ESIM & ETSR

A Clayton E. Cramer Software Product

Requirements: 128K RAM, PostScript printer.

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ESIM & ETSR

1. Purpose

The **ESIM** package provides two different methods for translating Epson MX-80 printer commands into PostScript. The **ETSR** program provides a user friendly method of performing this translation for parallel interface PostScript printers and 100% PC-compatible computers; **ESIM** works with most PC-compatible computers, and parallel or serial interface PostScript printers.

2. Installation

Installation is trivial. Place your installation disk in drive A. Determine in which directory you wish **ESIM** and **ETSR** to reside, then use the DOS **CD** (change directory) command to make that the current directory. Then enter the following commands at the DOS prompt:

```
COPY A:ESIM.EXE
COPY A:ETSR.EXE
COPY A:FF
```

This will copy the **ESIM.EXE** and **ETSR.EXE** program files, and the data file **FF** to the current disk and directory. Make sure that your **PATH** environment variable includes the directory to which you have copied **ESIM** and **ETSR**. (The **PATH** environment variable tells DOS which directories to search for executable programs -- if DOS doesn't know where to find **ESIM** or **ETSR**, you will have to be in the directory that contains them to use these programs. See your DOS manual for more details about the use of **PATH**).

3. Definitions

Application program: a program that does what you actually started out trying to do. Example: Lotus 1-2-3.

Utility: a program that makes it possible for your application program to do what it should be smart enough to do without outside help.

TSR: a terminate-and-stay-resident program. TSRs are a class of very clever programs that are loaded into your computer's memory, and stay there until the computer is turned off. There are many different types of TSRs, most of which provide a way to change how an application program works. **ETSR** provides a way to intercept output intended for an Epson MX-80 printer, and translate it into PostScript. This capability is necessary because a great many programs don't support PostScript yet -- and some never will support PostScript.

Filter: a class of programs that run under UNIX or DOS that read one type of file, and perform some type of processsing or translation on that file, producing another file. Your DOS manual explains the concept of filters -- by understanding what *stdin*, *stdout*, "pipes", and "redirection" mean, you will be able to increase the usefulness of not only **ESIM** (which is a filter), but also other DOS filters that you may already have. Don't worry -- you don't really need to read much of the DOS manual to use **ESIM** -- it will just make it easier to understand if you have difficulties using **ESIM**.

Timeout: a period of time that, by elapsing, signals an event of some sort that has or should take place.

Parallel interface: the method by which dot matrix printers are usually connected to a PC-compatible. The parallel interfaces are addressed as LPT1, LPT2, or LPT3. Parallel interfaces are fast, reliable, and easy for programs to talk to.

Serial interface: the method by which modems, mice, and some letter quality printers are attached to a PC-compatible. The serial interfaces are addressed as COM1 or COM2. Serial interfaces are slow, less reliable, and harder for programs to communicate with. This is why the **ESIM** program is much simpler to use with the parallel interface than the serial interface. If you have any choice in the matter, make sure you use a parallel interface to connect up your PostScript printer. You may even want to purchase a parallel to serial interface converter box for your PC, so that the **ETSR** program can talk to a parallel interface. Most converter boxes of this sort are also printer buffers as well, and can free up your computer sooner.

Character printer: a printer that prints a character at a time.

Page printer: a printer that buffers up characters until it has an entire page to print, then prints the entire page.

LAN: a local area network. If you don't know what this is already, you won't need to know.

Print server: a computer attached to a LAN which is responsible for collecting jobs from other users on the network, and printing these jobs on a directly attached printer.

4. Emulating An Epson MX-80 Printer

There are certain characteristics and unavoidable limitations when emulating an Epson MX-80 printer -- these are true with both **ETSR** and **ESIM**. These restrictions are generally true, regardless of how such an emulator is written.

4.1 Monospaced Fonts

Note that Epson MX-80 fonts are monospaced, and the only monospaced font family on PostScript printers is *Courier*. In a previous version of **ESIM**, the other fonts could be used, but the results were always disappointing, since the proportional spaced fonts don't match the widths of the MX-80 characters. Consequently, we have eliminated this unusable feature. Remember that emulating an Epson MX-80 is a less than optimal solution, and the results of doing such an emulation are going to be disappointing compared to using a program that knows how to talk PostScript.

