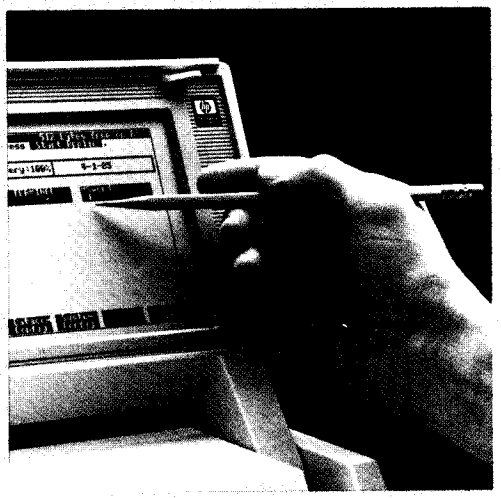
Getting Started with the Portable PLUS



Portable PLUS

Getting Started with the Portable PLUS

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About This Booklet

Welcome to the HP Portable PLUS! This booklet is the place to start learning about it, especially if you're new to HP Series 100 computers (the Touchscreen, the Portable, and the Portable PLUS). This is a step-by-step introduction, covering:

- A description of the computer's major pieces, both standard and optional.
- How to set up the computer, including connecting a Thinkjet printer and an HP 9114A disc drive.
- The Personal Applications Manager (P.A.M.), the friendly instructions the computer gives you to guide you through operations.
- How to start application programs in software modules.

If you are already familiar with a Series 100 computer, or you feel confident in your knowledge of computers in general, then the main owner's manual, *Using the Portable PLUS*, is the place for you to start. If you are a hardware or software developer, there is an optional manual for you: the *Technical Reference Manual for the Portable PLUS* (reorder no. 45711-90023).

You can use *Getting Started with the Portable PLUS* by working through its chapters in order. Or, if you are looking for information about a certain topic, look in the Table of Contents. For a particular task, look in the List of Tasks following the Table of Contents. The index for this booklet is included in the index in *Using the Portable PLUS*. That manual also includes a glossary of terms.

If you can't find the information you need in these manuals, look in the Support Guide for the Portable PLUS—it includes a phone number you can call for advice.

1 What's in Your Computer's System?

Suppose you wanted to order a new car. You might buy the basic, "stripped-down" model: it's just what you want, but without the extras. Or, you might buy an *enhanced* model: one with options added. Which options you choose depends on what special needs you have, like air conditioning for hot climates. The Portable PLUS computer also comes in basic and enhanced models. The basic system is *expandable*, which is why we call it Portable *PLUS*. Before you start learning *how* to use this computer, let's consider *what* you have.

The Basic Portable PLUS

The HP Portable PLUS is, in one piece, a fully functional, battery-operable computer, which is what makes it truly portable. The system does not require a disc drive or monitor, but these are available enhancements.

- The computer's *operating system* is built into its memory, so there is *no* system disc to load each time you start up the computer.
- There is a built-in, *electronic disc* that can store files you create. (More on this in chapter 5.)
- It draws power from an internal battery pack that frees you from the wall socket for about 20 hours at a stretch—*and* constantly and continuously preserves all information stored in the machine. There is no such thing as a power failure on the Portable PLUS! (More on this in chapter 2.)

- There are two built-in interface ports: HP-IL and serial (RS-232). If you want to attach a printer, disc drive, or plotter, you use one of these ports. (More on this in chapter 4 and in *Using the Portable PLUS.*)
- The computer accepts software—called *application programs*—in either *disc* or *module* (ROM) form. Software in plug-in modules is very attractive because it *does not need to be repeatedly loaded and installed.* Once you plug a software module in, the computer always "knows" it's there. (More on this in chapter 6.)

Major Options

Expanding User Memory. At your option, you can expand the amount of user memory (RAM) by adding 128K-byte memory cards. These modules are installed into one or two *memory drawers.*

Printers and External Disc Drives. These are the most popular peripheral devices used with the Portable PLUS. Chapter 4 explains how to connect the computer to HP's Thinkjet printer and the HP 9114A Disc Drive. For others, see *Using the Portable PLUS.*

Adding an Internal Modem. The Portable PLUS is available with and without an internal, fast modem. If your computer does not have this internal modem, your dealer can install one. This is the HP 82983A 300/1200 BPS Modem. Use of the modem is covered in the modem owner's manual and in *Using the Portable PLUS* (for those aspects relating to the computer's interfacing with the modem).

Adding a Monitor. You can hook the Portable PLUS up to a monitor to increase the size of the display. This requires the HP 82985A Video Interface.

Plug-in Software Modules. The easiest way to run software is from a software module, which you plug into a *software drawer.* You can install one or two software drawers, and each one can hold multiple applications.

2 The First Steps

This chapter takes you through your very first steps with the Portable PLUS: how to open it, turn it on and off, adjust its screen, and recharge the batteries. It also explains what to do if you run into trouble.

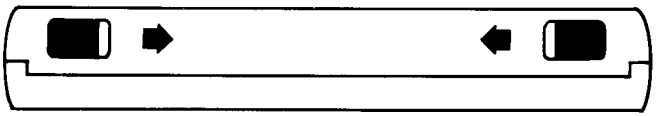
Note

The battery jumper must be properly set before you can turn on the computer. Refer to the sheet labeled "Connecting the Battery."

Starting Up the Computer

Unlatching the Case

To open the computer, slide the latches toward the center, then lift the top up and back. The top will feel heavy because it contains the display. The hinges will hold the display screen at any angle.

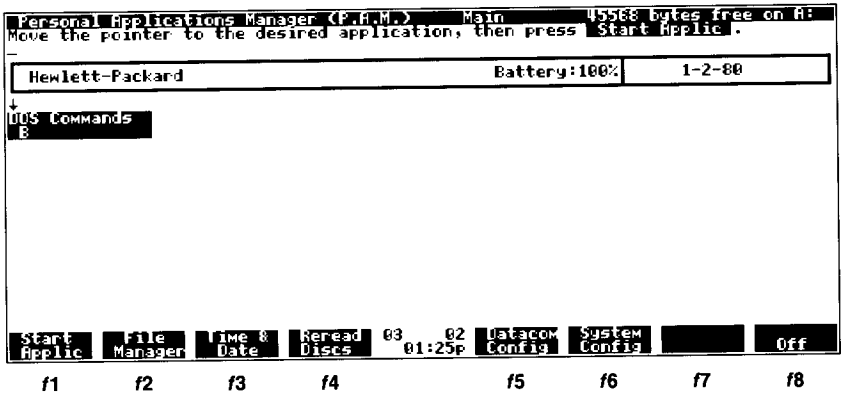


Turning the Display On and Off

To Turn the Display On: Press and hold the space bar for a second. *If the display does not turn on,* the battery might be low, so plug in the battery recharger (shown on page 2-5) and press the space bar again. If the machine has not been turned on since connecting the battery or installing a drawer, touch the (◑) key to wake it from "deep sleep". If there is still no display, *reset* the computer by holding down the (◑) key for about 15 seconds. Then press the space bar.

You should see the main screen for the Personal Applications Manager. (Refer to page 3-2 for more description of this screen.)

Main P.A.M. Screen



If this screen is *not* the one you see, try pressing (f8) one or more times until it does appear. For more help, refer to "How to Find P.A.M." on page 3-7.

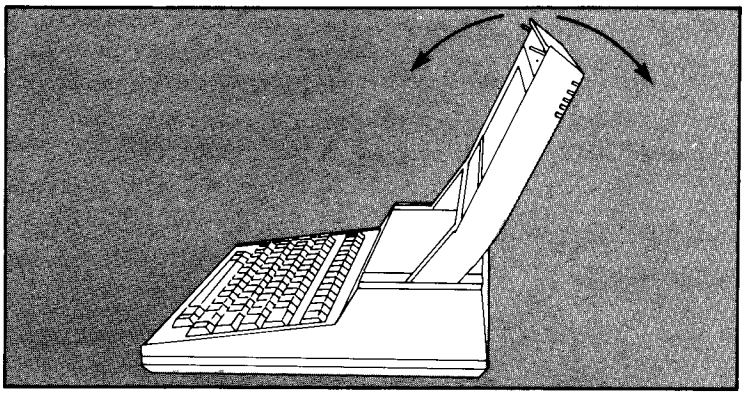
To Turn the Display Off: Press (f8), which corresponds to Off on the screen shown above.

Automatic Off. To conserve power when the recharger is not connected, the display automatically turns itself off after about 5 minutes of idleness if the recharger is not connected. *Your work on the computer is not affected when the display goes off*—it is saved as is. (More on this under "The Computer is Never Really Off", below.)

