Black Box Corporation
The Source for Connectivity ℠

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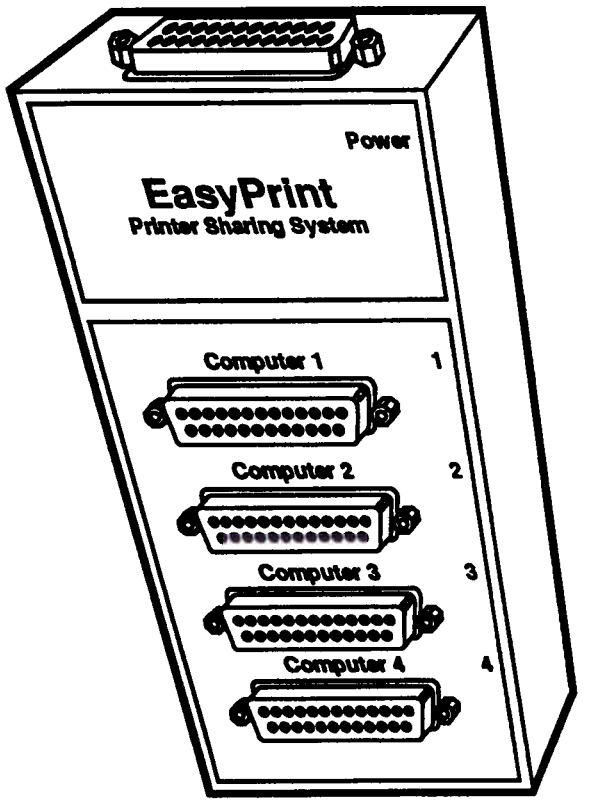
Easy Print



CUSTOMER SUPPORT INFORMATION

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1.0 Specifications

Indicators—(1) Power
(2), (4), or (6) port LEDs

Data Format—Transparent

Speed—Transparent

Memory—Uses PC's memory
(program provided)

Interface—RS-232 async (DCE) or
IBM PC parallel

Connectors—(3), (5), or (7) DB25S
female

Power—12 volts DC, 300mA,
external power supply included

Size—2-port: 2.2"H x 5.3"W x
1.3"D (5.6 x 13.5 x 3.3 cm)
4-port: 6"H x 3.1"W x 1.5"D
(15.2 x 7.9 x 3.8 cm)
6-port: 8"H x 3.1"W x 1.5"D
(20.3 x 7.9 x 3.8 cm)

Weight—2-port: 2 lb. (0.9 kg)
4-port: 2.6 lb. (1.2 kg)
6-port: 3 lb. (1.4 kg)

2.0 Introduction

Before you attempt to install and operate Easy Print, read this manual.

2.1 General

Easy Print allows several computers to share a single printer (usually a laser printer, but any type of prnter will work). Depending on the model you choose, you can attach up to 6 computers to Easy Print. Easy Print is available in either parallel or serial models. This manual provides installation and operation instructions for both models. When you open your package, you will find the following items:

- Easy Print Unit
- AC Adapter (Serial: 12 VAC, 300mA min., Parallel: 9 VDC, 300 mA min.)
- Easy Print Utilities Diskette
- This manual
- Mounting template
- Two mounting screws

2.2 Features

The following features make Easy Print simple to install and operate:

DSPOOL and RSPOOL printing programs allow you to use your hard drive (or RAM if you have a floppy based system) as a buffer. If the printer is busy, the programs store the print data in the "buffer." You can continue working on a different job, or move into another application.

MENU.COM, designed for the HP® LaserJet®, is a program providing a pop-up menu that controls the printer. You can reset the printer, select fonts and line spacing, and eject pages through the menu. MENU.COM takes 6K of your PC's memory when loaded.

LEDs continuously monitor system status. There's an LED for each computer port. When the printer is busy, the LED shows which computer's job is being printed. If the printer is not busy, the LEDs flash quickly as the unit scans all ports until a job is sent.

If the printer is off line or out of paper, or if there is some error, no input LEDs will be lit.

