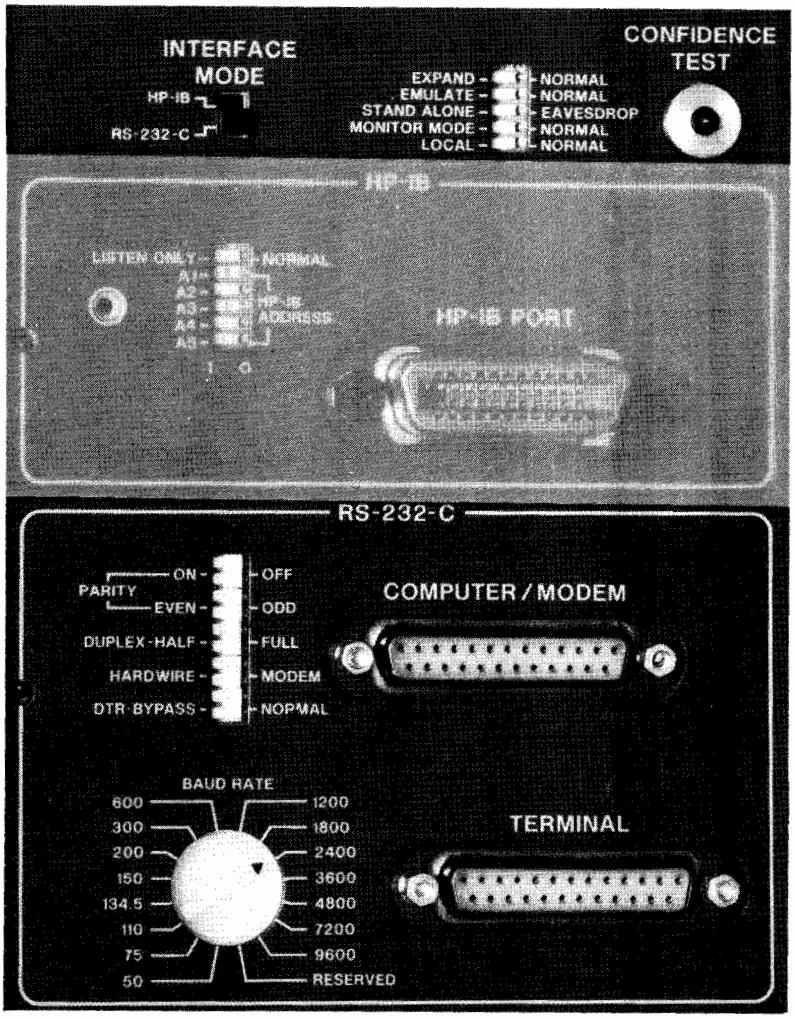
RS-232-C Controls and Indicators

Rear-panel controls and indicators that pertain to plotter operation in the RS-232-C Interface Mode are shown unshaded in the following illustration.

RS-232-C Interface Switches and Indicators



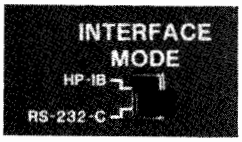
The functions of rear-panel and front-panel controls and indicators that pertain only to the RS-232-C Interface Mode are as follows:

NOTE: The positions of the **CALIBRATE/NORMAL, EXPAND/NORMAL, EMULATE/NORMAL, MONITOR MODE/NORMAL,** and **LOCAL/NORMAL** switches are sensed each time the front-panel **CHART UNLOAD** and **CHART HOLD** functions are invoked. The position of the **DTR** switch is sensed at all times. The **CONFIDENCE TEST** switch is sensed only when the **CHART HOLD** LED is on. The positions of all other switches are sensed only at power-on.

The **CALIBRATE/NORMAL, EXPAND/NORMAL, EMULATE/NORMAL,** and **CONFIDENCE TEST** switches are not related to interface functions and are explained in Chapter 2 of this manual. ■

Rear Panel

INTERFACE MODE — A two-position switch that is sensed only at power-on. In the RS-232-C position, the **RS-232-C** LED is on steady and indicates the plotter is operating in the RS-232-C Interface Mode.



RS-232-C — An LED that is on steady only when the **INTERFACE MODE** switch is set to **RS-232-C** at power-on.

STAND ALONE/EAVESDROP — A two-position switch that determines whether the plotter is programmed-on or programmed-off at power-on. It is used in conjunction with the **LOCAL/NORMAL** and **MONITOR MODE/NORMAL** switches to configure the plotter for operation in various system environments. Refer to Plotter Environments, in this chapter.

In **STAND ALONE,** the plotter is programmed-on at power-on, and cannot be programmed-off. The primary purpose for this switch position is to provide compatibility with HP 7580 and HP 7585 plotters that are equipped with the Option 001 (RS-232-C) interface. The plotter is compatible when it is connected to a computer via the **COMPUTER/MODEM** connector, and the **LOCAL/NORMAL** and **MONITOR MODE/NORMAL** switches are set to **NORMAL.** The plotter can also be installed in the other defined environments, but only programmed-on operation capabilities can be used.

NOTE: When three-wire data communication is desired, bit 1 of the second parameter of the ESC . @ instruction must be set to 1 to ensure full compatibility with plotters having the Option 001 (RS-232-C) interface. ■

In **EAVESDROP,** the plotter is programmed-off at power-on, and must be programmed-on before it will respond to any other instructions. The plotter can be installed in any of the defined plotter environments, and both programmed-on and programmed-off operating capabilities can be used.