Adjusting the Screen's Brightness

You can adjust the display to minimize glare by moving it back and forth:

Adjusting the Screen's Angle



You can also adjust the display's contrast by pressing ◑ (darker) or Shift ◑ (lighter), but *do not hold down the ◑ key for more than 10 seconds.* Doing so will *reset* the computer (as explained under "Resetting the Computer" at the end of this chapter).

Note

The sharpness of the display also depends on the ambient light. You get best results with a bright light source concentrated above or behind you.

The Computer is Never Really Off

If you're used to other personal computers, you'll find there's something different about the way the HP Portable PLUS turns off—it doesn't! Like our calculators, this computer has *Continuous Memory*. You can turn the *display* on and off, but not the computer itself. It doesn't matter whether the computer is plugged in or not, or whether the display is on or off: the computer *never loses your place*, which means it never loses your data, either. Try this:

1. Turn the computer on (press space bar).
2. Press (f2). This changes the screen to the File Manager.
3. Let the computer sit until it shuts itself off—about 5 minutes. (It will not shut itself off if the recharger is plugged in.)
4. Turn the computer back on (press the space bar). Notice that the computer is still in the File Manager, where you left off.
5. Press (f8) to return to the main display.

Using the Battery Recharger

When you first unpack your new computer, you should recharge it for 10 hours or overnight. (This is also advisable whenever the battery-level indicator does not seem to be correct. For more information refer to appendix B of *Using the Portable PLUS*.)

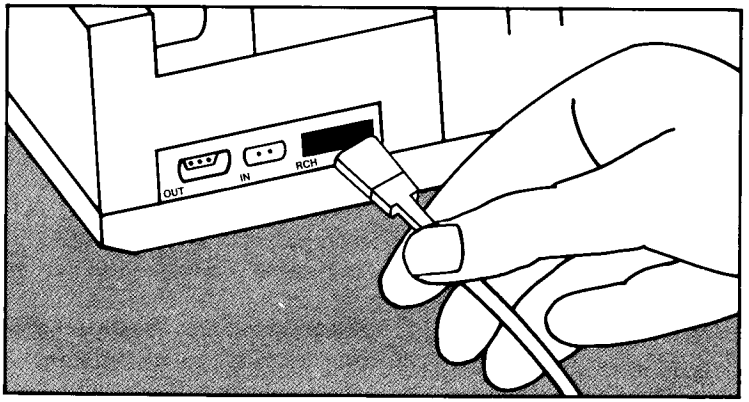
The HP Portable PLUS is powered by an internal battery pack. A fully charged computer will operate for an average of 20 hours on its battery pack.

If the `Low Battery!` message appears, or if the display will not turn on, you should plug in the ac adapter/recharger. When the `Low Battery!` message appears, you still have about 4 hours of "average" use remaining on the current charge.

To connect the ac adapter/recharger to the computer:

1. Insert the recharger-plug into an ac power outlet.
2. Insert the smaller plug into the appropriate outlet (marked "RCH") on the back of the computer, as shown in the photo.

Connecting the Recharger



The recharger will provide a full charge after 10 hours if the computer is not in use—or after 18 hours if it is. The battery pack is never in danger of being overcharged, so you can leave the computer plugged in whenever it's convenient.

Caution

Allowing the battery to run down until the Low Battery indicator appears before recharging can substantially reduce battery life. For best battery life, recharge the battery fully at every opportunity.

What to Do If You Get Stuck

Everybody gets stuck from time to time. Sometimes you're stuck because you don't know what to do next—that's when you should look in the owner's manuals (the index, List of Tasks, or glossary).

Other times you get stuck in a spot you don't know how to get out of, or you find the computer won't respond to your keystrokes. Then it's time to reset the computer.

For Example...

The Display Won't Come On. The batteries might need to be recharged. Plug in the battery recharger and then press the space bar. This should turn on the display immediately. Let the computer recharge for an hour before using it. If this does not work, try "Resetting the Computer", below.

You Keep Getting an Error You Don't Understand. Look in appendix A of *Using the Portable PLUS*. This is a list of messages, errors, and their remedies.

The Computer Seems to be Stuck. If the computer does not respond to instructions—or even keystrokes—then reset the computer. See "Resetting the Computer", below.

Do You Need More Help? Do You Think the Computer Needs Repair? Refer to the Support Guide that came with the computer. This tells you how to get advice on operation (including software) by phone or mail. It also spells out your warranty, how to get repair for the computer, and how to make sure the computer is faulty before you send it in.

Resetting the Computer

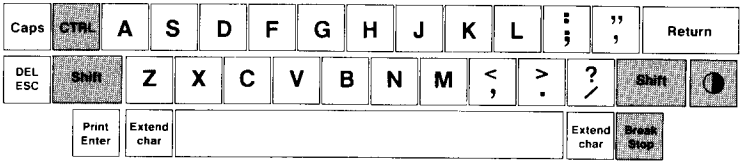
What Resetting Does. The display goes blank and comes back showing the main screen. *All of your stored files are preserved. Any software programs you might have are also unaffected.* Only work *not* stored in a file is lost.

To reset the computer:

- While holding down (CTRL) and (Shift), press (Break).
- *If* this has no effect because the keyboard is "locked up", *then* hold down the (◑) key until the display goes blank (about 10 seconds). Then press (◑) again to turn the display back on.

If these don't work, refer to appendix B, "Operating Information", in *Using the Portable PLUS* for more drastic measures.

Keys for Resetting



Where to Go from Here

Now that you've gotten your feet wet, you're ready to learn how the computer operates—that is, how you tell it what you want. This is covered in the next chapter, "Understanding the Display and Using the Keyboard".

Chapter 4 tells you how to hook up the "standard" peripheral devices: the Thinkjet printer and the HP 9114 disc drive.

3 Understanding the Display and Using the Keyboard

This chapter explains the basics of interacting with the Portable PLUS: what the Personal Applications Manager is all about, what the different items on the screen mean, how to set the time, and how the keyboard is laid out.

Understanding the User Interface (P.A.M.)

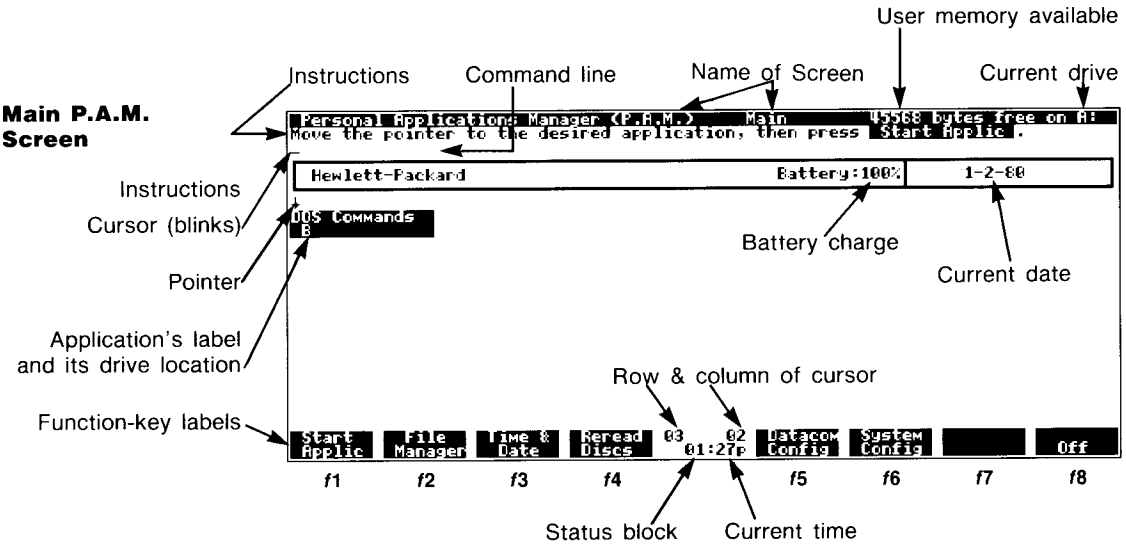
There is one screen that will become most familiar to you because it "guides" you from task to task and from software program to software program. This is the *main P.A.M. screen*. There are also several subordinate P.A.M. screens.

P.A.M. stands for Personal Applications Manager—a high-sounding title for a very down-to-earth job. P.A.M. interprets your (the "user's") instructions for the computer, so it is called a *user interface*. When you start a software program (also called an *application*), you start from the main P.A.M. screen; when you finish using a software program, you "exit" to the main P.A.M. screen.