Automatic, electronic switching prevents printer errors or damage. Easy Print's electronic switching eliminates the power surge produced by manual switching., which could damage HP LaserJet printers. Also, you don't need to turn on all the computers that are attached to Easy Print for the unit to work. Turning the computers on or off will not damage your system.

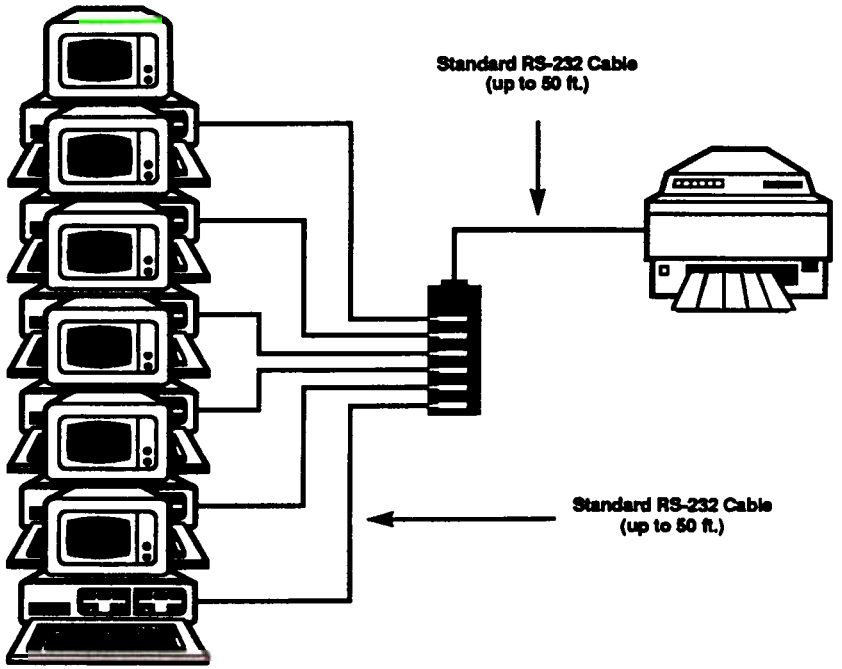

Fig. 2-1. Typical Easy Print Connection (6-port Serial Interface Model).

For serial connections, use the following cable lengths:

- Standard RS-232 Cable—up to 50 feet between the printer and Easy Print; up to 50 feet (15.2 m) between Easy Print and the computer.
- Extended Distance Data Cable—up to 500 feet (152 m) between the printer and Easy Print; up to 500 feet between Easy Print and the computer.

For parallel connections, use the following cable lengths:

- Standard Parallel Cable—up to 20 feet (6.1 m) between the printer and Easy Print; up to 20 feet between Easy Print and the computer.

3.0 Installation

3.1 Hardware Installation

To install the parallel model of Easy Print, refer to section 3.1.1. To install the serial model, refer to section 3.1.2.

3.1.1 Installing the Parallel Model

Follow the steps below to install Easy Print:

1. Connect the unit to an AC power supply using the AC wall adapter. The red power LED will light. It will be the only LED lit.

2. Use a standard IBM® parallel printer cable (DB-25 male to Centronics®) to connect the printer's parallel port to the connector on the unit marked PRINTER. Make sure the printer is ready to receive data on its parallel port. After connection, Easy Print should start scanning the ports. One LED at a time should light as the unit scans—e.g., first the Computer 1 LED lights, then Computer 2, etc. If the unit does not scan, refer to Section 5.

3. Use a standard DB-25 male-to-male, 25 wires connected, straight-through cable to connect each computer's parallel printer port (usually LPT1) to one of Easy Print's connectors. A maximum cable distance of 20 ft. is allowed between Easy Print and the computers. The connectors are marked Computer 1, Computer 2, etc. Because there is no priority order, you can connect any computer to any port.

3.1.2 Installing the Serial Model

1. Connect the unit to an AC power source using the transformer wallmount. The red power LED will light. It will be the only LED lit.

2. Use a standard DB-25 male-to-male straight-through serial cable to connect the printer's serial port to the connector on the unit marked PRINTER. Make sure the printer is ready to receive data on its serial port. Recommended settings are 9600 baud, no parity, 8 data bits, 1 stop bit. After connnection, Easy Print should start scanning the ports. One LED at a time will light as the unit scans—e.g., first the Computer 1 LED lights, then Computer 2, etc. If Easy Print does not scan, refer to Section 5.

