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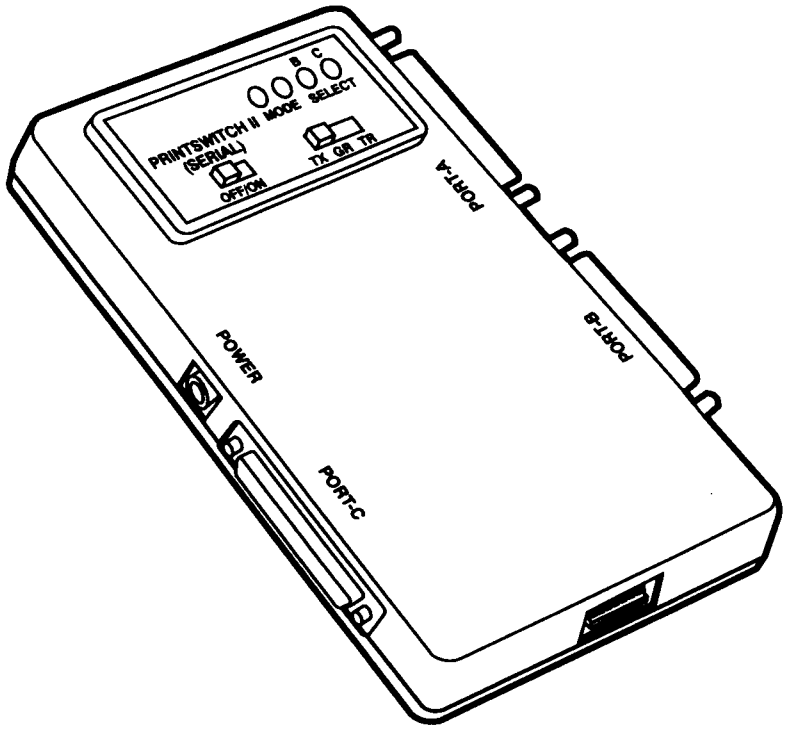
Printswitch II (Serial)



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1. Specifications

Compliance — FCC Class A, DOC Class/MDC classe A

Interface — EIA RS-232 serial (all ports DCE)

Protocol — Asynchronous

Data Formats — Either 7 data bits with odd or even parity or 8 data bits with no parity (user-selectable); always 1 stop bit

Data Rates — 115,200, 57,600, 38,400, 19,200, 9600, 2400, 1200, and 600 bps (user-selectable)

Maximum Distance — 50 ft. (15.2 m) to each connected device

User Controls — (2) Front-mounted slide switches: (1) for power, (1) for switching mode (text, graphics, or transparent);
(1) Bottom-mounted 8-position DIP switch for communication parameters

Diagnostic — User-selectable self-test at power-up

Indicators — (4) LEDs: (2) Operating Mode, (2) Printer Busy

Connectors — (3) DB25 female: (2) switched, (1) common

Leads/Signals Supported — All leads passed through

Power —	SW285A: From wallmount power supply PS115: Input: 115 VAC, 60 Hz; Output: 9 VDC, 200 mA; SW285AE, SW286AE: From desktop power supply PS115E: Input: 230 VAC, 50 Hz; Output: 9 VDC, 200 mA
MTBF —	100,000 hours
Altitude Tolerance —	15,000 ft. (4572 m)
Temperature Tolerance —	Operating: 32 to 104° F (0 to 40° C); Storage: –4 to 158° F (–20 to 70° C)
Humidity Tolerance —	Up to 95% noncondensing
Size —	1"H x 3.2"W x 5.8"D (2.5 x 8.1 x 14.7 cm)
Weight —	1 lb. (0.5 kg)

2. Introduction

With the PrintSwitch II (Serial), one computer can switch between two printers (as shown in Figure 2-1 on the next page) or other asynchronous RS-232 devices. By using this electronic method to switch, you avoid the problems that can occur (especially with laser printers) when you switch manually. The computer tells the Switch which printer to use with "soft codes" that can be embedded in your document (see Section 5.2).

As you can see, the Switch is very light and compact. For this reason, we've included a hook-and-loop fastener that you can use to attach the unit directly to any number of surfaces, including the housings of PCs and printers.

The Switch has three modes of operation, which you can choose between with the "Mode" slide switch on the front panel. In Text mode, the user can send soft codes immediately following other data. In Graphics mode, soft codes are not recognized unless they are preceded by a pause. (You can select the length of this pause.) In Transparent mode, soft codes are not recognized at all.

After the last of the data in a job is sent to an attached printer, the Switch times out the connection with that printer. This "timeout" prevents one computer from accidentally monopolizing the printer. You can select the time that elapses before a timeout to accommodate different applications of varying speed.

An optional form-feed code can be sent to the printer when the timeout has been reached to ensure that the next document starts on a new page.