Giving Instructions (The Main P.A.M. Screen)

The main P.A.M. screen is usually the one that you see whenever you turn on the display. If the screen you see now does *not* match the screen shown on the next page, refer to "How to Find P.A.M." on page 3-7 in this chapter.

Main P.A.M. Screen

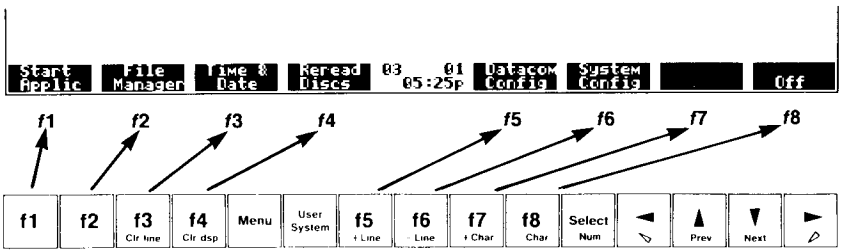


The computer jargon for a user interface (like P.A.M.) that spells out options and selections is a *menu*. The main and subordinate P.A.M. screens all have menus because, among other things, they present choices of activities or instructions. These choices are shown on the screen as dark blocks of text. In the diagram above, they are the application labels and the function-key labels.

Using the Function Keys (f1 through f8)

The menu labels on the bottom of the main P.A.M. screen correspond to each of the eight *function keys*, f1 through f8, in the top row of the keyboard. The plastic bezel underneath the screen also shows this correspondence.

The Function Keys



To invoke the feature or function shown on the menu label, you press the corresponding f-key.

Note

For now, *don't press* Start Applic (f1). Doing so would start an application program (as explained in chapter 5). If you pressed f1 and ended up in DOS Commands (you would see the line `Command v. 2.11` across the top of the screen), type `exit` and then press Return to bring back the main P.A.M. screen.

What P.A.M. Can Do (Other P.A.M. Screens)

P.A.M. can take care of: running applications and reading discs, managing—including copying and deleting—files, setting the time and date, assigning communications devices, and specifying what interface ports you're using and what peripheral devices (if any) are attached.

Here is an introduction to the main P.A.M. labels and their functions. For more information about the specific functions, refer to your owner's manual, *Using the Portable PLUS*.

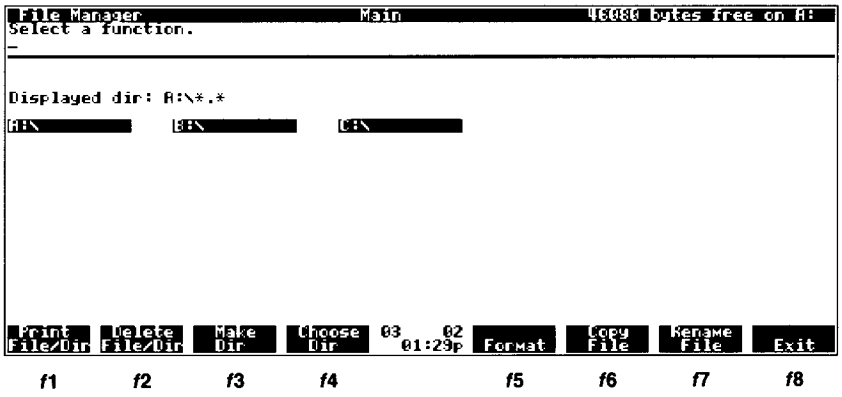
Starting a Program: Start Applic (f1). This calls up an application (software) program or the DOS Commands, depending on which software you have loaded and where the pointer (↓) is. Refer to the note above and to chapter 7, "Working with Files", for more information.

Working with Files: File Manager (f2). This calls up the computer's file manager, which guides you through the most common operations for files.

The following directions show you the File Manager screen. For a description of the File Manager itself, refer to chapter 7.

Press File Manager ((f2)). You should see a screen like this:

File Manager

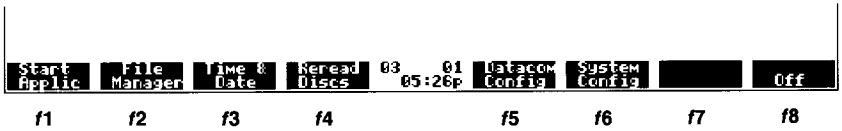


Notice that the bottom row of labels has changed—there are now eight new functions, each one part of the File Manager. Notice that in each case the last key ((f8)) is an exiting function. When you press (f8), it brings back the previous screen.

Press Exit ((f8)) to return to the main P.A.M. screen.

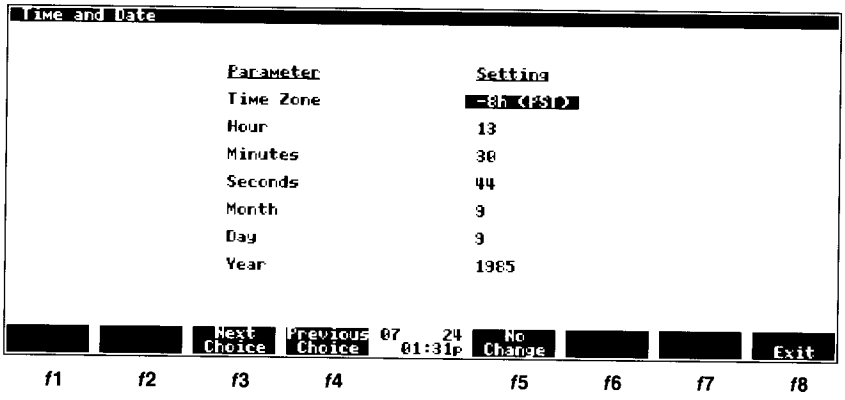
Setting the Time: Time & Date ((f3)). Look in the center of the bottom line of the screen to check the time. (This area is called the *status block*.)

The Status Block



If this is not the right time, set the clock:

1. Press Time & Date. This shows you the choices for setting the time and date.



2. Use the arrow keys (upper righthand corner of keyboard) to move the pointer (the black field) to any item you'd like to change.
3. Use Next Choice (f3) or Previous Choice (f4) to change the values. Set the hour using 24-hour-clock time.
4. Press Exit (f8) to set the time and date and return to the main screen.

If you have no changes to make, just press Exit. If you made changes but don't want them to take effect, press No Change and then Exit.

If you would like to know more about this clock configuration, refer to chapter 3 of *Using the Portable PLUS*.

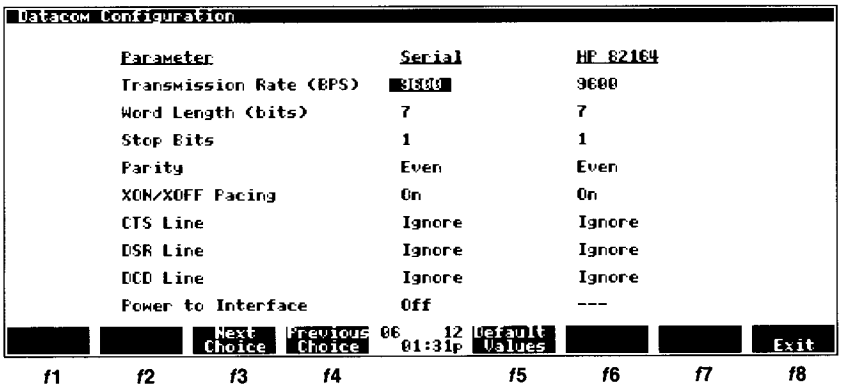
Reading Discs: Reread Discs (f4). Use this key to update the main P.A.M. menu of applications after you have inserted a new application disc in an external disc drive.

Press Reread Discs. The P.A.M. screen does not change—it only blinks. The P.A.M. screen would update itself if you had a disc drive hooked up with an application disc inserted.

Data Communications: Datacom Config (f5). This calls up a list of settings for communicating with another computer or RS-232 peripheral device. These settings are explained in chapter 9 of *Using the Portable PLUS*.

Press Datacom Config. You should see this screen. (If you have a built-in modem, you will also see modem settings.)

