

PowerScript



Dear PowerScript User:

PowerScript is a new enhancement package to SCRIPSIT which will give you numerous new abilities. We believe it brings Radio Shack's SCRIPSIT up to the level of the newer word processors available today.

However, PowerScript is designed to modify **SCRIPSIT/LC**, which is the Model I version of SCRIPSIT™. For many of you Model III users, this is no problem, since when you purchased the SCRIPSIT package from Radio Shack, you were provided with both the Model I and the Model III versions. Simply take your Model I SCRIPSIT disk and CONVERT the file called SCRIPSIT/LC onto your Model III system disk, and run the installation program of PowerScript as usual.

If you are one of those Model III users who did not receive the Model I disk upon his purchase of the package, you can take your master disk and invoice back to a Radio Shack Computer Center and ask them for the Model I disk. They should be willing to provide the Model I version to you at no charge.

If you cannot get any satisfaction from them, then please do the following: send us a copy of your SCRIPSIT invoice, or a xerox copy of your SCRIPSIT master disk label as proof of purchase, along with your PowerScript serial number, and a blank formatted disk formatted for TRSDOS 1.3. We will place SCRIPSIT/LC on your disk and return it to you as quickly as possible. However, we **MUST** have official proof that you purchased SCRIPSIT, or we will not be able to provide you with the SCRIPSIT/LC program.

Thank you for your patience and understanding in this matter.

PowerSOFT Technical Support

PowerScript

for SCRIPSIT™

Powerful features for use with SCRIPSIT™ and the
TRS-80' Models I and III and the Lobo Systems MAX-80

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INTRODUCTION

PowerScript is a modification program that adds many useful functions to Radio Shack's Scripsit™, features that have been suggested by people that use word processors in business and personal applications. It has been developed over a period of several years, growing with the enhanced capabilities of the many powerful daisywheel and dot-matrix printers now on the market. PowerScript has been designed for easy, personal customization in accordance with your specific hardware and word processing requirements. There is no need to purchase additional printer drivers.

PowerScript will work on any Radio Shack Model I or Model III computer or the Lobo MAX-80 computer. The program is compatible with the most popular operating systems including TRSDOS 2.3, TRSDOS 1.3, LDOS, DOSPLUS 3.4, and NEWDOS/80 version 2.0. SCRIPSIT/LC is required; however this program is not provided.

PowerScript has been designed to be compatible with a wide variety of daisy-wheel and dot-matrix printers. You can use two excellent techniques for sending printer control codes to the printer to take full advantage of the special functions, features, and print formats of your printer while your document is being printed. For example, you can:

- change to **expanded** print,
- change the number of characters per inch,
- underline,
- or print graphics,

all in accordance with the limitations and capabilities of your printer. Some printers can not mix different print formats on the same line. Others do not have a control code for underlining. In some cases, PowerScript can help overcome these limitations.

With a PowerScript command embedded in text you can pause the printer output and insert text from the

keyboard, adjust the paper for forms alignment, or change print heads. Provisions have been made for displaying a short message to prompt the operator for the appropriate action.

PowerScript will not crash programs protected in high memory. Utility programs and DOS functions that reside in upper memory will be unaffected by the text buffer.

<BREAK> END returns to DOS READY instead of rebooting the operating system. PowerScript does not overwrite any portion of the disk operating system.

With a simple <BREAK> command you can **ALPHABETICALLY** display a disk directory and Fetch, Chain load, or Kill any file right from the display!

You can select a software or hardware line feed after carriage return.

Your custom printer driver can be used or choose the PowerScript all-codes driver.

Eleven standard ASCII characters (braces, brackets, etc.), missing from the keyboard, can be typed into text by pressing a two-key combination.

With PowerScript you can mark part of the text buffer with copy markers and save that portion to a disk file.

Printed documents are not limited to the length of text in memory. Text from disk files can be included in the printout to form large documents as required.

Translation tables are provided to filter the keyboard input and printer output. You can change the keyboard to the Dvorak style or one of your own design. If your printer can produce scientific or foreign characters, you can use the printer filter to change a standard ASCII character to one of the special characters.

If you are unsure of the proper Scripsit procedure or

command sequence, PowerScript will come to the rescue! Just type a few keystrokes to access a help file and display the desired information on-screen. Another keystroke and you are returned to the text mode.

All tape functions have been deleted. Use SCRIPSIT to transfer files between tape and disk.

The foregoing paragraphs have given a brief introduction to the features of PowerScript. This guide will provide you with the information that you need to execute the special functions and commands that PowerScript adds to SCRIPSIT. You may also need a list of your printer control codes and associated functions.

It will be assumed that you have a working knowledge of SCRIPSIT as it is beyond the scope of this guide to teach the broad array of features of this fine word processing program. References to SCRIPSIT commands and functions will be made throughout this guide.

SCRIPSIT is not provided on the diskette and should be purchased from Radio Shack or an authorized distributor. We cannot support boot-leg or altered copies of SCRIPSIT!

THANKS

The author wishes to thank Gary Loos and Art Rasmussen for their help and ideas during the development of this program. Thanks also to the many others who helped find the bugs and smooth out the rough spots.

Acknowledgements

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MX-80, FX-80, Grafrax are trademarks of Epson Inc.

