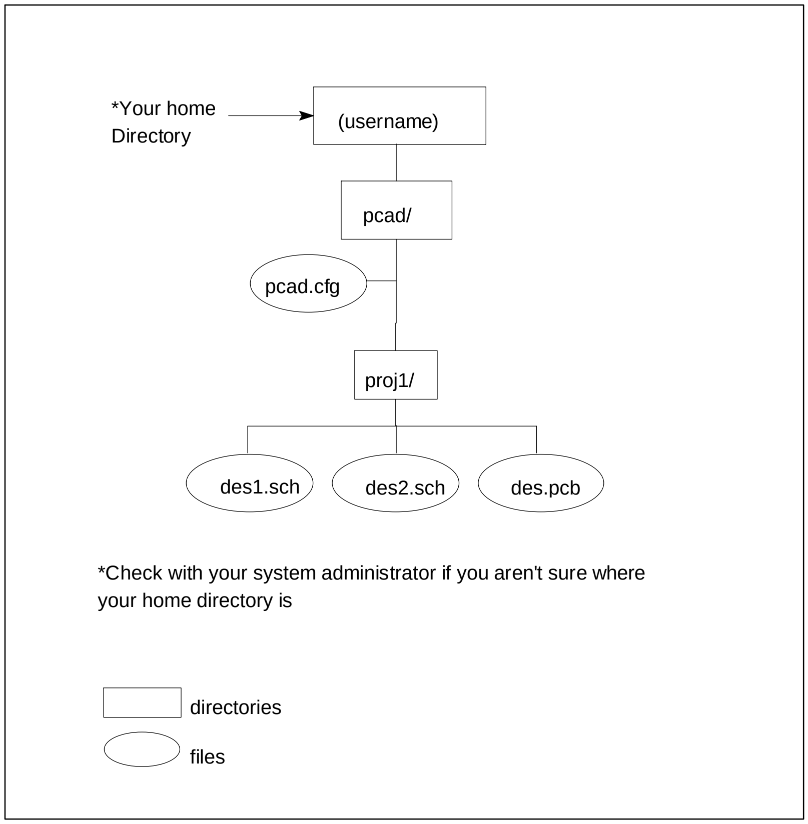

Figure 1-4. P-CAD Design Directory Structure Under Your Home Directory

When you use the frame menu to reduce a window to an icon, information is frozen. No data is lost.

Using the frame menu to exit from P-CAD is the same as using the P-CAD *EXIT* command in a utility, or the *File*!*Quit* command in an editor. In Open Windows, you use the Quit command to exit. In Motif, you use the Close command to exit.

Starting P-CAD

The first time you run P-CAD, the P-CAD configuration file, pcad.cfg, is created by the system. Each time you run P-CAD, this file supplies the default system configuration values, such as the name of the design directory, the text editor you're using, and the security device port location. You can't run P-CAD until this file is set up. This file needs to be in the directory you start P-CAD from. The first time you start P-CAD, the system asks if it should create this file in the current directory or in another directory in the network. Make sure you're in the directory you'll start P-CAD from, then let the system create the configuration file. From then on, whenever you start P-CAD, start it from the same directoryÄthe directory containing the configuration file. Don't create more than one configuration file.

The directory the configuration file is in becomes analogous to a root or home directory. That is, the design directories containing the project files are one level below this directory.

To start P-CAD using DOS

1. If you're on a network, you may have to log into the system. Enter your username and password. You should be on the drive where P-CAD was installed; usually it's C:.
2. Change to the directory you want the configuration file to be in (or to the directory it's in, if it exists).
3. At the DOS prompt, enter **pcad70**.

To start P-CAD using UNIX

1. Log into the system by entering your username and password. Your initial screen should include a Commands window where you enter UNIX commands.
2. Change to the directory you want the configuration file to be in (or to the directory it's in, if it exists).
3. In the Commands window at the UNIX prompt, enter **xpcad**.

Using P-CAD for the First Time

The first time you use P-CAD, the system displays the Design Maintenance screen shown in Figure 1-5.

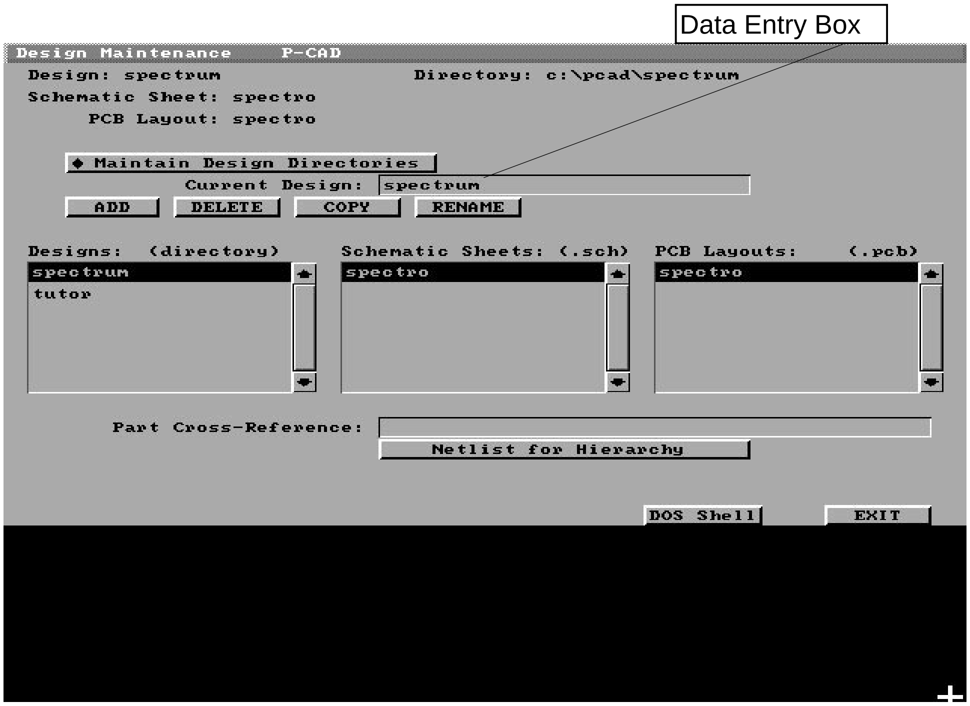

Figure 1-5. Design Maintenance Screen

Before you can create a design, you must create a directory for it. This screen lets you create the directory without having to exit to DOS or UNIX.