4.2 Undocumented Combinations

Some combinations of sizes and printing effects on the actual Epson MX-80 printer do not work -- for example, 8 characters/inch with shadow and enhanced print. These combinations work sensibly with **ESIM** and **ETSR** -- this may not be the same way they work on the MX-80 printer. (Some programs actually *rely* on these limitations of the MX-80 for printing documents).

4.3 Shadow Mode

Some word processors always print in shadow mode on the Epson MX-80 printer, to improve the quality of the print, and then use the bold mode to make bold face type. Because a laser printer is going to be doing the printing, you will not need shadow mode to make the print readable, and turning it on is actually a disadvantage. If possible, turn off any so-called "near letter quality" modes that your application program uses.

4.4 MX-80 Is Not FX-80

ESIM and **ETSR** support the modes of the Epson MX-80 printer *only*. There are a number of programs we have run into that assume that all FX-80 printer codes are accepted by the MX-80 -- this is *not* the case. Before assuming that **ESIM** or **ETSR** doesn't work, see if you can successfully print the file on a real Epson MX-80 printer.

4.5 Graphics Modes

ESIM and **ETSR** supports both the low and high density graphics modes of the Epson MX-80 with Graftrax III -- but it is slow. A full page of graphics can take from five to eight minutes, depending on the number of pixels being printed. Keep in mind that printing the same full-page graphics on a dot matrix printer is also very slow.

Like the Epson MX-80 printers, attempts to produce very small characters in graphics mode may be somewhat disappointing -- the limiting factor is the resolution of the Epson MX-80.

5. ETSR

5.1 What ETSR Does

ETSR is a terminate-and-stay-resident program that converts Epson MX-80 printer control codes to PostScript. It does this by intercepting the output sent to the parallel printer and translating it to PostScript before sending it to the printer. This happens without your application program even being aware of it.

Power-on default font sizes and conditions have been, as much as possible, kept the same as the Epson MX-80 printer. Unlike **ESIM**, **ETSR** preserves these defaults from one application program to the next -- just like a real Epson MX-80.

5.2 Form Feed Timeouts

If you print on a character printer, it isn't necessary to complete the page for what you've already sent to be printed. On a page printer, it is necessary, because page printers don't print a document until they receive a form feed. Most application programs print a form feed at the end of their output -- but not all. (The DOS **DIR** command, for example, doesn't send a form feed at the end of a directory listing).

To get around this problem, **ETSR** checks every character that is printed to see if a form feed has been sent or not. If the application program doesn't end the last page it prints with a form feed, **ETSR** will wait for a few seconds to see if any more data is being sent. By default, this interval is 30 seconds. If no more data is sent, **ETSR** forces a form feed to be sent.

Of course, if you are using the DOS **DIR** command to print a directory, you won't want to wait 30 seconds for the form feed to be sent, so setting the timeout to a shorter period is a good idea. (We use five seconds as the timeout interval here). Setting the timeout interval too short may cause problems for some very slow application programs -- for example a data base program that requires several seconds to compute the total line at the end of a report. This may require a bit of experimentation to determine the timeout interval that works best with your applications.

5.3 Command Options

`ETSR [R] [D`*n*`] [E`*n*`] [F`*n*`] [T`*x*`] [P`*n*`,`*m*`] [N+] [N-]`

R — Resets Epson emulation to the default printer settings.

D*n* — Turns off emulation on printer *n*. Data sent to printer *n* will be passed through to the printer unaltered. If you have an application program that knows how to talk to a PostScript printer, you should disable emulation.

E*n* — Enables emulation on printer *n* and resets emulation to default printer settings.

F*n* — Forces a form feed to be sent to printer *n*. This is useful if you have a long timeout interval set, and don't want to wait for the timeout to force printing of the last page.

T*x* Sets the timeout interval for on the current emulated printer to *x* seconds. The timeout interval *x* must be less than 1800 seconds. Setting the timeout interval to 0 disables timeouts forcing form feeds. We aren't sure why you would disable timeouts, but we used it for debugging and figured it wouldn't hurt to leave it in.