Datacom Configuration

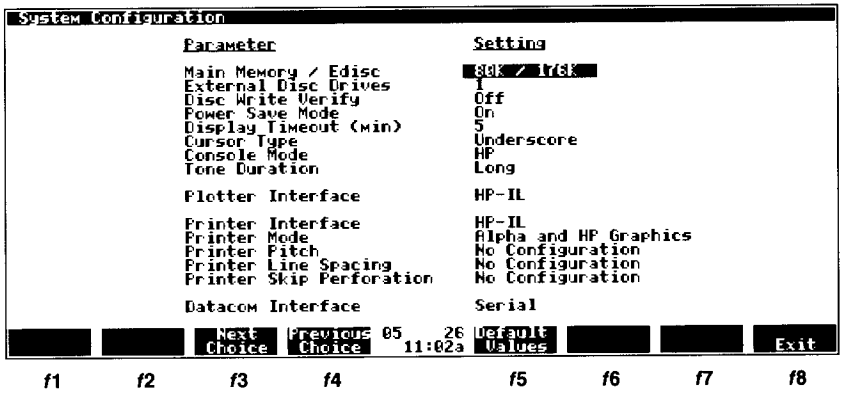


Press Exit ((f8)) to bring back the main P.A.M. screen.

Other Options: System Config ((f6)). This calls a list of important settings regarding any interfaces and peripheral devices you're using, the allocation of user memory, and other conditions.

Press System Config. You should see a screen similar to this:*

System Configuration



* This screen assumes a total of 256K bytes of user memory. If the total is different, then the Main Memory/Edisc setting will be different.

It's best not to change the settings for memory, disc drive, plotter, or printer until you know what they mean. Memory allocation is discussed in chapter 5, while information about hooking up a Thinkjet printer and an HP 9114A Disc Drive is in chapter 4. For more information, refer to chapter 6 of *Using the Portable PLUS.*

Press Exit (f8) to bring back the main P.A.M. screen. (You will see two copyright messages before the main screen reappears.) Any new settings would now take effect.

Turning Off: Off (f8). This turns the display off.

Press Off. Press and hold the space bar to turn the display back on again.

How to Find P.A.M.

If the last person to use the computer (which could be you!) did not finish by "exiting" to the main P.A.M. screen, then you will not see the main P.A.M. screen when you turn on the display. How do you recall the main P.A.M. screen?

- If the current screen has a bottom row of labeled blocks (*function-key labels*), then the last label on the right should say `Exit`, `Cancel`, or `Quit`, depending on the particular screen. Hit (f8), which corresponds to this last label, until the screen that appears is the main P.A.M. screen.

Note

If you hold down (f8) too long you might shut off the display. This is because (f8) on the main P.A.M. screen corresponds to Off.

- If there is no bottom row of labels, then the current screen is probably part of a software program that does not use function-key labels. You must refer to the owner's manual for that application program to find out how to exit that program. Exiting a program automatically brings back the main P.A.M. screen.

You can also reset the computer (CTRL Shift Break) to recall the main P.A.M. screen, but this will erase any open file.

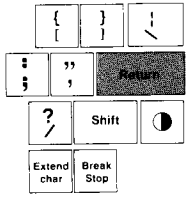
Using the Keyboard

The previous section covered the function keys (f1–f8) and how they correspond to the function-key labels. This section covers the rest of the keyboard, particularly those keys that are unlike those on a typewriter.

Using the Return Key

Take special note of the Return key—it's the one that you press when you want to tell the computer that you are finished with your current instruction. For instance:

The Return Key



1. On the main P.A.M. screen, type `command`. This is an instruction to the computer to switch from P.A.M. to MS-DOS commands. However, there is no reaction until you ...
2. Press Return. Now you see something like this:

   ```
   Command v. 2.11
   14:16 [A:\]: _
   ```

3. We don't really have anything to do here, so return to P.A.M. by typing `exit` Return.

Notice that the computer does not react to what you type until you formally *end* it with Return.

You might recall that we didn't use Return at all while using the f-keys in the last section. There's an important distinction here: Return is *not* necessary with a *function key*—that is, a key that gives an entire instruction all by itself. (In this sense, every key in the top row is a function key.) However, whenever you need to type one or more words for an instruction, you need Return to tell the computer when you're finished.

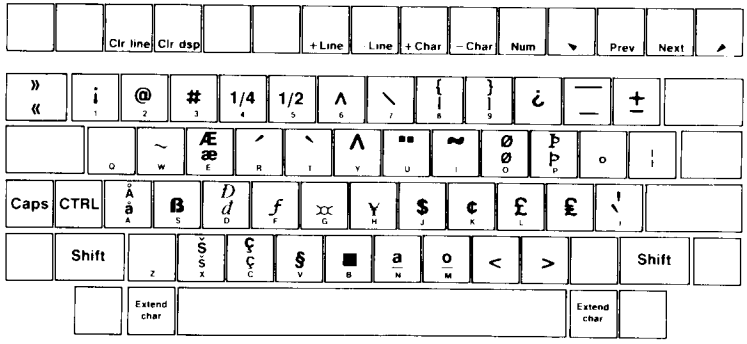
Using Other Special Keys

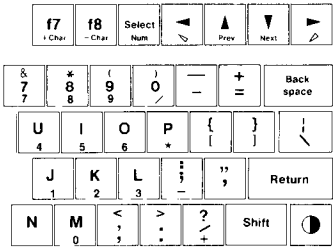
The Extended Character Key (Extend char). Notice that besides the regular shifted and unshifted characters there are other functions printed on the *front face* of some keys. These are functions accessed by Extend char. In addition, there is an entire *extended-character set* (mostly non-English characters)

that is not printed on the keyboard. To invoke an extended character or function, use (Extend char) like a shifting key. For instance, (Extend char)(Clr line) means: press and hold (Extend char) while then pressing (Clr line) (on the (f3) key). (This clears a line of typed text.)

The diagram below shows you the extended characters and their locations on the keyboard. Those shown here in color are the (Extend char) functions marked on the keys themselves. You will find an adhesive diagram of the extended-character keyboard in the envelope marked "Important Supplementary Information". You can stick this to the face of the computer where you can refer to it easily.

Extended-Character Keys

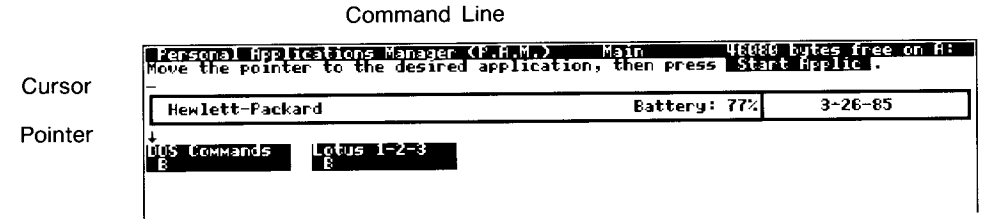




The Numeric Keypad. The digits printed in color comprise the numeric keypad. The numeric keypad is a convenience for people who type a lot of numbers. To activate the numeric keypad, press and hold (Extend char) while then pressing (Num) (on the (Select) key). The numeric keypad remains active until you press (Extend char)(Num) again. This is called a *toggle* switch.

Try typing some numbers using (Num). Notice that an **N** appears in the screen's status block while the numeric keypad is active. Remember to press (Extend char)(Num) again when you are done.

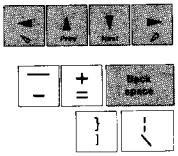
Moving the Cursor and the Pointer. The main P.A.M. screen has both a *cursor* and a *pointer*.



The *arrow* keys (in the upper right corner of the keyboard) move the pointer from label to label, assuming you have more than one application label, as shown with DOS Commands and Lotus 1-2-3 in the diagram.

The Cursor-Moving Keys

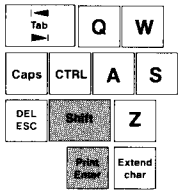
The (Back space) key moves the cursor backwards, erasing characters as it goes.



1. Try pressing (◄) and (►) (if you have more than one application label) to see how the pointer moves. In many software applications, the arrow keys are also used to move cursors (for example, in a word-processing program) and pointers (for example, in a spreadsheet program).
2. Type your name. It will appear in the *command line*.
3. Erase your name using (Back space). If you needed to make a correction, you would also use (Back space). (Note that if you had entered a real command you would need to end it with (Return).)

Printing the Screen. Getting a print-out of just exactly what is on the screen is very easy: just use (Print), a shifted function (hold down (Shift) while pressing (Print)).

The (Print) Key



If you have a printer connected already, try (Shift)(Print) now. You should get a printed copy of whichever screen you are currently viewing. If you have an HP-IL Thinkjet printer that is not yet connected, you can learn how to connect it in the next chapter.

Resetting the Computer. As explained in chapter 2, the (CTRL) and (Break) keys are special: holding down (CTRL) and (Shift) while pressing (Break) will *reset* the computer. This is not something to do lightly! Refer to page 2-6 for a description of this operation.