Note: If you already have directories and files you want to use in P-CAD, you can add them to P-CAD. The next section, Adding Existing Directories and Files, explains how to do this.

When you enter a name for a design in the Designs list box, you create a directory referred to as a design directory. This means that each time you enter a name for a design in the Designs list box, you create a new directoryÄthe same as if you were creating a new directory outside P-CAD by using your operating system. Each directory you create is onelevel below the directory you start P-CAD from.

Once you create a directory, you can set up files in it to use later to create schematics or PCB layouts:

- When you enter a name for a schematic sheet in the Schematic Sheets list box, you create an empty file in the highlighted design directoryÄa file that's ready to use later when you create a schematic sheet.

- When you enter a name for a PCB layout in the PCB Layouts list box, you likewise create an empty file in the design directoryÄa file that's ready to use later when you create a PCB layout.

The Design Maintenance screen is P-CAD's way of managing files for you. Once you list your directories and files in this screen, the system keeps track of them. You don't have to type a path and filename each time you use a file in another part of P-CAD.

To add a design directory, schematic sheet file, and PCB layout file the first time you start P-CAD

1. Enter the name of the design directory in the Current Design data entry box. The system prompts

    Enter a new PCB layout.

2. Enter the PCB filename in the Current PCB Layouts data entry box.
3. Place the cursor on *Maintain Design Directories* and click the left mouse button to change the option to *Maintain Schematic Sheets*.
4. Select *ADD*.
5. Enter the schematic sheet filename in the Current Schematic Sheet data entry box.
6. Select *EXIT* to close the *Design Maintenance* screen.

After you create the design directory and files, then exit from the *Design Maintenance* screen, the P-CAD screen appears. From now on, the P-CAD screen appears whenever you start P-CAD.

Adding Existing Directories and Files

In addition to using the Design Maintenance screen to create new directories and files, you can use it to add ones you already have. You add existing directories and files to P-CAD by entering their names in the list boxes. If you have groups of files to add, you can add them at one time by using the wildcard character, *, when specifying a filename. For example, to add a group of schematic sheets, you enter *.sch when a schematic sheet filename is requested.

Note: While we recommend you list your directories and files in the Design Maintenance screen, P-CAD is flexible enough to let you work on files that aren't listed there. For example, you can use the PCB Editor in P-CAD to work on a file in the A: driveÄa file that isn't listed in the Design Maintenance screen. To access the file, you enter its path and filename from the PCB Editor when you load the file. Each time you use the file, however, you must enter its path and filename.

Interacting With the P-CAD System

The mouse and keyboard are the devices you use to interact with the system. You access commands with these devices.

Using the Mouse

The mouse, shown in Figure 1-6, is one of the devices used to move the cursor. If you have a 3-button mouse, pressing the

- left button (button 1) selects and toggles options
- middle button (button 2) interrupts an action or ends an entry
- right button (button 3) pops up a menu

If you have a 2-button mouse,

- pressing the left button (button 1) selects and toggles options
- pressing the right button (button 2) interrupts an action or ends an entry
- **Ctrl**-button 2 acts like button 3 and pops up a menu

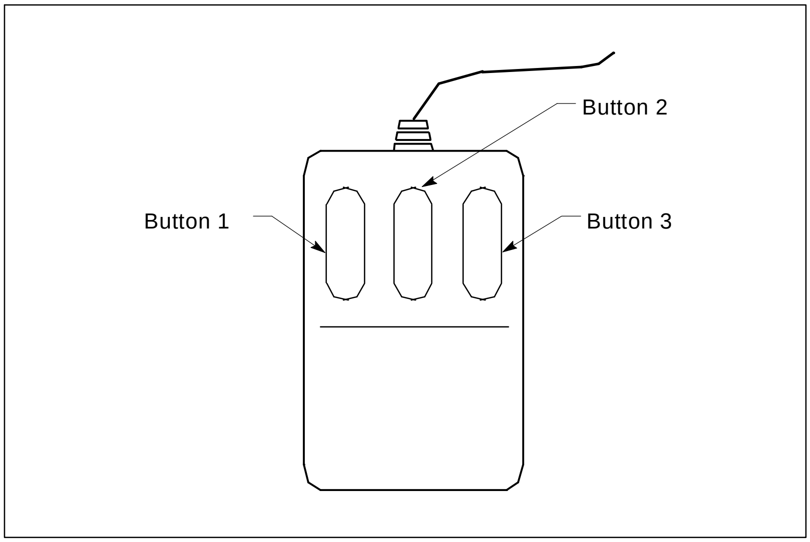

Figure 1-6. A Typical Mouse

Using the Keyboard

The alphanumeric keyboard, shown in Figure 1-7, has function keys you can program to execute commands and arrow keys you can use to move the cursor. Your keyboard may have a different arrangement.

Using Function Keys

Figure 1-8 shows the keyboard function keys. These are numbered **F1** through **F12**. Their location depends on the kind of keyboard you have; they're either across the top of your keyboard or on the left.

