

HP 95

Utility Pack

**Essential Programs for the
HP 95LX Palmtop PC**

**By
Richard E. Harvey**

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Introduction

MS-DOS 3.22 on the HP-95 is shy of some of the functions we often take for granted in other versions of MS-DOS. The Filer takes up some of the slack. This package fills-in more of the blanks and adds some new features.

Everyone who frequents the personal computer world collects utility programs. As time moves on, the goodies directory grows, often with forgotten utilities. We'll try to help fill the goodies directory on your HP-95, but with 8- or 16K-worth, instead of a few megabytes.

The HP-95 stores files in multiples of 512 bytes. If a file grows to just 513 bytes, the computer will store it in 1024 bytes-worth of disk space. These utilities are mindful of that 512 byte boundary.

When possible, and when we can do it without compromising functionality, we'll keep programs under 512 bytes. For instance, FATTR.COM is 512 bytes, while the comparable program in MS-DOS 5.0 is about 15K, and PLAY.COM is about one-twentieth the size of BEEP.EXE from the Norton Utilities. In fact, the largest program in this package is only 4K.

Belying its size and unique looks, the 95 is really quite compatible with traditionally-styled computers. Most of these programs will run on other PC compatible computers. Several programs automatically adjust to the HP-95 display; TMORE.COM, for instance, displays 40 columns and 16 rows on the HP-95, but may display several times more information on your desktop PC. Some, like PLAY.COM, require hardware compatibility. Just a couple will run only on the HP-95; we'll include compatibility information when we discuss each program. These programs require DOS 2.1 or later.

These programs were written in assembly language on a desktop PC-compatible. Programs were transferred to the HP-95 over the RS-232 interface using whatever communications program was handy; the 95 seems willing to talk with any communications program.

Using this Manual

Begin with the "Getting Started" chapter, starting on page 7, it's a review of installing and running programs under MS-DOS.

Once you've had a look at running DOS, back-up to "The Programs" section, beginning on page 3. That's a topical cross reference to programs and files included with this package. When you find an interesting sounding program title, turn to the "Software Reference," starting on page 16, for complete program descriptions. Of the more than thirty programs in this package, 95.COM, DIRS, FATTR, SIFT, TMORE and WINK.SYS are probably the most useful; they're the first programs you'll likely want to try.

The last part of this book, beginning on page 44, is "Program Listings." With those listings, you can use many of the programs from this package even if you don't have access to a disk drive. And you don't have to be a programmer.

Look for README.TXT on the disk for last-minute addenda and hints, additions or changes.

Conventions

Examples in this manual are in upper case, fixed-pitch type. DOS commands are not case-sensitive; you can type commands and program listings in upper- or lower-case.

We'll always show arguments entered on the command line with the program name. Remember that most programs will ask for arguments if you execute them from the Filer.

More Information

The 95 Utility Pack is a companion to the book *Explorer's Guide to the HP-95LX Palmtop Computer*, available from where you purchased this package. Together, these products are "Implements of instruction," dedicated to help you get the most out of your HP-95.

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Getting Started

Here's square one. This section includes information about loading and running programs on the HP-95. It is not a DOS tutorial, but it does discuss some of DOS' quirks, features and foibles.

File Names

Most program names are long and descriptive, and hopefully memorable. If you find conflicts with your other programs or if you simply don't like the program names, feel free to rename any files.

Some names are always reserved by DOS; if you rename TTYPE.COM to TYPE.COM, it won't be found by DOS unless you always type the extension. In fact, DOS doesn't even look at the extension you enter on the command line; you could enter TTYPE.PROGRAM and it would ignore anything after the period and still run TTYPE.COM.

MS-DOS recognizes four types of program files, represented by unique file name extensions. COM files (short for "command") and EXE (an abbreviation of "executable") are compiled programs. SYS (for "system") files are executable programs, usually called "device drivers," that are loaded when your computer first boots. File names ending with BAT are batch files, containing a series of commands—much like you'd enter from the keyboard—in a readable, English-like language. You can list or even edit batch programs. COM, EXE and SYS programs are in a machine-readable language; list one of these files and you'll see why they call this stuff code.

Most of the programs in this package are in the .COM file format. The .EXE file format begins with a header of at least an extra 512 bytes, and because of this extra overhead, EXEs load slower than COM programs. For small programs, there isn't much useful information in the header; the HP-95 can make better use of that memory elsewhere. Writing 30 COM programs instead of 30 EXEs saves 15K of disk storage space—and nearly cuts the size of this package in half. To save memory in a program you'll probably use all the time, WINK.SYS is a device driver.

Programs and Paradigms

Software falls into a few general categories; let's call them batch, filter and interactive. You enter a series of commands and the batch-style

program goes about its business without any further intervention; FORMAT works something like this.

A filter modifies the results of another process; akin to pouring the output of one program through another. Perhaps that's why DOS frequently uses terms like "Output streams." MORE—or TMORE.COM, included in this package—is a simple filter.

Finally, an interactive program is there for your bidding; it continues monitoring your keystrokes until you make it stop. Lotus 123 is an interactive program. When practical, the programs in this package blur the lines between program types.

Pipes, Filters and Redirection

The command line is the line you type with a program name. Stdin (short for "Standard input") is usually a synonym for the keyboard; when a program asks you for data, it reads it from stdin. DOS makes this distinction because the command line is a fixed number of characters, while stdin may be any length at all. When a program uses stdin, you can use I/O (Input/Output) redirection to have it read a file or even the output from another program instead of the keyboard.

Stdout usually means the display, too. Most of these programs display through stdout—using the satisfyingly named "Stream output"—so that you can redirect the information to another file or even to the printer.

There are several ways to redirect the stream, and each method is represented by a symbol. Here is a summary of how they are used:

Symbol	Operation
>	Redirects output to a file or device. If output is going to a file and the file already exists, the original file is replaced by the new file.
>>	Appends redirected output to a file or device. If the output is a file and the file already exists, the information is appended to the end of the file.
<	Use this symbol to read data from a file instead of entering it from the keyboard.
 	The piping symbol. You use it to redirect output from one program to stdin of another program. The second program is usually a filter or searching program.

Output Redirection with >

One of the most common uses for output redirection is to print a directory listing using DOS' DIR command:

```
DIR > PRN
```

For a printed listing of all directories, you can use the DIRS program:

```
DIRS > PRN
```

Sending the results to a file is much the same.

```
DIRS > DIRLIST.TXT
```

If the program takes command line arguments, include them after the program name but before the redirection symbol:

```
DIRS *.COM > PROGLIST.TXT
```

Output Redirection with >>

The problem with redirecting output to a file is the original file will be overwritten by the new information. DOS is ahead of us on this one, the ">>" symbol appends the output to the end of a file. Say you want a list of just TXT and Lotus 123 files, use ">" symbol to create the file, then ">>" to append the rest of the information:

```
DIR *.TXT > DATALIST.TXT
```

```
DIR *.WK* >> DATALIST.TXT
```

The Input Redirection Symbol <

Think of input redirection as something like TYPE, but instead of displaying the information, it is "Typed" to another program. This example says to DOS "Send the file README.TXT to SIFT:"

```
SIFT < README.TXT
```

The Piping Redirection Symbol |

Piping is perhaps a little more difficult to visualize. This example runs DIRS, redirecting the output to SIFT. Then, SIFT will see the data as coming from stdin, and will format it accordingly. Then the output from SIFT is redirected to a file called DATA.LOG:

```
DIRS | SIFT > DATA.LOG
```

Piping isn't as mysterious as it sounds. What actually happens is DOS runs the first program, redirecting the output to a temporary file. When the first program ends, DOS runs the second program, redirecting the contents of the temporary file to stdin. And finally, when the second program ends, DOS erases the temporary file.

Some simple filters that require redirection will "swallow-up" your keystrokes until you press Ctrl-C if you forget to redirect a file to them. In fact, if you want to stop them any time before they're finished working, Ctrl-C is the only way; DOS' MORE program works like this (though TMORE, in this package, doesn't). If Ctrl-C doesn't work, it's

because you've pressed another key which is still in the key buffer; in that case press Ctrl-Break. You can press Ctrl-S to pause, then any key to resume.

See SIFT.COM, beginning on page 37, for more about I/O redirection.

Loading the Programs

The HP-95 Utility Pack includes standard low-density disks, readable by most PC compatible computers. Please make a back-up copy before using these disks.

Create a directory on your PC, say C:\BIN, and copy the program files from your distribution disks to your hard drive. If the utility disk is drive A and your hard disk is C, you might use commands something like:

```
MD C:\BIN
COPY A:. C:\BIN
```

You can try most programs on your PC before transferring them to your HP-95. When you've decided which programs you'd like to use on your 95, simply connect the computers with the HP 8222A Serial Interface Cable then transfer the files using any PC communications program and the HP-95's Comm program.

If you don't have access to a PC you still have a couple of options. We've included DEBUG scripts for the most important programs. See "Program Listings," beginning on page 44, for information on typing and converting the programs. If you'd rather not enter the code manually, contact the author for information about having programs recorded on your RAM card.

Running the Programs

There's no blue launch-key for DOS programs! You can either select the programs from Filer or move to DOS and execute the programs by typing the file name. For example, 95.COM displays information about your computer. You can include a command with the file name; this example shows the help screen:

```
95 HELP
```

Don't enter the program extension with the program name, it's ignored anyway, and DOS will search for .COM, then .EXE and finally .BAT files, regardless of the extension you enter.

If you're using the HP-95's Filer, there is, in fact, no way to enter a file name on the command line—there is no command line—you just move

the highlight to the 95.COM entry and press F4. In that case, 95.COM will ask you for commands. 95.COM, and other programs in this package that need information from you use a colon (":") as the command prompt; when program space permits, they also include the program name. Here's 95.COM's prompt:

95: _

The flashing cursor follows the colon. Type your command then press Enter. Press Ctrl+C (hold down the Ctrl key while you press C then release both keys) to cancel and exit the program. You can also exit programs by pressing Enter without typing any command.

Some programs display lots of information. SIFT, for instance, can send reams of information streaming off the top of the display. You can pause the flow by pressing Ctrl+S, then press any key to continue. The keyboard repeat rate can leave extra keys in the keyboard buffer, so you'll have more consistent results if you press Ctrl+S to pause the display, then Ctrl+S again to continue.

Even if you use output redirection, errors messages and program information will still be sent to the LCD display.

If you like, you can run filters like SIFT without any file name; they'll pause and ask you for the name of the file. The disadvantage of this method is that if you redirect the output, you'll also redirect the file name you type, so you won't see the file name as you type. The programs will pause and ask you for a file name, but you won't be able to see what you are typing (what you type goes to the file instead of the display).

Memory Requirements

These utilities are designed to save disk storage space and run-time memory requirements. However they do require some additional memory available when they run. Most programs require 2-4K; a few, like DIRS, require as much as 8K. In the unlikely event that there is insufficient memory to run, the programs will simply exit, no damage done.

Making Room for DOS

You can leave the cozy-confines of the Filer by pressing Menu then selecting System. When you're done, you can return to Filer by typing EXIT. This doesn't, however, give you all available memory.

You can toggle between the convenience of ROM-based applications and the freedom and efficiency of DOS. When you're done with this

section you will have created two batch files and one configuration file (there are examples on disk if you want to cut down on your typing), and you'll be using a program to reboot the computer.

If you start from plain-DOS, you won't have access to Lotus 123, the Filer or other built-in software, but you'll have lots of extra memory for running DOS applications. Since most of DOS is in ROM, the computer needs only about 18.5K of memory—freeing about 81,800 bytes of additional memory!

Switching between ROM and DOS isn't as complicated as it sounds. The two files to remember are DOS.BAT and ROM.BAT. When you run DOS.BAT from Filer, it will reset the computer in plain-DOS mode. When you want to return to the HP-95's ROM-based applications, run ROM.BAT from the DOS command line. Here are the files we'll need:

File Name	Purpose
CONFIG.SYS	Installs drivers and the command shell.
AUTOEXEC.BAT	Commands to interpret after booting.
DOS.BAT	Reboots the computer at the DOS prompt.
ROM.BAT	Reboots the computer the built-in applications.
REBOOT.COM	This program reboots the computer.

CONFIG.SYS

The trick is a file named CONFIG.SYS, which the 95 will look for in the root directory. If the file exists, the computer will execute commands in the file when it boots; otherwise it'll ignore AUTOEXEC.BAT, and you'll end-up back in ROM.

To force the computer to boot from DOS instead of ROM, add a "SHELL=" line to CONFIG.SYS. For the HP-95, we use the driver COMMAND as the shell, for other computers we would use COMMAND.COM; the HP-95 will use the ROM-resident command interpreter instead of loading COMMAND.COM. Here's a simple CONFIG.SYS file.

```
DEVICE=WINK.SYS
SHELL=COMMAND /P
```

The DEVICE command loads WINK.SYS, a cursor enhancer. Don't forget the /P at the end of the SHELL statement. If you do, and you accidentally type EXIT, you'll exit to... nowhere!

AUTOEXEC.BAT

After CONFIG.SYS, the computer will interpret AUTOEXEC.BAT. AUTOEXEC.BAT is required when you start from DOS. Otherwise, every time you boot the computer you'll have to manually set the clock. It may seem like an obscure ritual, requiring a batch file that doesn't do anything, just to keep from having to set the clock. You can make it seem a bit less odd by adding some useful commands to AUTOEXEC.BAT.

AUTOEXEC.BAT is a regular batch file, it can execute any commands or programs you like. This example sets the prompt to display the current drive and directory name and sets the PATH to include the root and _SYS directories, as well as a directory named C:\BIN, where you'll likely have useful programs concealed (for instance, you might put 95.COM and ROM.BAT in the \BIN directory):

```
ECHO OFF
PROMPT $P$G
PATH=C: \ ; C: \_SYS ; C: \BIN
```

When you boot from ROM, the computer (maybe unfortunately) does not read AUTOEXEC.BAT. All of those commands will go unnoticed (but the clock gets set anyway).

DOS.BAT

Next, you have to give your 95 a boot to the head. Actually you have to do a "Warm boot," which just stops everything and restarts the computer in a civilized state. You can do this manually by pressing Ctrl+Alt+Del, or you can use either REBOOT.COM or 95.COM to boot for you.

The example batch files show REBOOT.COM. If you're using 95.COM anyway, you can replace the calls to REBOOT to the boot function of 95.COM. This will save 512 bytes of disk space and make it less likely that you or a coworker will accidentally reboot the computer.

Here are two batch files that restart the computer with the ROM applications in charge (ROM.BAT) or with DOS in control of the computer (DOS.BAT):

```
ECHO OFF
ECHO DOS.BAT resets the 95 to DOS.
ECHO Press ^C to cancel
PAUSE >NUL
REN C: \CONFIG.TMP CONFIG.SYS
C: \BIN \REBOOT
```

ROM.BAT

The last file you'll need is ROM.BAT. This program changes the name of CONFIG.SYS to CONFIG.TMP then reboots the computer.

```
ECHO OFF
ECHO ROM.BAT resets the 95 to ROM apps.
ECHO Press ^C to cancel
PAUSE >NUL
REN C:\CONFIG.SYS CONFIG.TMP
C:\BIN\REBOOT
```

Notice that we included the complete path with REBOOT ("C:\BIN\REBOOT"). If REBOOT.COM is not in that directory, change the path to the complete name of where you'll find the program. You can eliminate the PAUSE in both batch files once you're comfortable with them.