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POWERSCRIPT INSTALLATION

The modification overlays are designed to work ONLY with SCRIPSIT/LC™. If you are using a Model III, you must transfer SCRIPSIT/LC to a Model III disk using the procedure described in your DOS manual. The installation program will load SCRIPSIT/LC into memory and combine it with the overlay program. Use one of your backup copies of SCRIPSIT/LC (NOT the master) and kill off any unwanted files or utilities or move them to other diskettes to make enough free space available for PowerScript (PSCRIPT/CMD), the modification program (either SCRPMOD3/OVR or SCRPMOD1/OVR), and the installation program (INSTALL/PS). If you have only one disk drive, the disk must include an operating system.

Then boot in the PowerScript distribution diskette and follow the prompts for transferring files to your SCRIPSIT diskette. You MUST transfer the files SCRPMOD1/OVR (Model I) or SCRPMOD3/OVR (Model III) and INSTALL/PS.

After all selected files have been transferred, you will be able to build the PSCRIPT/CMD program. Boot in the SCRIPSIT diskette and type INSTALL/PS to execute the installation program. You will be carefully guided through a series of menus as you customize a version of PowerScript for your system (if you are running INSTALL/PS under LDOS, be sure to disable type-ahead first; under NEWDOS/80 be sure to enable the break key).

Load Menu

The first menu provides three choices:

1. Create PSCRIPT/CMD
2. Modify PSCRIPT/CMD
3. Exit to DOS

Select the first option to build a new version of PowerScript. SCRIPSIT/LC and the overlay file will be

loaded into memory. If you have previously created PSCRIPT/CMD and wish to make changes, select the second option to load PSCRIPT/CMD into memory.

Installation Menu

After the appropriate programs have been positioned in memory, the second (installation) menu will be displayed offering these choices:

1. Install printer control code table
2. Define keyboard filter
3. Define printer filter
4. Select linefeed sequence
5. Select paper advance code
6. Select printer driver
7. Select DOS patch
8. Write PSCRIPT/CMD to disk.
9. Exit to DOS

If you are creating PSCRIPT/CMD, you should choose each of the items to build your initial version of PowerScript. Or you can quickly modify the program by choosing selected items. Of course, you must choose item 8 to save your program to disk. Let's look at each of the items in greater detail.

Install printer control code table

Not surprisingly there are a number of selections from which to choose:

1. Select user-defined table
2. Gemini codes
3. MX-80 codes
4. MX-80 with Grafrax
5. MX-80 with Grafrax +
6. FX-80
7. TEK/NEC8023/C. Itoh
8. DMP-2100
9. Clear Table

They fall into three basic categories; modifying the current table, selecting one of the tables which we have developed for the printers available to us, or clearing the table.

But what exactly is the printer control code table and what does it do?

The actual settings for each of the printers above will be found in Appendix I. However, let us develop a little background for those who are being led into the land of software control of hardware functions (old hands can skim through this if they are bored). The printer control code table defines the relationship between PowerScript embedded print commands (Command letters) and the actual code sequences sent to the printer. Please refer to your printer manual - the section on control codes. Is there a code sequence for bold print, underlining, superscripts, or condensed print (etc. etc.)? Use the PowerScript printer control code table to translate a simple embedded command to one of the code sequences. Then, with just a few keystrokes, you can place print commands in text and PowerScript will translate them to the appropriate code when the text is printed. The printer will respond by printing subsequent characters in the designated format.

For example, let's assume that your printer can print twelve characters per inch after it receives the code sequence 1B 0C (in hexadecimal) and that it prints ten characters per inch in response to the sequence 1B 0A. Assign the Command letter 'A' to define twelve characters per inch and let the Command letter 'a' define ten characters per inch. Now we can choose the first menu option to define our Command/sequence relationship. Try it - press '1' to define our new table.

Did you do it? OK. Then read the on-screen instructions before you hit the <BREAK> key to proceed. No need to take notes, you will be guided throughout the procedure with more on-screen prompts.

After you press the <BREAK> key, the display will look something like this:

Command letter	A	Press <BREAK> for menu
		<UP/DN ARROW> to scan
		<RT ARROW> to modify
		<CLEAR> to clear sequence

1B 42 02

Some of the prompts are obvious. Use the <DOWN ARROW> and <UP ARROW> keys to look over the current translation table. Notice that you can define a code sequence for each of the upper and lower case letters and some other keys, up to 63 different code sequences in all. Move back to Command letter 'A'. In our example, we desire the code sequence '1B 0C'. So what's next? Try pressing the <RT ARROW> key. Aha! The prompt messages change and the cursor moves to the first byte. (One byte contains two hexadecimal digits; i.e.; 0A, B2, FA, 11, etc.). We're told that 3 bytes are available. So far, so good. Now, type the <1>, the , the <0>, and the <C> keys (Don't fret over upper or lower case). Then <ENTER>. What happened? The display shows the code sequence 1B 0C 02. Our hypothetical printer won't like it one bit (that's not funny). What happened is this: a defined sequence may be modified but the length cannot be changed. Let's hit the <CLEAR> key first. Then the <RT ARROW> key. Type in the desired code sequence and hit <ENTER>. Voila!

So far you have seen a string of hexadecimal control codes or the message 'Command undefined' for each of the Command letters. There are two other possible situations indicated by the messages:

'Command allocated, no code' and
'Command part of previous sequence'.

The first, 'Command allocated, no code', will be displayed when the Command letter has been defined with no code sequence. For example, touch the <CLEAR> key to clear a Command letter or scan to an already unspec-

ified command. Press the <RT ARROW> key to define the sequence. Do NOT enter any digits but instead hit the <ENTER> key when the cursor is blinking at the first digit location. You have allocated the Command letter without a code sequence.

