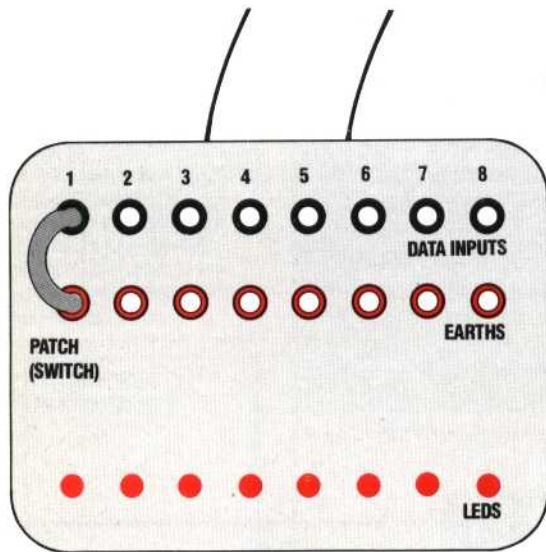




ALL BOXED UP

In our Workshop series we have discussed the functions of the Commodore 64 and BBC Micro user ports, and have shown you how to construct a buffer box to handle input and output. Now it is time to test the box in operation...

Once the input buffer box with LEDs has been constructed, we can write some simple software to test its operation by using it as a reaction timer. Here, we shall use bit 7 of the data register for the input switch and bits 0 to 6 for the LEDs. The objective is to time the interval between the computer turning the LEDs on and a switch being pressed. We must first connect a switch between input terminal 7 on the box and the corresponding earth; this switch can be of any type as it is to be used only to make and break the circuit between bit 7 of the data register and earth. A patch cord, for example, can be used as a switch. Connect the switch, ensuring that it is breaking the circuit between bit 7 and earth (the value of bit 7 should be one). The following diagram shows the connections:



Our test program first sets up the data direction register so that bit 7 is set for input and all others are set for output, and then zeros the data register. After a random delay, seven of the LEDs are lit and the computer's internal timer is initialised. Timing continues until bit 7 is sent low when the connection is made. Note that the LEDs are wired in such a way as to light when a zero is present in the data register and go out when a one is present.