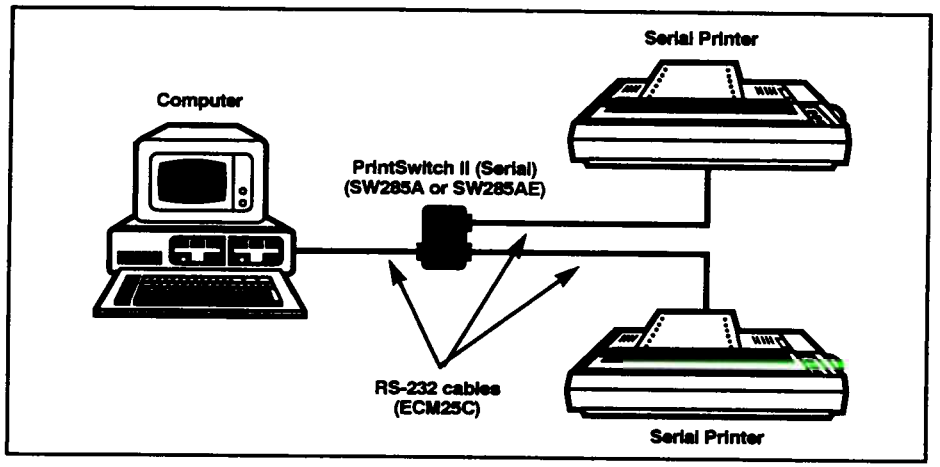

Figure 2-1. A computer sharing two serial printers through the PrintSwitch II (Serial).

3. Configuration

Before you install the PrintSwitch II (Serial), you should configure it for your application. **Section 3.1** describes setting the front-panel Mode switch to select your desired operating mode. **Section 3.2** describes setting the DIP switch so that the Switch operates using the communication parameters that you need. For each of these sections, refer to Figure 3-1 on the next page for the locations of the switches being discussed.

3.1 Selecting the Operating Mode

Use the slide switch labeled "Mode" on the front of the PrintSwitch II (Serial) to select which operating mode you want the unit to start in. In the left-hand position, the Text mode is selected (neither MODE LED is lit); in the center position, the Graphics mode is selected (the left-hand MODE LED is lit); in the right-hand position, the Transparent mode is selected (the right-hand MODE LED is lit). (See **Chapter 2** and **Section 5.3** for descriptions of these modes.)

3.2 Setting Communication Parameters

Use the DIP switch on the bottom of the PrintSwitch II (Serial) to set the Switch's communication's parameters. As shown in Table 3-1 on page 7, positions 1 through 3 control the data rate; positions 4 and 5 control the data format; and positions 7 and 8 control the graphics-mode pause. (Use position 6 during operation when you want the Switch to run its self-test.)