You might ask: "Why would I want to do that?". There are at least two reasons. Both involve the fact that PowerScript scans the document for embedded print commands that are unspecified (Illegal command) during the error checking phase prior to printout.

First, you may want to print the document on more than one printer, printers with different features. Suppose that your second printer can't print twelve characters per inch and you don't want to change all the embedded commands. For another example, you may want to create a version of PowerScript that prints the document with no (or only some) enhancements for proofing or some other reason. In either case, just create a second version of PowerScript, allocate the required Command letters with no code and the problem is solved. Before you create the second version of PowerScript, use your DOS to rename the first to PSCRIPT/PR1. Rename the second version PSCRIPT/PR2.

The last message, 'Command part of previous sequence', is displayed when the previous Command letter is defined with more than three code bytes. For example, scan to Command letter 'J', touch the <RT ARROW> key, and enter four or more code bytes. Touch <ENTER> and scan to the next Command letter. Get the message? Nuff said. You can enter up to fifteen hexadecimal codes for a single Command letter but only with the loss of subsequent Command letters.

This concludes the instructions for modifying the current printer control code table. You are encouraged to experiment with the program as much as you like. When you're ready, hit the <BREAK> key for the installation menu and again choose the first item to review some of the other options for installing the printer control code table.

If you choose to 'Clear table', all Command letters will be undefined.

The remaining choices involve tables which we have developed for a few specific printers. You may choose one of these and leave it as is or modify it to suit your specific needs. The definition for these tables is given in the Appendices.

After you have defined your printer control code table, you should document the relationship between the Command letters, the printer functions and the control code sequences. A suggested format is illustrated in the Appendices. Try to use Command letters that somehow relate to the printer function to make them easier to remember. We have also made it possible for you to modify the Help file to include your definitions. (See the section describing the Help file.)

Define keyboard filter

Return to the Installation Menu and choose the second item: 'Define keyboard filter'. There are only three options:

1. Select User-defined filter
2. Select the Dvorak keyboard
3. Select the Standard keyboard

Install the modified Dvorak filter (see Appendix II for the key arrangement) and type on a layout designed for speed typing. Just touch the <2> key and PowerScript will translate the original keyboard driver to the Dvorak layout. Use stick-on letters to identify the keycaps.

****** CAUTION!!! ******

Do not attempt to interchange the keycaps unless you are absolutely certain that your keyboard will not be damaged by this action. Refer to your owners manual or contact the manufacturer.

Choose the first selection to design your own keyboard layout or to install the number key changes for a full Dvorak keyboard. Press the <1> key and the screen will be filled with brief instructions for modifying the keyboard filter (the instructions are there to help when this guide is not handy). Read them and touch the <BREAK> key to continue. The display will be completely filled with the keyboard filter table as it currently exists in PowerScript. Each entry includes the original symbol, the corresponding hexadecimal code, the translation hexadecimal code, and the translation symbol. For example, the entry for the letter 'G' looks like this:

G	47	47	G	Standard keyboard
G	47	49	I	Dvorak keyboard

You may use the <UP ARROW> and <DN ARROW> keys to position the cursor over the translation code for any keyboard character. To change the character to any other, just type in the hexadecimal code of the translation character. (Use the table of standard ASCII codes in the Appendix.) The display will be updated with the correct symbol. Sorry, the keyboard cannot be filtered to produce non-ASCII characters; they are not compatible with the original Scripsit text handling functions.

For those using PowerScript on the Lobo MAX-80™ computer, you will find that the extra keys on the MAX keyboard will be recognized (with the exception of the four function keys). However, they will be recognized in a case-reversed fashion, that is, pressing the key without SHIFT will generate the shifted symbol and vice versa. This is a quirk in the way that Scripsit reads the MAX-80's keyboard matrix and is not a bug.

When you have completely defined your keyboard filter, touch the <BREAK> key to return to the Installation Menu.

Finally, choose the third option, 'Select the Standard keyboard', if you wish to return to the original configuration.

Define printer filter

Return to the Installation Menu and choose the third item: 'Define printer filter'. There are only two options:

1. Select user-defined filter
2. Select the standard filter

Choose the first selection to design your own printer filter. Press the <1> key and the screen will be filled with brief instructions for modifying the printer filter (the instructions are there to help when this guide is not handy). Read them and touch the <BREAK> key to continue. The display will be completely filled with the printer filter table as it currently exists in PowerScript. Each entry includes the original symbol, the corresponding hexadecimal code, the translation hexadecimal code, and the translation symbol. For example, the entry for the letter 'G' looks like this:

G 47 47 G Standard filter

You may use the <UP ARROW> and <DN ARROW> keys to position the cursor over the translation code for any character. To change the character to any other, including graphics characters, just type in the hexadecimal code for the translation character (use the table of printable characters in your printer manual). The display will be updated with the correct symbol if the code is for a standard ASCII character; graphics codes will not be displayed.

When you have completely defined your printer filter, touch the <BREAK> key to return to the Installation Menu.

Finally, choose the second option, 'Select the standard filter', if you wish to return to the original configuration.

Select linefeed sequence

Return to the Installation Menu and choose the fourth item: 'Select linefeed sequence'. There are only two options:

1. Send linefeed after carriage return.
2. Send carriage return only.

Under most circumstances, you should choose the second selection. But the first selection, in conjunction with a hardware change, may be the only way for you to perform certain word processing functions with your printer.

Many printers cannot change print formats in the middle of a line. Others may not have a control code for underlining. If you own a printer with these or some other limitations, PowerScript provides a technique for performing some of these functions. The technique involves more work for you in composing the text, but at least there is a way.