P*n*,*m* Redirects output intended for LPT*n* to LPT*m*. If emulation is enabled on LPT*n* with the E*n* option, Epson MX-80 printer codes sent to LPT*n* will be translated to PostScript before being printed on LPT*m*. If emulation is disabled on LPT*n* with the D*n* option, output is passed through to LPT*m* without changes.

N+ Enables control-D at the beginning of a job for Epson emulation. (See **Control-D And Local Area Networks** section, below).

N- Disable control-D at the beginning of a job for Epson emulation. (See **Control-D And Local Area Networks** section, below).

5.4 Setting Options

Even though the **ETSR** command stays in memory after you run it, you run it again to change the options. Confused? That's OK. Most users will put a command like:

```
ETSR D1 T5
```

in their **AUTOEXEC.BAT** file so that **ETSR** is automatically loaded when your computer puts up. Note that because of the **D1** option, emulation is disabled when **ETSR** is loaded. Then when they are ready to start an application program that can't talk PostScript, they will type the command:

```
ETSR E1
```

which enables emulation on LPT1. You may find it convenient, if you regularly use applications like Lotus 1-2-3 that need to use **ETSR**, to make a batch file that contains the commands:

```
ETSR E1
LOTUS
ETSR D1
```

to automatically enable and disable emulation just before entering and just after exiting Lotus.

5.5 Taking Advantage Of Redirecting Printers

Why would you want to redirect LPT2 to LPT1, or LPT1 to LPT3? Two reasons:

- Rather than running **ETSR** everytime you switch from an application program that knows PostScript to an application program that doesn't, you might want to leave emulation disabled on LPT1, and enable emulation on LPT2, and redirect LPT2 to LPT1. This way, application programs that know about PostScript (like Microsoft Word) can print to LPT1. Application programs that don't know about PostScript (DOS, BASIC, Lotus 1-2-3) can print to LPT2, which will be redirected out through LPT1 after being translated to PostScript.

- Your application program doesn't allow you write to any parallel printer except LPT1, and you have another parallel printer port attached to your computer which you want to be able to use. (Note that with emulation disabled, **ETSR** will redirect printer output from one port to another for any type of printer -- even if it's not PostScript or an Epson MX-80).

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5.6 DOS PRINT Command

The DOS PRINT command, at least in MS-DOS V3.3, automatically expands TAB characters to blanks on 8-character boundaries. There is a problem with this -- if a TAB character is in fact not a TAB character, but part of an Epson escape sequence, it will be expanded to blanks, and the corresponding escape sequence will be not be seen by either **ESIM** or **ETSR**, or even a real Epson MX-80 printer. Some word processors (notably Volkswriter III) use the DOS **PRINT** command for spooled printing. You may have to disable print spooling to prevent automatic tab expansion from scrambling the control codes that **ETSR** sees. (Note: if tab expansion causes problems for **ETSR**, it will cause problems for a real Epson MX-80 printer -- if you don't have a problem right now, you won't with **ETSR**).

5.7 Control-D And Local Area Networks

When ETSR starts receiving data from the application program, it sends a control-D character to the PostScript printer. The control-D character tells the printer, "ignore the last job you were working on". This is good practice in case some other application program has left the printer in a state where it can't accept data.

Some LANs interpret control-D as meaning, "That's it! No more stuff for the printer to print! Ignore everything after the control-D!" If you have a PostScript printer shared through a LAN, you may want to force ETSR to not send the control-D -- selecting this option will make sure that ETSR only sends a control-D at the end of a print job -- not the beginning.

Different LANs have different conventions -- in particular, we added the options for controlling the initial control-D because LocalTalk (previously known as AppleTalk) interprets control-D in this manner. If you are using a LAN to talk to a PostScript laser printer, and using ETSR won't print anything through the network, try using the N- option and see if this helps.

5.8 Timeout And Local Area Networks

Sun's PC-NFS networking product has a number of options that control when a job being printed to a network printer will be sent -- in essence, when to assume that a print job is complete and ready to be transmitted to the computer which is the print server. These options include:

1. send when application program completes;
2. send when the user runs **NET PRINT LPT*n***;
3. send when a "hot key" is pressed;
4. send after five minutes of inactivity.