The HP-95 won't allow you to run a program from Filer if any other applications are running. If Filer lets you run the program, then you've already closed any data files. Now, if you're in Filer and want to restart at the DOS prompt, make sure all other applications are closed, then move the highlight to DOS.BAT then press F4. The computer will restart. The screen will show something like:

```
Copyright (c) 1991 Lotus Development Corp.
All Rights Reserved
Copyright (c) Hewlett-Packard 1990
Copyright 1984,1985
Phoenix Software Associates Ltd
Version A
```

```
C>echo off
C:\>_
```

You are at the DOS prompt... completely. If you press the blue Filer, Comm or even the 123 key, nothing will happen. And even typing EXIT leaves you at the DOS prompt (this might be a good time to show a PCX graphic file that says "Don't Panic!"). To get back to the ROM applications, type ROM; a few copyright screens will flash-by, then you'll be back in ROM, safe and sound.

If you are using CONFIG.SYS when booting from ROM (to load device drivers like WINK.SYS), you can modify DOS.BAT and ROM.BAT to switch between the two versions of the file. You might name one of the files CONFIG.DOS and the other CONFIG.ROM. Then change the REN statement in DOS.BAT:

```
COPY C:\CONFIG.DOS C:\CONFIG.SYS
```

Now change the REN statement in ROM.BAT to:

```
COPY C:\CONFIG.ROM C:\CONFIG.SYS
```

When you run ROM.BAT or DOS.BAT, the timeout setting will be set to five minutes. If you prefer a different timeout, you can add a 95 TIMEOUT command to AUTOEXEC.BAT. Nothing after the REBOOT will be executed, so you'll have to call 95.COM again after the computer reboots.

HP-95LX Business Card

Normally when there isn't an application running the HP-95 displays a graphics screen called a "Business card," stored in the file C:_DAT\TOPCARD.PCX. You can save a bit of disk space by deleting this file (there's a back-up copy of that file always in C:_SYS, so don't worry about losing the file). Either delete the file from Filer or exit to DOS and enter:

```
DEL C:\_DAT\TOPCARD.PCX
```

The HP-95 will display the current time and date over your graphics screen only if the file is named TOPCARD.PCX, and the file must be in the C:_DAT directory. You can use the copy of TOPCARD.PCX stored in ROM, in the hidden C:_SYS directory, though the time and your name won't be displayed.

Go to the setup program (press Shift+Filer) then select Owner. Now select Picture-File and type:

```
C:\_SYS\TOPCARD.PCX
```

For a bit more style, try this picture file, in the hidden _SYS directory:

```
C:\_SYS\1000.PCX
```

Now, when no applications are running, the computer will display a stylized \$1000 bill.

PCX Files

We've included some other graphics files with this package. You can use them as the start-up card, or display them with PCX.COM.

The HP-95 can display monochrome (one bit per pixel) PCX files as large as 240 by 128 pixels (2.50 by 1.33 inches). You can create pictures from scratch with a paint program on your PC. It might be easier to start with an existing image; you may want to copy TOPCARD.PCX or 1000.PCX to your PC.



Software Reference

This section describes each program. Most programs are easy to use after you've tried them once, but please read this section first; you may find different ways to use programs you didn't expect.

95.COM

HP-95 only

Suppose you want to change display contrast, disable the `PrtSc` key or check the back-up battery level. You could write a little program for each of those tasks, but that would take at least 512 bytes of storage for each utility. How about a single program that does those things, and more? That's the idea behind 95.COM: it does more than twenty tasks, useful for day-to-day life with your HP-95, yet it's small enough to justify its disk space if you use only a few features. A side benefit is that each function shares features—and code—for flexibility and sophistication as well as saving memory. This program runs only on the HP-95.

Enter the program name, a space, and the command. This example disables the `PrtSc` (print screen) key:

```
95 PRTSC OFF
```

You can also run the program without any arguments (such as from `Filer`). This is interactive mode, you can enter one or more commands then press `Enter`. The program executes those commands then asks you for fresh commands. When you are done, press `Ctrl+C` or press `Enter`.

To see if `PrtSc` is active, type a question mark after the command:

```
95 PRTSC ?
```

The program also displays information about the computer. This next example displays the battery level:

```
95 BATTERY
```

Only the first two characters of command names are important (except the `BOOT` command, explained later). You can enter the examples as:

```
95 PR OFF  
95 BA
```

Save a bit more typing by combining commands in a single call to 95.COM. Separate arguments with commas or just spaces, whichever you find most readable. This example disables `PrtSc` then displays the battery level:

```
95 PRTSC OFF BATTERY
```

Like most programs in the HP-95 Utility Pack, 95.COM isn't very picky about how you enter commands. Several commands take Boolean (on or off) arguments. SCROLL, for instance, can be ON (non-zero) or OFF (zero), or none of the above (the question mark). You can shorten the commands by using 0 (the number zero) for OFF and 1 (the number 1, or another non-zero value) for ON. In fact, you could also use T (for TRUE) or F (for FALSE). You could type the example using a zero:

```
95 PRTSC 0 BATTERY
```

Some of the functions are useful mainly for batch files. Most of these functions return error level values. The results of the last command you executed will return a value to DOS when 95.COM exits.

95.COM Options

Here's a summary of 95.COM features. Following this table is a discussion of each feature.

Keyword	Purpose
BATTERY	Displays battery levels.
BOOT	Reboots the computer.
CAPS	Turns Caps lock on or off.
CONTRAST	Sets LCD display contrast.
CURSOR	Sets the cursor shape.
FLUSH	Flushes the keyboard buffer.
HELP	Displays a list of options.
INSERT	Turns insert mode on or off.
KEYWAIT	Waits for the next keystroke.
MEMORY	Displays available memory.
NOW	Shows current time and date.
PORT	Plug-in card port information.
PRTSC	Enables or disables PrtSc key.
REPEAT	Sets keyboard repeat rate.
SCROLL	Turns scroll lock on or off.
SYSINFO	Summary of system info.
SERIAL	Enable or disable serial port.
SLEEP	Turns the computer off.
TIMEOUT	Sets display timeout interval.
VOLUME	Sets speaker volume.
WAIT	Wait for a key or time to pass.
WIRE	Set serial port to wire or I/R.

95 BATTERY

The HP-95 Setup screen shows system battery as an ambiguous battery gauge; it doesn't display backup battery status. The BATTERY function in 95.COM reports levels for system (the two AA batteries) and backup (coin-shaped) batteries, and shows results to 1/10th volt. Run this report periodically as batteries age and you'll gain some insight about when it's time to carry spare batteries.

New batteries report about 3.0 volts. When system batteries dip below 2 volts, the computer displays "Low Main Battery" each time you power-up. When the batteries drop to 1.8 volts, the computer shuts-down until you replace the batteries. You can't just wait for tired batteries to recover a bit then try again, because a built-in fail-safe requires the batteries to recover to 2.5 volts (very unlikely) before the computer will return to normal. This sample report shows the main battery just marginal at 2.1 volts and the backup battery at full-steam (3 volts):

System battery: 2.1V, backup: 3.0V

The "Low Backup Battery" message is displayed when the backup battery drops below 2.5 volts.

The BAT function sets error level 0 if main battery voltage is at least 2.5, error level 1 for 2.0-2.4 volts, and error level 2 if it dips below 2 volts.

95 BEEP

Does a short, one-note beep. Use this function to test the speaker level when setting the volume (see page 21).

95 BOOT

Reboots the computer, much like pressing Ctrl+Alt+Del. It does not reset the RAM-disk. There is no abbreviated form of BOOT, you must spell the entire word. Anything after BOOT will be ignored.

95 BOOT

When you change system configuration, you usually have to reboot for the changes to take effect; a batch file can reboot automatically by calling this function. This feature is also available in REBOOT.COM (documented on page 36). See "Making Room for DOS," starting on page 11, for a practical use for this function.

95 CAPS ON/OFF/P

This function turns the caps lock key on or off.

95 CONTRAST 0-15/P

The contrast function sets LCD display contrast.

95 CURSOR 0-7,32/?

This function changes the cursor size. The cursor size grows from the bottom (scan line 7) of the 6x8 character cell. By setting the starting scan line, you can change the cursor shape. This creates a block cursor:

95 CURSOR 0

Starting at line 0—the top of the character cell—creates a cursor from 0 through 7, which is a solid, flashing block on the HP-95. If you specify 6, the cursor will flash on lines 6 and 7. You can turn the cursor off by specifying an unusually large cursor setting (above 31).

This setting won't apply to ROM-based applications. If you'd like a more permanent fix, try WINK.COM (see page 41) or WINK.SYS.

95 FLUSH

This function flushes (deletes) waiting keys from the keyboard buffer. The computer remembers up to the last 15 keystrokes; you can use this function to discard any waiting keystrokes so they will not be seen by subsequent programs. The error level returned is for the oldest keystroke. This function is most often used in batch files.

95 HELP

This function displays a help screen, listing commands recognized by the program. 95.COM also recognizes /? or /H as help.

95 INSERT ON/OFF/?

Turns keyboard insert mode on or off.

95 KEYWAIT

The KEYWAIT function waits for the next keystroke. It returns the error level for the key read. ASCII codes will be returned as upper case equivalents; for instance "A" and "a" will both return 65.

95 MEMORY

Displays amount of memory available. This function returns an error level representing available memory. Less than 100K available is returned as 0, less than 200K is 1, and so forth.

95 NOW

This function displays the current time and date in the format:

4:23 pm Wed, Sep 04, 1991

95 PORT

Displays information about a plug-in card.

95 PRTSC ON/OFF/?

If you've accidentally hit the PrtSc key when the printer is turned off or the serial port is the printer and you're using the serial port for something else, you know about delays and panic. This function enables or disables the PrtSc key; the example turns off the PrtSc key:

95 PRTSC OFF

The Shift+PrtSc key combination will be ignored until you turn it back on with this function or until you reboot. This function affects only PrtSc; you can still use your printer with other programs.

95 REPEAT 0-30-31

The 95 REPEAT function sets keyboard repeat rate. The two values are the amount of time to wait before repeating a key, and the delay between additional repeats, called "Typematic." The longer the repeat wait, the less likely you'll accidentally repeat keystrokes. The longer the typematic rate, the slower keys will repeat. This example sets a half second delay before and a typematic of 10 cps:

95 REPEAT 1,12

Both arguments are required, separate them with a comma or space.

These tables list the valid arguments. First the delay before keys repeat:

Argument	Delay
0	.25 sec.
1	.50 sec.

Argument	Delay
25	.75 sec.
26	1 sec.

And the typematic—keyboard repeat—rate:

Typematic	CPS
0-7	30
8-11	15
12-15	10
16-17	7.5
18-19	6.0
20-21	5.0
22,23	4.3

Typematic	CPS
25	3.3
26	3.0
27	2.7
28	2.5
29	2.3
30	2.
31	2.0

95 SCROLL ON/OFF/?

Turns the scroll lock key on or off.

95 SERIAL ON/OFF

Turns the serial port on or off. Disabling the serial port when it's not needed can extend battery life. SEROFF.COM, which we'll discuss on page 37, also turns off the serial port.

95 SLEEP

Enters sleep mode. The display and keyboard shut-down until you tap the ON key. This feature is also available in SLEEP.COM, see page 39.

95 SYSINFO

Summary of system information. For a quite different look at your 95—or another PC-compatible—try PCINFO.EXE, explained on page 30.

95 TIMEOUT 30-3640/P

The HP-95 will time-out (turn off the display and go to sleep) after a period of inactivity, most often five minutes. The 95 TIMEOUT function changes this value to anything up to about one hour. Enter a delay from 15 through 3640 seconds. The example sets a two-minute timeout:

```
95 TIMEOUT 120
```

A value of 0 disables timeout—use this value with caution because batteries will quickly drain. Avoid settings below 30 seconds because the 95 will keep falling asleep in the middle of things.

Internally, the timeout is calculated in clock ticks, which occur about 18.2 times per second. The TIMEOUT function rounds to 18 ticks per second, so settings will be inaccurate by about one percent.

When you reboot, the timeout value returns to 5 minutes.

95 VOLUME 0-3

This function sets the speaker volume. Enter a value from zero through 3; you might follow the volume with the BEEP function:

```
95 VO 2 BE
```

95 WAIT 0-180

Wait for a keystroke or for a specified period of time to pass, whichever occurs first. Specify a number of ticks to wait (a tick is approximately 1/18 second). This function is available in WAIT.COM, see page 41.

95 WIRE ON/OFF

Sets the serial port to the wire or the infra red port.

BEEP.COM

This little program plays a short, four-note beep on your 95's speaker (reminiscent of the HP-41 calculator).

```
BEEP
```

We've included the assembly language source code for this program. If you own Microsoft MASM 6.0 or later, or Borland's TASM, you can edit BEEP.ASM to add, delete or change the sounds.

To play custom tunes, see page 35, and try PLAY.COM.

BW80.COM

Not HP-95

This program is not designed to run on the HP-95! BW80 is useful if you have a composite monochrome monitor connected to a color CGA card or a laptop computer with an LCD display that wakes-up in color mode. Most software checks the video mode, then tries to display in color—unfortunately many colors are invisible on some displays.

BW80

BW80 can be used like the DOS command **MODE BW80**, but it's a bit faster and takes very little disk space compared to **MODE.COM**. Place **BW80.COM** on your boot disk and run it from **AUTOEXEC.BAT** when you turn on your computer.

CHECK95.COM

This program is a batch file enhancer. It returns an error level value: true (1) means the computer is an HP-95, false (0) means it's not.

DIRS.COM

DIRS, short for **DIR Search**, locates a file or group of files on a disk. Think of it as a variation of **DIR** that will also search subdirectories; this is similar to **DIR/S** in MS-DOS 5.0. Don't be surprised if **DIRS** shows you files you've never seen before; unlike **DIR**, it also displays directory entries for hidden and system files.

Include a partial path to restrict the search; wild cards are allowed. Limit the search, for example, to all files with the **.DOC** extension:

DIRS C:\WORD*.DOC

This locates and displays a list of all **.DOC** files in the **\WORD** directory and subdirectories sprouting off of **C:\WORD** (such as **C:\WORD\LETTERS*.DOC**), but ignores your **C:_DAT** directory. If you don't include any path, it'll search the entire disk. Press a key to pause, or **Ctrl-C** to cancel the search. **DIRS** uses a clean, simple format: names are upper case and indented, the path is lower case and left justified:

```
c:\word\doc\  
  README  DOC      54321 Sep 10 90 8:45p
```

Here are some typical DIRS search patterns:

Command	Results
DIRS	Show all files on the disk.
DIRS *.DOC	All DOC files on the disk.
DIRS \DOS\	Files in \DOS\ directory and subdirectories off of \DOS\.
DIRS \WORD*.DOC	DOC files in \WORD or subdirectories.

If you organize files in groups of related subdirectories, DIRS can simplify finding and displaying lists of files. Say \123\ is your spreadsheet directory, and \123\BUDGET\, \123\PROJECT\ and \123\SALES\ sprout off that directory, use DIRS to display a list of files in those directories:

```
DIRS \123\*.WK?
```

Specify just a file name and DIRS will act like a simple file finder, something like Norton's FF.EXE (though DIRS.COM is smaller and runs faster), searching through the whole disk for matching files:

```
DIRS LOSTFILE.*
```

When DIRS is done, it displays a tally of the number of matching files found and the total of their sizes:

```
17 files,      176342 bytes
```

- ❑ If DIRS doesn't seem to find any files, it may be because you've included spaces in your response or more information than is needed.
- ❑ If the program has been working for a few seconds but doesn't seem to be getting anywhere, stop and try it again with a different file path.
- ❑ If you include only a directory path, not a file name, be sure to end the line with a backslash character.

DISKSIZE.COM

For those times when you would like to know how much space is available on a disk but you don't want to wait for CHKDSK and you don't need all the information PCINFO.EXE offers, try DISKSIZE. It's the disk-equivalent of MEM.COM:

```
DISKSIZE
```

Add a drive letter if you'd like information about another drive:

```
DISKSIZE A:
```

DISKSIZE reports disk space, bytes used, and remaining space:

```
362,496 total disk space
333,824 bytes used
28,672 bytes available
```

DISP.COM

Imagine how useful ECHO would be if it let you display any characters. That's the idea behind DISP. Whatever you enter on the line is displayed without modification... *except* if you use the command character `/`. If a number follows the slash, it is interpreted as a one to three digit decimal number representing a character code. Slash has several uses:

Code	Results
/000	Slash followed by a 1-3 digit number enters a character code as a number.
//	Displays a slash character.
/D	Displays the current date.
/T	Displays the current time.
/	If at the end of the line, it suppresses the carriage return/line feed.