First, a little background. TRS-80 Basic sends ONLY a carriage return code to the printer to return the carriage to the left position AND to advance the paper. Normally, one would send both the carriage return and the line feed codes for this purpose. To compensate, the printers were designed to perform both functions in response to the carriage return code. Thus, the printer driver in SCRIPSIT was set up to be compatible with this unique feature of the TRS-80 computer.

Refer to the sections describing the Control Code Line and Printer configuration. Then choose the first selection if you can make use of the techniques described in these sections.

Select paper advance code

Return to the Installation Menu and choose item five: 'Select paper advance code'. There are only two options:

1. Select carriage return code
2. Select linefeed code

SCRIPTSIT sends a linefeed code to advance the paper for top and bottom margins or blank lines. Some printers respond only to the first linefeed and ignore the rest. Result? Apparently missing margins or lines. If you experience this problem, choose the first option.

Select printer driver

Return to the Installation Menu and choose item six: 'Select printer driver'. There are only two options:

1. All codes driver
2. ROM driver

The ROM printer driver does NOT send all codes through the parallel port. The 00 is not sent and the 0C is changed to a number of line feed codes. Therefore you should choose the first option for most installations. Also choose the first option if your printer works with an unmodified version of SCRIPTSIT. But, if your printer requires a special printer driver to print Basic listings and programs, you will probably need to choose the second option.

Select DOS patch

Return to the Installation Menu and choose item seven: 'Select DOS patch'. Model I options include:

1. DOSPLUS 3.4
2. LDOS
3. TRSDOS
4. NEWDOS-80

The Model III options are:

1. DOSPLUS 3.4
2. LDOS
3. NEWDOS-80
4. TRSDOS 1.3

An operating system patch is required to make the file handling functions of SCRIPSIT compatible with your operating system. If you are using another DOS, try one of the selections and experiment with a test file composed of at least 300 characters. Save the file to disk, erase the text buffer and then load the file back in. Look for a complete load, sometimes the last record is not loaded. Or you may get an end-of-file error message. If you experience one of these problems, try another patch or ask for help from the authors of your DOS.

Write PSCRIPT/CMD to disk

Return to the Installation Menu and choose item eight: 'Write PSCRIPT/CMD to disk'. No options. The new version will overwrite any previous version on the disk or it will create the file PSCRIPT/CMD. Be sure that there is sufficient room for the program (about 55 sectors) on your disk.

Exit to DOS

Press the <9> key for immediate return to your disk operating system. Choose this option after you have finished with the other selections or if you decide to exit without writing the changes to disk.

This completes the installation procedure. You now have a very good word processor that has been enhanced with some powerful features.

Call up the new program by typing:

PSCRIPT/CMD <enter>

If you are using an operating system OTHER than TRS-DOS™, follow YOUR system's directions for converting TRSDOS™ files to YOUR DOS. Or you may use SUPER UTILITY PLUS, which can convert from ANY DOS to ANY other DOS.

USING POWERSCRIPT'S SPECIAL FEATURES

Within PowerScript, the standard SCRIPSIT keyboard control codes and special commands (with the exception of the tape commands) are still active. The @ key remains as the CONTROL key. In addition to the standard SCRIPSIT commands, several new commands have been added.

IMBEDDED CODES

Most printers can change print formats in the middle of a line for underlining, printing in bold print, and many other functions. To do so, the appropriate control code sequence must be imbedded in the text line. With PowerScript you can imbed the print commands with a simple control-key and command-letter sequence. Define the relationship between command letters and the control codes for your printer with the INSTALL/PS program.

Print commands are entered into text by first pressing **control-p** (hold down the Scripsit control key and press the 'P' key). The message on the command line will prompt you to ENTER PRINT COMMAND. Then type the command letter for the desired function. The display includes a graphics character followed by the command character. The length of the display line will automatically increase to accommodate the extra characters. Justified print will not be affected by the print command character pair.

As an example, let's assume that you have a printer that can underline in the middle of a line and that you have defined command letter 'U' to start underlining and command letter 'u' to stop underlining. Also, the print command graphics character will be represented by the caret (^). Then we can type the following text to underline "big" for emphasis:

Imbedded commands are a ^Ubig^u help in word processing applications.

Editing of the print command character pair has been error-trapped. You can overstrike the command letter, but not the graphics character. You cannot insert a character between the graphics and command characters. The print-code pair can be deleted by placing the cursor on the graphics character and then pressing 'DELETE'. Insert a print code pair by placing the cursor over the first character to be affected by the print command, press control-p and the command letter and the character pair will be properly inserted.

You will get an ILLEGAL COMMAND error during error tests if you type an undefined print command letter. Try it.

The imbedded print codes can be searched out with Scripsit's global search commands, so editing codes can easily be accomplished when necessary.

NEW CHARACTERS

Eleven new characters can be entered into text by pressing the control key in conjunction with the number keys and the colon/asterisk key. The displayed characters may be different from the printed characters depending on your hardware. We encourage you to try the characters in a text line to verify the displayed and printed formats. Hexadecimal codes are given for each character to enable you to verify the results with information in your printer manual.

Control-0	[	5B
Control-1	\	5C
Control-2	|	5D
Control-3	^	5E
Control-4	_	5F
Control-5	~	60
Control-6	{	7B
Control-7	!	7C
Control-8	}	7D
Control-9	~	7E
Control-:	del	7F

Use stick-on labels to identify the keys with the new characters.