DOS internal commands (*e.g.* DIR, COPY) don't really "complete", since they are part of DOS -- you will need to use either options 2, 3, or 4 -- but remember that if you run **NET PRINT LPT*n*** or press a "hot key" before **ETSR**'s form feed timeout occurs, and there is no closing form feed on a page, you will lose that page. (Of course, if your output is only one page, you will get nothing at all).

DOS external commands (*e.g.* TREE, CHKDSK) complete immediately after they finish. If you have option 1 selected, the print job will be submitted before the form feed timeout has a chance to send the form feed. The same problem will happen -- no last page will print. Depending on how smart the print server software is, you may get a single page out that contains "FF" at the top of an otherwise blank page.

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6. ESIM

6.1 What ESIM Does

ESIM is a filter that converts Epson MX-80 printer control codes to PostScript for PostScript printers. It isn't anywhere near as convenient to use as **ETSR**, but it can be used with serial interface printers, and *almost* PC-compatibles that aren't compatible enough for TSR programs to work. You may also find **ESIM** more convenient to use if you have a program that writes to *stdout*. (See your DOS manual to learn more about filters).

6.2 Format

```
ESIM  [/cport[,baud,bits,stop,parity,protocol,out,in]][filename] ...
```

port is either 1 or 2, for COM1: or COM2:. (COM3: and COM4: are not supported). If only *port* is specified, the rest of the parameters are assumed to be: 9600 baud, 8 data bits, 1 stop bit, no parity, XON/XOFF protocol, 20 second output timeout interval, 5 second input timeout interval.

baud is one of the following baud rates: 75, 110, 300, 1200, 2400, 4800, 9600, or 19200.

bits is the number of bits per character (either 7 or 8).

stop is the number of stop bits (either 1 or 2).

parity is one of the following values:

0	no parity
1	even parity
2	odd parity

protocol is a mask of the following values, which controls the handshake protocol used:

1	DSR
2	CTS
4	XON/XOFF

out is how many seconds to wait before asking the user what to do (Abort, Retry or Ignore).

in is how many seconds to wait before assuming that the printer isn't going to send any more characters. This timeout is only in effect when **ESIM** has finished writing the file, and is waiting to see if there are any messages pending.

The output is printed to *stdout* if the **/c** command line switch is left out; this output can be directed to another program with the pipe symbol (|) or to a file with the greater than symbol (>). (If you have a PostScript printer with a serial interface, and have changed it to use DTR protocol, you can add the appropriate **MODE** commands to your **AUTOEXEC.BAT** file and redirect output to the appropriate **COM** port with the greater than symbol, instead of using the **/c** command line switch).

ESIM examines switches and filenames from left to right; if the user intermixes filenames on the command line with switches, the switches **already processed** are the ones that control what actions are taken on a particular filename.

WARNING: Unlike the filters supplied with PC-DOS and MS-DOS, there must be at least one space before the first command line switch.

6.3 Description

If no ***filename***s are specified on the command line, **ESIM** reads characters from the standard input device and writes out the equivalent PostScript commands to the output device *outputdevice*. If ***filename***s are specified on the command line, the characters are read from the specified files. The ***filename*** may be a "wild card" specification, including any valid path.

Power-on default font sizes and conditions have been, as much as possible, kept the same as the Epson MX-80 printer. However, **ESIM** will not preserve these defaults from one invocation of the program to the next. (This means that if you send a file to **ESIM** that sets a particular size of characters, or a particular printing mode, print that file, and then run **ESIM** again with another file that assumes the last file's characteristics, you will get incorrect output).

As an example, consider what happens if your application program sends the sequence to the printer which is supposed to use compressed mode, then you run an application program that assumes the printer is still in compressed mode. A real Epson printer will stay in compressed mode until you power it off, or send a command sequence that turns off compressed mode. **ETSR** will behave like a real Epson printer, and maintain the compressed mode. Because **ESIM** is re-run each time you use it, it has no memory of what printing modes were in effect the last time you ran it, so it will start in the default state each time it is run.