MONITOR MODE/NORMAL — A two-position switch that enables monitor mode 1 when in the **MONITOR MODE** position. Monitor mode 1 and 2 can also be programmatically enabled using the Set Plotter Configuration Instruction, ESC . @, or the Set Monitor Mode Instruction, ESC . Q.

NOTE: If monitor mode 1 is manually enabled, it cannot be disabled using the ESC . @ or ESC . Q instruction. However, both instructions can be used to toggle between monitor mode 1 and monitor mode 2. Refer to Monitor Mode in this chapter. ■

LOCAL/NORMAL — A two-position switch that selects either the normal or local operating mode. Refer to Plotter Environments, in this chapter.

PARITY — The parity **ON/OFF** and **EVEN/ODD** switches are effective when the plotter is programmed-on in either the normal or local operating mode. These switches set parity checking and generation electronics for use with odd or even parity as established by system requirements. If parity is not used, the **ON/OFF** switch is set to **OFF,** and the setting of the **EVEN/ODD** switch is irrelevant.

DUPLEX — The **DUPLEX** switch is effective only when the plotter is set to local, programmed-off mode or monitor mode 2.

During local, programmed-off mode operation the switch function is as follows:

1. When set to **FULL**, the plotter returns (echoes) data received from the terminal back to the terminal.
2. When set to **HALF**, the echo is suppressed.

During monitor mode 2 operation the switch function is as follows:

1. When set to **FULL**, and the computer is working in an echo-plex environment, all plotter output responses are echoed from the computer, through the plotter, to the terminal.
2. When set to **HALF**, all plotter output responses are sent to both the computer and the terminal. All data received from the computer is also sent to the terminal.

HARDWIRE/MODEM — A two-position switch that determines the power-on bit states of the 2nd parameter in the ESC . @ instruction. After power-on, the switch position can be overridden programmatically using the ESC . @ instruction.

In **MODEM**, the bits are set to disable hardwire handshake and to enable full duplex data communications protocol.

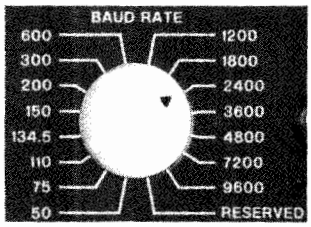
In **HARDWIRE**, the bits are set to enable hardwire handshake and to permit data communication in an environment where the only lines used are Transmitted Data (BA), Received Data (BB), and ground.

NOTE: Data communication requires only three wires; however, the Data Terminal Ready (CD) line must also be connected if hardwire handshake is to be used. ■

DTR — A two-position switch that is sensed at all times. It determines whether the plotter or terminal has control of the **COMPUTER/MODEM** DTR line state.

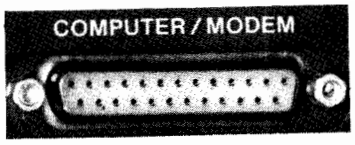
In **NORMAL**, the plotter holds the DTR line high, unless hardwire handshake is enabled. Refer to Hardwire Handshake, in this chapter.

In **BYPASS**, the DTR line is controlled by the terminal. This position is provided to prevent certain types of modems, such as the Bell 113, from inadvertently logging the user off the computer if plotter power is cycled on or off. Hardwire handshake is functionally disabled in this position because the DTR line is held high by the terminal.

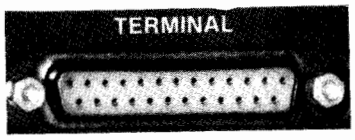


BAUD RATE — A 16-position rotary switch that establishes the baud rate at which data is received and transmitted by the plotter. This switch should be set at the same baud rate selected on the computer and/or terminal.

The **COMPUTER/MODEM** connector is used to interconnect the plotter with a modem or host computer. It is a standard 25-pin, female-type, RS-232-C connector.



The **TERMINAL** connector is identical to the **COMPUTER/MODEM** connector and is used to interconnect the plotter with a terminal.



Front Panel

DSR (HP 7580 and 7585 only) — The **DSR** LED indicates the state of the modem or host computer when the plotter is connected into a computing system. The LED is on steady when the Data Set Ready (CC) line from the modem or host computer is high.

BYPASS — A pushbutton switch with an LED that is functional only if the plotter is in the RS-232-C Interface Mode. The operating characteristics of the **BYPASS** pushbutton are determined by the operating environment selected by the **STAND ALONE/EAVESDROP** switch.

In the stand alone environment, the **BYPASS** LED is set to off at power-on to indicate the plotter is programmed-on. The plotter cannot be programmed-off, and pressing the **BYPASS** pushbutton has no effect.

In the eavesdrop environment, the **BYPASS** LED is set to on at power-on to indicate the plotter is programmed-off in either the normal or local operating mode. Repeatedly pressing the **BYPASS** pushbutton will toggle the plotter between programmed-off (LED on) and programmed-on (LED off). Refer to Plotter Environments, in this chapter.

Setting Up the Plotter: a Checklist

The following steps outline the decisions that must be made to correctly interface the plotter with a given system environment.

1. Determine which installation and operating environment matches your system. Refer to Plotter Environments, in this chapter.
2. Check that you have the required cables and connect the plotter as shown for the environment chosen in step 1. Use the cable supplied with the plotter when connecting to the **COMPUTER/MODEM** connector. Use the cable supplied with your terminal when connecting to the **TERMINAL** connector.
3. Determine if parity checking is used on your system and set the **PARITY** switches accordingly.
4. Determine the baud rate at which your computer sends data and set the **BAUD RATE** switch accordingly.