SAVING TEXT BETWEEN COPY MARKERS

Text enclosed between copy markers can be saved to a disk file. Insert the copy markers (press <BREAK> HM <ENTER> for marker help) and then type <BREAK> S,C FILENAME/EXT <ENTER> to save a block of text starting from the first copy marker to the next or, if there isn't another copy marker, to the end of text. If the file name is not specified, the last file name will be used, thereby overwriting the last disk file that was used.

KEYBOARD FILTER

The entire keyboard can be redefined (with the INSTALL program) to any desired configuration, including the DVORAK layout. A lookup table does a simple translation from the original keyboard character to the one you specify when you install PowerScript. The lookup routine will slow the keyboard routine slightly which may disappoint some of the faster typists.

PRINTER FILTER

Output to the printer can be filtered to change any character to any other, including graphic or special characters. A lookup table does a simple translation from the original text character to the one you specify when you install PowerScript. For example, our configuration changes the DEL key to an end-line graphics character (■).

CONTROL CODE LINES

Printers, in response to specific code sequences, can print graphics, change print formats, and perform many other functions. To enable these special functions, decimal numbers (control codes) which represent the print control commands are assembled in a new control code line which is similar to SCRIPSIT format or comment lines. In addition to the control codes, this new line may also contain comments and special text.

The control code line is easily used by following some simple rules :

- 1) It must begin with a greater-than sign and a number sign (>#), it may be as long as necessary, and it is terminated by <ENTER>.
- 2) It must be placed after a text boundary marker.
- 3) Comments can be inserted anywhere in the line and must be followed by a space or by <ENTER>.
- 4) The control code commands are entered as decimal numbers followed by a comma. Codes not followed by a comma will be ignored.
- 5) Embedded spaces are ignored and cause the routine to skip to the next control code.

- 6) Characters (text) enclosed within < > will be printed starting at the current carriage position.
- 7) A single control code or text character can be repeated up to 132 times by placing an asterisk (*) between the multiplier and the object code.

Use the control code line for sending codes that would not normally be embedded in a text line.

Examples

All of the rules are more fully explained by the following examples. They are presented in the same order as the rules appear in the above list. Hopefully these examples will clearly illustrate the procedures.

If your printer is not one of those used in these examples, then the control codes will probably be different. (We think it's a conspiracy against authors of word processing software. A standard set of printer codes could make their task much easier.) You must consult your printer manual for the appropriate control codes that correspond to the desired results of the examples. Unfortunately, some operators manuals are not very complete and they do not always tell you of the control code combinations which are incompatible. You are encouraged to experiment with short files; the most that can be lost is a little paper (and, in our experience, maybe a little patience).

1) This one is easy since it is self-explanatory. The control code line is set apart from text lines by beginning the line with the symbol pair >#.

># this is a control code line ■

Like the SCRIPSIT format and comment lines, the control code line must be left-justified on the screen. Terminate the line by pressing <ENTER> .

2) Control code lines must follow a line boundary marker (`<ENTER>`), a paragraph boundary marker, a page marker, or another control code line properly terminated by `<ENTER>`.

```
.....some text ends.
># a valid control code line
>#also valid
>LM-6
># another valid control code line
```

3) You can insert comments anywhere in the line to identify the functions of the codes you send. Just remember to follow the comment with a space or `<ENTER>`.

```
># MX-80 code for double print 27,71,
```

4) All control code commands are entered as decimal numbers. This format was chosen because it is compatible with the BASIC `LPRINT CHR$()` statements that have often been used to set up the printer prior to using SCRIPSIT. Each decimal code must be followed by a comma.

```
># expanded 14, enhanced 27,69, and double print
27,71,
```

is an example of a control code line for an Epson or Gemini printer.

Suppose you want to print something expanded for a header or for emphasis. Several printers provide this feature.

THIS IS A HEADER

To get this printout with an Epson or Gemini printer you would type:

```

>#14,      control code
>LM=8,     adjust margin
THIS IS A HEADER
>#20,      back to normal
>LM=12,    readjust margin

```

With an Okidata Microline 80 (or 82a/83a) printer, type:

```

>#31,
>LM=6,
THIS IS A HEADER
>#30,
>LM=12,

```

Remember, the control code line can be placed anywhere in text as long as it follows a text boundary marker, just as with format lines.

The control code line can be used to print graphics or characters that do not appear on the keyboard. Typing this code:

```
>#12*32,91,92,93,94,95,96,123,124,125,126,198,32,205,
```

will produce this printout

```
[ \ ] ^ _ ` ( ) ~ ~ ~ ~ ~
```

on an MX-80 printer. Did you notice the graphics?

You can also control paper movement by sending the appropriate control codes for the number of lines per inch, horizontal and vertical tabs, etc.

5) Each control code must be terminated by a comma, NOT a space. A space will abort the transmission of any code that was interpreted following the last comma. (That's why comments can be included in the control code line.) In these two examples, control code 71 will not be sent to the printer.

```
>#27,71 MX-80 code
>#27,71
```

6) You can print partial lines of text from within a control code line. (Only if you can configure the printer for separate carriage return and line feed functions. Read the section on Configuring The Printer.) This feature is useful if you want to change print format in the middle of a line with printers that do not have a built-in capability for this or similar functions. Text contained within the control code line must be preceded by a less-than sign and end with a greater-than sign.

```
>#33*32,27,71,<easily> 13,
>#27,72,MX-80 control codes
Print formats can be mixed.
```

The above lines produce the following printed text:

Print formats can be easily mixed.