6.4 Form Feeds

You may find it convenient to force a form feed after a file with the following approach:

```
ESIM trash.lst \BIN\FF >LPT1:
```

This assumes that **\BIN** was the directory into which you copied **ESIM.EXE** and **FF** during installation, and that your PostScript printer is attached to **LPT1**.

6.5 Where Does The Data Come From?

The application program you are trying to use with **ESIM** normally writes directly to a printer through the parallel printer port **LPT1:**, or the serial port **COM1:** or **COM2:**. The vast majority of application programs will, with the right selection of options, write to a disk file instead of the printer. You must determine how the application program you are using can be set to write to a disk file, instead of a printer. Most application programs allow you to select characteristics of the printer you will use, and it's most likely that you will find a menu choice for writing output to a disk file.

IF YOUR APPLICATION PROGRAM WRITES TO LPT1, LPT2, OR LPT3, AND YOUR POSTSCRIPT PRINTER HAS A PARALLEL INTERFACE, TRY ETSR INSTEAD! Your life will be simpler, and you will be a happier customer, and we want nothing but happy customers.

There is a small possibility that the application program you are using does not have a method of writing its printer output to a disk file. For that reason, we have included a program called **LPTX** on the **ESIM** disk. (See the **LPTX** section of this document for details).

7. LPTX

7.1 Purpose

This program, which is included free of charge with **ESIM**, captures output intended for a parallel printer, and redirects it to a disk file. **Don't use LPTX unless you have no other choice.** The **LPTX** program does some very tricky things to capture output going to the parallel printer ports, and while *we* haven't found any programs that fail to work with it, we can't guarantee that it will work with every application program. (This is why **LPTX** is free, and whether you choose to pay the author for it is up to you. A more detailed description of how to use **LPTX** is at the back of this manual -- it was printed with **ESIM** partly as a demonstration that it works, and partly because the conditions under which **LPTX** is distributed require the original documentation to be distributed with it).

7.2 Shareware

LPTX is "shareware". If you haven't seen the term before, it means that the author (in this case, Mark DiVecchio) gives the program away, and asks people who find it useful to send him money. You aren't legally obligated to do so, but it does provide a way to distribute programs like **LPTX** that may not work under all circumstances.

Of course, "shareware" is copyrighted -- this means you can't redistribute it for profit, or do anything else with it that violates the terms specified in the documentation for **LPTX**.

7.3 Description

The **LPTX** program consists of three files: **LPTX.COM** (the program that intercepts the parallel printer), **LPTX.ASM** (the assembler language source program, for those of you who are interested in how this is done), and **LPTX.DOC** (the original documentation file Mr. DiVecchio distributes with **LPTX**).

7.4 Installation

Place your **ESIM** installation disk in drive A. Determine which directory you wish **LPTX** to reside in, then use the DOS **CD** (change directory) command to make that the current directory. Then enter the following command at the DOS prompt:

```
COPY A:LPTX.COM
```

This will copy the **LPTX.COM** program to the current disk and directory. Make sure that your **PATH** environment variable includes the directory to which you have copied **LPTX**.

8. USING ESIM WITH 1-2-3

Since so many of you will using **ESIM** with 1-2-3 to print 1-2-3 graphs, we've added this special section that explains how to do it, especially since you may not want to wade through the descriptions of the commands.

8.1 Setting Up 1-2-3

For starters, run the Lotus 1-2-3 **INSTALL** program to configure 1-2-3 and PrintGraph to use the Epson MX-80 printer. (Running INSTALL is explained in pages 1-15 through 1-18 of *Lotus 1-2-3 Getting Started Manual Release 2.01*). If you are going to be switching back and forth between **ESIM** and a real dot matrix printer (other than an Epson MX-80), you will probably will want to read the section of the 1-2-3 manual that explains how to create different "sets" of configuration information for 1-2-3. (See pages 1-18 and 1-19 of *Getting Started*). If you do this, you will be able to painlessly switch between your imaginary Epson MX-80, and the printer you are actually using.