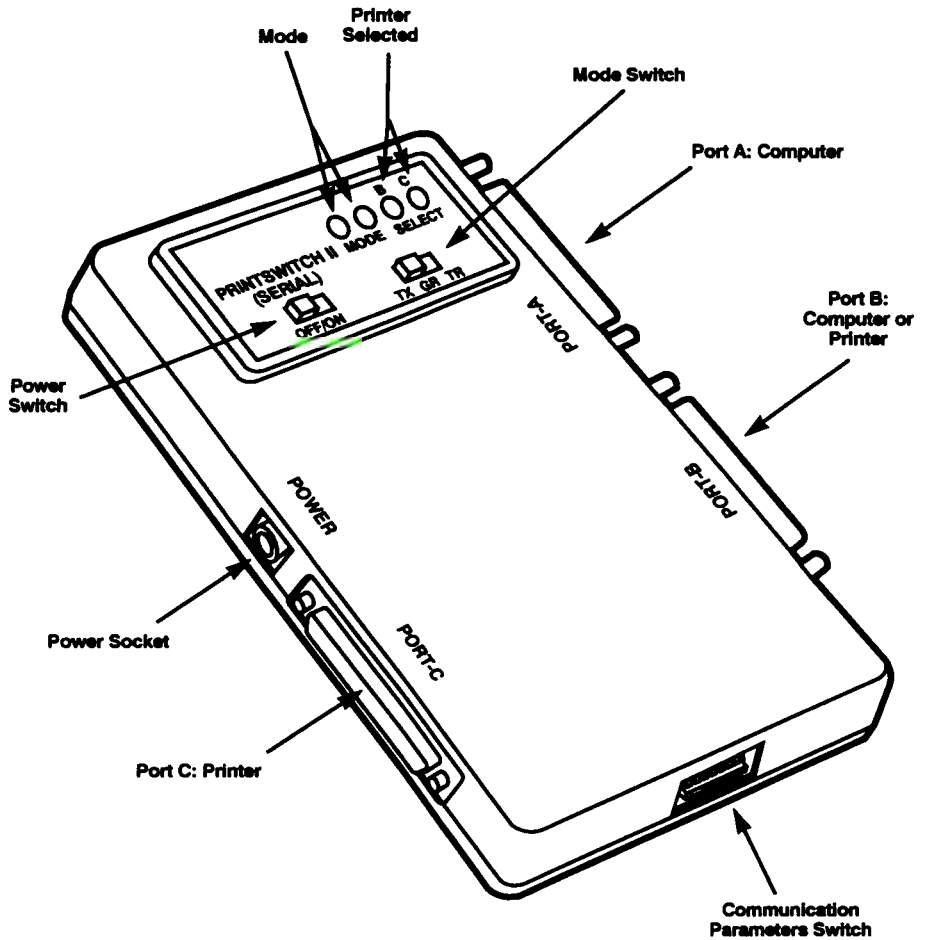

Figure 3-1. Layout of the PrintSwitch II (Serial)'s controls and indicators.

Table 3-1. Possible Settings of the Communications DIP Switch

FUNCTION	DIP SWITCH POSITIONS 1	2	3	4	5	6	7	8
Data Rate (bps)								
115,200	OFF	OFF	OFF					
57,600	ON	OFF	OFF					
38,400	OFF	ON	OFF					
19,200	ON	ON	OFF					
9600	OFF	OFF	ON					
2400	ON	OFF	ON					
1200	OFF	ON	ON					
600	ON	ON	ON					
Data Format								
8 data bits, no parity				OFF	OFF			
8 data bits, no parity				ON	OFF			
7 data bits, odd parity				OFF	ON			
7 data bits, even parity				ON	ON			
Operating Mode								
Normal						OFF		
Self-Test						ON		
Pause for Graphics Mode								
1 millisecond							OFF	OFF
10 milliseconds							ON	OFF
100 milliseconds							OFF	ON
500 milliseconds							ON	ON

*A switch position is ON when it is down (closer to the number that identifies it).

4. Installation

4.1 Placement and Mounting

Place the PrintSwitch II (Serial) in a cool, dry place close to an electrical outlet. It should be within 50 ft. (15.2 m) of the devices you want to connect to it.

Your package also includes a special "hook-and-loop fastener" fabric strip that allows you to mount the switch in a convenient place, such as on a PC (see Figure 4-1 below). To mount the Switch, remove the white backing of this strip, then attach the side with the "hooked" material to the Switch and the side with the felt material to any smooth, flat surface. When the two materials touch, they will stick together, holding the switch in place. The materials can later be pulled apart.

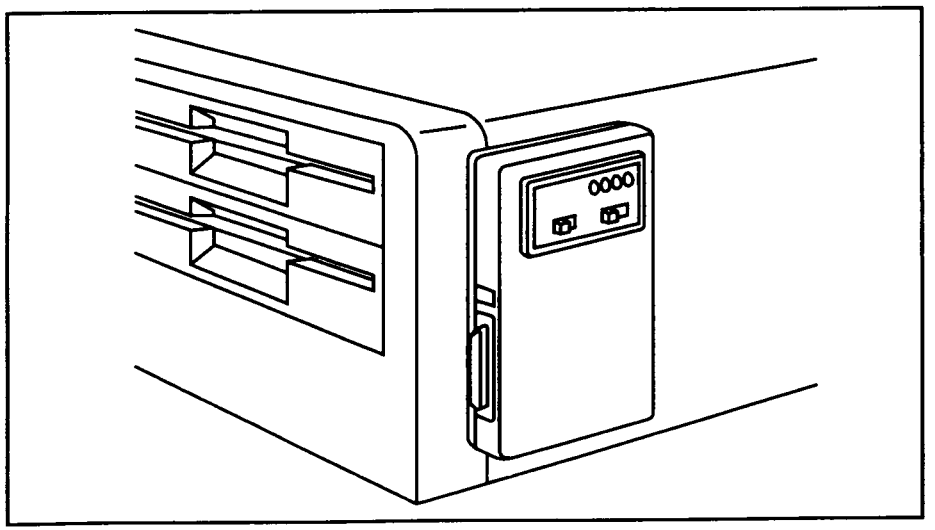

Figure 4-1. Mounting the PrintSwitch II (Serial) on your PC.

4.2 Cabling

This section describes the cables and procedures you'll use to connect equipment to the PrintSwitch II (Serial). Refer to Figure 2-1 on page 4 for an illustration of a typical application.

4.2.1 Computer to Switch or Switch to Printers

For each computer or printer you want to connect to the PrintSwitch II (Serial), you'll need a 25-wire cable with a DB25 male connector on the Switch end and a DB9 (AT® or PS/2®) or DB25 (PC/XT™ or printer) female on the computer end. The cable(s) should be wired "straight through" or "pin for pin," meaning that Pin 1 on the computer end is connected to Pin 1 on the Switch end, Pin 2 to Pin 2, and so on. (Our product code for this type of "RS-232 cable" is EVMBMC for the DB9 type or ECM25C for the DB25 type.)