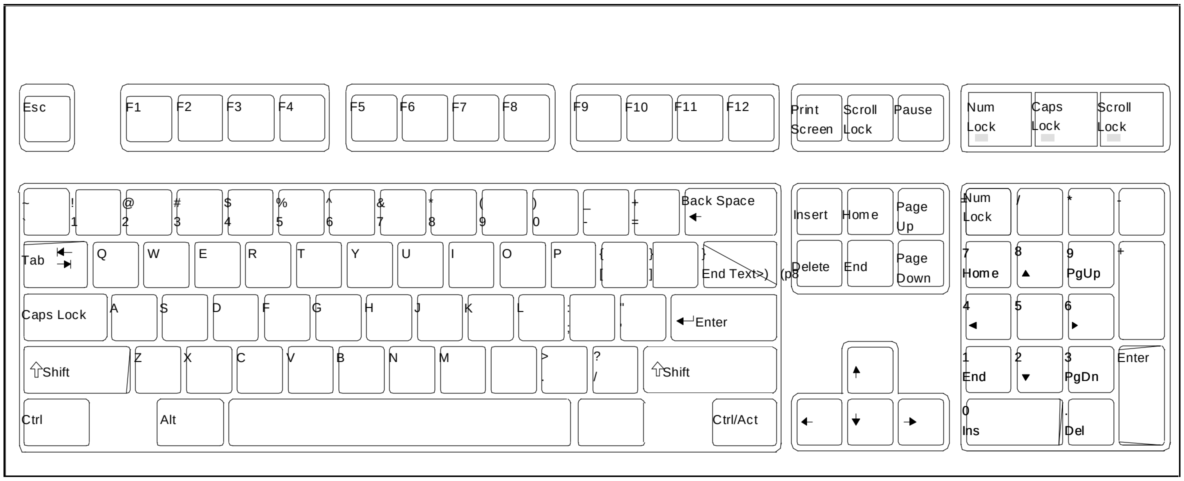

Figure 1-7. A Typical Keyboard

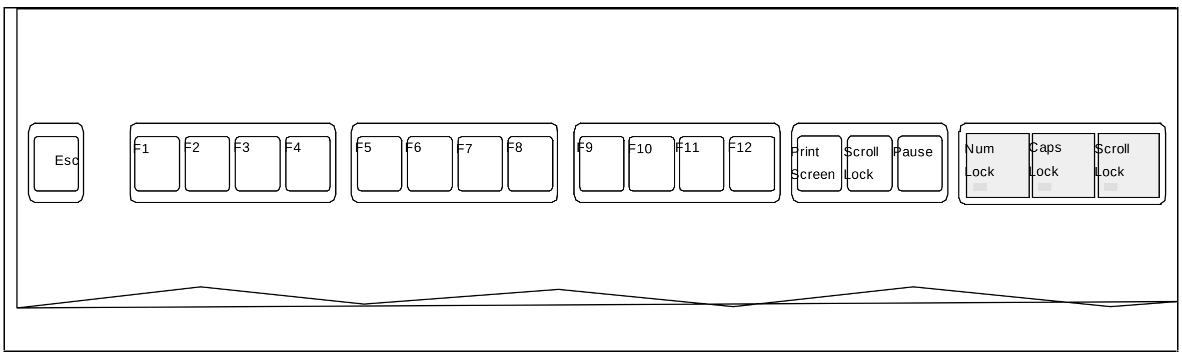

Figure 1-8. The Function Keys Recognized by P-CAD

P-CAD supplies default functions for **F1** through **F8** and for all lowercase alphabet keys. You can use the default functions or change them to meet your needs. (Details on default key functions and programmable keys are in the Advanced Editor Topics chapters of the *Schematic Tools, PCB Tools,* and *Library Manager* manuals.) You can also assign functions to other keys on the keyboard. This means that

- If you're using DOS, you can assign functions to keys **F1** through and to many other keys.

- If you're using UNIX, you can assign functions to keys **F1** through **F20**. On Sun keyboards, **L1** through **L10** are equivalent to **F11** through **F20**.

Note: Before you program a UNIX function key, especially , make sure your windowing system hasn't already assigned a function to it. If it has, consult your manual to find out how to unbind the key before programming it in P-CAD.

Using Keys to Move the Cursor in the Graphics Editors

Figure 1-9 shows the arrow keys on a typical keyboard. The arrow keys move the cursor within the drawing area of a P-CAD graphics editor screen. Each key moves the cursor in the direction of the arrow. **Home**, **Pg Dn**, **Pg Up,** and **End** move the cursor diagonally.

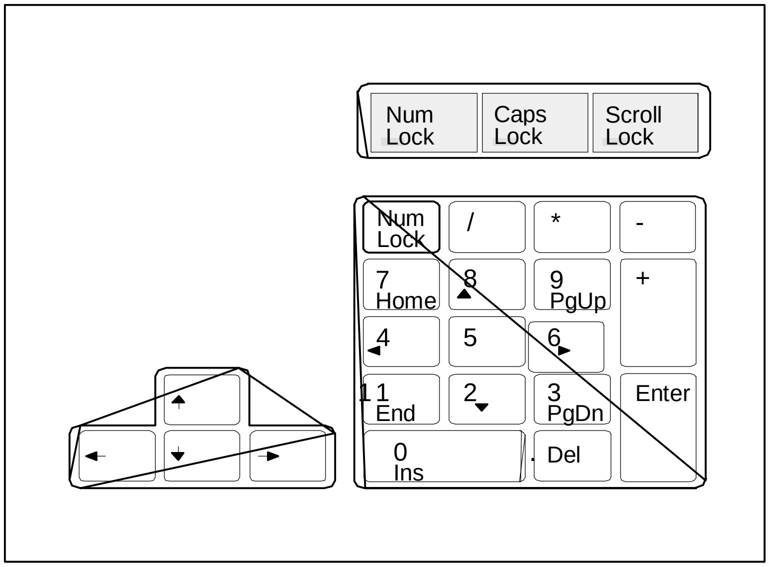

Figure 1-9. The Arrow Keys

Using Keys to Move the Cursor in the Utility Screens

On all screens *except the graphic editors,* you can use the keyboard to move the cursor from item to item, or to move the cursor within a data entry box. The keys defined for this function are as follows:

Tab moves the cursor to the next item on the screenÄfor example, a list box, a button, or a data entry box

Shift-Tab moves the cursor to the previous item.

