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LaserWriter IINTX: Printing in HP Emulation Mode (1 of 3) (2/95)

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TOPIC -----

This article describes how to make a LaserWriter IINTX print the Pound Sterling character in Hewlett-Packard LaserJet Plus emulation mode. In doing so, it describes the difference between PostScript codes and ASCII character codes. It also gives step-by-step instructions for how to print from a LaserWriter IINTX in HP LaserJet Plus Emulation mode from an MS-DOS computer either via a serial connection or via AppleTalk. Part 2 covers troubleshooting, while part 3 is a table of the upper 128 ASCII characters for HP LaserJet Plus emulation.

DISCUSSION -----

The LaserJet Plus emulation mode uses the ROMAN-8 symbol set used by the HP LaserJet. This is different from the standard LaserWriter character set. The LaserWriter PostScript characters are not really ASCII values, because they are mapped, character definitions and belong to a character set.

These values can be remapped, at will, to an output character. The standard LaserWriter set defines the Pound Sterling as character code 243. The ASCII value for the character is 187. Once again, the character code is not an ASCII value; it is a mapping reference used by PostScript. PostScript character codes are not available in the LaserWriter HP LaserJet emulation mode.

To print the sterling character, the following steps and information must be taken into account.

There is a problem trying to print characters, like the Pound Sterling, in HP LaserJet emulation on the LaserWriter IINTX. If you are using a serial connection, the following instructions must be used.

The problem appears when printing the upper 127 ASCII characters and graphics (ASCII values 128 through 255). This is due to the serial port DIP setting of 7 data bits. To attain full emulation, configure the serial port as described in

the steps below.

NOTE:

Currently, there is no available method of software switching back to PostScript or any other emulation mode once you leave the PostScript mode. The correct method is to change the DIP switch settings and wait 30 seconds. If you want PostScript, set switch 1 to the DOWN position. Wait 30 seconds and place the switch back to the UP position.

Printing in HP LaserJet Plus Emulation Mode from an MS-DOS Computer
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Step 1 - Connection

Connect a 25-Pin Serial Cable to the 25-pin serial port on the LaserWriter IINTX. Connect the other end to a serial port on the PC.

NOTE:

Most serial ports for PCs use a male DB-25 connector and the LaserWriter IINTX uses a female DB-25 connector. You need to use a straight pin-to-pin female-to-male DB-25 cable.

Step 2 - Switch Settings

While the LaserWriter IINTX is off, set the printer DIP switch settings to:

- 1 UP
- 2 DOWN
- 3 UP
- 4 UP
- 5 UP
- 6 DOWN

These switch settings place the LaserWriter IINTX in:

PostScript Batch Mode,
RS-232 9600 baud,
RS-422 9600 baud,
7 data bits, no parity check, 1 stop bit, with DTR/DSR handshake.

Step 3 - Power On

Turn on the LaserWriter IINTX and the PC. After a few seconds, the LaserWriter II will print a test page containing its current settings (listed above).

Step 4 - PostScript Code

The PostScript code that follows switches the LaserWriter II into LaserJet+ emulation mode.

Caution:

If you choose to use the PostScript code provided in this article, you assume all risks involved in making these changes. PostScript code, if not entered correctly, can place the LaserWriter into a condition requiring service.

NOTE:

The "%" characters and following comments are not necessary. Remove them when typing the program.)

- For DTR/DSR, from the DOS prompt, type:

```
COPY CON POST.TXT
%=====
% Begin PostScript Code
%
serverdict begin 0 exitserver %Exits the printer server loop.
statusdict begin %Starts modifying settings.
9 0 3 setsccbatch %Turns off the RS-422 9600-baud port.
25 9600 68 setsccbatch %Sets the 25-pin RS-232 9600-baud port to 8 data
% bits.
5 setsoftwareiomode %Sets printer to HP LaserJet+ mode.
0 sethardwareiomode %Sets communications mode to serial.
end %This is the end of the mode switch routine.
systemdict/quit get exec %Forces an error to cause a system start test
% page.
(Control-Z) %The keyboard Control key and the Z key together.
% This ends text editing and saves the file.
%
% end PostScript Code
%=====
```

- For XON/XOFF, from the DOS prompt, type:

```
COPY CON POST.TXT
%=====
% Begin PostScript Code
%
serverdict begin 0 exitserver %Exits the printer server loop.
statusdict begin %Starts modifying settings.
9 0 3 setsccbatch %Turns off the RS-422 9600-baud port.
25 9600 64 setsccbatch %Sets the 25-pin RS-232 9600-baud port to 8 data
% bits.
5 setsoftwareiomode %Sets printer to HP LaserJet+ mode.
0 sethardwareiomode %Sets communications mode to serial.
end %This is the end of the mode switch routine.
systemdict/quit get exec %Forces an error to cause a system start test
% page.
(Control-Z) %The keyboard Control key and the Z key together.
% This ends text editing and saves the file.
%
% end PostScript Code
```

%=====

Step 5 - Batch File

A batch file must be created to set up the PC communications port and to send the PostScript code to the printer.

From the DOS prompt, type:

```
COPY CON HPMODE.BAT
MODE COM1:96,N,8,1,P
MODE LPT1:=COM1
TYPE POST.TXT > LPT1
(Control-Z)
```

Step 6 - Change LaserWriter II to LaserJet+ emulation mode

Type HPMODE from the DOS prompt to set the LaserWriter IINTX to LaserJet+ emulation. The printer will internally switch from the PostScript Batch mode to LaserJet+ emulation, and, after a few seconds, it will print a test page displaying the new settings.

Your printer will now print graphics and text properly with the emulation provided by the Adobe PostScript ROMs. This fixes the problem of losing the eighth data bit for special text and graphics. This also fixes the problem of the "print screen" keyboard command not functioning.

Article Change History:

23 Feb 1995 - Added PostScript caution and reformatted.

Support Information Services

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