Connect the female end of each of these cables to the serial port (COM1, COM2, etc.) on the selected computer or the input port on the selected printer. If the selected computer is the "source" or "master" (the one that's doing the switching), connect the male end of the cable to the Switch's port "A." If the computer is a "destination" or "slave" (one that's being switched between), connect the male end of the cable to the Switch's port "B" or "C."

4.2.2 Modem(s)↔Switch

For each modem you want to connect to the PrintSwitch II (Serial), you'll need a 25-wire cable with DB25 male connectors on each end. The cable(s) should be specially "cross-pinned" as shown in Table 4-1 on the next page. (Our product code for this type of "tail-circuit cable" is EYN254C.)

Connect one end of each of these cables to the input port on the selected modem. If the selected modem is a "source" or "master" (it's doing the switching), connect the other end of the cable to the Switch's port "A." If the modem is a "destination" or "slave" (it's being switched between), connect the other end of the cable to the Switch's port "B" or "C."

4.3 Power Connection

Lastly, plug the PrintSwitch II (Serial)'s power-supply adapter into a working outlet and plug the adapter's output cord into the power socket on the Switch.

NOTE

The adapter's power requirements (written on the back) probably match those of your local electric utility, but check just to make sure.

Table 4-1. Pinout of the Tail-Circuit Cable EYN254C

Modem End	Switch End
Pin No.	Pin No.
1	1
2	3
3	2
5	
6	20
8	
7	7
	5
20	6
	8

5. Operation

5.1 Power-Up

Turn on power to the PrintSwitch II (Serial) using the OFF/ON slide switch on its front panel (see Figure 3-1 on page 6). If position 6 of the Switch's right-hand DIP switch is set to OFF (down), the Switch will be ready to operate normally. If position 6 is set to ON (up), the Switch will begin performing its self-test (see **Section 5.7**).

5.2 Sending Data and Soft Codes

Before you send data, verify which printer is selected. If you cannot see the PrintSwitch II (Serial), select the printer just to be safe. Printers can be selected by sending a "soft code" to the Switch from your computer. The soft code consists of the plain ASCII text `*PORT=B*` or `*PORT=C*` (all of the letters must be uppercase). Use "B" or "C" depending on which printer you want to use. When the switch receives the code (including the asterisks) it will immediately select the correct printer.

The PrintSwitch II (Serial) continuously reads incoming data for the presence of soft codes. No special method is necessary to send them. You can type them into the beginning of a document you want to send to the printer, or use any other method that sends the code you need to the Switch. For example, you can transmit them in batch files; see **Section 5.6**.

5.3 Operating Modes

The PrintSwitch II (Serial) has three operating (switching) modes: Text, Graphics, and Transparent. While the Switch's front-panel "Mode" switch is in the Text (left-hand) position, the Switch operates in Text mode: Soft codes are recognized without a preceding pause. In Text mode, both of the Switch's MODE LEDs are dark.

If you are using Text mode and you find that unwanted soft-code processing is occurring, move the Mode switch to the Graphics (center) position. In Graphics mode, a pause must occur before soft codes are recognized, so the Switch doesn't act on occurrences of soft codes among

6. Troubleshooting

6.1 First Steps

If the PrintSwitch II (Serial) does not seem to be passing data or soft codes correctly, the first thing to try is to have the Switch perform its self-test as described in **Section 5.8**. If the LEDs fail to light, contact your supplier. If the Switch passes its self-test, check the settings of its DIP switch and make sure these are correct. If they are, check the cables connected to the Switch and make sure all of them are securely connected to the proper equipment at both ends. If the cabling is OK, turn the printer(s) off and back on and try again. If problems persist, reboot the computer(s) (saving any documents in progress first), reload the software you were using and the affected document(s), and try again. If you still have problems, contact your supplier.

6.2 Calling Your Supplier

If you determine that your PrintSwitch II (Serial) is malfunctioning, *do not attempt to alter or repair it*. Contact your supplier. The problem might be solvable over the phone.

Before you do, make a record of the history of the problem. Your supplier will be able to provide more efficient and accurate assistance if you have a complete description, including:

- The nature and duration of the problem.
- When the problem occurs.
- The components involved in the problem.
- Any particular application that, when used, appears to create the problem or make it worse.

6.3 Shipping and Packaging

If you need to transport or ship your PrintSwitch II (Serial):

- Package it carefully. We recommend that you use the original container.
- Before you ship a unit for repair or return, contact your supplier to get a Return Materials Authorization (RMA) number, and make sure you include everything you received with the unit when you ship it.