Where to Go from Here

There is more information on keyboard functions in chapter 2 of *Using the Portable PLUS*. That manual also goes into greater depth in discussing the various P.A.M. functions.

If you have a peripheral device (printer, disc drive, plotter) to hook up, go on to the next chapter. If you have a peripheral that does *not* use an HP-IL interface, however, refer to chapter 6 ("Connecting Printers, Disc Drives, and Other Peripherals") in *Using the Portable PLUS* for instructions.

If you don't need to learn about hooking up peripherals, go on to chapter 5 to learn the essentials of memory management. This will help you greatly in understanding the memory requirements to run application programs and to store files, which are covered in chapters 6 and 7.

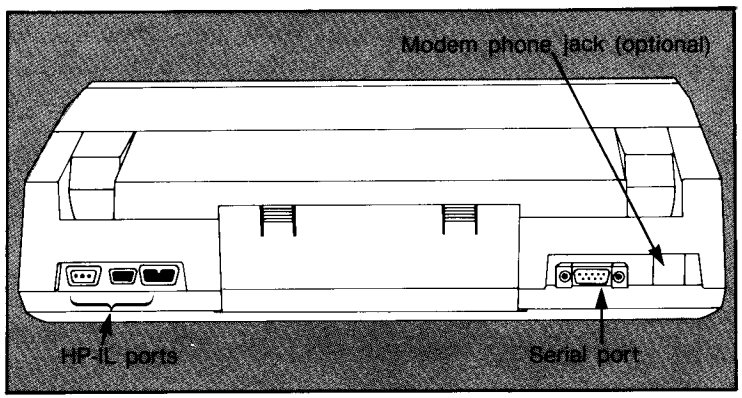
4 Hooking Up a Printer and a Disc Drive

This chapter describes how to connect a Thinkjet Printer and an HP 9114A Disc Drive to the computer. This is very easy to do, particularly since these peripheral devices use the HP Interface Loop (HP-IL), an interfacing system designed for simplicity, low power consumption, and portability.

A printer and a disc drive are optional equipment, and not necessary for you to use the computer. However, they are very convenient: a printer to make printed copies of your work, and a disc drive to greatly increase your storage capacity. Also, some software is available only on disc, and not in modules. Plotters are also popular accessories, used for creating graphs and charts.

If you have a peripheral device *other than* the Thinkjet or HP 9114A, refer to its owner's manual or to *Using the Portable PLUS* for instructions.

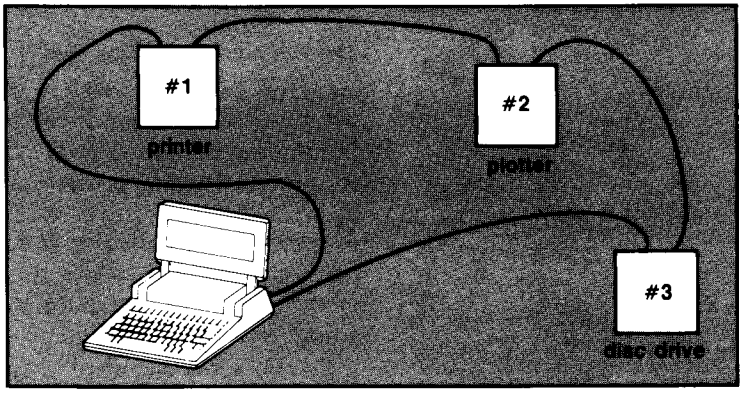
The Interfacing Ports



What's an Interface Loop?

Peripherals that use the HP–IL system are connected to the computer and to each other in a loop using HP–IL cables. One such cable comes with the computer, and another comes with each peripheral. This diagram shows you the basic idea.

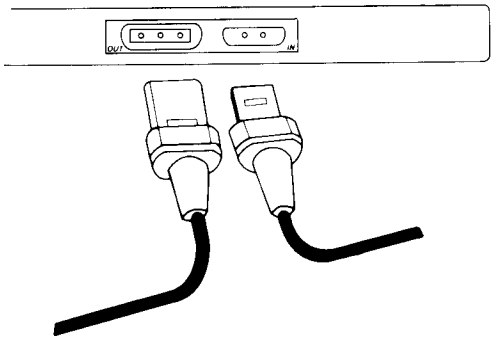
An HP-IL Loop



The *order* of each item in the loop is unimportant. What is important is that each device be connected by two cables, and that every device be connected in the same loop. (You can connect up to 30 devices in the loop, and each device can be up to 10 meters away from its neighbors!)

The two plugs at the ends of an HP–IL cable are different from each other. As you can see in the diagram below, the two HP–IL sockets differ, too. When you plug the cables into the sockets, you must match their types. (If you have to force the plug into the socket, they are not matched.)

HP-IL Port and Cable Connectors



Hooking Up the HP-IL Thinkjet Printer

The back panel of the HP-IL Thinkjet printer has two HP–IL sockets that match the computer's HP–IL sockets.

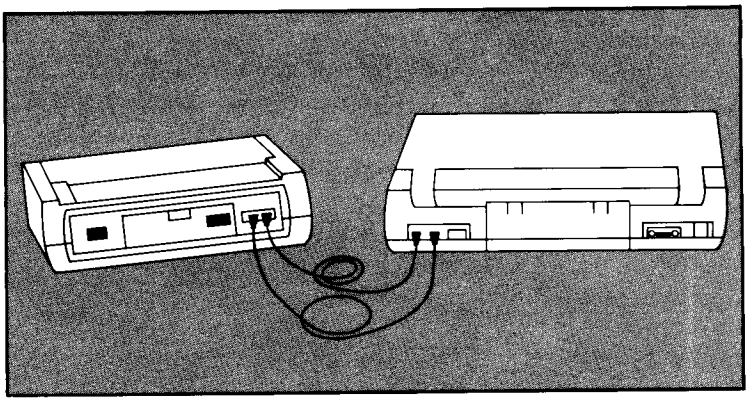
To hook up the Thinkjet:

1. Install the printhead and paper as explained in the printer's owner's manual.
2. Connect the cables between the printer and the computer, using the HP–IL sockets as shown in the diagram above and as described above in "What's an Interface Loop?".
3. Turn on the printer. (The switch is on the back panel. "On" is position **1**.) If the printer is not fully charged, you should plug in its battery recharger.

   If there are other items in the loop, make sure they are on, too.
4. Test the connection by getting a print-out of the screen: press (Shift)(Print) on the computer.

   If the printer prints out the screen, then the connection is good. If there are other items in the loop and this test succeeds, then *all* items are correctly hooked up.

Printer and Computer Connected



That's all there is to connecting the printer! Refer to the printer's owner's manual for information on operating the printer.

You can hook up an HP 7470A (option 003) Graphics Plotter in exactly the same way. There is a diagram of three devices hooked together on the next page.

Note

All devices connected in a loop *must be turned on* for any one of the peripheral devices to work. For instance, if you have both a printer and a disc drive attached to the computer, they both must be turned on for either one to work.

If the printer did *not* print out the screen:

- First double-check all of the cable connections.
- If these are all right, then check the System Configuration menu. Call up System Config ((f6)) from the main P.A.M. screen. Check that the setting for `Printer Interface` is `HP-IL`. If it is not, press (f3) or (f4) until it is. Exit the System Configuration menu.
- Check that all devices in the loop are on.

Now try (Shift)(Print) again. If you're still unsuccessful, check the owner's manual for the printer. For help from your dealer or HP refer to the Support Guide that comes with the Portable PLUS.

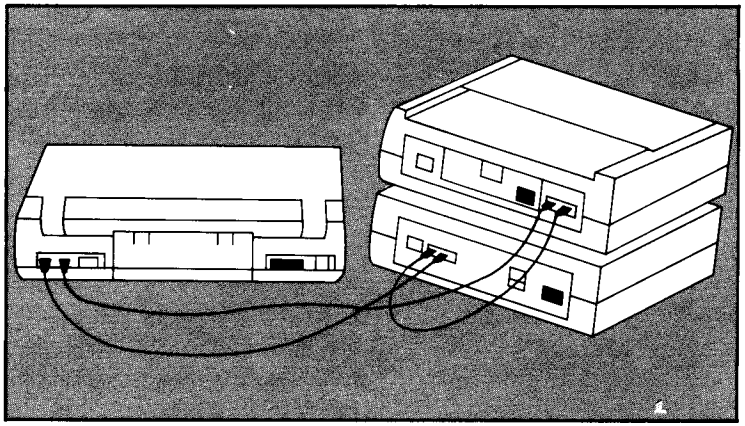
Hooking Up the HP 9114A Disc Drive

To hook up the disc drive:

1. Attach the cables between the disc drive and the computer (and any other devices) as shown in the above diagram and as described under "What's an Interface Loop?"
2. Turn on the disc drive. (The switch is on the back panel; "on" is **1**.) To make sure the drive is fully charged, it's best to plug in its recharger.