Note: Tab and **Shift-Tab** only move the cursor. Use ↵ to select a button or enter information.

← operates only in data entry boxes. Press it to move the cursor to the left. When the cursor reaches the left edge of the box, it wraps around to the right.

→ operates only in data entry boxes. Press it to move the cursor to the right. When the cursor reaches the right edge of the line, it wraps around to the left.

Understanding the P-CAD Screen

The P-CAD screen is shown in Figure 1-10. (This screen looks slightly different on UNIX systems.)

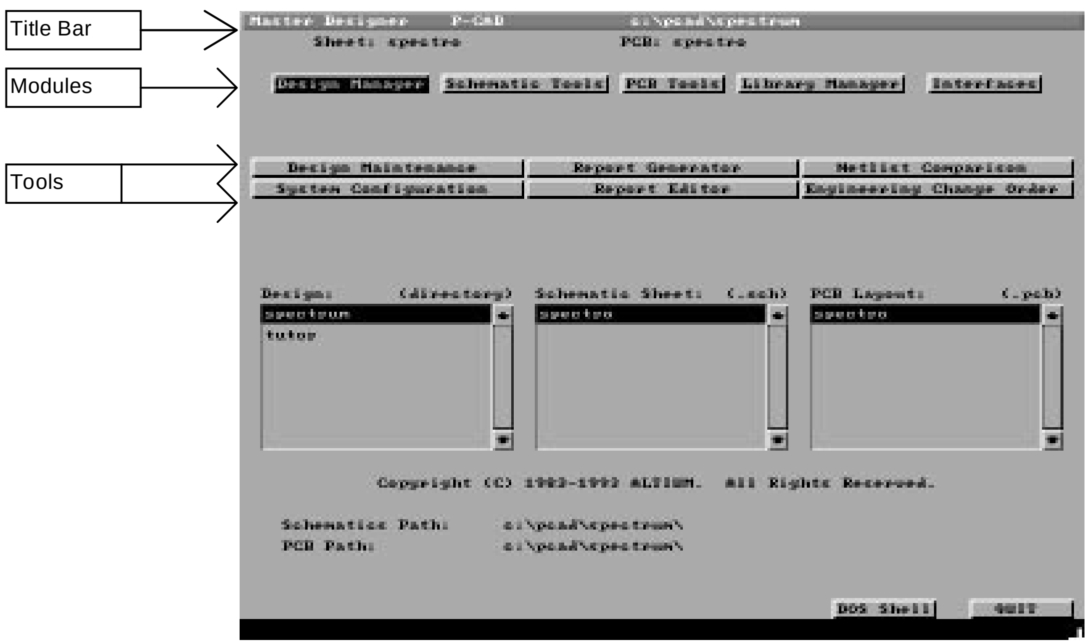

Figure 1-10. P-CAD Screen

The main parts of the screen are the

- Title bar, which is at the top of the screen. It lists the name of the tool and the software version. It also shows the selected directory, schematic sheet and PCB layout. (These are also highlighted in the list boxes below.)
- Module area, which displays the five major P-CAD subsystems. They are Design Manager, Schematic Tools, PCB Tools, Library Manager, and Interfaces. The modules are represented by buttons on DOS systems and by icons on UNIX systems.

- Tool area, which displays a module's programs, known as tools. Each tool appears in a rectangular box, called a button.
- DOS Shell button (DOS only) which takes you directly to the DOS prompt.

Selecting a Module

The P-CAD opening screen contains all the modules you need to complete a PCB design. The five major modules are shown in Figure 1-10. Each module has its own set of tools to complete individual phases of the PCB design process. The following list provides a brief overview of the P-CAD modules:

- Design Manager creates and maintains project directories and related database files.
- Schematic Tools creates and edits schematic databases.
- PCB Tools creates and edits printed circuit board databases.
- Library Manager creates, edits, and archives schematic symbols and PCB components and creates and maintains the archived library files in which they reside. Library Manager also defines the search paths and libraries used by all the modules.
- Interfaces converts files from other systems to formats compatible with P-CAD and converts P-CAD files to formats used by other systems.

To select a module

- Place the cursor on the button or icon that represents the module and press the left mouse button.

After you select a P-CAD module, the module button or icon is highlighted and a list of all the tools available in that module is displayed.

Selecting a Tool

The tools available for a module are displayed after you select the module button or icon. The tools appear as buttons in the display. The tools for each module are listed in Figure 1-11.

Design Manager	Schematic Tools	PCB Tools	Library Manager	Interfaces
Design Maintenance	Editor Configuration	Editor Configuration	Set Libs. & Search Paths	Add Program
System Configuration	Schematic Editor	PCB Editor	Library Maintenance	SPICE Circuit Writer
Monitor Jobs (UNIX)	Electrical Rules Check	Autorouter	Symbol Editor	Viewlogic Interface
Report Generator	Package Schematic	Design Rules Check	Part Editor	EDIF Netlist Reader
Netlist Comparison	Report Generator	Shapetech Router	Component Editor	DXF File Reader
Engineering Change Order	Hardcopy	PDIF File Reader	Report Editor	EDIF Netlist Writer
Report Editor	PDIF File Reader	PDIF File Writer		DXF File Writer
	PDIF File Writer	Hardcopy		Report Editor
	Netlist (DOS only)	Report Generator		
	Report Editor	Drill		
		Auto-Insertion		
		Netlist Conversion		
		EZPlot (DOS only)		
		Report Editor		

Figure 1-11. Tools in the P-CAD Modules

To select a tool

- Place the cursor on the button that represents the tool and press the left mouse button.

