The Ingenious SWITCHABLE TEST SOCKET

Decreases IC circuit design and debugging time

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THE Switchable Test Socket, details of which are shown in the drawing, can help cut down time spent in designing, debugging, and troubleshooting circuits using ICs and/or component carriers. A simple but ingenious device, the STS can be used to isolate or monitor a signal at any selected IC or carrier pin and provide a convenient means for selectively injecting test signals. There's no need to flip over the board or cut circuit traces to perform these operations with the STS.

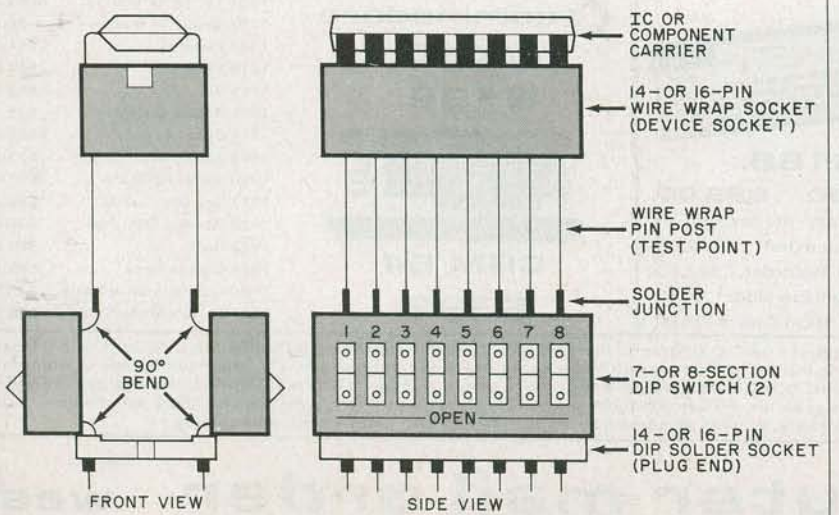
As shown in the drawing, the STS consists of a 14- or 16-pin Wire Wrap DIP (dual in-line package) socket to the pins of which are soldered in series 7- or 8-section DIP switches. The free pins of the DIP switches, in turn, connect to a 14- or 16-pin solder socket.

To use the STS, you simply unplug the IC or component carrier from its socket, install the STS in the vacated socket, and plug the removed device—properly oriented—back into the circuit via the Wire Wrap socket atop the STS. With the STS installed, you can switch in and out device pins as desired, using the DIP switches. Additionally, the long, rigid bare-metal leads of the Wire Wrap socket permit easy connection of meter, logic-probe, and oscilloscope test leads for voltage and signal monitoring, or the probes of a signal generator or other signal-injection instrument for performing operating tests.

Fabrication. Using the drawing as a guide, tin about ⅛" of the free ends of the Wire Wrap socket leads with solder. Next, bend the pins of two DIP switches so that they project away from the sides of the cases at a 90° angle and tin about $\frac{1}{16}$" of the free ends of each pin. Use heat judiciously when tinning and soldering pins on the DIP switches to avoid damaging their potting compounds.

Gently clamp the Wire Wrap socket in a vise or other clamp/support device, arranging it so that its leads are accessible. Making sure of proper orientation, carefully solder one row of DIP-switch pins to one row of the Wrap socket leads, using only enough heat and solder to assure good electrical and mechanical joints. Solder first one end pin and then the other, squaring the assembly for neatness, and finish up with the remaining pins. Then file smooth each soldered connection. Repeat this procedure for the second DIP switch and remaining Wire Wrap socket leads.

After soldering both DIP switches to the Wire Wrap socket, insert the free pins of the switches into a 14- or 16-pin (depending on configuration of socket and DIP switches) solder socket.



Series DIP switches are connected between a Wire Wrap socket and the DIP solder socket.

In Closing. If you routinely design or work with circuits in which many 14- and 16-pin ICs or component carriers are used, you might want to have two or more Switchable Test Sockets available. By installing them in several critical locations in a circuit, the STSs will further reduce design, debugging, and troubleshooting time by permitting you to connect several instruments simultaneously. Using a multi-channel scope, for example, you can compare the timing waveforms at selected points in a digital circuit or observe the levels of amplification obtained at various points in an analog circuit with a given input signal level. ◇