No extra spaces are added around text, be sure to add needed spaces:

DISP Today is /d, at /t.

Time and date stamps are usually for logging system activity, so the format is compact. The date is represented as "Sep 04-91" while the time is shown as "20:45:12" in a 24-hour clock. If you need a more elaborate time and date, try the NOW command in 95.COM (see page 19).

Everything is interpreted exactly, if you want to enter a number immediately following the code, make sure to use three digits for the number, adding leading zeros if necessary. The following prints CHR\$(27)+"8" without the carriage return or linefeed.

DISP /0278/ > PRN

All values from 0 through 255 are permissible, though be sure that whatever device you are directing the string to can handle the characters. Here are some common codes that DISP lets you enter:

Code	Character
/7	Bell (beep).
/8	Backspace.
/10	Linefeed.
/12	Formfeed.
/13	Carriage return.
/27	Escape.
/60	< Less than symbol.
/62	> Greater than symbol.
/124	Vertical bar.

This next example resets some printers then sounds the bell (character 7). We've used the code /64, but that's the same as character 64, the "@"

DISP /27/64/7/ > PRN

DISP also lets you enter characters that DOS uses for redirection. Here's an easy way to use < and > characters without redirection:

DISP Press /60Enter/62 to continue...

The example is displayed as:

Press <Enter> to continue...

FATTR.COM

Short for File Attribute, FATTR modifies file attributes. You can change files to read-only or hidden, and change them back again.

FATTR is similar to ATTRIB.EXE, furnished with many versions of DOS (though not DOS 3.22), though it does not support ATTRIB's /S switch. FATTR can also make files hidden or un-hidden (this feature was introduced in MS-DOS 5.0). Enter a file specification (with wild cards, if you like) and any of these switches:

Set	Clear	Operation
+ A	-A	Set or clear the archive bit.
+ H	-H	Hide or un-hide.
+ R	-R	Make read-only or modifiable.
+ S	-S	Mark as a system file.

If you omit these switches, FATTR displays attributes for matching files without changing any files. This example displays the attributes for all .COM files in the current directory:

FATTR *.COM

You can make programs read-only, adding a bit of security in case you accidentally enter DEL *.* , with the following:

FATTR +R MYPROG.COM

Later, if you decide to delete a program, you can change the read-only attribute back to normal:

FATTR -R MYPROG.COM

There are a few points to keep in mind when using FATTR:

- ❑ FATTR cannot change the status of files in ROM, such as the hidden ROMDUMMY files and the files in the HP-95's C:_SYS directory, though it can display information about those files. If you use FATTR to try to change files in ROM, the computer will display "Write protect error writing drive C, Abort, Retry, Ignore?" Press I to ignore the file, and FATTR will move on to the next file.

- ❏ You can hide program files and still be able to run the programs from DOS (not from Filer, it can't find them!), but you can't delete them and they don't show up in directory listings.
- ❏ Try setting a directory to read-only to protect files in the directory.
- ❏ You can hide many types of files, but be sure the applications you're running can still find them! If you hide 123.CNF (in the root directory), for instance, Lotus 123 won't be able to update the file.

FCRYPT.COM

This program encrypts or decrypts a file using a binary XOR-NOT algorithm. Encrypt or decrypt the file by calling FCRYPT again using the same password. Enter the command line something like:

```
FCRYPT FILENAME.TXT
```

If you don't specify a file name (or the program can't find the file), FCRYPT will ask you to enter the name of a file.

Next, FCRYPT will ask you for a password. The password can be up to the length of the command line; the longer the string, the more difficult it will be to "crack" the password.

Finally, FCRYPT will ask you to enter the password again, to confirm that you typed it accurately.

So, how does FCRYPT know whether to encrypt or decrypt your file? It doesn't! Each time you run FCRYPT reverses the effect of the last program run. A short demonstration will make it easier to understand how the encryption works. The letter "A" is ASCII code 65. Say your password is "*", with a value of 42. XOR 65 with 42 and you'll get 107 (which happens to be the letter "k"). Now do a NOT and you end up with 148 (the character "ö"), which is what FCRYPT will write to your file.

Next time through, you'll use the "*" password again, though now your file contains "ö". When you XOR with 42, it becomes 190. Finally, when you NOT it, your original "A" is back.

Breaking the "*" code would be fairly painless. Using NOT when we're done helps a bit, but more important is a long password. As FCRYPT reads your file, it matches a different letter of the password to each character in your file; when it reaches the end of the password, it starts at the beginning again. The longer the password, the more challenging it is for the snooper to figure out what's happening.

For an added level of security, you could run FCRYPT twice, using a different (and different length) password each time through, then reverse the process to decode the file. After the second encryption pass, your file will look curiously English-like, but the words won't make sense to anyone over two years old.

- ❑ The password is treated literally. Space characters, while invisible on the command line, are counted in the password string. Upper- and lower-case characters are treated differently, and any characters are allowed in the string. Use a variety of characters for more security.
- ❑ Use a long, memorable password. The longer the password, the more effective the encryption.
- ❑ The password is not included in the file—it is not saved anywhere! If you forget the password, you won't be able to restore the file!
- ❑ The file is encrypted in place, no back-up copy is created. The file length does not change.
- ❑ Test the program first only with back-up copies of your files.
- ❑ The program is a “toggle.” Each time you run it with the same file and the same password it changes from encrypted to un-encrypted.
- ❑ Avoid files with long repeating series of nulls; this will repeat the password, only slightly encrypted, making it a breeze to guess the key. Avoid .EXE programs, which begin with a few hundred null bytes.
- ❑ If you are encrypting a program file (.COM or .EXE file extension), change the file extension to something benign and not executable. If you try to execute the program, you'll surely hang the computer—with some possibility of serious repercussions.
- ❑ Don't interrupt FCRYPT's work or your file may be damaged.
- ❑ This is not a bullet-proof encryption scheme. This program is only reasonable protection. Like locks on doors, if somebody wants to break-in, this program cannot stop them. The only truly secure method is to not make important files available.

FTD.COM

FTD, short for File Time and Date, modifies file time and date stamps without changing the contents of files. There is no equivalent of FTD in DOS, but it is similar to—and a bit easier to use than—touch utilities available on some bulletin boards.

Using FTD is much like using FATTR: you specify a file, with wild cards if you like, along with the new file date and time stamps. This example changes all .TXT files to December 24, 1991 at 11:50 pm. Notice that the time is entered in 24-hour format, and midnight through 12:59:59 am is entered as hour 00.

```
FTD *.TXT 12/24/91 23:50
```

Note that we didn't enter any command line switches; FTD can tell file names from time and date specifications by the slash or colon or minus sign in time and date stamps. It really doesn't matter what order you enter the arguments; for instance, all of the following do the same thing:

```
FTD 9/4/91 8:45 *.ASM
```

```
FTD *.ASM 09-04-1991 08:45
```

```
FTD 9-4-91 *.ASM 8:45
```

The program is sort-of intelligent. It can tell the difference between times and dates and file names. However, if you enter more than one file name or date or time, FTD will remember only the last one (very short memory).

FTD will update all files to the current date if you enter only a name without a time/date stamp (FATTR just shows matching files). You can enter the date without any year and FTD will assume the current year. If you specify only a time or a date, only that field will be changed.

GETKEY.COM

GETKEY waits for the next keystroke then returns the key code as an error level. Letters "a" through "z" are returned as upper case equivalents (65-90). Nothing is displayed.

```
GETKEY
```

See also page 30, PAUSE95.COM.

INTR.COM

INTR displays a multi-column table of the segment and offset for interrupt vectors. Often this is just a curiosity, you'll know when you need it.

```
INTR
```

All of the numbers the program displays are hexadecimal. The first number in each column is the interrupt number. Following are the segment, a colon, and the offset within that segment where the interrupt vector lives. An "r" following the interrupt vector means the interrupt

points to a simple do-nothing instruction (an IRET instruction). Here are some typical interrupts:

```
00=0234:56EA
01=0070:075Cr
```

The second line in the example ends with “r” to signify an IRET. If you’ve run the PRTSC function of 95.COM to disable the PrtSc (print screen) key, you’ll also notice an “r” next to interrupt 05. Run 95.COM again to turn PrtSc on, and the “r” will disappear.

You can also tell INTR which interrupt vectors to display. Include a hex number in the range of 0 through FF, and INTR will begin the list at that value. This example will show interrupts beginning at 97:

```
INTR 97
```

You might run INTR, then load a RAM-resident program, then run INTR again to see how the table changes. Borland SideKick 1.56, for example, hooks interrupts 08, 09, 10, 13, 16, 1C, 21, 25, 26 and 28. Usurping interrupt 08 means that SideKick snags control of your computer 18.2 times per second—whether it’s active or sitting quietly in the background!

Try using INTR to find an address of an interrupt vector, then run DEBUG and look at the code executed by the interrupt.

When installing a mouse—on your desktop PC, you might also be installing a serial port, or network adapter—note how these interrupt numbers map to the IRQ hardware interrupts. This explains the mess involved installing a bus mouse, internal modem, and network card at the same time. *The MS-DOS Encyclopedia* (from Microsoft Press) explains these conflicting interrupts. Here’s a cross-reference between interrupt and HP-95 IRQs:

IRQ	Int	IRQ Meaning	Interrupt Meaning
0	08	Timer	286 Double fault.
1	09	Keyboard	286 Segment overrun.
2	0A	Miscellaneous	EGA retrace.
3	0B	Keyboard/touch panel	COM2
4	0C	UART	COM1, 286 Stack segment overrun.
5	0D	Infrared	Fixed disk, LPT2.
6	0E	Disk	Floppy disk.
7	0F	RTC (LPT1)	LPT1.

MEM.COM

MEM displays available system memory, excluding memory used as a RAM disk. It is similar to MEM.EXE, furnished with DOS 4.0 and later. Use MEM instead of CHKDSK.EXE when you just want to see memory information. Here's a typical MEM report:

```
1,024 K EMS memory
 768 K EMS available
458,752 bytes main memory
 86,016 bytes used
372,736 bytes available
```

MEM displays main (conventional) memory and EMS memory (bank-switched, Enhanced Memory Specification). If no EMS is available, the report will include only conventional memory. The HP-95LX currently supports only conventional memory—but we're prepared.

MEM returns an error level representing memory. Less than 100K available is returned as 0, less than 200K is 1, and so forth.

PAUSE95.COM

PAUSE95 works like DOS' PAUSE command, but it's customized for the HP-95, and may extend battery life. Use it just like PAUSE:

```
PAUSE95
```

You can suppress the "Press any key to continue. . ." prompt by redirecting it to the null device:

```
PAUSE95 > NUL
```

We've included a second version, called PAUSE2.COM, that's just for fun. To save disk space, try the PAUSE function in 95.COM instead of this program. See also page 28, GETKEY.COM.

PCINFO.EXE

This program looks at your computer the same way many sophisticated application programs do (though in a bit more detail), and describes the computer in a formatted report. PCINFO is designed to run on most PC-compatibles; it runs just fine on the HP-95LX, a testament to the compatibility of the 95, but you'll get more 95-specific information from 95.COM (see page 16).

If some programs are acting odd, run PCINFO and note any inconsistencies between what it says and what your computer is supposed to look like. When a program or piece of hardware fails to work as it

should, run PCINFO before you call your dealer. Run the program simply by entering the name at the DOS prompt:

PCINFO

Much of the information PCINFO displays is about disk drives. You can specify which disk drive to check after the program name:

PCINFO C:

If the drive you specify isn't available, or if you don't specify a disk drive letter, PCINFO displays information about the current drive.

Here is a typical report from PCINFO. Unless otherwise listed, all values are reported in bytes.

```
1 CPU family: 80286 12:15 am Sat, Oct 27 1990
2 No Math coprocessor reported, no coprocessor available
3 BIOS identification: 252 09/28/88; PC/AT
4 Video type: 80 by 25, color text
5 Active display: 256K EGA color
6 Current video mode: 3 80 by 25, color text
7 Memory: 655,360 available: 568,336
8 Environment: 304 available: 46
9 EMS expanded (3.2): 786,432 48 pgs; avail: 786,432
10 XMS manager installed Extended memory: 327,680
11 Logical drives: 5 floppy drives: 2
12 Disk drives found: A: B: C:
13 Drive C: type: 248 fixed disk, 16-bit File Alloc.
14 Disk space: 31,827,968 available: 8,398,848
15 Bytes per sector: 512 sectors per cluster: 4
16 Bytes per cluster: 2,048 total clusters: 15,541
17 2 button mouse version: 6.10 IRQ 5; interface: InPort
18 Serial port(s): 1
19 Printer port(s): 2; LPT1 not ready; LPT2 ready
```

1) CPU family, time and date

An 8088 or NEC V-20 is in the 8086 family, while the 80386SX is in the 80386 family. The time and date are on the right.

2) Math coprocessor Installed

This test asks the BIOS if there is a math coprocessor (80x87) installed. It then checks for an operating coprocessor. If both tests don't agree, it is likely that the computer is configured incorrectly, and either a motherboard switch is set wrong or the computer setup program needs to be run again.

3) BIOS Identification:

This reports the ID byte of the ROM BIOS and what many programs assume the byte means. If it says that your computer is a PC/XT when it's actually an 80286 machine, you might mention the anomaly to the computer manufacturer. It doesn't check the actual copyright notice in the ROM, since applications shouldn't be expected to look there. If a ROM date is found (not all manufacturers include it), it's also shown.

4-6) Video type

These lines describe your video display. This a none-too-snoopy search, a bit more than the average application program can be expected to do. When there is any doubt, it will call it a CGA card. If the display is in video mode 7 and PCINFO identifies it as CGA, it's MDA-like (such as the original IBM PC convertible or the HP-95 Palmtop PC).

7) Main memory

This is the amount of conventional memory the computer tells applications to expect to find. The second value is available memory after loading DOS and any resident programs. This is similar to the CHKDSK memory report.

8) Environment, available

Whenever you use "COMSPEC=" or "PATH=", DOS stores it in a common memory-pool called the environment. If the environment is small, some programs may have trouble running. With DOS 3.3 or later, you can change the environment size in CONFIG.SYS with something like:

```
SHELL C:\COMMAND.COM /E:384 /P
```

Running PCINFO from another program instead of from DOS will report available environment space inaccurately. The HP-95 will usually show zero space, though you can still dynamically allocate environment variables.

9) Expanded memory

This test looks for an EMS controller program. It doesn't snoop around if there is no expanded memory manager. The usual page size is 16K bytes, so available memory is listed as pages*16384.

10) Extended memory

This is AT memory, found only on 80286 or later processors. The 8086 can only recognize up to 1 megabyte of memory, extended memory lives beyond that 1 megabyte wall.

There are several (mostly incompatible) ways programs use extended memory. Some programs simply use the memory without leaving any indication (if you are using a program like this, available extended memory won't account for what the program uses). Other programs attempt to fool the computer into believing there's less available memory than there really is (they then take control of the hidden memory).

We now have XMS memory managers, which work something like EMS, mediating requests for extended memory and minimizing conflicts. If your computer uses an XMS memory manager (such as Microsoft's HIMEM.SYS), the report will include "XMS manager installed." The size will be decreased by the amount of memory reserved by the driver (usually 64K) and by any programs already using XMS memory.