Since PowerScript text is not controlled by SCRIPSIT format lines, you are required to exercise extra care when assembling these text lines to produce the desired justification, etc. Also, you must follow a partial text line with a carriage return control code before you return to regular text typing. (Control code 13 in the above example.)

You can also print complete lines of text from within the control code line. Each line of text must be followed by a carriage return (and a line feed if auto line feed has been selected). If you send the carriage return and line feed codes from the control code line, SCRIPSIT will not know about these lines and can not count them for proper page length. The BEST way to make sure that your lines get counted correctly for page length is to follow your control code line with another <ENTER> , like this:

```
>#12*32,<A complete text line including graphics,etc.>
```

which prints out like this:

A complete text line including graphics, etc.

7) Any control code or the first character following the less-than sign (<) can be repeated up to 132 times by placing an asterisk (*) between the multiplier and the code that you want repeated.

>#12*32,4*<\$500.00>3*33, exclamation mark ■

prints out like this:

\$\$\$\$500.00!!!

The "12*32," prints the left margin spaces;

"4*<\$>" prints four dollar signs;

"3*33," prints three exclamation marks.

Notice that "500.00" is printed normally.

THE HELP FACILITY

PowerScript incorporates a HELP facility which is invoked by typing <BREAK> H <ENTER>. The file called **HELPPFILE/SCR** must be present on one of the disk drives when this is done. The HELP function provides immediate, on-screen information on virtually any Scripsit or PowerScript function. Pressing <BREAK> H <ENTER> will present you with the HELP MENU:

Blocks: header, footer, etc.	Paragraph, Printing
Comments, Cursor Motion	Query Information
Deleting, Directory	Repeat command
Exchanging	Saving text
Format lines	Tab set, clear
Global repeat, find, etc.	Upper case lock
Hyphenation	Video line width
Inserting, Included files	Window motion
Loading files	
Markers: text and boundary	

Type the first letter for help.

The help file screens are arranged by subject as shown on the menu, and keyed to the first letter of each column. All you need to do is press the first letter of the appropriate subject to call up that screen. For example, if you wanted to see the help information regarding format lines, you would press F.

The bottom line of the display will prompt you for keyboard input. Some menu letters point to more than one screenful of information. Press the spacebar to display the next group of examples or instructions. When prompted, press a menu letter for help in another category. Pressing an undefined menu letter will display the menu.

Alternatively, you may follow the letter H with the menu letter before pressing <ENTER>. (<BREAK> HP <ENTER> will call up paragraph and print help.)

Each screenful of information can be printed by pressing control-p. Pressing <BREAK> will always return to the text mode.

CUSTOMIZING THE HELP FILE

The HELP function accesses the text file entitled HELPFILE/SCR. The HELPFILE/SCR file itself can be loaded into PowerScript as a regular file, and modified to suit your needs. You might want to do this if you install your own printer codes in PowerScript, for example, and want the help file to reflect these codes. Just be sure that if you are maintaining different versions of PowerScript, you do not get the help files mixed up. Also, do not rename the help file.

The end of the file can be modified to describe the functions of the imbedded print command letters that you defined with the INSTALL program. The HELP routine uses several methods to control access to the file.

First, the page marker will point to the end of a page of information for a given menu letter. The last line of an intermediate page should prompt you to press the space bar for more information. End the prompt line with a page marker.

Second, the block end marker signifies the end of all information for the menu letter selected. Use a prompt line suggesting another menu letter or the break key to exit the HELP function. Terminate the prompt line with a block end marker.

Finally, the help routine expects to find the help files in specific locations in the disk file. For this reason, you are encouraged to avoid changes to all but the last file. Extensive changes will most surely result in a 'Program not found' error. But, you may add as many pages to the end of the file as you like.

Save the edited file back to disk using the file password HELP4 to provide protection against inadvertent modification.

Caution! Do not edit your master copy of HELPFIL/SCR. Always work with a backup copy.

HYPHENATING

The hyphenating command has been changed from <BREAK>-'H' to <BREAK>-'.'. <BREAK>-'H' is now used to call up the HELP function.

CHAINING FILES TOGETHER

Like many word processors, SCRIPSIT's document size is limited by available memory. However, PowerScript gives you the ability to chain files together at print time, so that they print one after the other. This feature makes it possible to print out long documents or books directly from one or a series of disk files previously saved from the text buffer. Or the included text could simply be a letterhead.

Disk files are included in the printout by typing an include line which contains the file name, like this:

>& FILENAME/EXT ■

The file name must be in capital letters.

The include line can be placed at the beginning of your text file. Elsewhere in the text buffer it must be placed after a line or page boundary marker, just as a format or control code line. There may be any number of include lines in the text buffer, and they may be typed on successive lines or they may be separated by additional text.

Included files may NOT contain headers, footers, or another include line. These will generate error messages during the error test before the actual printing of the text. But format lines and control code lines are ok, as long as they are properly placed in the text.

Errors in the include file will generate appropriate messages at the bottom of the screen and the cursor will be placed at the end of the include line that contains the error. Be sure that page formatting lines in included files appear at the top of a page. The included file may be printed starting in the middle of a page and an error will be detected if the first line in the included file contains page formats.

When you go to print a file which invokes additional files, those files will also be tested for errors before printing begins. Thus the "Testing for Errors" phase may take a few minutes, depending on the number and size of files being chained together. This is not a cause for alarm, but you should be aware that it will take considerably longer before printing actually begins.