8.2 Starting LPTX

To use **ESIM** with Lotus 1-2-3, you will need to use the **LPTX** program. You will need to use **LPTX** because Lotus PrintGraph, which prints out graphs for 1-2-3, doesn't provide a facility for printing the output to disk, only printing directly to the printer. Before you start 1-2-3, type:

```
LPTX -sprinted
```

where **printed** is the name of the temporary file in which the output of PrintGraph will be placed. (Of course, this assumes that you don't already have a file by that name that you are using for some other purposes -- it's most unlikely that you do). This activates the LPTX program so that all subsequent writing that you do to LPT1: (parallel printer 1) will actually be written to a file named **printed**.

8.3 Print Your Graph

Now start PrintGraph, either from the Lotus ACCESS program, or directly from DOS. In PrintGraph, you should go to the menu where you select the printer interface. If you have installed PrintGraph to use an Epson MX-80 printer, you will be offered the opportunity to select either low or high density graphics. (This is explained on pages 5-12 through 5-15 of *Lotus Reference Manual Release 2.01*). On a regular Epson MX-80, the low density graphics are a lot faster. With ESIM, the difference is much less -- both low and high density graphics are slow! Go ahead and pick high density graphics. Now tell PrintGraph to **GO**.

As PrintGraph thinks it is printing the graphics image to **LPT1:**, **LPTX** is intercepting the output and writing it to disk. Every time a chunk of data is written to the disk file you specified in the **LPTX** command, you will hear a short beep from the speaker of your computer.

8.4 Turning Off LPTX

When PrintGraph is done, exit Lotus back to DOS. **A very important step.** Type:

```
LPTX -c
```

This stops **LPTX** from continuing to capture printer output, and closes the file. If you screw up and forget this step, you will only have part of your graphics output on disk -- and since the form feed at the end of the page probably won't be on disk, **ESIM** will spend a very long time sending information to your PostScript printer, and produce **absolutely nothing**.

8.5 Converting To PostScript

Now, type:

```
ESIM /c1 printed
```

(This assumes that the file where you told LPTX to save the graphics output is named **printed**, that your PostScript printer is attached to COM1, and you are using the default communications parameters for your PostScript printer).

8.6 Sample Batch File

The following batch file may be useful as a starting point:

```
LPTX -sprinted
LOTUS MX80
LPTX -c
ESIM /c1 printed
```

The first line sets up LPTX. The second line starts Lotus with a "set" named MX80. The third line, executed after you have exited Lotus, stops LPTX, and the fourth line runs **ESIM**, sending the output to COM1.

9. SAVING KEYSTROKES

If you are using **ESIM** with a printer attached to COM1 or COM2, you are probably wondering if there is some way to run **ESIM** with less typing. Consider the following batch file named **EPS.BAT**:

```
ESIM -c2,1200,8,2,2,6,60,10 %1 %2 %3 %4 %5 %6 %7 %8 %9
```

If you create such a batch file, and then issue the command:

```
EPS JAN.WK1 FEB.WK1 MAR.WK1 APR.WK1 MAY.WK1 JUN.WK1
```

to print out your spreadsheets for January through June, ESIM will be started with the specified communications parameters, and all six of the file names that you specified as arguments to the **EPS** batch file. Notice that you can give up to nine file names to **EPS**, and if you give less, that's OK also. Of course, make sure that **EPS.BAT** is in a directory that is specified by your **PATH** command.

10. TRADEMARKS

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Epson America, Inc: Epson, MX-80, MX-100, Graftrax III, FX, LQ

Apple Computer, Inc.: LaserWriter, LaserWriter Plus, LocalTalk, AppleTalk.

Adobe Systems: PostScript.

Lotus Development Corporation: Lotus, 1-2-3.

AST Research Inc.: TurboLaser/PS.

Lifetree Software, Inc.: Volkswriter III.

Sun Microsystems, Inc.: PC-NFS.

If we failed to acknowledge any trademarks, please send your usual threatening letter.

11. COMMON PROBLEMS: Questions, Answers, & Solutions

Q: I tell **ESIM** to print a file, and I've redirected the output to **COM1** or **COM2** with the greater than symbol. I only get a few pages of output, there are no error messages as it's running, the lights on my PostScript printer flash, but nothing else ever prints out.

A: The default communications protocol for PostScript printers attached through serial ports is XON/XOFF. DOS only supports DTR/CTS protocol for serial ports. Your PostScript printer is screaming, "Stop sending me data!" at the PC, but the PC is ignoring the request and continuing to send data which is lost.