11) Logical drives reported, Floppy drives

12) Disk drives found

DOS usually reports 5 "Logical drives" to programs, regardless of the number of physical drives there really are, which explains why you can't always blame programs if they need help to figure out which drives to use. "Floppy drives" is the number of floppies the computer reports.

The third value is the number of logical drives the program has found while (politely) looking around. Many people assume that if they find drive F, all drives from A through F exist. This is not always the case; you may in fact find logical drive Z in a computer with only two or three physical drives.

13) Drive C: type

This is how DOS identifies disks to itself. The first number (248 in the example) is the media ID byte, followed by an interpretation of that byte. If it's a fixed- or RAM-disk, we'll also tell you if it has 12-bit or 16-bit File Allocation Tables; A 16-bit FAT indicates the potential to use large disks.

14) Disk space

Shows, in number of bytes, the size of the disk and the amount available. If it's a new disk without anything on it, a discrepancy between these numbers means that there are hidden files or bad sectors; use CHKDSK to be sure.

15-16) Bytes per sector, Bytes per cluster

The sector is the smallest physical storage space on a disk. We multiply sector size by sectors per cluster to find bytes per cluster; in the example, it's $512 \times 4 = 2048$. This is important if you have many small files on the disk, since disk space is allocated by clusters, and even the smallest files occupy at least one cluster, even if they are only a few bytes long.

The HP-95 stores files in 512 byte units; about as efficient as you can get. Early versions of DOS require as much as 8K minimum per cluster, which can waste a lot of disk space. This is a good enough reason to use

newer version of DOS on your desktop PC, though it will require you to reformat your hard disk. Each DOS version seems to format hard disks a bit differently, so it's usually best to reformat when you upgrade DOS—DOS 5.0 can usually be installed without reformatting your hard disk (finally!). Newer DOSes can read and write floppy disks written by older DOS'.

17) Mouse Information

If your computer has a Microsoft-compatible mouse and you have run **MOUSE.COM** (or included **DEVICE=MOUSE.SYS** in **CONFIG.SYS**), this line displays information about the mouse and mouse driver. It may show odd information if your mouse isn't Microsoft compatible. The IRQ number can be helpful when diagnosing conflicts between a bus mouse and serial ports. In the example the mouse driver version is 6.10, this is the earliest version that most newer programs will support. As of this writing (August, 1991) the current Microsoft mouse driver is version 8.0, updated for the Microsoft BallPoint pointing device..

18) Serial port(s)

Shows how many serial ports or modems are installed. It does not differentiate between the wired and infrared serial ports on the HP-95.

19) Printer port(s)

This shows how many printer ports are installed. It then tests each port.

PCX.COM, PCXS.COM

HP-95 Only

These programs display PCX graphics files. Used with **GETKEY**, **WAIT** and **PLAY**, you can create graphics demonstrations. Picture files must be 240x128 pixels, one color plane, the format as the HP-95 business card.

PCX C:_SYS\1000.PCX

If the file is not found, no error message is displayed; the program just returns an error level. If there was an error while reading the file, the screen will be cleared.

There are two similar programs: **PCX.COM** and **PCXS.COM**. The first program, **PCX**, displays the graphics image and waits for a keystroke, then clears the screen and returns to text mode. The **PCXS** program, on the other hand, displays the picture then exits, leaving the graphics image on the screen. To return to text mode, run the **TEXTMODE** program or display another file with **PCX**.

PCXINFO.COM

How do you tell what kind of a PCX file it is without loading it into a viewer? Ask PCXINFO to display information about the file:

```
PCXINFO *.PCX
```

PLAY.COM

HP-95 or PC

The PLAY program plays a series of tones through the HP-95's speaker. You can specify a series of notes on the command line, redirect a file to the program, or enter notes interactively.

PLAY

The program will ask you to enter notes to play. At the "play:" prompt, enter frequency (37-5000Hz) followed by duration in 1/18th seconds (2-100). You can include one or more notes on the line. For reading ease, separate the frequency and duration by a comma, period or colon. When you're done playing, press Ctrl+C or press Enter.

If you'd like, you can enter the notes on the command line when you run the program. This example plays four notes:

```
PLAY 300,4 400,4 600,4 880,4
```

You can also use redirection to give PLAY a file to interpret. This example plays BACH.TXT, a sample file included with this package.

```
PLAY < BACH.TXT
```

If you include a command line full of data and also redirect a file (it could happen!), PLAY will play-back the command line before the file. Redirection is always required for reading a file because the command line is reserved for entering notes directly. This example plays an 880 Hz note then pauses for one half second then reads TUNES.TXT:

```
PLAY 880,5 0,9 < TUNES.TXT
```

PLAY really isn't very picky about line format. You can enter a single note per line, or stuff as much on one line as you like. Also, any character with ASCII code 47 or below (including, but not limited to: /-.,+#!) is ignored, so you can use any comfortable delimiter characters. The tune will end if PLAY finds an unrecognized delimiter, unmatched frequency and duration, or the letters A-Z.

- ❑ The redirected file can be up to 8K long, with any number of notes on each line. Only a space is required to separate notes, though you can place them on separate lines.

- ❏ If a simpler, four-note beep will do, you could use BEEP.COM. Or use ECHO with the bell character. Type ECHO, then a space, then press Ctrl+G (the display will show “ECHO ^G”).
- ❏ If you specify a frequency below 37Hz, no sound will be emitted, but the program will pause for the specified duration.
- ❏ PLAY.COM runs on the HP-95 and on most PC-compatible computers. It may not run on less-than-compatible computers.

RANDWORD.COM

RANDWORD displays a multi-column list of 8-character random words. Each word contains letters a-z, with common letters appearing more frequently, in a pseudo-random sequence. This program is useful for creating passwords and encryption keys that are not easily guessed. Type the program name or select RANDWORD.COM from Filer:

RANDWORD

Passwords that have personal meanings (like your mother’s maiden name) are convenient and easy to remember, but they are also easy to guess. A random password—if you can remember it—adds an extra level of security.

REBOOT.COM

REBOOT resets the computer, much like pressing Ctrl+Alt+Del. It does not affect the contents RAM disks. When you execute REBOOT, the computer immediately resets—no confirmation, no protection.

REBOOT

REBOOT is useful if you sometimes run the programs in ROM, but at other times want extra memory available to run DOS applications. See “Making Room for DOS,” starting on page 11, for more information. The boot function is also available in 95.COM.

RENAME.COM

RENAME works like DOS’ RENAME (REN) to rename a file. With DOS 3.0 or later (including 3.22 on the HP-95), RENAME can also rename subdirectories. Separate the old and new names with a space:

RENAME OLDNAME.DOC NEWNAME.DOC

It can also move a file to another directory on the same disk drive. It simply moves the directory entry to the new directory, the file isn’t changed. RENAME cannot move a file to another disk drive.

This little program turns the serial port off to extend battery life.

SEROFF

The seroff function is also available in 95.COM. See page 20.

SHOWKEYS.COM

This program displays scan and character codes, as well as characters, for each key you press. Press Esc to quit.

SHOWKEYS

SHOWKEYS reads keystrokes through the BIOS, so input redirection and external keyboards (installed with DOS' CTTY command) are ignored. The HP-95 will return some odd keystroke combinations, and some combinations you'd expect to only find on an IBM PC/AT with a 101-key keyboard. Press Ctrl+Up and SHOWKEYS will display:

c Scan 141, code 000

The "c" means the Ctrl key was pressed, and the scan code was 141; since it's a special key, there is no character code, so the program displays "000". Now try the same thing with Shift+Ctrl+Up:

cs Scan 132, code 000

The "s" means the shift key was pressed, and the scan code changes to 132. Here are the possible combinations returned by the A key:

Scan 030, code 097 "a"

s Scan 030, code 065 "A"

c Scan 030, code 001

a Scan 030, code 000

The HP-95, recognizes *both* shift keys as the left key. As far as programs can tell, there is no right shift key ("But I see it right there..."), however there are two lefts! So that's all SHOWKEYS will return.

SIFT.COM, SIFTHIGH.COM, SIFTI.COM, SIFTWS.COM

These are filters. That is, they sift-out or modify unprintable characters from a file. There are four variations on this theme:

- ❑ SIFT is useful for sending a file to the display or printer without extraneous characters mucking-up the view; it ignores all unprintable characters, turns tabs (ASCII 9) into a single space, carriage returns (13) or vertical tabs (11) are turned into carriage return/line feed.

- ❑ SIFTHIGH translates all high-order characters (those above 126) to displayable characters. Line drawing characters become “|+” characters and foreign characters are Americanized.
- ❑ SIFTI is the international version of SIFT; it also recognizes foreign language characters.
- ❑ SIFTWS maps all characters above 127 to the value minus 127. This is useful for viewing files written with programs like WordStar that use these characters for special purposes.

So how do you decide which program to use? You could try each one and see which does a better job, but there are some general guidelines: If it's a program file (COM or EXE extension), you'll probably get the most useful information from SIFT. If it's a WordStar file, use SIFTWS. For non-English text files, try SIFTI. SIFTHIGH is used less frequently because it returns lots of garbage characters; if you know the file has foreign language or box drawing characters that your printer can't handle, try SIFTHIGH.

Of these four utilities, SIFT is probably the most useful, so we'll use it in the examples, though all four work exactly the same. To look at a file, simply enter the file name on the command line. For example, to look at RANDWORD.COM, use the following:

```
SIFT RANDWORD.COM
```

This will show the text from the file without any of the garbage characters. To pause the display, press Ctrl-S, then any key to continue, or press Ctrl-C to stop the program.

The SIFT utilities are often used with redirection. Use the “<” redirection symbol to point a file at SIFT:

```
SIFT < RANDWORD.COM
```

You can redirect in the other direction at the same time. This example takes README.TXT and redirects the sifted output to the printer:

```
SIFT < README.TXT > PRN
```

This says to DOS: “Send the contents of the file README.TXT to SIFT.COM, and send whatever SIFT returns to my printer.” The original file, README.TXT, isn't changed in any way. And, since SIFT doesn't require input redirection, you can make the above look a bit less confusing:

```
SIFT README.TXT > PRN
```

You can do the same kind of thing by sending the contents of one file through SIFT into a new file, thus removing the garbage characters.

Since the ">>" redirection symbol appends to the end of a file, you can use SIFT to add several files together. Simply run SIFT again for each file, using ">>". This example uses ">" to create the file, then ">>" to append files to the end. When you are done, you'll have created a forth file, OUTPUT.TXT, with the tidied-up text from the three original files.

```
SIFT < FILEA.TXT > OUTPUT.TXT  
SIFT < FILEB.TXT >> OUTPUT.TXT  
SIFT < FILEC.TXT >> OUTPUT.TXT
```

You can also use SIFT with piping. The piping symbol is "|". That is, if another program supports output redirection and you aren't sure that your printer can handle the characters, send it through SIFT. While RANDWORD.COM is polite and only uses printable characters, let's assume here that it isn't, and you want to send the output to the printer:

```
RANDWORD | SIFT > PRN
```

Finally, you can use SIFT without specifying a file name (such as from the HP-95 Filer). It will stop and ask you to enter the name.

SLEEP.COM

HP-95 only

SLEEP turns the computer off.

```
SLEEP
```

When you press the ON key, the computer continues from exactly where it left-off. If you were running a batch file, the next line in the file will be read. This program runs only on the HP-95.

The sleep function is also available in 95.COM. See page 21.

TEXTMODE.COM

HP-95 only

This program restores text mode after a graphics program (like PCXS) has left the computer in graphics mode. It clears the screen and restores the cursor to normal shape and places it in the upper-left corner of the screen. TEXTMODE is a simple replacement for MODE.COM, furnished with most versions of DOS.

```
TEXTMODE
```

TMORE.COM

This utility will display any file. When it reaches a screen-ful, it will display "-More-", asking you to press a key to continue. See the similar program TTYPE for more information.

A simpler program, MORE.COM, is often included with DOS. MORE is Traditionally used as a pipe from another program; you might display a file a page at a time by piping it through MORE:

```
TYPE README.TXT | MORE
```

You can do it that way with TMORE, or just enter the name directly:

```
TMORE README.TXT
```

If you're using batch files written for other PC-compatibles, you can re-name TMORE.COM to MORE.COM for compatibility. There are a few difference between this program and DOS' MORE.

- ❑ Each version of MORE will only work with its DOS version.
- ❑ If you execute MORE.COM without a program name it will hang until you press Ctrl+C. TMORE will ask you for a file name.
- ❑ MORE expands tabs to 8 places, but not if you redirect output.
- ❑ The bell character (ASCII 7) makes the computer beep with MORE; TMORE ignores the bell and other undisplayable characters.
- ❑ MORE.COM stops when it finds an end of file marker (ASCII 26).
- ❑ TMORE erases the "-More-" prompt; DOS' leaves it there.

TTYTYPE.COM

TTYTYPE is a convenient way to display files on the HP-95's 40-column screen. DOS' TYPE displays text in 80-columns, even on the HP-95. TTYTYPE—as well as the similar TMORE—wraps text at 39-columns on the HP-95, expands tabs with spaces, and strips-out undisplayable characters.

Unlike TYPE, TTYTYPE works with or without redirection:

```
TTYTYPE README.TXT  
TTYTYPE < README.TXT
```

Normally tab stops are at eight character positions, but the slash switch lets you adjust tab stops to any value you like. This example displays the README.TXT formatted with 4-space tab stops:

```
TTYTYPE /4 README.TXT
```

UNCOMMON.COM

Short for UNassemble COM to MONitor, UNCOMMON.COM translates a COM file into a script compatible with DEBUG.EXE. It also displays the file size and a checksum in hex (DEBUG does everything in hex). Listings in this manual were created with UNCOMMON.

The command line looks something like:

```
UNCOMMON COMMAND.COM > COMMAND.SCR
```

The program displays the script with ten bytes per line, formatted for a 40-column display; you can use output redirection, as shown above, to save the information in a file.

UNCOMMON can convert any file up to 64K, not just COM files. But remember that the output will be three times larger than the original. For instance, you could create a DEBUG script from TOPCARD.PCX.

If you transfer programs using X-Modem protocol with the HP-95's COMM program, files will be padded with end of file markers (ASCII 26) or null bytes (ASCII 0) to even 128-byte boundaries. This will make subsequent checksums and file sizes different from those listed in this manual, though it will not affect how programs run—if they ran the first time, padding the end of files won't change anything.

WAIT.COM

This program waits for a keystroke or for a period of time to pass. WAIT is useful when you are displaying a series of screens and want the process to continue unattended if necessary. Specify a number of ticks to pause (a tick is approximately 1/18 second). This example will pause for two seconds:

```
WAIT 36
```

The delay will be canceled if the user presses a key. If you need to delay until the user presses a key, without any time-out period, use DOS' internal PAUSE command (or PAUSE95). 95.COM also contains the WAIT function, see page 21.

WINK.COM

HP-95 Only

The HP-95's display is legible and sharp—under most conditions. Face it, though, the cursor is sometimes difficult to find. This Terminate and Stay Resident (TSR) program beefs-up the one- or two-scan line cursor to a large flashing block. WINK intercepts attempts to set a skimpy-little cursor, but it won't stop programs from hiding the cursor when it could be a distraction.

Run WINK only once, whenever you boot your computer:

```
WINK
```

WINK uses a square block cursor, not quite full-size, which is quite legible on the HP-95. It's also appropriate for programs that alternate be-

tween underline and full block cursors (usually designating insert or overtype mode). You can customize the beginning line of WINK's cursor to create a big block (0) or a skinny line (7), or anywhere between; this example sets a full-size cursor:

```
WINK 0
```

Some cursor utilities cause a double-blinking cursor: a flashing underline, followed by a solid block. The cursor flashes even when it's supposedly hidden. There's also a slight performance penalty because they gain control of the computer at each clock tick. Finally, Alt+Cursor key tracking works sporadically, if at all. WINK tries to transparently overcome these issues.