PRINTOUT CONTROL

A question mark (?) in the control code line is used by PowerScript to halt printer output to allow the user to change print wheels, insert text, position the paper for forms alignment, or do something we haven't thought of yet. During the pause, the screen will clear, any prompt typed after the "?" will be displayed, and a blinking cursor will prompt you for input. Type in whatever you like and use the left and right arrow keys to move the cursor for corrections. Be sure that the cursor is at the end of the text you have typed before you hit <ENTER>. Depress <ENTER> to print the inserted text and/or to continue printing. Text must be inserted into a PowerScript-controlled text line that is assembled within a control code line (remember to follow the line with an extra <ENTER> to advance the line counter. Refer to rule 6 explanation). For example:

>#12*< Dear >? insert name and comma

■

This sequence will prompt you to input some text ("insert name and comma " will be displayed), print 12 spaces, "Dear ", and whatever you type in. (up to 44 char-

acters). The extra <ENTER> will issue the carriage return and line feed and then normal printing will continue.

DIRECTORY FUNCTIONS

You can read the disk directory from within PowerScript by pressing <BREAK> and then, on the command line, by typing a colon (:) followed by the drive number. If the drive number is not specified, drive 0 will be assumed. No space is allowed between the colon and the drive number. Do not specify a drive number that is not available.

Free grants will be displayed first. Then the first 63 files (if there are that many or more) will be displayed in as many as four columns, and alphabetized. If you touch <BREAK>, the next group of files will be alphabetically displayed, and so on until all files have been displayed.

While in the display mode, several keys have special functions:

- P = (P)rint the display
- K = (K)ill a selected file
- F = (F)etch a selected file
- C = (C)hain load a selected file

Each display can be dumped to the line printer by pressing the "P" key. The printout can be aborted by touching the <CLEAR> key.

If you want to (K)ill, (F)etch, or (C)hain a file, use the up and down arrow keys to move the cursor through the list, positioning the cursor on the file name that you want. You have full, wrap-around control of the cursor (which means that you can move from upper left to lower right by depressing the up arrow or from lower right to upper left with the down arrow key.)



If you are killing files, press the "K" key to kill the file (as indicated by the blinking cursor) which will then be erased from the screen. This action is NOT reversible. The kill function will begin as soon as you touch the "K" key. Know what you are doing. After you finish killing files, press "P" if you want another printout, or press <BREAK> to get the next page or return to the text mode.

To load a file into the text buffer, position the cursor on the file name and press the "C" key if you are chaining (or merging) the requested file with material already in the text buffer. Or press the "F" key to fetch the requested file. Just touch the appropriate key and the file will be loaded into the text buffer and you will be placed in the text mode. (We know that the "L" key is used by PowerScript to load in a file from the SPECIAL COMMAND line but the "F" key was chosen here to minimize the possibility of mistakenly touching the "K" key and thus killing a file you wanted to fetch.)

PRINTER CONFIGURATION

If you have a printer that cannot change formats or underline in the middle of a line, you will get the most out of PowerScript if you set up the printer so that it does not advance the paper when it executes a carriage return. Let PowerScript take care of it by selecting the automatic line feed feature when you install the program. Then, using text in the control code line, you can overprint, underline, change the number of characters per inch in the middle of a line, or even print characters that are not on the computer keyboard (such as special or graphics characters).

For example, the lines

>#12*32,3*95,32,7*95,13, UNDERLINING For example. 
For example, type: 

result in this line:

For example, type

Read your printer operating manual or contact the manufacturer for explicit configuration instructions. Some printers have jumper plugs, others use DIP switches to establish configuration.

SPECIAL ASSISTANCE

Early versions of PowerScript (SCRIPPLUS) have been use-tested by literally hundreds of users. As with any other software designed to interface with various hardware, some of you will have problems. When you do, re-read the instructions on your printer pertaining to control code interaction and also this document. You must know your hardware. With a little practice, PowerScript will give you excellent results.

As a LAST resort, or if you have found a bug (heaven forbid!), write to ROSTEK and include a printout (using <BREAK> P,I <ENTER>) showing your problem. A stamped, self-addressed envelope will be appreciated.

Questions will be answered at PowerSoft Mondays through Fridays from 10:00 a.m. to 5:00 p.m. CENTRAL TIME (i.e., 11 a.m. through 6 p.m. EASTERN, 9 a.m. through 4 p.m. MOUNTAIN, or 8 a.m. through 3 p.m. PACIFIC). NO collect calls accepted. Only registered owners are entitled to technical support services. Please be brief, and make sure this is a problem with PowerScript, not with your printer. We cannot possibly tell how to configure the MANY types of printers out there now. It WILL work with the capabilities of YOUR printer if you read your printer manual for YOUR control codes. If the problem involves printouts or examples, send them in a letter (with a self addressed envelope) to ROSTEK, as stated above.