   If there are other items in the loop, make sure they are on, too.

Printer, Disc Drive, and Computer Connected



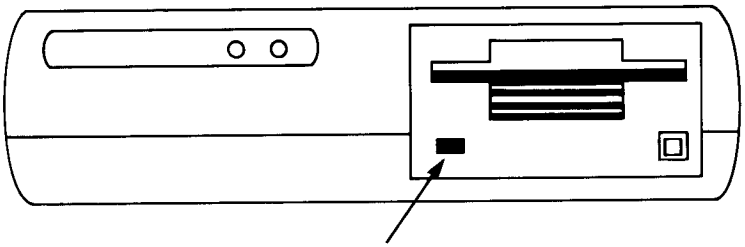
That's it! Refer to the disc drive's owner's manual for information on operating the disc drive.

Note

For important information on inserting and removing discs, refer to the owner's manual for the disc drive. *Never turn the drive off or remove a disc while the "drive busy" light is on.*

For important information on how to store and retrieve information from a disc, refer to *Using the Portable PLUS.*

The "Drive Busy" Light



If the disc drive does not seem to be working:

- Double-check all of the cable connections.
- Check the System Configuration menu (f6 from the main P.A.M. screen). The setting for `External Disc Drives` should be `1`.

Where to Go from Here

Chapter 5 teaches the essentials of memory management in the Portable PLUS. Understanding this is of great help in running applications programs and working with files, which are covered in chapters 6 and 7, respectively.

5 What You Need to Know about User Memory

What Is User Memory?

Generally speaking, the computer has two kinds of memory: user memory and read-only memory.

- **User memory** is also known as read/write memory or random-access memory (RAM). It holds *changeable* material, such as your files, which you can revise and delete. It can also hold application programs that you copy into user memory from external discs.

  Application programs also use user memory, but only *temporarily*, while you are using that program. Large programs, like sophisticated spreadsheets, need a significant amount of user memory to run.

- **Read-only memory** (ROM) is unalterable. The computer's operating system is in ROM, as are software programs that come in software modules. You, the user, cannot affect ROM, which is why it is "read only" (as opposed to "read/write").

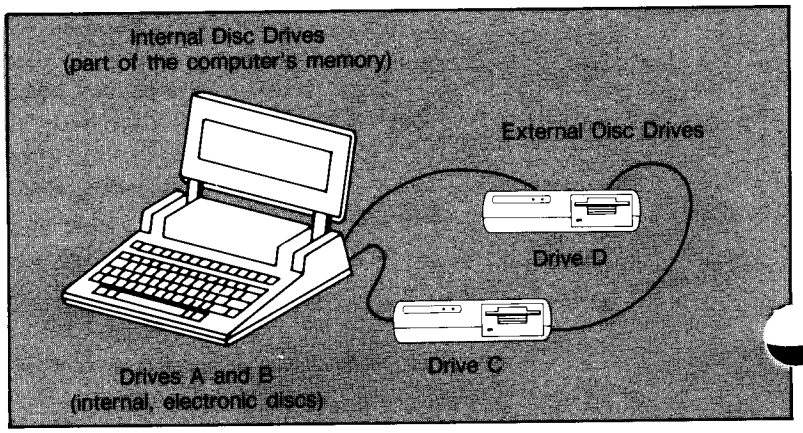
Where Is User Memory?

Your computer came with a certain amount of user memory built in, and this amount can be expanded with memory cards. Unlike in most computers, the user memory in the Portable PLUS can be used to store files. This makes this computer truly *portable* because you don't need to carry a disc drive and discs with you.

Electronic-disc memory and main memory are the two categories of user memory. The *electronic disc* in *drive A* is for storing files. *Main memory* is used as *workspace* for an open (running) application.

The Electronic-Disc Drives (A and B). The Portable PLUS has two *internal, electronic-disc* drives, designated drives A and B. (This is why a regular, external disc drive starts with the designation "C".) These are called (electronic) discs because they are accessed by the computer like other disc drives. For you, however, they are not like disc drives at all: you don't hook them up, configure them, turn them on, or put discs in them! "Drive A" is merely a label for a storage location.

Internal and External Drives



Of the two electronic-disc drives only drive A uses user memory; drive B is strictly for ROM.

Main Memory. Besides drive A (Edisc memory), the other part of user memory is *main memory*. When you run an application and work on a file in that application, the "work space" you use comes from main memory. As the file you're working on grows, the work space it needs in main memory also grows.

When you finish your current session with an application and exit it, main memory is erased. That is why you need to save your work in a file before you exit an application.

Example. Suppose you have Lotus 1–2–3 loaded into your software drawer. This is in ROM. When you start this application, which opens a file, it uses some of main memory for workspace. When (and if) you store the open 1–2–3 file, that file is stored in electronic-disc memory (drive A) (unless you store it on an external disc). When you exit 1–2–3, your work is erased from main memory. The next time you use 1–2–3 and call up your previous file, the original remains in drive A while a copy is made in main memory. When you store the *new* version of your file, it *copies over* the original version in drive A.

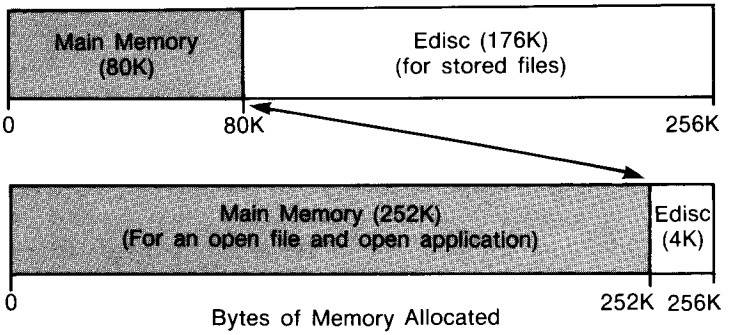
Adjusting the Memory Allocation

Although main memory and the electronic disc's memory share user memory, you can adjust the division between the two categories in P.A.M.'s System Configuration. Note, however, that you cannot re-allocate memory while an application is open.

The minimum amount of memory that can be allocated to main memory is 80K, and the maximum is 512K. (Any user memory over 512K will automatically be allocated to the Edisc.) On the other hand, the maximum possible Edisc allocation is the total amount of user memory minus the minimum main memory (80K). The minimum Edisc allocation is 4K.* For example, in a Portable PLUS having 256K bytes of user memory, the following maximum and minimum configurations would be available:

* If your computer has 384K bytes or 512K bytes of user memory, the minimum Edisc allocation is 8K. If you have more than 512K bytes of user memory, the minimum Edisc allocation is that amount of memory over 512K.

Example of System Configuration for User Memory

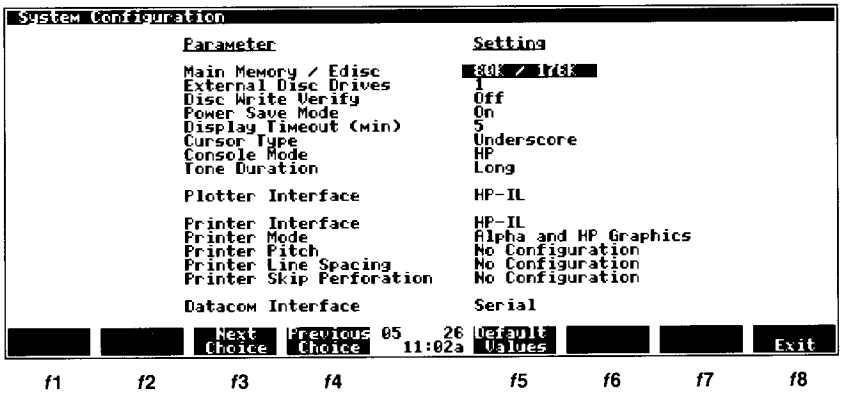


Maximum and Minimum Configurations

Changing the System Configuration

The System Configuration screen (f6 from the main P.A.M. screen) lets you change the allocation of user memory between main memory and the electronic disc. Use Next Choice (f3) and Previous Choice (f4) to alter the ratio of Main Memory / Edisc.

System Configuration



When Do You Need to Re-Allocate Memory?

Is Main Memory Large Enough for Your Application? The manual for the application program should tell you how much memory (RAM) the application needs to "run". This is the amount you will need allocated to main memory.