Accessing the DOS Shell From the P-CAD Screen

While you're working in P-CAD on a DOS system, you can exit to the DOS prompt, execute a DOS command, and return back to P-CAD.

To access the DOS shell from the P-CAD screen

1. Select the *DOS Shell* button at the bottom of the screen that lists the P-CAD modules.

   A message, similar to the one shown below, appears.

   ```
   C:\COMMAND.COM
   C:\;C:\DOS;C:\EXE;C:\DRV;C:\PROJX;D:\;
   ```

Type EXIT to Return.

Microsoft(R) MS-DOS(R) Version 5.00
(C)Copyright Microsoft Corp 1981-1991.
[P-CAD] C:ROJXESIGN1_

You can use any DOS command that available memory allows.

Caution: Do not use the DOS commands to alter temporary files (files created by the P-CAD system or any of its programs) while working in the P-CAD system. Altering these files *can severely damage your database* if you're working in one of the graphic editors or can give erroneous results if you're using one of the utilities.

To return to the P-CAD opening screen from the DOS shell

- Enter **exit** at the DOS prompt. The system returns to the P-CAD screen.

Using the P-CAD Screens

When you select a tool in one of the modules, a new screen appears. Screens provide you with the framework for running applications and executing commands. The P-CAD screens are designed to make it easy for you to enter data. The two basic types of screens are the utility screen and the graphics editor screen.

Using a Utility Screen

A utility is a service program that performs maintenance and support operations. A utility screen, shown in Figure 1-12, is similar to a form that you fill out to complete a task. You can't create or edit graphics in a utility screen. The appearance of a utility screen varies according to the tasks you need to accomplish with the utility.

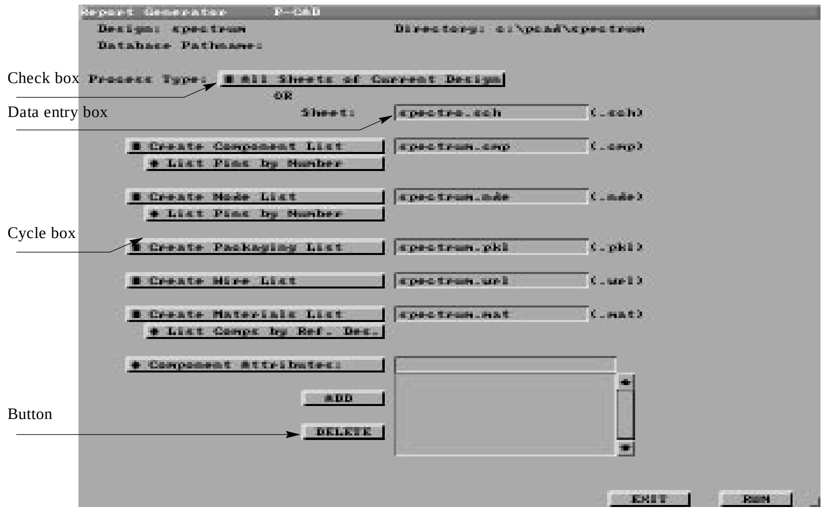

Figure 1-12. Utility Screen

Opening a Utility Screen

Various tools access utility screens.

To open a utility screen

1. Select a module. For example, select the Schematic Tools module.

2. Select a tool that uses a utility screen. For example, select the *Report Generator* tool.

A utility screen can include one or more of the following items:

- check boxes
- cycle boxes
- buttons
- data entry boxes
- decision boxes
- file selector windows
- list boxes

Using a Check Box

A check box is indicated by ■. If the check box is filled, it means yes, or the option is enabled, or on. If the box is empty, it means no, or the option is disabled.

To use a check box

- Place the cursor in the check box or on the text, and click the left mouse button.

Using a Cycle Box

A cycle box is indicated by ◆. It means you have two or more related choices that can't be answered with yes/no or on/off. The current choice is displayed.

To use a cycle box

- Place the cursor in the cycle box or on the text and click the left mouse button to cycle through the options. Click the right mouse button to cycle through the options in reverse order.

Note: If you're using UNIX, you can also display a menu of the options by placing the cursor on the symbol or text and holding down the right button. You can select an option by moving the cursor to it and releasing the button.

Using a Button

A button is a rectangular box that contains a command. For example, Figure 1-12 shows the *DELETE* command on a button.

To use a button

- Place the cursor on the button and click the left mouse button.

Using a Data Entry Box

A data entry box is indicated by a rectangle in which you enter data such as the name of a file. If a previous value exists, it appears in the data entry box. The first alphanumeric character you type clears the field. You can edit the previous value by using , , and .

To enter data in a data entry box

1. Select the data entry box.
2. In some cases, a file selector window appears. For more details on the file selector window, see the section called Using a File Selector Window in this chapter. If no file selector window appears, continue the steps in this procedure.
3. Type the data you want to enter and press ↵.

Note: If you press **Esc** after you type data in the data entry box, the input is cancelled and the previous value restored.

Using a Decision Box

A decision box appears when you select an operation that requires you to make a decision. It contains a question or statement with the answers on buttons. Figure 1-13 shows a decision box.

Figure 1-13. Decision Box

To use a decision box

- Select a button in the decision box for the choice you want.

Using a File Selector Window

An example of a file selector window with a list box is shown in Figure 1-14. A file selector window appears when you need to select a file from a list of available files or specify a path or search pattern. For example, when you generate reports and want to select an input schematic sheet filename, a file selector window appears displaying a list of available schematic sheets. You can use the wildcard character * to generate a list of filenames. For example, you can use *.sch to list only schematic sheets.

