Tech Info Library

LW IINTX In HP LaserJet+ Emulation Mode: Serial Connect From PC

```
Revised:        3/4/90
Security:       Everyone
```

LW IINTX In HP LaserJet+ Emulation Mode: Serial Connect From PC

===

This article last reviewed: 7 July 1988

Here are a few suggestions about printing to LaserWriter IINTX in LaserJet
Plus emulation mode:

(NOTE: You may experience a communications problem printing in this
configuration when the emulation mode is set by the DIP switches. The problem
appears when printing the upper 127 ASCII characters and graphics, and is due
to the serial port DIP setting of 7 data bits.)

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

To attain full emulation, the serial port can be configured as follows:

1) Connection:

  Connect an Apple 25 pin Serial cable (590-0037) to an Apple Modem Eliminator
  (590-0166). Take one end and connect it 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. Since both ends
of the Apple 25 pin serial cable are male, a female-to-female gender changer
is required for connection to a PC serial port. An alternative is to use a
straight pin-to-pin female-to-male DB 25 cable.)

2) Switch Settings:

  While the LaserWriter IINTX is off, set the printers 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.

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).


4) PostScript Code:


   The PostScript code that follows is used to switch the LaserWriter II into
   LaserJet+ emulation mode.


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


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


COPY CON POST.TXT
serverdict begin 0 exitserver %This exits the printer server loop.
statusdict begin              %Start modifying settings.
9 0 3 setsccbatch             %Turns off the RS-422 9600 Baud port.
25 9600 68 setsccbatch        %set the 25 pin RS-232 9600 Baud port-8 data
                               bits.
5 setsoftwareiomode           %Set printer to HP LaserJet+ mode.
0 sethardwareiomode           %Set communications mode to serial.
end                           %This is the end of the mode switch routine.
systemdict/quit get exec      %Force 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.


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


COPY CON POST.TXT
serverdict begin 0 exitserver %This exits the printer server loop.
statusdict begin              %Start modifying settings.
9 0 3 setsccbatch             %Turns off the RS-422 9600 Baud port.
25 9600 64 setsccbatch        %set the 25 pin RS-232 9600 Baud port-8 data
                               bits.
5 setsoftwareiomode           %Set printer to HP LaserJet+ mode.
0 sethardwareiomode           %Set communications mode to serial.
end                           %This is the end of the mode switch routine.
```

```
systemdict/quit get exec        %Force 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.
```

5) Batch File:

   A batch file must be created to set up the PC's 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)
```

6) Change LaserWriter II to LaserJet+ emulation mode:

   Type HPMODE from the DOS prompt to set the NTX 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
   8th data bit for special text and graphics. This also fixes the problem of
   the "print screen" keyboard command not functioning.

Problem Solving:

LaserWriter II will not print test page to indicate HP emulation mode:

   Check cable connections and paper supply to the LaserWriter II. Turn off any
   spooler commands that may be implemented on the PC.

   Check the PostScript file (POST.TXT) and the batch file (HPMODE.BAT) for any
   typing errors. If none are apparent, try re-typing the PostScript
   code from scratch. If the LaserWriter II does not receive the PostScript
   code character for character, the mode change will not work.

   Once the code has been re-typed, send it to the LaserWriter II. If the
   LaserWriter II prints a test page, then all is well. If the LaserWriter II
   prints out a page containing the PostScript code, it is in LaserJet+
   emulation mode, but a test page will not be printed (there is an error in the
   PostScript code that instructs the LaserWriter II to print a test page, but
   the mode switch was successful). If the LaserWriter II does nothing, then
   start over from step 1.

LaserWriter II will not print from within an application:

   Check the applications print settings to ensure that it is sending output to

LPT1 or COM1. The application also must be set up to print to a LaserJet+
using Times, Helvetica, or Courier.

NOTE: When printing from DOS, always follow the print command with a 'Control
D'. A 'Control D' tells the LaserWriter II that the data transmission is
completed and printing can now begin. The best method is to create another
text file with a 'Control D' inside.
Enter the following from the DOS prompt-
COPY CON D.TXT
(Control D)
(Control Z) or (F6)

Now, you make a batch file to send the end of page marker to the printer.
From the DOS prompt enter-
COPY CON END.BAT
TYPE D.TXT > LPT1
(Control Z) or (F6)

After doing a TYPE or Print Screen or DIR to the printer, just type END, and
the printer will print any remaining data in the buffer.

If your print job does not have a Control-D (end of page) character, you will
have to wait for your print job until a time-out, or until another job is
printed that is larger than a page.

Copyright 1988 Apple Computer, Inc.

Tech Info Library Article Number:3089