If the current size of main memory is *not* sufficient, the computer will give you this message when you try to start the application: `Program too big to fit in memory`. The solution is to increase the size of `Main Memory` at the expense of `Edisc`. If this leaves you with too little in the electronic disc (drive A) to store a file, you will need to either 1) expand memory with a memory card, 2) store any new files on an external disc, or 3) delete old files.

Packing the Electronic Disc. You can make more memory available to main memory by *packing* drive A (the electronic disc). This removes unused gaps between files and reclaims them for main memory. Type `pack` (Return) into the command line of the main P.A.M. screen.

Is Edisc Memory Large Enough? This is harder to determine. Look in the upper right corner of the main P.A.M. screen or of the File Manager screen to see the number of bytes (of user memory) free on drive A. To know whether this amount is sufficient to store your next file, you need an idea of the size of your next file. Some applications give you the size of a "typical" file: for MemoMaker it's about 2,000 to 2,500 bytes per page. For Lotus 1-2-3 it's 10,000 to 20,000 bytes per worksheet. These are only estimates.

If the given amount of free (available) electronic-disc memory does not seem large enough, then you should adjust the System Configuration to increase `Edisc` at the expense of `Main Memory`. You must do this *before* starting an application and creating a file; otherwise, you will be stuck with a file that fits in main memory but is too large to store in drive A. (You could pare it down or store it on an external disc, if you have one attached.)

If you cannot increase the size of Edisc memory relative to main memory, then you need to increase total user memory (with a memory card) or store your files on an external disc.

What Resetting the Computer Does to Memory

As mentioned at the end of chapter 2, resetting the computer by using CTRL Shift Break or ◑ does *not* affect stored files or the permanent versions of application programs:

- Drives A and B are not affected by resetting the computer. (Neither are any external drives, of course.)
- Main memory is *erased* by resetting the computer. This means any open file (work not stored) is lost.

Where to Go from Here

This chapter, along with chapter 3, has covered the most important fundamentals of the Portable PLUS. With this information, you should now be ready to run applications and work with files *while understanding why things work as they do!* For more information, see chapter 4 of *Using the Portable PLUS.*

You are now ready for chapter 6, "Using Programs from Software Modules", and chapter 7, "Working with Files".

6 Using Programs from Software Modules

This chapter describes how to start an *application program* (a software program) from a *software module*. If you are used to using software *discs*, you will enjoy the convenience of using software modules: no discs to keep track of, no need to load and install the program every time you use it (so the applications come up quickly), *and* you can hold several applications at one time.

Application programs for this computer are also available on discs. For information on loading and starting disc-based software, refer to *Using the Portable PLUS*.

Installing a Software Module

The Portable PLUS has two receptacles on its underside to hold *drawers* containing software, extra user memory, or other enhancements. The instructions for installing the software modules in a software drawer come with the software modules. The instructions for installing the software drawer into the computer come with the software drawer. (The software drawer is an accessory that does not come with the basic model of the Portable PLUS.)

Caution

Before you remove a drawer you should back up Drive A's files on a regular disc. (Refer to chapter 8 in *Using the Portable PLUS*.) Removing the software drawer can cause the loss of anything stored in memory, including your files and the time.

Once you have physically installed a software module, there is no further preparation prior to using the application. You do not need to run an "install routine", which most disc-based software requires. The computer will show you in the main P.A.M. screen a label for each software program in its software drawer. (If it does not, refer to chapter 1 of *Using the Portable PLUS.*)

Starting an Application

There are four steps to running an application.

Checking the Available Memory

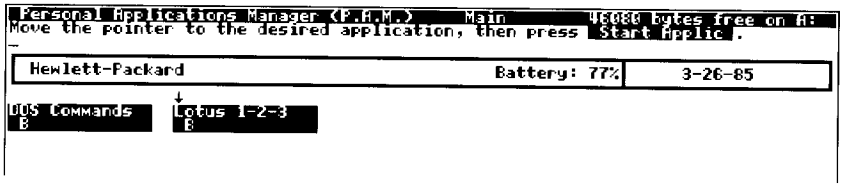
Refer to chapter 7 to learn how the computer utilizes user memory.

1. **Make sure that you have sufficient memory in drive A to store your work when you're done.** This is *not* necessary if you have an external disc drive, which gives you practically unlimited storage.
   - Check that you have enough user memory remaining to store a new file. This status is shown in the very top line (right-hand corner) of the main P.A.M. screen, where it says something like `133224 bytes free on A:`. There are no hard and fast rules as to how much is enough—it depends on the application as well as the length of your work (file). The application's manual should give you an idea of this.
   - Check the overall memory *allocation* in the System Configuration (press `System Config` from the main P.A.M. screen). To maximize the memory available to store files, increase the size of `Edisc` versus `Main Memory`. (Total user memory minus 80K is the largest possible allocation for Edisc.) Note, however, that main memory needs to be big enough to run the application program, as explained after step 4.

- If maximizing `Edisc` memory still doesn't get you as much electronic-disc (drive A) memory as you need, you might have to delete older stored files to make room for new ones. Your other alternatives are to add to user memory with a memory card, or to use an external disc drive for storage (on discs) of old or new files.

Selecting the Application

2. Select the main P.A.M. screen. (It's usually there when you turn the display on. If it is not, refer to page 3-7 for instructions on finding it.)
3. Select the application: move the pointer (↓) using the arrow keys to the application label you want. Suppose you have the Lotus 1-2-3 program for spreadsheets:



4. Press `Start Applic` (f1). That's it!

If there is not enough main memory to run the application program, the computer will let you know when you try to start the application. If you see the message, `Program too big to fit in memory`, then you must increase `Main Memory` at the expense of `Edisc` in the System Configuration. The manual for the application should give you its requirements for main memory.

- If the System Configuration will not let you expand main memory, then you should *pack* the electronic disc. Type `pack` (Return) in the main P.A.M. screen (in the command line). This consolidates the blank space on the disc. Try again to adjust main memory.

- If you cannot afford to decrease the allocation to Edisc, then you must gain memory by adding a memory card, transferring existing files to a diskette, or erasing some existing files.

Starting an Application Not Listed in P.A.M. What do you do if you look at the main P.A.M. screen but don't find the name of the application you want? Check that you have installed the module in the software drawer correctly. (If the application program is on a disc, check that the connection to the disc drive is not faulty, that the System Configuration is set to the proper number of external disc drives, and that all peripheral devices are on. Then press Reread Discs on the main P.A.M. screen.)

Assuming the hardware is in order, check the manual for the software. It could be that this particular application requires a different method of starting, such as typing its name in the command line.

Stopping an Application. To find out how to stop and exit an application, refer to the manual for the application. Many applications (such as MemoMaker, but not 1-2-3) use (f8) for Exit.

The MS–DOS Commands. A Portable PLUS without any added software still shows a label in the application menu for *DOS Commands*. This gives you access to the Disc Operating System. By communicating directly with the operating system, you can do some things that P.A.M. can't. Commands and instructions for MS–DOS are given in *Using the Portable PLUS*.

To exit MS–DOS once you've started it, type `exit` (Return).

Where to Go from Here

For more information on starting application programs, refer to chapter 1 of *Using the Portable PLUS*.

Chapter 7 will introduce you to using files, an integral part of using any application.

7 Working with Files

This chapter describes what *files* are and then explains several common operations for files: looking them up in a directory, creating them, printing them, and deleting them. For illustration, this chapter shows examples using files from Lotus 1-2-3, a popular spreadsheet application.

What Files Are For

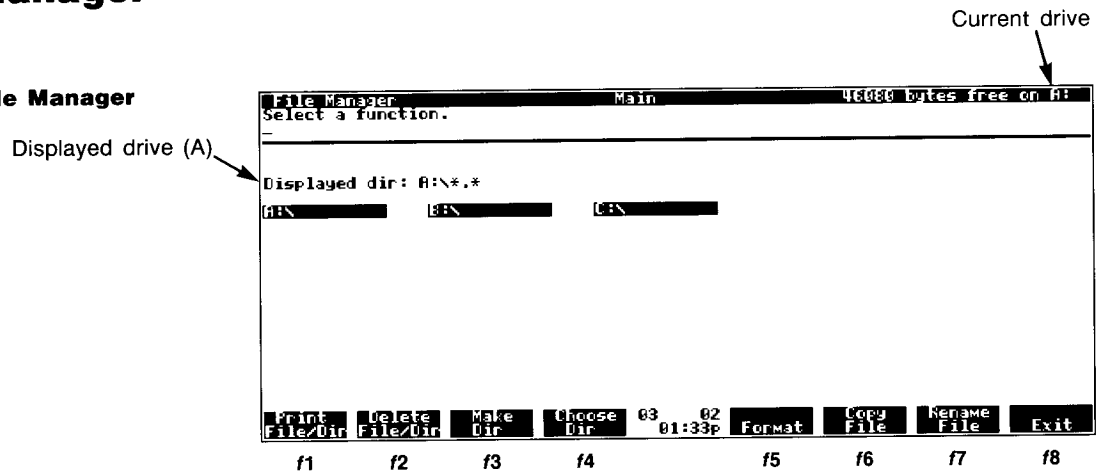
A file in a computer (or on a disc) is like a file in your desk: it's a convenient method to label, store, and retrieve work such as memos, graphs, and spreadsheets.