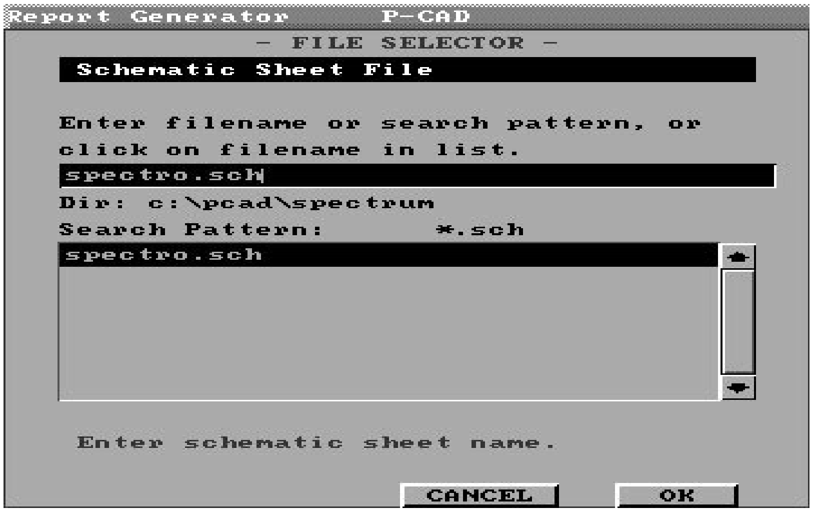

Figure 1-14. File Selector Window and List Box Example

To enter data in a file selector window

1. Select a data entry box that requires a filename. A file selector window appears.

2. Select the filename from the list box.

   or

   Type the filename, a path, or a search pattern in the data entry box and press ↵ or *OK*. If you have generated a new list of files, select a filename from the list.

Note: In some cases, you can select (or deselect) multiple files by pressing **Shift** as you select the files in the list box.

3. When the filename appears in the selector window, select *OK.*

Using a List Box

A list box is indicated by a rectangle with a scroll bar on the right or left, depending on the system you're using. You use a list box to access files or directories. You can also use it to add or delete data or to choose an item from a list.

If you want to scroll through the items in a list box, place the cursor in the scroll bar and do one of the following:

- Select the top arrow to move the list up.
- Select the bottom arrow to move the list down.
- Place the cursor on the scroll bar, then hold down the left mouse button.

To select an item in a list box

1. Move the cursor to the option you want and click the left mouse button.

2. When you've made the selections you want and are ready to exit from the screen, select *OK*.

Note: Rapidly double-clicking on an item is equivalent to selecting the item and *OK.*

Exiting a Utility Screen

When you select *RUN* in a utility screen, the screen closes and the tool processes your data. If you want to close the screen without running the tool, use *EXIT* or *CANCEL*.

To close a utility screen without running the tool

- Select *EXIT* or *CANCEL*.

Using a Graphics Editor Screen

You use a graphics editor screen to create and edit graphics and electrically intelligent information. Figure 1-15 and Figure 1-16 show examples of graphics editor screens.

Opening a Graphics Editor Screen

There are four graphics editor screens: Schematic Editor, Symbol Editor, Part Editor, and PCB Editor.

To open a graphics editor screen

1. Select the module. For example, select the *Schematic Tools* button if you're using DOS, or the *Schematic Tools* icon if you're using UNIX.

2. Select the tool that uses a graphics editor screen. For example, select the *Schematic Editor* tool.

A graphics editor screen consists of five sections:

- The drawing area or graphics area is the largest part of the editor screen. It's where you create and modify schematics, board layouts, components, and symbols.
- The sidebar menu contains top-level command buttons. Using the *Menu* cycle button in the status area, you can choose from two different sidebar menu display styles or turn the menu off and work with a pop-up menu.
- The view command line contains commands for controlling the graphics display. A command is executed when you select a button on this line. These are top-level commands; there are no subcommands.
- The response area displays prompts, error messages and additional information.
- The status area contains various fields that display information and allow you to change values, such as grid spacing.

Setting the Menu Display

In the graphic editors, you can display menus in two ways- pull-down menus and button menus -or you can turn off the menu display. The menu display cycle button offers these options:

- *MnPul* gives you the P-CAD pull-down menus. Select a menu item and hold the mouse button while you select the submenu option. In DOS, you can release the mouse button and the submenu stays up until you make a selection. An example of pull-down menus is shown in Figure 1-15.

