LaserWriter: Connecting to IBM PC and PS/2 Computers

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TOPIC ----------

This article discusses how to connect LaserWriter printers to IBM PC and PS/2 computers.

DISCUSSION ----------

To connect IBM PC-XT and all PS/2 systems (all have DB-25 Male Serial connectors from the CPU) to the LaserWriter families, use a Serial Null Modem cable. Here is the cabling scheme for Apple cables:

[CPU -- PC or PS/2 DB-25 (Male)] to
 [(Female) DB-25 Female-to-Female Gender Changer (Female)] to
  [(Male) 590-0037 (Straight through DB-25 Serial cable) (Male)] to
 [(Female) 590-0166 (Modem Eliminator Cable) (Male)] to
 [(Female) LaserWriter Serial Port]

To adapt the IBM PC/AT or other 80286 class MS-DOS machines to the DB-9 serial port, add a DB-9-to-DB-25 adapter between the CPU and the Female-to-Female DB-25 adapter. Radio Shack stocks both adapters. The DB-9-to-DB-25 is Radio Shack part number 26-1388 or 26-265. The DB-25 Female-to-Female is Radio Shack part number 26-1495. If the Apple 590-0166 is not readily available, use a Radio Shack Null modem (Modem Eliminator) adapter.

Testing the Connection

This test, if successful, prints the current DOS directory on the LaserWriter. Before doing the steps below, make sure that a) Everything is connected correctly; and b) the IBM-PC serial port to be used is configured as a known COM: port (like COM1: or COM2:).

Note: The test assumes that COM1: is the serial port. If you're using a different COM port, substitute it as appropriate in step 2 below.

Follow these steps:

1) Set the printer to Diablo emulation mode.

- On a LaserWriter or LaserWriter Plus, set the rotary switch to SPECIAL.

- On a LaserWriter IINT, set switche 1 to ON and 2 to OFF.

- On the LaserWriter IINTX, set switch 1, 2, and 3 to ON and 4, 5, and 6 to OFF.

2) Power on the LaserWriter and the MS-DOS machine. At the DOS prompt, type the following:

```
MODE COM1:96,n,8,1

MODE LPT1: = COM1:

DIR > LPT1:

ECHO ^D > LPT1:
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Note: The "^D" stands for the keystroke sequence Control-D. This is the "end-of-transmission" command. Note: Use ^D instead of ^L to avoid problems with the printer expecting more information and maintaining the connection after a print.

If all went well, you should have a printout of the current DOS directory. If nothing happened, check these three things:

- Make sure that you have access to the MODE command.

- Make sure that the serial port you think is "there" really is "there".

- Make sure that all cabling is snugly connected.

If you got a good printout, then the physical and logical integrity of the connection between the MS-DOS computer and the LaserWriter is good. Once you have successful test results, you can switch modes on the LaserWriter and expect it to perform well in the MS-DOS-to-LaserWriter printing environment.

However, if you are printing a long document and pieces of the document appear to be missing from the output, the problem is probably not in the fundamental connection between the printer and the computer. This symptom will most likely appear in a PostScript production environment.

The problem probably has to do with the "Handshake" mode settings in the printer and the computer. ("Handshaking" is the process where the computer expects the printer to tell the computer to pause briefly while it finishes the current print job.) The "XON/XOFF" handshaking protocol is supported by both series of printers (LaserWriter and LaserWriter II). The "DSR/DTR" protocol is only supported by the LaserWriter IINT/NTX family.

Further questions about MS-DOS and LaserWriter connectivity are answered in Appendix C of the "LaserWriter IINTX Owner's Guide".
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