3. Use a DB-25 male-to-female, straight-through cable to connect each computer's serial (COM) port to one of Easy Print's connectors. If your computer has a 9-pin serial connector, you will need to have a 9-pin to 25-pin adapter. If you are using standard RS-232 cable, you are allowed up to 50 ft. between the computer and Easy Print. The connectors are marked Computer 1, Computer 2, etc. Because there is no priority order, you can connect any computer to any port.

3.2 Software Installation

Easy Print does not require any special software. However, a diskette with MS-DOS® utilities is provided.

The INSTALL.BAT program copies the Easy Print utilities to your boot disk. It also configures the AUTOEXEC.BAT file to include the utilities you select from the install menu. If you do not run INSTALL.BAT, you have to manually add any utilities you want to use.

To run INSTALL.BAT, at the A>prompt type:

INSTALL C: (for hard-disk systems)

INSTALL B: (for floppy-disk systems)

For floppy-disk systems, you must boot from your system diskette before running INSTALL.BAT. INSTALL.BAT updates your AUTOEXEC.BAT file and copies the Easy Print utilities to this system diskette. You will need to have the diskette with the configured AUTOEXEC.BAT file and the Easy Print utilities in the floppy drive every time you boot the computer (if you want to use Easy Print).

The README text file contains any new information. To check the file, type the following command at the prompt:

TYPE A:README

Load the utilities in the order they are listed in this chapter.

3.2.1 Pop-Up Menu

MENU.COM provides a pop-up menu for controlling the printer from your computer. MENU is a memory-resident program using 6K of memory. To load the program, type MENU, the primary (default) port/number, and the secondary port/number at the

prompt. If you do not have a secondary printer, omit its parameter. See the examples shown next.

To set a primary and secondary port, type the following at the prompt:

MENU COM1: LPT1:
(COM1 is primary, LPT1 is secondary)

To set only a primary port, type the following at the prompt:

MENU COM1:
(COM1 is primary, no secondary port selected)

After you load the program, press the Alt Key and Right Shift Key to call up the menu. The menu provides you with the current status of the primary printer—either available or unavailable. You can also use the menu to redirect the print data to a secondary printer by using the function keys.

The menu also contains several options to reset the printer, eject pages, and select print fonts and line spacing. To select an option, use the cursor-control keys to move the highlight bar to the desired option. Press the Enter key.

SPMODE.COM replaces the DOS MODE command to allow printer redirection and higher baud rates. SPMODE also enables the "retry mode," which prevents the "printer not ready" message if you are not using a spooler.

For the following, any commands in brackets [ ] are optional.
To enable the parallel printer retry mode, type the following at the prompt:

SPMODE LPTn[:],,P
where n = 1, 2, or 3

For parallel printer redirection type the following at the prompt:

SPMODE LPTN[:]=COMm[:]
where n=1, 2, or 3 and m=1,2,3, or 4

To initialize the serial port type the following at the prompt:

SPMODE COMm[:]baud[,[parity][,[databits][,[stopbits][,[P]]]]

where

m=	1, 2, 3, or 4
baud=	110, 150, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, or 57600. You need to specify the first two digits—the rest are optional.
parity=	N (none), E (even), or O (odd)
databits=	8 or 7
stopbits=	1 or 2
P=	Serial retry mode

Use the "P" option if you're not using a spooler.

3.2.2 Print Spooling Programs

Two print spooling programs are provided with Easy Print: DSPOOL and RSPOOL. If the printer is busy, when you send your job, the programs buffer the print data on either the hard drive (DSPOOL) or in RAM (RSPOOL). When the printer is available, the spooler sends the buffered data to the printer. Both spooler programs run in the background. You can continue working in your application, or work in a different application while the buffer holds, and then sends your data.

Make sure you load the spooler after loading MENU.COM and the MODE commands. This insures that redirection of print data will not affect the spooled information. Once loaded, MENU.COM uses 6K of RAM.