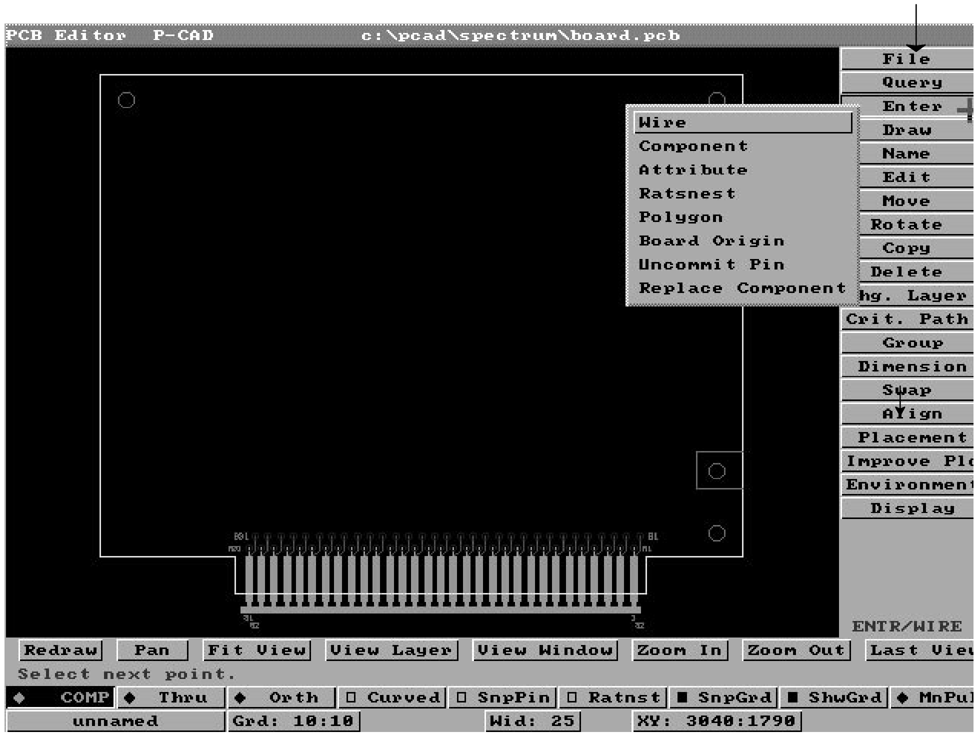

Figure 1-15. Graphics Editor Screen With a Pull-Down Menu

- *MnOff* turns off the sidebar menu, giving you the full screen width for design work. To activate a pop-up menu (described below), press the third mouse button while the cursor is in the drawing area. An example of a graphics editor screen with the menus turned off is shown in Figure 1-16.

- *MnBtn* uses the sidebar to display a submenu continuously. When you select a main menu item, the submenu appears on the sidebar, replacing the main menu. You can work with the submenu until you decide to return to the main menu. To return to the main menu, select *Main Menu.* An example of a button submenu is shown in Figure 1-17.

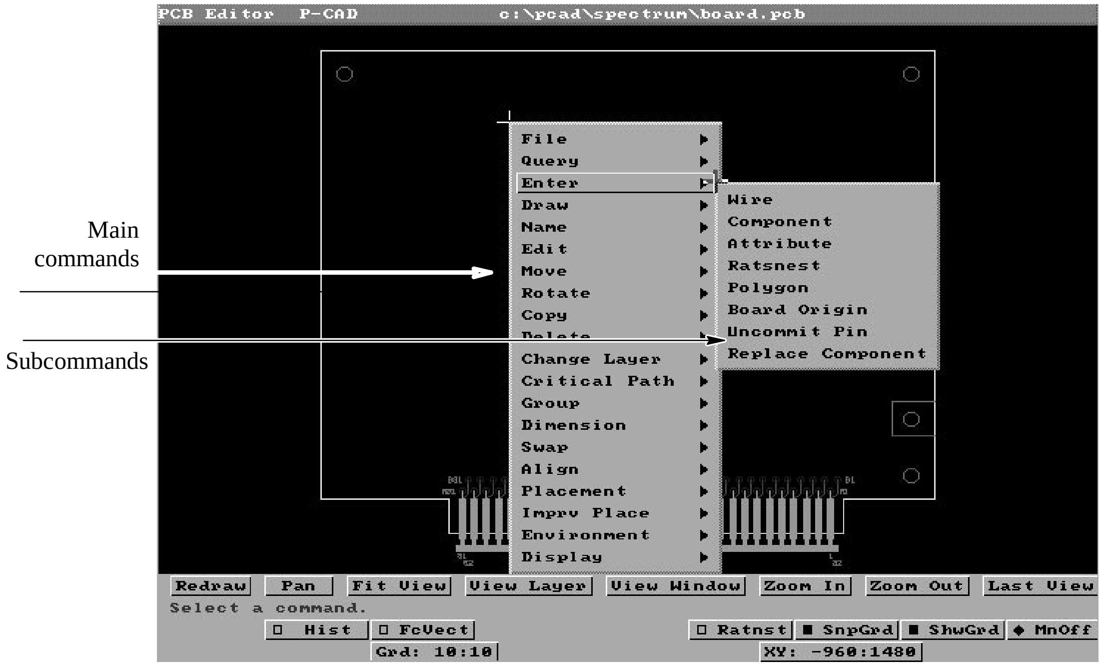

Figure 1-16. Graphics Editor Screen With Menus Off

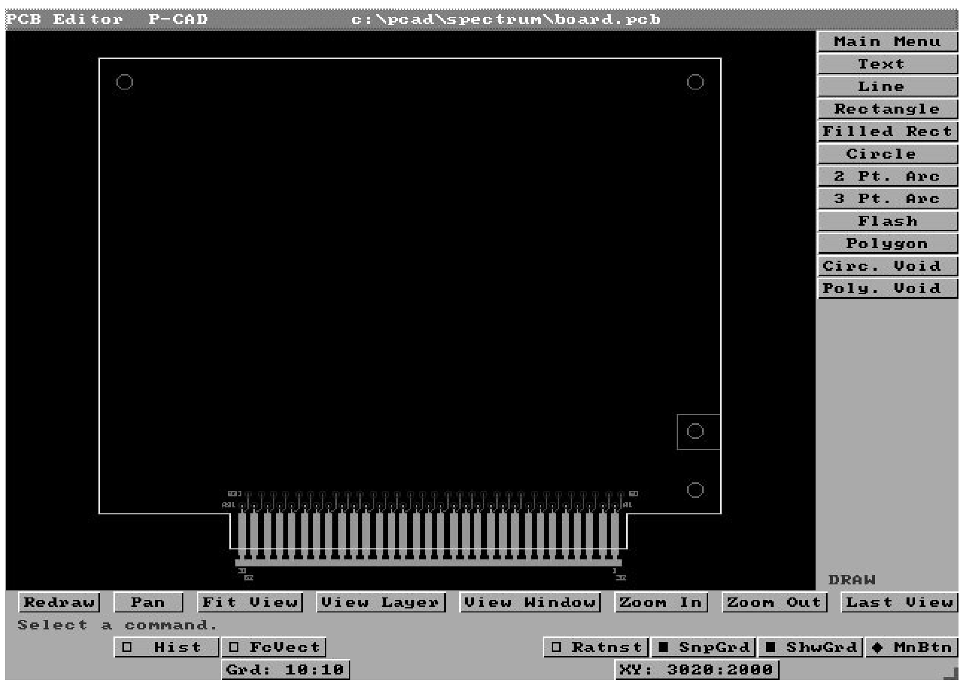

Figure 1-17. Graphics Editor Screen With a Button Menu

To set the menu display

- Select the menu cycle box or enter the /menu keyboard command to cycle through the menu display options.