If you're using HP-95 Application Programming Interface programs, you'll notice that the hotkeys no longer work after you load *any* TSR. If this is a problem, use WINK.SYS.

WINK.SYS

HP-95 Only

WINK.SYS is a device driver version of WINK.COM. You don't need to run both WINK.COM and WINK.SYS. Pick whichever program you find most convenient.

Add the following line to CONFIG.SYS, and WINK.SYS will load automatically when you boot your HP-95:

```
DEVICE=WINK.SYS
```

Like WINK.COM, you can specify the cursor starting line:

```
DEVICE=WINK.SYS 0
```

WINK.SYS uses approximately 240 bytes of memory, about half that required by WINK.COM. It's compatible with System Manager, so HP-95 add-in programs can still run with a hot key.

WORDS.COM, WORDSI.COM

WORDS counts words, sentences and paragraphs in files of any length. WORDSI is the international version of WORDS, recognizing not just A-Z, but international characters; it's a bit larger, but it's also ten to fifty percent slower than WORDS. All of the following command lines are acceptable:

```
WORDS  
WORDS README.TXT  
WORDS < README.TXT
```


As it runs, WORDS displays the number of bytes it has read. When it's finished, the report looks something like:

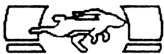
```
47,616 Bytes
31,664 Characters
7,538 Words
557 Sentences
351 Paragraphs
```

The characters count includes all non-blank characters. The words field shows the number of blank-delimited words. Sentences is the number of groups of words followed by a period, exclamation mark or question mark; multiple punctuation is ignored. Paragraphs is the total number of carriage return characters in the file. Modern text editors (like the HP-95 Memo program) do automatic word-wrap; they treat a paragraph as any series of characters followed by a carriage return / line feed combination, and they move words between lines as you edit the file.

Remember that WORDS treats high-order characters (ASCII codes greater than 127) as blanks, while WORDSI recognizes foreign language characters, which will cause inaccuracies if you use the program to read text written by programs like WordStar. To count the words in a WordStar-style file, pipe the output from SIFTWS through WORDS:

```
SIFTWS WS.DOC | WORDS
```

To count the words in a file that contains extraneous high-order characters, you could instead give WORDS the results of SIFT or SIFTHIGH, just like you do SIFTWS.



Program Listings

This section includes listings for several of the more useful programs. These listings were created by UNCOMMON.COM. If you don't have access to a PC or a disk drive, you can enter these listings, called *scripts*, in text files, then redirect the files through DEBUG.EXE to create finished programs.

If you need listings for other programs, or you would like the programs recorded on other kinds magnetic media, contact the author.

Entering the Listings

By convention, we use the same name for the script file as for the original program, though with the .SCR extension. For instance, REBOOT.SCR is the script for REBOOT.COM. The HP-95 Memo program is fine for entering listings. Every line is less than 40 characters. Type each line then press Enter at the end of the line. You don't have to enter leading zeros, but including them will make it easier to spot errors. Place a ruler on the page and enter a single line at a time, rechecking as you go. Except for file names, there are no O (oh) characters; assume that "O" is the number zero, and "I" is the number one.

Creating the Programs

The HP-95LX includes the DOS' program DEBUG.EXE, though it is not documented and it's buried in the hidden C:_SYS directory. From the DOS prompt, send each script file through DEBUG:

```
C:\_SYS\DEBUG < REBOOT.SCR
```

This says to DOS: "Send the file REBOOT.SCR through DEBUG." DEBUG displays each line as it works. When it's finished you will have a file named 95.COM. Verify the checksum by running the COM file through UNCOMMON, redirecting the results to the nul device (since you really don't care what it's doing, you can just throw the information away); when it's through, UNCOMMON will display the checksum. If the checksum matches the listing, it's safe to run REBOOT.COM, otherwise there's a typing error, and you should check the script and try again.

```
UNCOMMON REBOOT.COM > nul
```

You can discard the script file when the program is ready to run. Page 40 describes UNCOMMON.COM. The *Explorer's Guide to the HP-95*, also by this author, includes more information about DEBUG.

95.COM (07E1)

N 95.com

E 100 B4 30 CD 21 3D 03 16 75 59 33
E 10A DB B8 D4 4D CD 15 81 FB 50 48
E 114 75 4C 80 FD 01 75 47 88 00 44
E 11E 33 DB CD 21 F6 C2 80 74 70 BE
E 128 80 00 AC 25 FF 00 74 06 95 E8
E 132 7E 01 75 34 BA DF 07 B9 03 00
E 13C E8 A7 02 BE 80 00 C7 04 4E 48
E 146 8B D6 B4 0A CD 21 AC AC 25 FF
E 150 00 95 C6 06 74 06 FF B2 0A B4
E 15A 02 CD 21 E8 52 01 75 08 A1 72
E 164 06 CD 21 E8 48 01 83 ED 02 79
E 16E 09 80 3E 74 06 00 75 C0 EB EA
E 178 AC BA E0 AC 25 DF 05 E8 45 01
E 182 BF B0 01 B9 1B 00 86 E0 0E 07
E 18C F2 AF 75 D2 83 C7 34 FF 15 EB
E 196 D0 81 FC 00 1A 72 C5 BE E1 08
E 1A0 33 DB B8 D6 B9 00 10 B4 3F CD
E 1AA 21 72 B5 95 EB B7 42 41 43 41
E 1B4 43 4F 43 55 48 45 49 4E 4B 45
E 1BE 4D 45 4E 55 54 49 57 41 50 4F
E 1C8 4E 4F 50 52 52 45 53 43 53 45
E 1D2 53 49 53 4C 53 59 56 4F 57 49
E 1DC 42 4F 46 4C 42 45 0F 1F 0F 48
E 1E6 2D 03 F8 04 5A 03 7F 03 DD 03
E 1F0 F4 04 52 05 C1 04 FC 04 6A 04
E 1FA A6 03 F5 03 D2 05 21 04 69 05
E 204 00 05 8B 05 A6 04 83 05 A6 04
E 20E 95 05 5B 04 B5 05 CC 03 50 03
E 218 DD 03 DD 03 DD 03 E8 91 00 74
E 222 34 3C 3D 74 2E 3C 30 72 2C 3C
E 22C 39 77 28 2C 30 98 46 4D 74 1D
E 236 93 B9 0A 00 8A 04 3C 30 72 12
E 240 3C 39 77 0E 2C 30 98 99 93 F7
E 24A E1 03 C3 93 46 4D 75 E8 93 F8
E 254 C3 46 4D 3C C0 F9 C3 E8 54 00
E 25E 74 50 3C 3F 74 4A 3C 30 72 0D
E 268 3C 39 77 09 E8 C0 FF 0B C0 74
E 272 33 EB 34 2A DF 3C 4F 74 12 3C
E 27C 54 75 05 E8 45 00 EB 25 3C 46
E 286 75 28 E8 3C 00 EB 19 46 4D 74
E 290 15 AC 4D 3C 20 76 0F 24 DF 3C
E 29A 4E 74 0C 3C 46 75 0F 45 4E E8
E 2A4 21 00 33 C0 C3 F8 B8 01 00 C3
E 2AE 46 4D F9 C3 0B ED 74 0E AC 3C
E 2B8 2C 74 04 3C 20 77 06 4D 75 F4
E 2C2 0B ED 03 4E C3 0B ED 74 09 80
E 2CC 3C 20 76 04 46 4D 75 F7 C3 E8
E 2D6 DA FF 74 06 3C 3F 75 02 4D 46
E 2E0 C3 92 1E 07 FD BB 0A 00 8B CA
E 2EA 33 D2 F7 F3 91 F7 F3 92 04 30
E 2F4 AA 8B C1 0B CA 75 ED FC C3 CD
E 2FE 15 83 F8 FF 74 20 25 FF 00 74
E 308 1B B2 05 F6 F2 48 3C 19 73 08

E 312 FE C4 3C 14 73 02 FE C4 88 26
E 31C 72 06 D4 0A 05 30 30 C3 C6 06
E 326 72 06 01 B8 3F 3F C3 BF E2 07
E 330 B8 01 50 E8 C7 FF 88 65 1E 88
E 33A 45 20 B8 00 50 E8 BB FF 88 65
E 344 10 88 45 12 8B D7 B9 24 00 E9
E 34E 93 00 E8 C2 FF B2 07 B4 02 CD
E 358 21 C3 E8 81 FE 72 06 93 B8 00
E 362 47 CD 15 B8 01 47 CD 15 A2 72
E 36C 06 D4 0A 05 30 30 86 C4 A3 10
E 376 08 BA 06 08 B9 0E 00 EB 67 E8
E 380 9C FE 72 08 8A E8 B1 07 B4 01
E 38A CD 10 B4 03 87 00 CD 10 8A C5
E 394 D4 0A 05 30 30 86 E0 A3 1C 08
E 39E BA 14 08 B9 0C 00 EB 40 33 C0
E 3A8 8E C0 E8 71 FE 72 1D 3D 08 07
E 3B2 76 03 B8 08 07 26 03 06 6C 04
E 3BC 97 B4 11 CD 16 75 09 CD 28 26
E 3C6 39 3E 6C 04 72 F1 E8 06 FF B4
E 3D0 11 CD 16 74 05 E8 7F 01 EB F2
E 3DA C3 EB 06 BA CE 06 B9 11 01 E8
E 3E4 EF FE B4 40 BB 01 00 CD 21 72
E 3EE 01 C3 B8 01 4C CD 21 E8 DD FE
E 3F8 BA 04 E3 EC BA 89 08 B9 09 00
E 402 8A E0 C0 E8 06 24 01 A2 72 06
E 40C 74 D8 BA 92 08 B9 20 00 F6 C4
E 416 10 74 CD BA A2 08 B9 10 00 EB
E 420 C5 E8 37 FE 72 11 1E BB 00 F0
E 42A 8E DB BA 53 FF 02 D0 B8 05 25
E 434 CD 21 1F B8 05 35 CD 21 B1 01
E 43E B8 4E 20 26 80 3F CF 75 05 FE
E 448 C9 B8 46 46 88 0E 72 06 A3 BE
E 452 08 BA B2 08 B9 10 00 EB 8B E8
E 45C FD FD 72 07 F7 D8 40 B4 49 CD
E 466 15 C3 12 00 E8 B1 FD 72 14 33
E 470 D2 F7 26 68 04 0B C0 74 05 3D
E 47A 0E 01 72 05 93 B4 46 CD 15 BF
E 484 CA 08 1E 07 B8 20 20 AB AB 33
E 48E D2 8E C2 26 A1 A3 04 F7 36 68
E 498 04 99 E8 44 FE BA C2 08 B9 14
E 4A2 00 E9 40 FF E8 29 01 E8 B9 FE
E 4AC E8 DD FE E8 D1 FF E8 E9 00 E8
E 4B6 3D FF E8 72 FE E8 79 FF E8 65
E 4C0 00 CD 12 99 BF 6D 08 E8 17 FE
E 4CA BB FF FF B4 4A CD 21 8B C3 99
E 4D4 B9 70 17 F7 F1 A2 72 06 99 8B
E 4DE C3 99 B9 10 00 F7 E1 BF 76 08
E 4E8 E8 F6 FD BA 63 08 B9 26 00 E9
E 4F2 EF FE B0 07 EB 0A B0 06 EB 06
E 4FC B0 05 EB 02 B0 04 97 33 C0 8E
E 506 C0 E8 51 FD 72 1A 8B CF 0B C0
E 510 75 0D FE C0 D2 E0 F6 D0 26 20
E 51A 06 17 04 EB 07 D2 E0 26 08 06
E 524 17 04 33 C0 8E C0 26 8A 16 17
E 52E 04 1E 07 BF 3A 08 B8 20 08 B9
E 538 07 00 8B 07 43 43 D0 E2 72 03
E 542 B8 20 20 AB 47 E2 F1 BA 2E 08
E 54C B9 22 00 E9 94 FE E8 80 FD CD

E 556	28	B4	10	CD	16	3C	61	72	06	3C	E 79A	20	30	2D	33	0D	0A	6D	65	6D	6F
E 560	7A	77	02	2C	20	A2	72	06	C3	E8	E 7A4	72	79	20	20	20	20	20	20	20	B3
E 56A	B2	FC	72	14	97	E8	AC	FC	72	0E	E 7AE	77	61	69	74	20	31	2D	31	38	30
E 574	8B	DF	8A	FB	8A	D8	81	E3	1F	03	E 7B8	0D	0A	6E	6F	77	20	20	20	20	20
E 57E	B4	03	CD	16	C3	E8	4F	FD	B4	42	E 7C2	20	20	4F	20	20	B3	77	69	72	65
E 588	CD	15	C3	E8	CD	FC	72	04	B4	4A	E 7CC	20	20	2F	4E	2F	4F	46	46	0D	0A
E 592	CD	15	C3	E8	86	FC	72	04	B4	48	E 7D6	6F	72	74	69	6E	66	6F	0D	0A	39
E 59C	CD	15	BA	09	E3	EC	C0	E8	02	24	E 7E0	35	3A	53	79	73	74	65	6D	20	62
E 5A6	03	04	30	A2	DE	08	BA	D6	08	B9	E 7EA	61	74	74	65	72	79	3A	20	30	2E
E 5B0	08	00	E9	31	FE	4E	4E	AD	25	DF	E 7F4	30	56	2C	20	62	61	63	6B	75	70
E 5BA	DF	3D	4F	54	74	03	E9	9F	FB	B8	E 7FE	3A	20	30	2E	30	56	0D	0A	43	6F
E 5C4	FF	FF	50	40	50	8E	D8	C7	06	72	E 808	6E	74	72	61	73	74	3A	20	20	30
E 5CE	04	34	12	CB	56	B4	2C	CD	21	1E	E 812	0D	0A	43	75	72	73	6F	72	3A	20
E 5D8	07	BF	AE	06	BB	70	6D	8A	C5	3C	E 81C	20	30	0D	0A	49	6E	43	61	4E	75
E 5E2	08	77	08	B3	61	0A	C0	75	02	B0	E 826	53	63	41	6C	43	74	53	68	4B	65
E 5EC	0C	3C	0C	76	02	2C	0C	D4	0A	05	E 830	79	20	73	74	61	74	65	73	3A	20
E 5F6	30	30	80	FC	30	75	02	B4	20	86	E 83A	49	6E	20	43	61	20	4E	75	20	53
E 600	C4	AB	B0	3A	AA	91	D4	0A	05	30	E 844	63	20	41	6C	20	43	74	20	53	68
E 60A	30	86	C4	AB	B0	20	AA	93	AB	93	E 84E	0D	0A	50	72	69	6E	74	65	72	20
E 614	AA	B4	2A	CD	21	BE	75	06	98	03	E 858	6E	6F	74	20	72	65	61	64	79	0D
E 61E	F0	D1	E0	03	F0	A5	A4	B8	2C	20	E 862	0A	4D	65	6D	6F	72	79	3A	20	20
E 628	AB	BE	87	06	8A	C6	98	03	F0	D1	E 86C	20	30	4B	2C	20	20	20	20	20	20
E 632	E0	03	F0	A5	A4	B0	20	AA	8A	C2	E 876	30	20	62	79	74	65	73	20	61	76
E 63C	D4	0A	05	30	86	C4	AB	B8	2C		E 880	61	69	6C	61	62	6C	65	0D	0A	4E
E 646	20	AB	B8	31	39	81	E9	6C	07	83	E 88A	6F	20	43	61	72	64	0D	0A	57	72
E 650	F9	64	72	06	83	E9	64	B8	32	30	E 894	69	74	65	20	70	72	6F	74	65	63
E 65A	AB	91	D4	0A	05	30	86	C4	AB		E 89E	74	65	64	20	43	61	72	64	20	49
E 664	B8	0D	0A	AB	5E	B9	1C	00	BA	AE	E 8A8	6E	73	74	61	6C	6C	65	64	0D	0A
E 66E	06	E9	71	FD	00	4C	00	53	75	6E	E 8B2	50	72	74	73	63	20	6B	65	79	3A
E 678	4D	6F	6E	54	75	65	57	65	64	54	E 8BC	20	4F	4E	20	0D	0A	54	69	6D	65
E 682	68	75	46	72	69	53	61	74	4A	61	E 8C6	6F	75	74	3A	20	20	20	30	20	20
E 68C	6E	46	65	62	4D	61	72	41	70	72	E 8D0	73	65	63	2E	0D	0A	56	6F	6C	75
E 696	4D	61	79	4A	75	6E	4A	75	6C	41	E 8DA	6D	65	3A	20	30	0D	0A			
E 6A0	75	67	53	65	70	4F	63	74	4E	6F	RCX										
E 6AA	76	44	65	63	39	35	2E	43	4F	4D	07E1										
E 6B4	20	28	63	29	39	31	20	52	69	63	W										
E 6BE	68	61	72	64	20	45	2E	20	48	61	Q										
E 6C8	72	76	65	79	0D	0A	62	61	74	74											
E 6D2	65	72	79	20	20	20	20	20	20	B3											
E 6DC	70	72	74	73	63	20	4F	4E	2F	4F											
E 6E6	46	46	0D	0A	62	65	65	70	20	20	N beep.com										
E 6F0	20	20	20	20	20	20	20	B3	72	65	E 100	BB	0F	07	E8	17	00	BB	97	0A	E8
E 6FA	70	65	61	74	20	6E	2C	6E	0D	0A	E 10A	11	00	BB	4B	05	E8	0B	00	BB	0F
E 704	62	6F	6F	74	20	20	20	20	20	20	E 114	07	E8	05	00	BB	00	4C	CD	21	B0
E 70E	20	20	20	B3	73	63	72	6C	20	4F	E 11E	B6	E6	43	93	E6	42	8A	C4	E6	42
E 718	4E	2F	4F	46	46	0D	0A	63	61	70	E 128	E4	61	0C	03	E6	61	33	C0	8E	C0
E 722	73	20	4F	4E	2F	4F	46	46	20	20	E 132	26	A1	6C	04	83	C0	03	26	3B	06
E 72C	B3	73	65	72	69	61	6C	20	4F	4E	E 13C	6C	04	77	F9	E4	61	34	03	E6	61
E 736	2F	4F	46	46	0D	0A	63	6F	6E	74	E 146	C3	0D	0A	28	43	29	39	31	20	52
E 740	72	61	73	74	20	30	2D	31	35	B3	E 150	69	63	68	61	72	64	20	45	2E	48
E 74A	73	6C	65	65	70	0D	0A	63	75	72	E 15A	61	72	76	65	79					
E 754	73	6F	72	20	30	2D	36	20	20	20	RCX										
E 75E	B3	73	79	73	69	6E	66	6F	0D	0A	005F										
E 768	66	6C	75	73	68	6B	65	79	73	20	W										
E 772	20	20	20	B3	74	69	6D	65	6F	75	Q										
E 77C	74	20	30	2D	33	36	34	30	0D	0A											
E 786	68	65	79	77	61	69	74	20	20	20											
E 790	20	20	20	B3	76	6F	6C	75	6D	65											