To install DSPOOL, type **DSPOOL** at the A> prompt.

Once installed, DSPOOL uses only 10K of memory. If the printer is busy when you send your data, DSPOOL uses the hard disk to buffer print data. Storage is limited only by your hard disk's capacity. After the data is printed, it is removed from your hard disk.

To install RSPOOL, insert the Easy Print utilities diskette in drive A. Type **RSPOOL** at the A> prompt. You will have to copy the RSPOOL files to your diskette containing the configured AUTOEXEC.BAT files and the other Easy Print utilities.

Once installed, RSPOOL uses 64K of RAM to run. If the printer is busy when you send your data, RSPOOL uses this RAM to buffer the print data.

Note that you do not have to install either DSPOOL or RSPOOL to use Easy Print. Easy Print should work with any existing print-spooler program depending on the application you are using. Also, you can use Easy Print without installing any print-spooling program. Use the SPMODE program (Section 3.2.1) to set printer retry if you choose to use Easy Print without a print-spooler program.

Table 5-2. Parallel Cable Connections.

Computer	Easy Print Computer Connector		Easy Print Printer Connector		Printer
DB25	Pin	Signal	Pin	Signal	Centronics
1	1	Strobe	1	Strobe	1 Strobe
2	2	Data 0	2	Data 0	2 Data 1
3	3	Data 1	3	Data 1	3 Data 2
4	4	Data 2	4	Data 2	4 Data 3
5	5	Data 3	5	Data 3	5 Data 4
6	6	Data 4	6	Data 4	6 Data 5
7	7	Data 5	7	Data 5	7 Data 6
8	8	Data 6	8	Data 6	8 Data 7
9	9	Data 7	9	Data 7	9 Data 8
10	10	Acknowledge	10	Acknowledge	10 Ack
11	11	Busy	11	Busy	11 Busy
12	12	Ground	12	No Connect	12 PE
13	13	+5 Volts	13	No Connect	13 Select
14	14	No Connect	14	+5 Volts	14 ±0 Volts
15	15	+5 Volts	15	No Connect	32 Fault
16	16	Init	16	+5 Volts	31 Input
17	17	No Connect	17	Ground	36 Not Used
18	18	Ground	18	Ground	33 LD
19	19	Ground	19	Ground	19 GRND
20	20	Ground	20	Ground	21 GRND
21	21	Ground	21	Ground	23 GRND
22	22	Ground	22	Ground	25 GRND
23	23	Ground	23	Ground	27 GRND
24	24	Ground	24	Ground	29 GRND
25	25	Ground	25	Ground	30 GRND

NOTE: Input cable is typically a straight-through extension cable from a PC's parallel port to unit. Output cable is the same as that used from a PC's parallel port directly to a Centronics port or printer.

4. Easy Print is in its hold time. Scanning should resume within 60 seconds.

5. Check the serial printer port's pin 20 (DTR) to ensure that it is set at a high voltage level.

Problem: Easy Print will not lock onto a computer which has sent data, and the computer is "locked up."

Solution:

1. Be sure the cable is wired correctly. For the parallel version, make sure that all 25 lines are connected straight through. For the serial version, see Table 5.1.

2. The data is not being sent to the correct port, or the computer is sending data to a port that is non-existent. Go back to MENU.COM and reconfigure the computer for the correct port.

3. For the serial version, if the input cable works directly to the printer you have the wrong input cable.

For the parallel version, the computer may not be setting the INIT line (pin 16 on a DB25 connector) high on the cable between the computer and Easy Print. Pin 16 must be at +5 volts for the Easy Print parallel version to operate.

Problem: Easy Print begins to scan before a computer is done sending data.

Solution: The hold time setting is too short. Move the "Hold Time" switch to the next higher hold time.

Problem: The document is printed at the bottom of another person's document.

Solution: The last job did not end with a form feed. Use MENU to send a reset or form feed before starting your print job.

Problem: The first or last few lines of the print-out are missing, or the print-out is in the wrong font.

Solution: The last job did not end with the set/reset to the printer's default form definition. Or, you did not start your print job with the set/reset function. Use MENU to send a reset before starting your print job.