In addition to the sidebar menus, you can display a pop-up menu in the drawing area. The pop-up menu has the same set of commands as the sidebar menu. If you have a 3-button mouse, the pop-up menu appears when you press the third (right) button while the cursor is in the drawing area. If you have a 2-button mouse, the pop-up menu appears when you press **Ctrl** and the second button simultaneously while the cursor is in the drawing area. The pop-up menu appears at the cursor's location. An example of the pop-up menu is shown in Figure 1-16. The cursor appears at its original point after the command is selected.

Using a Picklist

A picklist is a screen that appears when you select the *PICKLIST* button. *PICKLIST* appears with some of the graphics editor commands. A picklist, shown in Figure 1-18, displays libraries and directory paths and the parts or symbols available in the selected library.

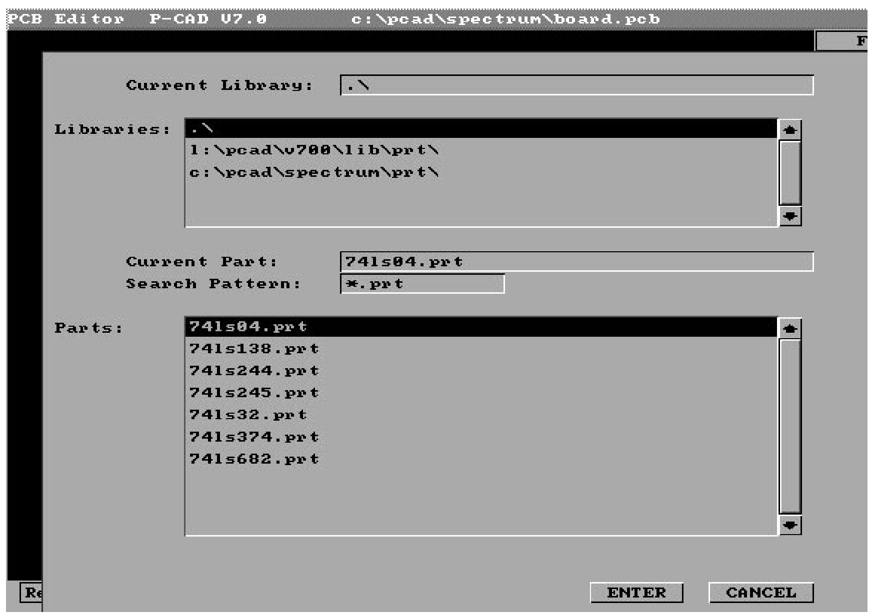

Figure 1-18. Picklist Example

To select an item from a picklist

1. Select a command that displays a picklist, such as *Enter*!*Component* or *File*!*Load.*
2. Select *PICKLIST* in the status area.

3. Select the item you want. If you're using *Enter*!*Component,* highlight the library containing the part or component you want in the Libraries list box, then select the part or component from the Parts list box. If you're using *File*!*Load*, select the filename you want to load.
4. Select *ENTER*.

You can use a search pattern to list a pattern of names. For example, you can enter **74ls*.prt** in the Search Pattern data entry box to list only those parts that begin with 74ls.

Note: You can use a shortcut method to enter items from the picklist without selecting *ENTER*. Double-click the option you want. Double-click means to move the cursor to the option you want and click the left mouse button twice quickly.

Exiting a Graphics Editor Screen

When you want to exit a graphics editor screen, select *File*!*Quit* from the main command menu.

Setting Up Access to the Graphics Editor Configuration Files

Every graphics editor uses a configuration file to get its default values. The Schematic Editor and Symbol Editor use a configuration file called caps.cfg.The PCB Editor and the Part Editor use a configuration called cards.cfg. You can change the values in the Editor Configuration screen for each editor. The *Copy Default* button accesses the default configuration file. The *Save Default* button saves the changes you made back to that file.

You can access the default editor configuration files from any directory. In order to do this, you must first set the environment variable, PCAD_CFG so that the system knows where to look for these files.

To set up access to default graphics editor configuration files on a DOS machine

- Enter the following line in your autoexec.bat file:

SET PCAD_CFG=*pathname*

where *pathname* is the complete path to the directory where you want P-CAD to create the default configuration files**.**

To set up access to default editor configuration files on a UNIX machine running the C-Shell

- Enter the following line at the UNIX prompt or place it in a start-up script.

    setenv PCAD_CFG *pathname*

    where *pathname* is the complete path to the directory where you want P-CAD to create the default configuration files**.**

To set up access to default editor configuration files on a UNIX machine running the Korn-Shell or Bourne-Shell

1. Enter the following line at the UNIX prompt or place it in a start-up script

    PCAD_CFG=*pathname*

    where *pathname* is the complete path to the directory where you want P-CAD to create the default configuration files**.**

2. You must use the Bourne-shell export command for the system to recognize the PCAD_CFG environment variable outside of the startup script execution. Enter the following line at the UNIX prompt or place it in a startup script.

    export PCAD_CFG

Exiting P-CAD

When you exit P-CAD, you return to the screen that contains the DOS or UNIX prompt.

To exit P-CAD and return to the DOS or UNIX prompt

1. Go to the P-CAD screen by selecting the *EXIT* or *RUN* button in a utility screen or *File*!*Quit* in an editor screen.

2. Select the *QUIT* button on the P-CAD opening screen. You're now at the DOS or UNIX prompt.

3. If you logged into your system, be sure to log out.

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