BEEP.COM (24A0)

DIRS.COM (4904)

E 100	FC	81	FC	00	20	73	05	B8	01	4C	E 344	4E	CD	21	72	60	F6	06	D4	06	10
E 10A	CD	21	BE	80	00	AC	98	91	E3	13	E 34E	74	53	80	3E	DD	06	2E	74	4C	8B
E 114	BF	EC	06	99	AC	3C	2C	74	08	3C	E 358	56	FE	BF	93	05	03	FA	BE	DD	06
E 11E	3B	74	04	3C	20	77	12	E2	F1	E9	E 362	B9	0C	00	AC	22	C0	74	04	AA	42
E 128	D2	00	AC	3C	2C	74	0C	3C	3B	74	E 36C	E2	F7	42	B0	5C	AA	89	16	91	05
E 132	08	3C	21	72	04	AA	42	E2	EF	8B	E 376	8D	7E	D2	BE	AF	06	B9	16	00	F3
E 13C	CA	BE	EC	06	03	F1	4E	80	3C	5C	E 380	A5	33	C0	8E	D8	A1	1A	04	3B	06
E 146	74	73	4E	E2	F8	BE	EC	06	BF	F0	E 38A	1C	04	8C	C0	8E	D8	74	03	E8	A8
E 150	04	83	FA	02	72	2D	80	7C	01	3A	E 394	FE	E8	0D	FF	BF	BF	06	8D	76	D2
E 15A	75	27	A0	5C	00	3C	1A	77	20	0A	E 39E	B9	16	00	F3	A5	B4	4F	CD	21	EB
E 164	C0	74	1C	04	40	A2	93	05	C7	06	E 3A8	9E	8B	46	FE	A3	91	05	8B	E5	5D
E 16E	94	05	3A	5C	C7	06	91	05	03	00	E 3B2	C3	BF	A6	04	B8	20	20	B9	0A	00
E 178	83	FA	02	74	AA	83	EA	02	83	C6	E 3BC	F3	AB	A1	DB	06	8B	16	D9	06	FF
E 182	02	83	FA	0C	76	03	BA	0C	00	8B	E 3C6	06	8D	05	01	16	89	05	11	06	8B
E 18C	CA	F3	A4	32	C0	AA	42	89	16	8F	E 3D0	05	BB	0A	00	FD	8B	CA	33	D2	F7
E 196	05	EB	4B	8B	CA	BE	EC	06	BF	93	E 3DA	F3	91	F7	F3	92	04	30	AA	8B	C1
E 1A0	05	F3	A4	80	7C	FF	5C	74	04	B0	E 3E4	0B	CA	75	ED	FC	BE	DD	06	BF	A6
E 1AA	5C	AA	42	83	FA	46	76	03	BA	46	E 3EE	04	B9	09	00	AC	22	C0	74	18	3C
E 1B4	00	89	16	91	05	EB	41	3B	CA	74	E 3F8	2E	74	05	AA	E2	F4	EB	0F	BF	AF
E 1BE	DA	2B	D1	83	F9	46	76	03	B9	46	E 402	04	B1	03	AC	3C	20	76	05	74	03
E 1C8	00	89	0E	91	05	BE	EC	06	BF	93	E 40C	AA	E2	F6	BF	BB	04	B0	20	AA	A1
E 1D2	05	F3	A4	8B	CA	BF	F0	04	F3	A4	E 416	07	06	8B	DD	01	05	D3	E8	83	E0
E 1DC	32	C0	AA	42	89	16	8F	05	BF	F0	E 420	0F	BE	FD	04	03	F0	D1	E0	03	F0
E 1E6	04	8B	CA	49	B0	2E	F2	AE	74	0C	E 42A	A5	A4	B0	20	AA	8A	C2	83	E0	1F
E 1F0	B8	2E	2A	AB	32	C0	AA	83	06	8F	E 434	D4	0A	05	30	30	80	FC	30	75	02
E 1FA	05	02	BA	BF	06	B4	1A	CD	21	E8	E 43E	B4	20	86	C4	AB	B0	20	AA	8A	C6
E 204	9F	00	BA	77	05	A1	8D	05	83	F8	E 448	D0	E8	04	50	3C	63	76	02	2C	64
E 20E	01	72	23	75	06	C7	06	61	05	2C	E 452	D4	0A	05	30	30	86	E0	AB	B0	20
E 218	20	92	33	C0	FD	BF	5B	05	E8	5C	E 45C	AA	8B	16	D5	06	8A	C6	B1	03	D2
E 222	00	BF	6D	05	8B	16	89	05	A1	8B	E 466	E8	B3	61	3C	0C	72	06	B3	70	74
E 22C	05	E8	4F	00	FC	BA	55	05	B4	09	E 470	02	2C	0C	D4	05	30	30	80	FC	
E 236	CD	21	B8	00	4C	CD	21	E8	29	00	E 47A	30	75	02	B4	20	86	E0	AB	B0	3A
E 240	BA	2D	05	BB	02	00	B9	11	00	B4	E 484	AA	92	D3	E0	80	E4	3F	8A	C4	D4
E 24A	40	CD	21	33	C0	E8	26	00	50	BA	E 48E	0A	05	30	30	86	C4	AB	93	AA	BA
E 254	3E	05	BB	02	00	B9	13	00	B4	40	E 498	A5	04	BB	01	00	B9	29	00	B4	40
E 25E	CD	21	58	3C	1B	74	A1	3C	03	74	E 4A2	CD	21	C3	20	0D	0A	50	2E	4F	2E
E 268	9D	B4	01	E8	0A	00	75	01	C3	32	E 4AC	20	42	6F	78	20	35	36	39	35	2C
E 272	E4	E8	02	00	EB	F1	55	06	CD	16	E 4B6	20	47	6C	65	6E	64	61	6C	65	20
E 27C	07	5D	C3	BB	0A	00	33	ED	45	83	E 4C0	41	5A	20	38	35	33	31	32	20	20
E 286	FD	03	76	07	C6	05	2C	4F	BD	01	E 4CA	20	20	0D	0A	44	49	52	53	20	31
E 290	00	8B	CA	33	D2	F7	F3	91	F7	F3	E 4D4	2E	31	20	28	63	29	39	31	20	52
E 29A	92	04	30	AA	8B	C1	0B	CA	75	E0	E 4DE	69	63	68	61	72	64	20	45	2E	20
E 2A4	C3	55	8B	EC	83	EC	2E	A1	91	05	E 4E8	48	61	72	76	65	79	0D	0A	2A	2E
E 2AE	89	46	FE	33	C0	BF	DD	06	B9	06	E 4F2	2A	00	00	00	00	00	00	00	00	00
E 2B8	00	F3	AB	BF	EC	06	BE	93	05	8B	E 4FC	00	3F	3F	3F	4A	61	6E	46	65	62
E 2C2	0E	91	05	F3	A4	BE	F0	04	8B	0E	E 506	4D	61	72	41	70	72	4D	61	79	4A
E 2CC	8F	05	F3	A4	B9	06	00	BA	EC	06	E 510	75	6E	4A	75	6C	41	75	67	53	65
E 2D6	B4	4E	CD	21	72	49	BE	93	05	8B	E 51A	70	4F	63	74	4E	6F	76	44	65	63
E 2E0	D6	8B	0E	91	05	8A	04	3C	41	72	E 524	3F	3F	3F	3F	3F	3F	3F	3F	3F	50
E 2EA	08	3C	5A	77	04	04	20	88	04	46	E 52E	72	65	73	73	20	45	73	63	20	74
E 2F4	E2	EF	C7	04	0D	0A	8B	0E	91	05	E 538	6F	20	71	75	69	74	0D	20	20	20
E 2FE	83	C1	02	BB	01	00	B4	40	CD	21	E 542	20	20	20	20	20	20	20	20	20	20
E 308	33	C0	8E	D8	A1	1A	04	3B	06	1C	E 54C	20	20	20	20	0D	2A	2E	2A	00	20
E 312	04	8C	C0	8E	DF	74	03	E8	21	FF	E 556	20	20	20	20	20	30	20	66	69	6C
E 31C	E8	94	00	B4	4F	CD	21	73	E3	33	E 560	65	73	2C	20	20	20	20	20	20	20
E 326	C0	BF	DD	06	B9	06	00	F3	AB	BF	E 56A	20	20	20	30	20	62	79	74	65	73
E 330	93	05	8B	D7	03	3E	91	05	BE	51	E 574	0D	0A	24	4E	6F	20	66	69	6C	65
E 33A	05	A5	A5	BA	93	05	B9	16	00	B4	E 57E	73	20	66	6F	75	6E	64	0D	0A	24

E 588 90 00 00 00 00 00 00 04 00 01
 E 592 00 5C
 RCX
 0494
 W
 Q

DISKSIZE.COM (7733)

N disksize.com

E 100 E9 C5 00 44 49 53 4B 53 49 5A
 E 10A 45 2E 43 4F 4D 20 31 2E 31 20
 E 114 28 63 29 31 39 39 30 20 52 69
 E 11E 63 68 61 72 64 20 45 2E 20 48
 E 128 61 72 76 65 79 20 42 6F 78 20
 E 132 35 36 39 35 20 47 6C 65 6E 64
 E 13C 61 6C 65 20 41 5A 20 38 35 33
 E 146 31 32 0D 0A 43 6F 75 6C 64 20
 E 150 6E 6F 74 20 72 65 61 64 20 64
 E 15A 69 73 6B 20 64 72 69 76 65 0D
 E 164 0A 20 20 20 20 20 20 20 20 20
 E 16E 20 20 20 20 20 30 20 74 6F 74
 E 178 61 6C 20 64 69 73 6B 20 73 70
 E 182 61 63 65 0D 0A 20 20 20 20 20
 E 18C 20 20 20 20 20 20 20 20 20 30
 E 196 20 62 79 74 65 73 20 75 73 65
 E 1A0 64 0D 0A 20 20 20 20 20 20 20
 E 1AA 20 20 20 20 20 20 20 30 20 62
 E 1B4 79 74 65 73 20 61 76 61 69 6C
 E 1BE 61 62 6C 65 0D 0A 0A 00 00 00
 E 1C8 8A 16 5C 00 80 FA 1A 76 02 32
 E 1D2 D2 B4 36 CD 21 83 F8 FF 74 40
 E 1DC 89 1E C6 01 8B EA 33 D2 F7 E1
 E 1E6 8B F0 F7 E3 BF B1 01 E8 37 00
 E 1F0 8B C5 F7 E6 BF 73 01 E8 2D 00
 E 1FA 8B C5 2B 06 C6 01 F7 E6 BF 95
 E 204 01 E8 1F 00 BB 01 00 B9 5F 00
 E 20E BA 65 01 B4 40 CD 21 B8 00 4C
 E 218 CD 21 CD 20 BB 02 00 B9 62 00
 E 222 BA 03 01 EB EA FD 92 33 DB FE
 E 22C C3 80 FB 03 76 06 C6 05 2C 4F
 E 236 B3 01 8B CA 33 D2 F7 36 C4 01
 E 240 91 F7 36 C4 01 92 04 30 AA 8B
 E 24A C1 0B CA 75 DC FC C3
 RCX
 0151
 W
 Q

DISP.COM (8677)

N disp.com

E 100 81 FC 02 07 72 35 BF 10 02 BE
 E 10A 80 00 33 ED AC 25 FF 00 91 49
 E 114 78 25 AC 3C 2F 74 25 49 78 09
 E 11E AC 3C 2F 74 1D AA 45 EB F4 B8
 E 128 0D 0A AB 45 45 BA 10 02 8B CD
 E 132 E3 07 BB 01 00 B4 40 CD 21 B8
 E 13C 00 4C CD 21 E3 EB AC 49 3C 2F

E 146 74 DB 8A E0 80 E4 DF 80 FC 44
 E 150 74 58 80 FC 54 74 32 3C 30 72
 E 15A C8 3C 39 77 C4 B4 03 99 2C 30
 E 164 EB 0C 2C 30 D0 E2 8A F2 D0 E2
 E 16E D0 E2 02 D6 02 D0 FE CC 74 0E
 E 178 E3 0C AC 49 3C 30 72 04 3C 39
 E 182 76 E2 4E 41 92 EB 9A 51 B4 2C
 E 18C CD 21 8A C5 E8 4D 00 B0 3A AA
 E 196 8A C1 E8 45 00 B0 3A AA 8A C6
 E 1A0 E8 3D 00 59 83 C5 08 E9 71 FF
 E 1AA 56 51 B4 2A CD 21 BE E9 01 8A
 E 1B4 C6 98 03 F0 D1 E0 03 F0 A5 A4
 E 1BE 80 20 AA 8A C2 E8 1A 00 80 2D
 E 1C8 AA 91 2D 6C 07 83 F8 63 76 03
 E 1D2 83 E8 64 E8 08 00 83 C5 09 59
 E 1DC 5E E9 3B FF D4 0A 05 30 30 86
 E 1E6 C4 AB C3 3F 3F 3F 4A 61 6E 46
 E 1F0 65 62 4D 61 72 41 70 72 4D 61
 E 1FA 79 4A 75 6E 4A 75 6C 41 75 67
 E 204 53 65 70 4F 63 74 4E 6F 76 44
 E 20E 65 63 0D 0A 44 49 53 50 2E 43
 E 218 4F 4D 20 31 2E 31 20 28 63 29
 E 222 39 31 20 52 69 63 68 61 72 64
 E 22C 20 45 2E 20 48 61 72 76 65 79
 E 236 0D 0A

