Adding IrDA Interface

Q *My Biostar PC motherboard has a connector for an IrDA infrared transceiver. There are four wires, +5V, GND, IRRX, and IRTX. I assume the latter two are infrared receive and transmit respectively. There is no infrared LED or photodiode. What do I need to add in order to be able to use IrDA?—A. G., Washington, DC*

A First make sure that the IrDA UART (universal asynchronous receiver-transmitter) is really on the motherboard—that the chips haven't been left off. The way to tell is that if the UART is there, Windows 95 and 98 will detect

Properties" carefully.

Although we don't have the particulars of your motherboard, it appears that what you need to add is an infrared transceiver such as the Hewlett-Packard HSDL-1100-017. This is a hybrid IC that contains the appropriate LED, photodiode, and control circuitry.

Figure 1 shows how it's used. The HSDL-1100-017 itself can transmit and receive data as fast as 4 megabits per second, but its actual speed will depend on the IrDA UART on your motherboard.

You can download a data sheet for the HSDL-1100-017 from www.hp.com/go/ir, which includes a link for ordering this device in small quantities for about

we have not actually built and tested it, so it's doubly important for you to read the data sheets and understand what you're building.

General information on IrDA (Infrared Data Association) standards and protocols can be obtained from www.irda.org.

Computer Masquerades As Printer

Q *I have some data files on a Commodore 64 computer and a program that can print them but cannot put them onto a diskette. Can I connect the parallel printer port of my Commodore to the parallel port of a PC and capture the data? Stripping out the printer control codes and other extraneous material is no problem.—D.L.G., Detroit, MI*

A We consulted parallel-port expert Jan Axelson (www.lvr.com), who advised that although modern PC parallel ports are capable of receiving input, you'd be better off converting the data to serial before transmitting it to the PC. The reason is that serial ports have the ability to buffer incoming data, but parallel ports don't; the computer must be listening at the exact moment the data is placed on the port. Thus, data transfer between parallel ports requires cooperation between the two computers.

Figure 2 shows roughly what you need. A parallel-to-serial converter, also known as a Centronics-to-RS-232 converter, would normally be used to connect a computer's parallel port to a serial printer. In this situation, though, you'll be feeding the serial data into another computer. You can do this by writing a program in BASIC to read from COM1 or by running a terminal program such as Kermit and capturing the data received.

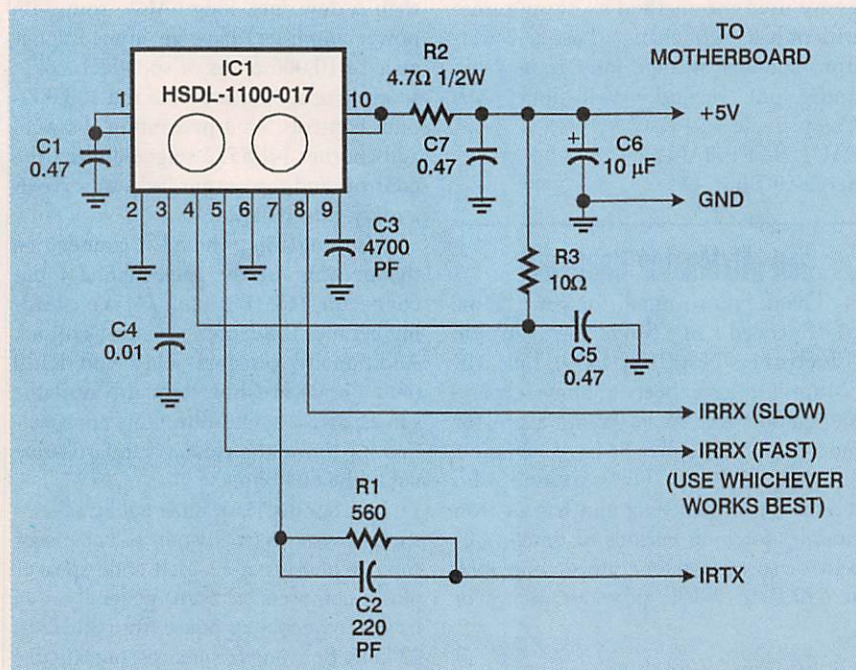Parallel-to-serial converters are available for about $85 from B&B

FIG. 1—AN INFRARED TRANSCEIVER, such as the Hewlett-Packard HSDL-1100-017, is a hybrid IC that contains the appropriate LED, photodiode, and control circuitry. This example circuit was taken from an HP application note. Pins 1 and 10 are double pins.

the IrDA hardware and let you install IrDA drivers, which you can get from your installation disk or from www.microsoft.com. The drivers may already be there; check "My Computer,

$14 each. Bear in mind that it is a tiny surface-mount IC for which you will probably have to make a printed-circuit board. Also, our published circuit is taken from an HP application note, but