APPENDIX I

Print Code Tables

Gemini

Cmd.	Code	Function
A	1B 42 02	12 Characters per inch
B	0E	Double Width On
C	0F	Condensed Print On
D	1B 47	Double Strike On
E	1B 45	Emphasized Print On
G	07	Bell
I	1B 34	Italics On
O	1B 56 01	Slash Zero On
P	1B 5A 01	Proportional Print On
R	1B 40	Reset
S	1B 53 00	Superscript On
T	1B 54	Super/Subscript Off
U	1B 2D 01	Underline On
a	1B 42 01	10 Character per inch
b	14	Double Width Off
c	12	Condensed Print Off
d	1B 48	Double Strike Off
e	1B 46	Emphasized Print Off
i	1B 35	Italics Off
o	1B 56 00	Slash Zero Off
p	1B 5A 00	Proportional Print Off
s	1B 53 01	Subscript On
u	1B 2D 00	Underline Off

Epson MX-80

Cmd.	Code	Function
B	0E	Double Width On
C	0F	Condensed Print On
D	1B 47	Double Strike On
E	1B 45	Emphasized Print On
G	07	Bell
b	14	Double Width Off
c	12	Condensed Print Off
d	1B 48	Double Strike Off
e	1B 46	Emphasized Print Off

Epson MX-80 With Graftrax

Cmd.	Code	Function
B	0E	Double Width On
C	0F	Condensed Print On
D	1B 47	Double Strike On
E	1B 45	Emphasized Print On
G	07	Bell
I	1B 34	Italics On
b	14	Double Width Off
c	12	Condensed Print Off
d	1B 48	Double Strike Off
e	1B 46	Emphasized Print Off
i	1B 35	Italics Off

Epson MX-80 with Grafrax Plus

Cmd.	Code	Function
B	0E	Double Width On
C	0F	Condensed Print On
D	1B 47	Double Strike On
E	1B 45	Emphasized Print On
G	07	Bell
I	1B 34	Italics On
R	1B 40	Reset
S	1B 53 00	Superscript On
T	1B 54	Super/Subscript Off
U	1B 2D 01	Underline On
b	14	Double Width Off
c	12	Condensed Print Off
d	1B 48	Double Strike Off
e	1B 46	Emphasized Print Off
i	1B 35	Italics Off
s	1B 53 01	Subscript On
u	1B 2D 00	Underline Off

Epson FX-80

Cmd.	Code	Function
A	1B 4D	12 Characters per inch
B	0E	Double Width On
C	0F	Condensed Print On
D	1B 47	Double Strike On
E	1B 45	Emphasized Print On
G	07	Bell
I	1B 34	Italics On
P	1B 70 01	Proportional Print On
R	1B 40	Reset
S	1B 53 00	Superscript On
T	1B 54	Super/Subscript Off
U	1B 2D 01	Underline On

a	1B 50	10 Character per inch
b	14	Double Width Off
c	12	Condensed Print Off
d	1B 48	Double Strike Off
e	1B 46	Emphasized Print Off
i	1B 35	Italics Off
p	1B 70 00	Proportional Print Off
s	1B 53 01	Subscript On
u	1B 2D 00	Underline Off

TEK, NEC 8023, and C ITOH Prowriter

Cmd.	Code	Function
A	1B 45	12 Characters per inch
B	1B 21	Bold Print On
C	1B 51	Condensed Print
D	0E	Double Wide On
E	1B 4E	Pica Print (10 cpi)
P	1B 50	Proportional Print
U	1B 58	Underline On
b	1B 22	Bold Print Off
d	0F	Double Wide Off
u	1B 59	Underline Off

Radio Shack DMP-2100

Cmd.	Code	Function
A	1B 17	Standard 12 cpi print
B	1B 1F	Bold Print On
C	1B 14	Condensed Print
D	1B 0E	Double Wide On
E	1B 13	Standard 10 cpi Print
P	1B 11	Proportional Print
U	0E	Underline On
a	1B 1D	Correspondence 12 cpi
b	1B 20	Bold Print Off
d	1B 0F	Double Wide Off
e	1B 12	Correspondence 10 cpi
u	0E	Underline Off

APPENDIX II

Dvorak Keyboard Filter

Modified top row

[!]	["]	[#]	[\$]	[%]	[&]	[']	[\langle]	[\rangle]	[]	[=]	[*]
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[0]	[-]	[:]
[?]	[<]	[>]	[P]	[Y]	[F]	[G]	[C]	[R]	[L]	[]	[]
[/]	[,]	[.]	[p]	[y]	[f]	[g]	[c]	[r]	[l]	[@]	[]
[A]	[O]	[E]	[U]	[I]	[D]	[H]	[T]	[N]	[S]	[]	[]
[a]	[o]	[e]	[u]	[i]	[d]	[h]	[t]	[n]	[s]	[]	[]
[+]	[Q]	[J]	[K]	[X]	[B]	[M]	[W]	[V]	[Z]	[]	[]
[;]	[q]	[j]	[k]	[x]	[b]	[m]	[w]	[v]	[z]	[]	[]

Dvorak top row

[*]	[\langle]	[']	[%]	[#]	[!]	[]	["]	[\$]	[&]	[\langle]	[=]
[:]	[9]	[7]	[5]	[3]	[1]	[0]	[2]	[4]	[6]	[8]	[-]

APPENDIX III

ASCII Conversion Table

HEX	0	1	2	3	4	5	6	7
0	NUL	DLE	SPC	0	@	P	-	p
1	SOH	DC1	!	1	A	Q	a	q
2	STX	DC2	"	2	B	R	b	r
3	ETX	DC3	#	3	C	S	c	s
4	EOT	DC4	\$	4	D	T	d	t
5	ENQ	NAK	%	5	E	U	e	u
6	ACK	SYN	&	6	F	V	f	v
7	BEL	ETB	'	7	G	W	g	w
8	BS	CAN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
A	LF	SUB	*	:	J	Z	j	z
B	VT	ESC	+	;	K	[	k	{
C	FF	FS	,	<	L	\	l	|
D	CR	GS	-	=	M	]	m	}
E	SO	RS	.	>	N	^	n	~
F	SI	US	/	?	O	`	o	DEL

APPENDIX IV

Decimal-Hexadecimal Conversion Table

HEX	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
B	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255



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