Some applications (software programs) require you to create and name a file before you can start working. Others, such as 1-2-3, let you start a spreadsheet first, then name (and create) the file for it when you're done. In either case, your work can only be stored if it is assigned to a file.

Using the File Manager

Take a look at P.A.M.'s File Manager: press File Manager ((f2)).

File Manager



Looking Up an Existing File

We will look here only at files stored in drive A, the (electronic-disc) drive inside the computer. To look at files on a regular disc, refer to chapter 5 of *Using the Portable PLUS*.

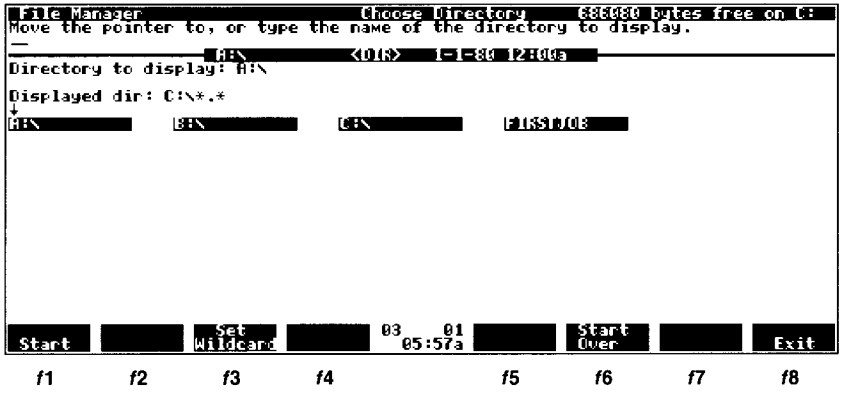
Directory of a Drive. The File Manager shows you a *directory* of existing files on a particular *disc drive*.

In the illustration above, the directory being displayed is for drive A. Since there are no files listed, no files exist on drive A. The labels for A:\, B:\, and C:\ represent the three drives present. (C is an external drive.)

Directory of Another Drive. If the currently displayed directory is *not* for the drive you want, choose the one you want.

1. Press Choose Dir ((f4)). You will then see a screen like this, which might show some files:

Choose Directory



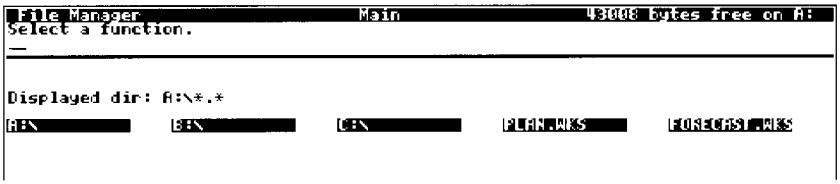
2. Move the pointer (using the arrow keys) to the drive you want.

Suppose the given displayed directory is for drive C, but you want to look at a list of files on A. You would move the pointer to A:\, which represents the directory for drive A. The line below the command line would now read `Directory to display: A:\` (Recall that the command line is the line with the cursor.)

3. Press Start (f1). The screen now shows you a list of all files on drive A.

If you saw this display, you would know that the 1-2-3 files `PLAN.WKS` and `FORECAST.WKS` were on drive A:*

Files on A



4. Press Exit (f8) when you're done. The main File Manager keys reappear.

* All 1-2-3 files are automatically marked with the extension `.WKS` for *worksheet*. This immediately distinguishes all 1-2-3 files from all others.

Creating a File

The File Manager does *not* create new files (although it can copy or rename existing files). Instead, *each individual application program creates and names new files.* In HP's Memomaker, for instance, you use File Keys and Save Memo to name and thereby create a file for a memo. In 1-2-3, on the other hand, you use the commands / F S (for *f*ile *s*ave).

Any file name can have up to eight characters (without spaces). The only characters you *cannot* use are . [ ] ? \ / = * : ; - < > . *File-name extensions* are also allowed: you can add a period followed by up to three characters to the rest of the file name.

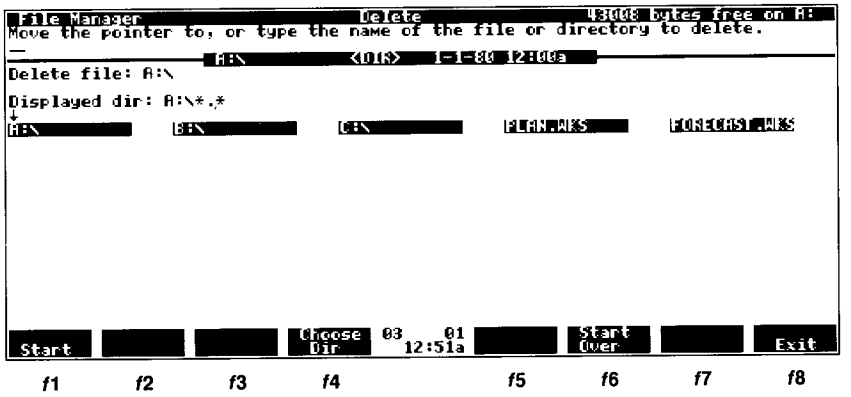
Examples of valid file names are: PLAN, PLAN.NEW, MEMO#5, and NEW_JOB.

Deleting a File

To delete a file:

1. In the File Manager, press Delete File/Dir ((f2)). You will then see something like this:

Delete File



2. Move the pointer to the file you want to delete. (If the file is not listed because it's on a different drive, use Choose Dir to change the drive.) You will see the name of the file appear below the command line.

For example, if you moved the pointer to the file name PLAN.WKS, you would see
`Delete file: A:\PLAN.WKS`

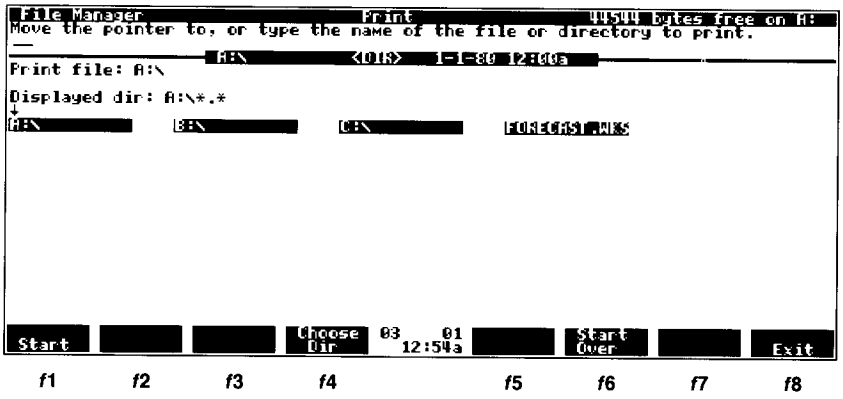
3. Press **Start** (f1). This deletes the named file.
4. Press **Exit** (f8) when you're done.

Printing a File

To print a file:

1. Make sure your printer is hooked up and turned on. (This is covered in chapter 4 for the Thinkjet, and in chapter 6 of *Using the Portable PLUS* for other models of printers.)
2. In the File Manager, press **Print File/Dir** (f1) to see a screen like this:

Print File



3. Use the arrow keys to move the pointer to the name of the file to print.

   If you chose FORECAST.WKS in this example, you would see the line
   `Print file: A:\FORECAST.WKS` beneath the command line.
4. Press **Start** to begin printing.
5. Press **Exit** when you're done.

Where to Go from Here

You should now be in good shape to use your Portable PLUS for everyday tasks. When you want to learn more (and there is a lot more power in this computer than we've covered in these seven chapters!), start looking through the main manual, *Using the Portable PLUS*. This is also a very handy reference book for looking up specific questions you have.

Remember that there is an index in *Using the Portable PLUS* for both it and this manual. There is also a List of Tasks after the Table of Contents in this manual. The *Using* manual has a glossary of terms.

HEWLETT PACKARD

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