RCX

0138

W

Q

MEM.COM (8810)

N mem.com

E 100 B8 67 35 CD 21 0E 1F BE CB 01
 E 10A BF 0A 00 B9 04 00 F3 A7 75 3D
 E 114 B4 40 CD 67 22 E4 75 35 B4 42
 E 11E CD 67 22 E4 75 2D 53 8B C2 33
 E 128 D2 B9 04 00 D1 E0 D1 D2 E2 FA
 E 132 BF DE 01 E8 66 00 58 33 D2 B9
 E 13C 04 00 D1 E0 D1 D2 E2 FA BF F9
 E 146 01 E8 54 00 BA D3 01 B4 09 CD
 E 150 21 CD 12 50 99 B9 00 04 F7 E1
 E 15A BF 18 02 E8 3E 00 BB FF FF B4
 E 164 4A CD 21 8B C3 B9 70 17 F7 F1
 E 16E A2 C9 01 99 58 B9 40 00 F7 E1
 E 178 53 2B C3 B9 10 00 F7 E1 BF 38
 E 182 02 E8 18 00 58 B9 10 00 F7 E1
 E 18C BF 51 02 E8 0C 00 BA 0D 02 B4
 E 196 09 CD 21 A1 C9 01 CD 21 92 1E
 E 1A0 07 FD BB 0A 00 33 ED 45 83 FD
 E 1AA 03 76 07 C6 05 2C 4F BD 01 00
 E 1B4 8B CA 33 D2 F7 F3 91 F7 F3 92
 E 1BE 04 30 AA 8B C1 0B CA 75 E0 FC
 E 1C8 C3 00 4C 45 4D 4D 58 58 58 58
 E 1D2 30 20 20 20 20 20 20 20 20 20
 E 1DC 20 20 20 20 4B 20 45 4D 53 20
 E 1E6 6D 65 6D 6F 72 79 0D 0A 20 20
 E 1F0 20 20 20 20 20 20 20 20 20 20

E 1FA 20 4B 20 45 4D 53 20 61 76 61
 E 204 69 6C 61 62 6C 65 0D 0A 24 20
 E 20E 20 20 20 20 20 20 20 20 20
 E 218 20 20 62 79 74 65 73 20 6D 61
 E 222 69 6E 20 6D 65 6D 6F 72 79 0D
 E 22C 0A 20 20 20 20 20 20 20 20
 E 236 20 20 20 20 62 79 74 65 73 20
 E 240 75 73 65 64 0D 0A 20 20 20 20
 E 244 20 20 20 20 20 20 20 20 20 62
 E 254 79 74 65 73 20 61 76 61 69 6C
 E 25E 61 62 6C 65 0D 0A 24 28 63 29
 E 268 31 39 39 31 20 52 69 63 68 61
 E 272 72 64 20 45 2E 20 48 61 72 76
 E 27C 65 79 0D 0A
 RCX
 0180
 W
 Q

PAUSE95.COM (2B58)

N pause95.com
 E 100 B4 4D CD 21 50 B8 00 44 BB 01
 E 10A 00 CD 21 81 E2 80 00 52 74 0D
 E 114 BA 61 01 B9 1F 00 BB 01 00 B4
 E 11E 40 CD 21 CD 28 B4 00 CD 16 59
 E 128 E3 0D BA 5F 01 B9 02 00 BB 01
 E 132 00 B4 40 CD 21 58 B4 4C CD 21
 E 13C 50 41 55 53 45 39 35 2E 43 4F
 E 146 4D 20 28 63 29 39 31 20 52 69
 E 150 63 68 61 72 64 20 45 2E 20 48
 E 15A 61 72 76 65 79 0D 0A 50 72 65
 E 164 73 73 20 61 6E 79 20 68 65 79
 E 16E 20 74 6F 20 63 6F 6E 74 69 6E
 E 178 75 65 2E 20 2E 20 2E 20
 RCX
 0080
 W
 Q

PLAY.COM (87A1)

N play.com
 E 100 B8 00 44 33 DB CD 21 81 E2 80
 E 10A 00 8B FA BE 80 00 AC 25 FF 00
 E 114 74 09 91 80 3C 20 77 34 46 E2
 E 11E F8 F7 C7 80 00 74 34 BA 15 02
 E 128 B9 05 00 BB 02 00 B4 40 CD 21
 E 132 BE 80 00 C7 04 4E 00 8B D6 B4
 E 13C 0A CD 21 B2 0A B4 02 CD 21 46
 E 146 AC 98 91 E3 28 E8 2A 00 EB D5
 E 150 E8 25 00 F7 C7 80 00 75 1A 81
 E 15A FC 00 26 72 14 BE 1A 02 33 DB
 E 164 8B D6 B9 00 20 B4 3F CD 21 72
 E 16E 04 91 E8 05 00 B8 00 4C CD 21
 E 178 E8 12 00 72 0E 8B EB E8 0B 00
 E 182 72 07 E8 3F 00 0B C9 75 ED C3
 E 18C 0A 33 DB 83 E7 FE E3 0B AC 3C
 E 196 3A 74 06 3C 2F 77 05 E2 F5 F9

E 1A0 C3 AC 2C 30 3C 09 77 14 98 93
 E 1AA F6 26 8C 01 03 D8 83 CF 01 E2
 E 1B4 EC F7 C7 01 00 74 09 C3 4E F7
 E 1BE C7 01 00 74 01 C3 F9 C3 B0 B6
 E 1C8 E6 43 8B FD 25 72 2E 81 FD D8
 E 1D2 27 76 03 BD D8 27 BA 12 00 B8
 E 1DC DE 34 F7 F5 E6 42 8A C4 E6 42
 E 1E6 E4 61 0C 03 E6 61 81 FB B4 00
 E 1F0 76 03 BB B4 00 83 FB 02 77 03
 E 1FA BB 02 00 33 C0 8E C0 26 A1 6C
 E 204 04 03 C3 26 3B 06 6C 04 77 F9
 E 20E E4 61 34 03 E6 61 C3 70 6C 61
 E 218 79 3A 50 4C 41 59 2E 43 4F 4D
 E 222 20 31 2E 30 28 63 29 39 31 20
 E 22C 52 69 63 68 61 72 64 20 45 2E
 E 236 20 48 61 72 76 65 79
 RCX
 013D
 W
 Q

REBOOT.COM (0750)

N reboot.com
 E 100 B8 FF FF 50 40 50 8E D8 C7 06
 E 10A 72 04 34 12 CB
 RCX
 000F
 W
 Q

SIFT.COM (9819)

N sift.com
 E 100 81 FC 00 0C 73 03 E9 A7 00 B8
 E 10A 00 44 33 DB CD 21 F6 C2 80 74
 E 114 64 BE 80 00 33 C0 AC 91 E3 07
 E 11E AC 3C 20 77 41 E2 F9 BA 79 02
 E 128 B9 2C 00 BB 02 00 B4 40 CD 21
 E 132 BE 80 00 C7 04 4E 00 8B D6 B4
 E 13C 0A CD 21 B2 0A B4 02 CD 21 46
 E 146 AC 98 91 E3 07 AC 3C 20 77 14
 E 150 E2 F9 BA DA 01 B9 9F 00 BB 02
 E 15A 00 B4 40 CD 21 B8 01 4C CD 21
 E 164 8B D6 4A AC 3C 20 77 FB B8 00
 E 16E 3D 4E 88 04 CD 21 72 DC A3 A5
 E 178 02 BE A8 04 8B 1E A5 02 8B D6
 E 182 B9 00 02 B4 3F CD 21 72 25 91
 E 18C E3 22 33 D2 BF A7 02 AC 3C 7E
 E 196 77 06 3C 20 72 25 AA 42 E2 F3
 E 1A0 8B CA E3 D5 BA A7 02 B4 40 BB
 E 1AA 01 00 CD 21 73 C9 8B 1E A5 02
 E 1B4 0B DB 74 04 B4 3E CD 21 B8 00
 E 1BE 4C CD 21 3C 09 74 0F 3C 0B 74
 E 1C8 04 3C 0D 75 D1 B8 0D 0A AB 42
 E 1D2 EB C9 B0 20 EB C4 0D 0A 28 63
 E 1DC 29 39 31 20 52 69 63 68 61 72
 E 1E6 64 20 45 2E 20 48 61 72 76 65
 E 1F0 79 20 42 6F 78 20 35 36 39 35

E 1FA 20 47 6C 65 6E 64 61 6C 65 20
 E 204 41 5A 20 38 35 33 31 32 0D 0A
 E 20E 53 49 46 54 20 73 74 72 69 70
 E 218 73 2D 6F 75 74 20 75 6E 77 61
 E 222 6E 74 65 64 20 63 68 61 72 61
 E 22C 63 74 65 72 73 2E 0D 0A 49 74
 E 236 20 77 6F 72 68 73 20 77 69 74
 E 240 68 20 6F 72 20 77 69 74 68 6F
 E 24A 75 74 20 72 65 64 69 72 65 63
 E 254 74 69 6F 6E 3A 0D 0A 09 53 49
 E 25E 46 54 20 6D 79 66 69 6C 65 0D
 E 268 0A 09 53 49 46 54 20 3C 20 6D
 E 272 79 66 69 6C 65 0D 0A 45 6E 74
 E 27C 65 72 20 61 20 66 69 6C 65 20
 E 286 6E 61 6D 65 20 6F 72 20 70 72
 E 290 65 73 73 20 5E 43 20 74 6F 20
 E 29A 71 75 69 74 0D 0A 73 69 66 74
 E 2A4 3A 00 00 00

RCX
 01A8
 W
 Q

TMORE.COM (19A2)

N tmore.com

E 100 B4 30 CD 21 3D 03 16 75 15 33
 E 10A DB B8 D4 4D CD 15 B8 0F 28 81
 E 114 FB 50 48 75 05 80 FD 01 74 21
 E 11E B4 0F CD 10 50 B3 10 B4 12 CD
 E 128 10 58 B0 18 80 FB 10 74 0E 33
 E 132 DB B8 C3 26 A0 84 04 0A C0 75
 E 13C 02 B0 18 FE CC A2 D6 02 A3 D7
 E 146 02 B8 00 44 33 DB CD 21 BE 80
 E 150 00 23 D6 8B EA 33 C0 AC 91 E3
 E 15A 07 AC 3C 20 77 2E E2 F9 0B ED
 E 164 75 03 E9 B3 00 BA E8 02 B9 06
 E 16E 00 E8 55 01 BE 80 00 C7 04 4E
 E 178 00 8B D6 B4 0A CD 21 46 AC 98
 E 182 91 E3 5E AC 3C 20 77 04 E2 F9
 E 18C EB 55 3C 2F 75 2F 83 E9 02 78
 E 196 5F AC 2C 30 74 5A 3C 09 77 56
 E 1A0 E3 1A 8A 1C 80 EB 30 80 FB 09
 E 1AA 77 10 98 99 F6 26 D3 02 02 C3
 E 1B4 3A 06 D8 02 73 3C 46 49 A2 CF
 E 1BE 02 EB C2 0B ED 74 31 4E 8B D6
 E 1C8 AC 3C 20 76 02 E2 F9 B8 00 3D
 E 1D2 E3 01 4E 88 04 CD 21 72 3C A3
 E 1DC D4 02 E3 03 41 EB A0 B8 00 44
 E 1E6 33 DB CD 21 F6 C2 80 74 2D 83
 E 1F0 3E D4 02 00 75 26 B8 01 4C CD
 E 1FA 21 41 41 B8 0D 0A AB BF E8 02
 E 204 BB 01 00 8B D7 B4 40 CD 21 72
 E 20E 08 C3 8B CD E3 03 E8 E4 FF B8
 E 218 00 4C CD 21 81 FC 00 0C 72 F5
 E 222 A1 D8 02 F6 36 CF 02 FE C8 98
 E 22C F6 26 CF 02 A2 D1 02 1E 07 33
 E 236 ED BF E8 02 BE 74 03 8B 1E D4

E 240 02 8B D6 B9 00 08 B4 3F CD 21
 E 24A 72 C4 91 E3 C1 E3 E9 AC 49 3C
 E 254 20 72 46 AA 45 3B 2E D8 02 72
 E 25E F0 E3 07 80 3C 0D 75 02 49 46
 E 268 87 CD E8 8E FF FE 0E D7 02 75
 E 272 24 A0 D6 02 A2 D7 02 BA DA 02
 E 27C B9 06 00 E8 45 00 B4 00 CD 16
 E 286 3C 03 74 8D 3C 1B 74 89 BA E0
 E 290 02 B9 08 00 E8 30 00 8B CD 33
 E 29A ED EB B2 3C 0D 77 AE 3C 0B 73
 E 2A4 BA 3C 09 75 A6 3B 2E D1 02 77
 E 2AE B0 8B D1 33 C9 03 0E CF 02 3B
 E 2B8 CD 76 F8 2B CD 03 E9 B0 20 F3
 E 2C2 AA 8B CA EB 88 BB 02 00 B4 40
 E 2CC CD 21 C3 08 00 00 00 0A 00 00
 E 2D6 00 00 00 00 2D 4D 6F 72 65 2D
 E 2E0 0D 20 20 20 20 20 20 0D 74 6D
 E 2EA 6F 72 65 3A 28 63 29 39 31 20
 E 2F4 52 2E 45 2E 48 61 72 76 65 79

RCX
 01FE
 W
 Q

TTYE.COM (0405)

N ttye.com

E 100 B4 30 CD 21 3D 03 16 75 15 33
 E 10A DB B8 D4 4D CD 15 B8 0F 28 81
 E 114 FB 50 48 75 05 80 FD 01 74 21
 E 11E B4 0F CD 10 50 B3 10 B4 12 CD
 E 128 10 58 B0 18 80 FB 10 74 0E 33
 E 132 DB B8 C3 26 A0 84 04 0A C0 75
 E 13C 02 B0 18 FE CC 88 26 AA 02 B8
 E 146 00 44 33 DB CD 21 BE 80 00 23
 E 150 D6 8B EA 33 C0 AC 91 E3 07 AC
 E 15A 3C 20 77 2E E2 F9 0B ED 75 03
 E 164 E9 B3 00 BA AC 02 B9 06 00 E8
 E 16E 2B 01 BE 80 00 C7 04 4E 00 8B
 E 178 D6 B4 0A CD 21 46 AC 98 91 E3
 E 182 5E AC 3C 20 77 04 E2 F9 EB 55
 E 18C 3C 2F 75 2F 83 E9 02 78 5F AC
 E 196 2C 30 74 5A 3C 09 77 56 E3 1A
 E 1A0 8A 1C 80 EB 30 80 FB 09 77 10
 E 1AA 98 99 F6 26 A7 02 02 C3 3A 06
 E 1B4 AA 02 73 3C 46 49 A2 A3 02 EB
 E 1BE C2 0B ED 74 31 4E 8B D6 AC 3C
 E 1C8 20 76 02 E2 F9 B8 00 3D E3 01
 E 1D2 4E 88 04 CD 21 72 3C A3 A8 02
 E 1DC E3 03 41 EB A0 B8 00 44 33 DB
 E 1E6 CD 21 F6 C2 80 74 2D 83 3E A8
 E 1F0 02 00 75 26 B8 01 4C CD 21 41
 E 1FA 41 B8 0D 0A AB BF AC 02 BB 01
 E 204 00 8B D7 B4 40 CD 21 72 08 C3
 E 20E 8B CD E3 03 E8 E4 FF B8 00 4C
 E 218 CD 21 81 FC 00 0C 72 F5 A1 AA
 E 222 02 F6 36 A3 02 FE C8 98 F6 26
 E 22C A3 02 A2 A5 02 1E 07 33 ED BF

