New Column Puts the Spotlight on BASIC Stamp Projects, Hints, and Tips

First Look at the New BS1-IC Stamp-on-a-SIP, by Scott Edwards

WELCOME to the first installment of Stamp Applications, a forum for users of BASIC Stamp single-board computers. Every month we'll introduce new ideas in hardware and software for the Stamp, answer questions, and keep up with news about the Stamp and related products.

To kick things off, let's look at the newest member of the Stamp product line, the BS1-IC, also known as "Stamp on a SIP." SIP stands for single-inline package, and it describes the diminuitive new Stamp's printed-circuit board design. The entire Stamp circuit plugs right into a 14-pin SIP socket. This makes it easier to breadboard with the Stamp, or to incorporate it into your own circuit designs.

Figure 1 shows the layout and important dimensions of the BS1-IC. I elected to sketch the unit rather than photograph it because its small size makes it a real challenge to get a decent picture.

The BS1-IC has four advantages over the regular, full-sized Stamp. The first is size. The BS1-IC is small enough to be treated as a component that can be integrated into ultra-small designs.
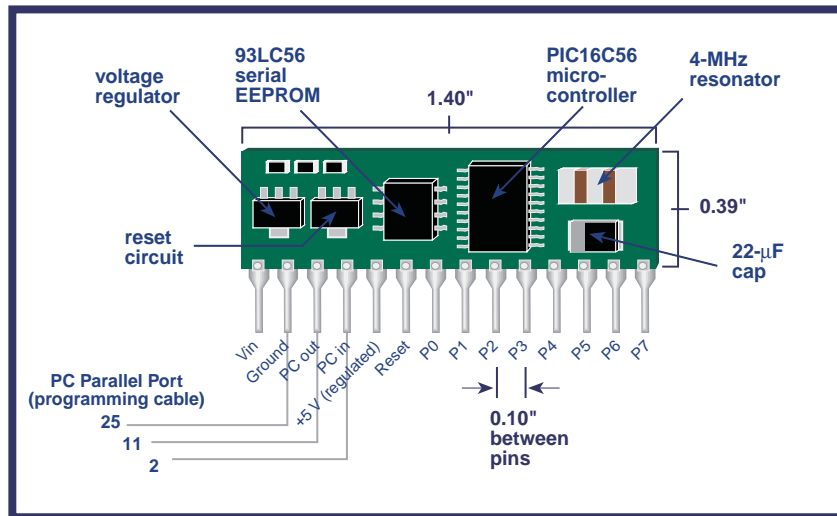

Figure 1. The new BS1-IC.

The second advantage is price. At $29, the BS1-IC has everything the original $39 Stamp had, except for the battery clips and prototyping area. If your power supply is something other than a 9V battery, you won't miss the clips. And if you're not a fan of wire-wrapping (I detest it! Crocheting for engineers!), you'd probably never use the grid-of-holes proto area anyway. The BS1-IC plugs right into socket-type proto boards, like the ones sold by Radio Shack and Jameco, allowing rapid circuit testing. If you want to add the clips and proto grid later, you can buy a "carrier board" for $10 to turn the BS1-IC in a normal-form-factor Stamp.

The third, least tangible benefit of the component-style package is professional appearance. You can integrate a factory-assembled and tested Stamp into a product without having a messy jumble of printed circuit boards under the hood. Put the BS1-IC right on the circuit board with your application-specific components.

The fourth advantage over the original Stamp design is not very glamorous, but nonetheless important: The BS1-IC has a reset input that's accessible to your circuitry. You can add a button between reset and ground. This allows you to reset a runaway program to the beginning. You can also treat the reset connection as an output, using it to reset other logic in your circuit.

In my first application for the BS1-IC, I wasn't too worried about looking good. I just wanted to reduce the jumble of jumper wires that was accumulating as I interfaced Stamps to different projects and test jigs around the shop. My Stamp Stretchers and LCD Serial Backpacks both borrow power from the Stamp and use a standard connector layout: +5V, ground, serial data. I decided to make a bunch of three-wire jumpers with female header sockets at each end. I then designed my own carrier board with eight, three-conductor male headers--one for each input/output pin.

Figure 2 shows the resulting board layout. I present it not as a finished product, but as an example of how simply you can turn Parallax' newest Stamp into Scott's Stamp or Mary's Stamp or Acme Industries' Stamp.
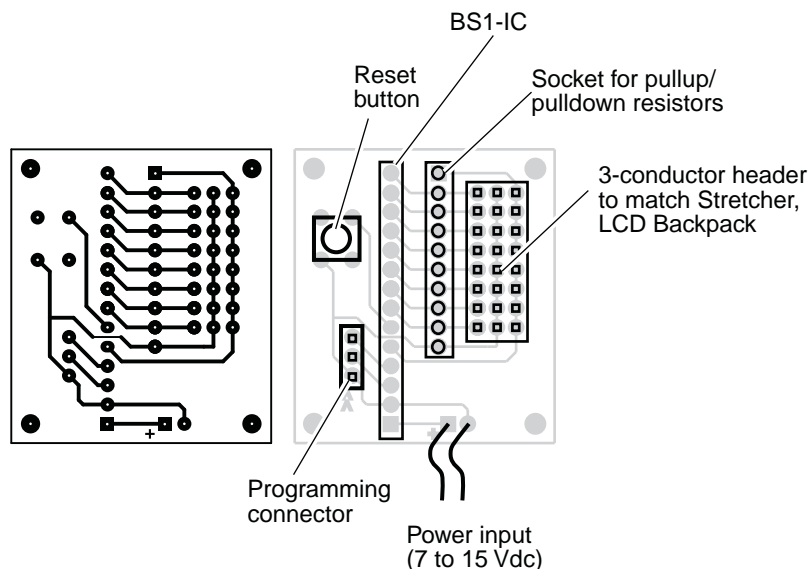

Figure 2. Example of a simple, homemade carrier board for the BS1-IC.

That wraps up this month's installment of Stamp Applications. Future columns will dig into Stamp hardware and software issues, generally presenting at least one schematic and one program listing each month. Initially, I'll take the topics from Parallax's technical support folks and the online venues where the Stamp is discussed

NOTE: This article was originally published in 1995. The Stamp Applications column continues with a changing roster of writers. See www.nutsvolts.com or www.parallaxinc.com for current Stamp-oriented information.