S: Use the **/c** command line switch for XON/XOFF protocol communication with your printer, or alternatively, change your PostScript printer to use the DTR/CTS protocol. If your printer has a parallel printer interface available as well, use this instead.

Q: The last page (or only page) doesn't print.

A: There's no form feed at the end of the file, so ESIM doesn't know to print the page.

S: The file **FF** contains a form feed character. Specify the **FF** file on the command line when you print the file. Example: you are printing a file called **LETTER.LST** which lacks a closing form feed. The command:

```
ESIM LETTER.LST \esimdirectory\FF >LPT1:
```

will translate **LETTER.LST** and the form feed in the file **FF** to PostScript, and send them to your printer attached to **LPT1:**. (The path to the directory where you installed **ESIM** replaces *esimdirectory* in the command above).

Q: Everything seems to print on the top line in graphics mode.

A: There are a few programs out there that print an entire line of graphics, and rely on the printhead to wrap around to the beginning of the next line without a carriage return and line feed.

S: Even though this works on an MX-80, the same output won't work on an MX-100 (the wide carriage form of the MX-80). This is a bad programming practice. Get a better application program.

Q: I'm losing the top or bottom, or left or right margin of my document.

A: First, make sure that your document will print correctly on a real Epson MX-80 printer. If it does, or if you are losing *part* of a line or column (the letters are cut through the middle), you are probably using a PostScript printer with a slightly different image area than the Apple LaserWriter or AST TurboLaser/PS, our principal test machines. (The image area is the printable area of the page).

S: Please contact us -- we may have to make adjustments in **ESIM** to suit the particular model of printer you have.

Q: The output doesn't exactly match what an Epson MX-80 printer prints -- some of the print is coming out the wrong width.

A: The Epson MX-80 printer has a number of "errors" in how it works -- some combinations of print modes were not specified to work, and using these combinations gives unexpected results. In particular, some sizes of print can be combined with superscripts and subscripts, but not with double strike printing -- the width changes dramatically.

S: **ESIM** doesn't attempt to reproduce the irrational, undocumented combinations -- it does what would make sense. (In the example above, bold face superscripts in the specified width). The most common source of this problem is word processors that use double strike print mode to improve the quality of the MX-80 print. The simplest solution is to turn off the double strike print mode -- the standard print quality will produce very readable type on your PostScript printer.

Q: I really like the look of the *Times-Roman* and *Helvetica* typefaces -- why can't I use these fonts?

A: The *Times-Roman* and *Helvetica* typefaces are proportional fonts. This means that the width of the characters varies. The *Courier* typeface, and the Epson MX-80's typeface are monospaced fonts: all the characters are the same width. (Later Epson printers, starting with the FX-80, supported a proportional typeface -- but not the MX-80). Unless your word processor is smart enough to handle proportional width characters, you aren't going to get the proportional fonts to generate pleasing results. Previous versions of **ESIM** supported these other fonts, but they turned out to not be useful. You are better off sticking to *Courier* typeface. (A later release of **ESIM** and **ETSR** will support the Epson FX and LQ series of printers -- proportional spacing will be supported at that time).

Q: Will **ESIM** work with DTR/CTS protocol?

A: Yes -- but not all serial cables work with DTR/CTS protocol. If you are going to use DTR/CTS protocol, don't bother using the **/c** command line switch -- redirect the output to **COM1** or **COM2** with the greater than sign, and make sure you have used the DOS **MODE** command to set the communications parameters for the serial port you are using.

S: Your printer owner's manual should include a description of what signals a cable is required to carry. The time to find out if your cable will support DTR/CTS protocol is *not* while installing a new software product -- this just increases the number of unknowns in the equation.

Q: Why can't I access the *Symbol* font?

A: There is no equivalent Epson MX-80 font. **ESIM** is *not* a replacement for a word processor that knows how to produce PostScript -- it's an *ad hoc* solution to the large body of existing software that is targeted towards the Epson MX-80 printer.

S: Buy a word processor that can really take advantage of PostScript's capabilities.

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Please direct all questions concerning this license agreement to:

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