E 236 AC 02 BE 38 03 8B 1E AB 02 8B
 E 240 D6 B9 00 08 B4 3F CD 21 72 C4
 E 24A 91 E3 C1 E3 E9 AC 49 3C 20 72
 E 254 1C AA 45 3B 2E AA 02 72 F0 E3
 E 25E 07 80 3C 0D 75 02 49 46 87 CD
 E 268 D8 8E 3F 8B CD 33 ED EB DC 3C
 E 272 0D 77 D8 3C 0B 73 E4 3C 09 75
 E 27C D0 3B 2E A5 02 77 DA 8B D1 33
 E 286 C9 03 0E A3 02 3B CD 76 F8 2B
 E 290 CD 03 E9 B0 20 F3 AA 8B CA EB
 E 29A B2 BB 02 00 B4 40 CD 21 C3 08
 E 2A4 00 00 00 0A 00 00 00 00 74 74
 E 2AE 79 70 65 3A 20 28 63 29 39 31
 E 2B8 20 52 69 63 68 61 72 64 20 45
 E 2C2 2E 48 61 72 76 65 79 0D 0A
 RCX
 01CB
 W
 Q

UNCOMMON.COM (0261)

N uncommon.com

E 100 BE 80 00 33 C0 AC 91 E3 07 AC
 E 10A 3C 20 77 42 E2 F9 BA A3 02 B9
 E 114 5D 00 BB 02 00 B4 40 CD 21 BE
 E 11E 80 00 C7 04 4E 00 8B D6 B4 0A
 E 128 CD 21 46 AC 25 FF 00 74 1A 91
 E 132 AC 3C 20 77 19 E2 F9 B8 01 4C
 E 13C CD 21 BA A3 02 B9 48 00 BB 02
 E 146 00 B4 40 CD 21 B8 01 4C CD 21
 E 150 33 ED 8B D6 4A AC 45 3C 20 77
 E 15A FA B8 00 3D 4E 88 04 8B FA CD
 E 164 21 72 D7 A3 66 02 80 7D 01 3A
 E 16E 75 04 47 47 4D 40 B0 5C 8B F7
 E 178 03 FD 8B CD FD F2 AE FC 75 07
 E 182 8B F7 46 46 41 2B E9 38 04 75
 E 18C 02 46 4D 8B CD BF C5 02 8B D7
 E 196 B8 4E 20 AB F3 A4 8B 0D 0A AB
 E 1A0 8B CD 83 C1 04 33 ED BB 01 00
 E 1AA B4 40 CD 21 72 5B BE A3 02 8B
 E 1B4 1E 66 02 8B D6 B9 0A 00 B4 3F
 E 1BE CD 21 72 49 91 E3 46 BF C5 02
 E 1C8 8B D7 B8 45 20 AB 8B C5 05 00
 E 1D2 01 E8 71 00 03 E9 51 BB 6A 02
 E 1DC B8 20 00 AA AC 01 06 68 02 E8
 E 1E6 69 00 E2 F2 B8 0D 0A AB 58 8B
 E 1F0 F8 8B C8 D1 E0 03 C8 83 C1 08
 E 1FA BA C5 02 B4 40 BB 01 00 CD 21
 E 204 72 05 83 FF 0A 74 A5 8B 1E 66
 E 20E 02 B4 3E CD 21 BF 96 02 8B C5
 E 218 E8 2C 00 BA 91 02 B9 12 00 BB
 E 222 01 00 B4 40 CD 21 BF 76 02 8B
 E 22D C7 8B C5 E8 15 00 83 C7 11 A1
 E 236 68 02 E8 0C 00 B4 40 BB 02 00
 E 240 B9 1B 00 CD 21 CD 20 BB 6A 02
 E 24A 50 8A C4 E8 03 00 58 8A E0 80
 E 254 E4 0F D0 E8 D0 E8 D0 E8 D0 E8

E 25E D7 86 C4 D7 86 E0 AB C3 00 00
 E 268 00 00 30 31 32 33 34 35 36 37
 E 272 38 39 41 42 43 44 45 46 20 62
 E 27C 79 74 65 73 2C 20 63 68 65 63
 E 286 6B 73 75 6D 20 30 30 30 30 0D
 E 290 0A 52 43 58 0D 0A 30 30 30 30
 E 29A 0D 0A 57 0D 0A 51 0D 0A 1A 55
 E 2A4 4E 43 4F 4D 4D 4F 4E 20 28 63
 E 2AE 29 39 31 20 52 69 63 68 61 72
 E 2B8 64 20 45 2E 20 48 61 72 76 65
 E 2C2 79 0D 0A 43 72 65 61 74 65 73
 E 2CC 20 61 20 64 65 62 75 67 20 73
 E 2D6 63 72 69 70 74 20 66 72 6F 6D
 E 2E0 20 61 6E 79 20 66 69 6C 65 0D
 E 2EA 0A 45 6E 74 65 72 20 61 20 66
 E 2F4 69 6C 65 20 6E 61 6D 65 3A 0D
 E 2FE 0A 3A

RCX
 0200
 W
 Q

WAIT.COM (3000)

N wait.com

E 100 BE 80 00 33 C0 AC 91 E3 42 33
 E 10A ED AC 3C 20 77 07 E2 F9 EB 37
 E 114 AC B3 0A 2C 30 3C 09 77 0F 98
 E 11E 95 99 F6 E3 03 E8 81 FD 80 0C
 E 128 77 02 E2 E8 33 C0 8E C0 26 A1
 E 132 6C 04 03 C5 26 8B 0E 1A 04 26
 E 13C 3B 0E 1C 04 75 09 CD 28 26 3B
 E 146 06 6C 04 75 F0 B4 01 CD 16 74
 E 150 08 B4 00 CD 16 CD 28 EB F2 B8
 E 15A 00 4C CD 21 0D 0A 57 41 49 54
 E 164 2E 43 4F 4D 20 28 63 29 39 31
 E 16E 20 52 69 63 68 61 72 64 20 45
 E 178 2E 20 48 61 72 76 65 79

RCX
 0080
 W
 Q

WINK.SYS (7181)

N wink.sys

E 100 FF FF FF FF 40 C8 6D 00 78 00
 E 10A 57 49 4E 4B 58 58 58 58 00 00
 E 114 00 00 80 FC 06 74 2B 80 FC 01
 E 11E 74 08 72 1A EA 65 F0 00 F0 90
 E 128 80 FD 20 73 07 80 FD 02 76 02
 E 132 B5 02 B1 07 EA 65 F0 00 F0 90
 E 13C 3C 07 77 F6 74 04 3C 03 77 F0
 E 146 9C 9A 65 F0 00 F0 1E 50 33 C0
 E 150 8E D8 A0 61 04 3C 20 73 11 3C
 E 15A 02 76 0D 51 B4 01 B9 07 02 9C
 E 164 9A 65 F0 00 F0 59 58 1F CF 2E
 E 16E 89 1E 12 00 2E 8C 06 14 00 CB
 E 178 1E 56 2E C5 36 12 00 C7 44 03

E 182 00 01 80 7C 02 00 74 03 5E 1F
 E 18C CB C7 44 0E 8D 00 8C 4C 10 06
 E 196 57 52 51 53 50 55 C5 5C 12 8A
 E 1A0 07 3C 0A 74 4C 3C 0D 74 48 3C
 E 1AA 1A 74 44 43 3C 20 76 ED 8A 07
 E 1B4 3C 0A 74 39 3C 0D 74 35 3C 1A
 E 1BE 74 31 43 3C 20 77 ED 8A 07 3C
 E 1C8 0A 74 26 3C 0D 74 22 3C 1A 74
 E 1D2 1E 43 3C 20 76 ED 8C 8E DB
 E 1DC 2C 30 3C 07 77 0F A2 2F 00 A2
 E 1E6 33 00 A2 62 00 A2 F6 00 A2 5A
 E 1F0 00 8C C8 8E D8 B9 07 02 B4 01
 E 1FA CD 10 B8 10 35 CD 21 89 1E 23
 E 204 00 8C 06 25 00 89 1E 37 00 8C
 E 20E 06 39 00 89 1E 48 00 8C 06 4A
 E 218 00 89 1E 65 00 8C 06 67 00 BA
 E 222 16 00 B8 10 25 CD 21 BA 3C 01
 E 22C B4 09 CD 21 5D 58 5B 59 5A 5F
 E 236 07 5E 1F CB 0D 0A 57 49 4E 4B
 E 240 2E 53 59 53 20 31 2E 30 20 28
 E 24A 43 29 20 31 39 39 31 20 52 69
 E 254 63 68 61 72 64 20 45 2E 20 48
 E 25E 61 72 76 65 79 0D 0A 24 42 6F
 E 268 78 20 35 36 39 35 20 47 6C 65
 E 272 6E 64 61 6C 65 20 41 5A 20 38
 E 27C 35 33 31 32

RCX

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W

Q

WORDS.COM (8120)

N words.com

E 100 81 FC 00 0E 73 03 E9 37 01 B8
 E 10A 00 44 33 DB CD 21 F6 C2 80 74
 E 114 6B BE 80 00 33 C0 AC 91 E3 13
 E 11E AC 3C 20 77 04 E2 F9 EB 0A 8B
 E 128 D6 4A AC 3C 20 77 FB EB 3E BA
 E 132 44 03 B9 25 00 33 DB B4 40 CD
 E 13C 21 BE 80 00 C7 04 4E 00 8B D6
 E 146 B4 0A CD 21 BA D1 02 B9 01 00
 E 150 BB 02 00 B4 40 CD 21 AC AC 98
 E 15A 91 E3 07 AC 3C 20 77 05 E2 F9
 E 164 E9 D9 00 8B D6 4A AC 3C 20 77
 E 16E FB 4E C6 04 00 B8 00 3D CD 21
 E 178 73 03 E9 C3 00 A3 6A 03 33 C0
 E 182 BF DD 02 8B 16 6C 03 A1 6E 03
 E 18C E8 02 01 BA D2 02 B9 13 00 BB
 E 196 02 00 B4 40 CD 21 BE 80 03 50
 E 1A0 8B 1E 6A 03 8B D6 B9 00 08 B4
 E 1AA 3F CD 21 91 58 73 03 E9 8C 00
 E 1B4 01 0E 6C 03 83 16 6E 03 00 E3
 E 1BE A5 AC 3C 41 72 2B 3C 7A 77 27
 E 1C8 24 DF 80 FB 5A 77 20 F6 C4 01
 E 1D2 75 0D 80 CC 01 83 06 74 03 01
 E 1DC 83 16 76 03 00 83 06 70 03 01
 E 1E6 83 16 72 03 00 E2 D2 EB 93 3C

E 1F0 0D 74 41 3C 2E 74 1C 3C 21 74
 E 1FA 18 3C 3F 74 14 3C 27 74 DE 3C
 E 204 5F 74 DA 3C 2D 74 D6 80 E4 FE
 E 20E E2 AF E9 6F FF 83 06 70 03 01
 E 218 83 16 72 03 00 F6 C4 01 74 C9
 E 222 83 06 78 03 01 83 16 7A 03 00
 E 22C 80 E4 FE E2 8E E9 4E FF 83 06
 E 236 7C 03 01 83 16 7E 03 00 EB EC
 E 240 8B 1E 6A 03 0B DB 74 04 B4 3E
 E 24A CD 21 8B 16 70 03 A1 72 03 BF
 E 254 F1 02 E8 38 00 8B 16 74 03 A1
 E 25E 76 03 BF 0A 03 E8 2B 00 8B 16
 E 268 78 03 A1 7A 03 BF 1E 03 E8 1E
 E 272 00 8B 16 7C 03 A1 7E 03 BF 36
 E 27C 03 E8 11 00 BA D2 02 B9 72 00
 E 286 33 DB B4 40 CD 21 B8 00 4C CD
 E 290 21 FD BB 0A 00 33 ED 45 83 FD
 E 29A 03 76 07 C6 05 2C 4F BD 01 00
 E 2A4 8B CA 33 D2 F7 F3 91 F7 F3 92
 E 2AE 04 30 AA 8B C1 0B CA 75 E0 FC
 E 2B8 C3 28 63 29 39 31 20 52 69 63
 E 2C2 68 61 72 64 20 45 2E 20 48 61
 E 2CC 72 76 65 79 0D 0A 20 20 20 20
 E 2D6 20 20 20 20 20 20 20 30 20 42
 E 2E0 79 74 65 73 0D 0A 20 20 20 20
 E 2EA 20 20 20 20 20 20 20 30 20 43
 E 2F4 68 61 72 61 63 74 65 72 73 0D
 E 2FE 0A 20 20 20 20 20 20 20 20 20
 E 308 20 20 30 20 57 6F 72 64 73 0D
 E 312 0A 20 20 20 20 20 20 20 20 20
 E 31C 20 20 30 20 53 65 6E 74 65 6E
 E 326 63 65 73 0D 0A 20 20 20 20 20
 E 330 20 20 20 20 20 20 20 30 20 50 61
 E 33A 72 61 67 72 61 70 68 73 0D 0A
 E 344 45 6E 74 65 72 20 61 20 66 69
 E 34E 6C 65 20 6E 61 6D 65 20 6F 72
 E 358 20 70 72 65 73 73 20 5E 43 0D
 E 362 0A 77 6F 72 64 73 3A 90 00 00
 E 36C 00 00 00 00 00 00 00 00 00 00
 E 376 00 00 00 00 00 00 00 00 00 00

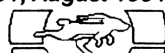
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Version 1.01, August 1991



HP 95 Utility Pack

- ✧ Includes over 30 programs and utilities to help you get the most out of your HP-95.
- ✧ Adds features missing from ROM-based MS-DOS 3.22.
- ✧ Runs on a standard HP-95, no add-ins or additional memory required.
- ✧ Small, efficient programs. Written entirely in assembly language.
- ✧ Easy to use, consistent command interface. Works with DOS' command line, redirected input, or prompt for data, automatically.
- ✧ Most programs will also run on PC-compatibles. You can use the same software on your desktop PC. You may want the *HP-95 Utility Pack* even if you don't have an HP-95 yet!
- ✧ Free an extra 80K for running MS-DOS applications.
- ✧ Includes 95.COM, combining over 20 utilities in one program.
- ✧ Accurate information about memory, battery (including backup battery), contrast, speaker, serial port, keyboard and more. And easily change settings.
- ✧ Displays graphics (PCX) files. Plays music. Can be used to create automated graphic demonstrations.
- ✧ Filters for both 40- and 80-column screens. Eliminate or translate extraneous characters for files or transferring to other computers.
- ✧ Change file attributes--even to hidden. Change file times and dates. Encrypt files. Count words, sentences and paragraphs. Create DEBUG scripts. Erase unneeded files from the C:_DAT\ directory. Just about the fastest file finder in the business.
- ✧ Even if you don't have a disk drive, you can still enter the programs. Includes listings and instructions for entering programs right on your HP-95.
- ✧ Includes 5¼" and 3½" disks.

System Requirements

- ✧ HP-95LX Palmtop PC.
- ✧ HP 82222A Serial Interface Cable or HP 95 Connectivity Pack. Required if transferring files from a PC.
- ✧ IBM-PC compatible computer running MS-DOS 3.1 or later recommended for transferring programs.

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