Stamp Stack Construction Help

Building either Stamp Stack Kit is reasonably straight-forward however, there are a few things that might be confusing for beginners.

The primary resource for building the Stamp Stacks is the manual that comes with each kit. If you have read that manual and still have problems, this document may be able to help you.

IMPORTANT: Removing soldered-in components from the circuit board is not difficult but it is a skill that requires practice. If you are not completely comfortable with this process and/or do not have the appropriate tools then ask someone who does to help you or contact HVW Technologies. Once the circuit board is damaged, the kit is pretty-much junk.

Component Identification & Orientation

While most components will be easy to identify for anyone with some electronics experience (resistors, capacitor, etc.), we have taken some pictures of the components that might not be so obvious.

Photo 1 shows the four TO-92 package components showing the specific lettering on each device. From left to right, they are: 2N3904 (NPN) Transistor; 2N3906 (PNP) Transistor; MIC 2954 5-Volt LDO Regulator; and the 34064 Reset Circuit. Note that since more than one manufacturer makes versions of these parts, some of the lettering may be slightly different, but the part number will always be the same. Similarly, the colour of a component in your kit may be different than what is pictured in this document. With the exception of resistors whose coloured bands indicate the resistance, Colour has no significance.

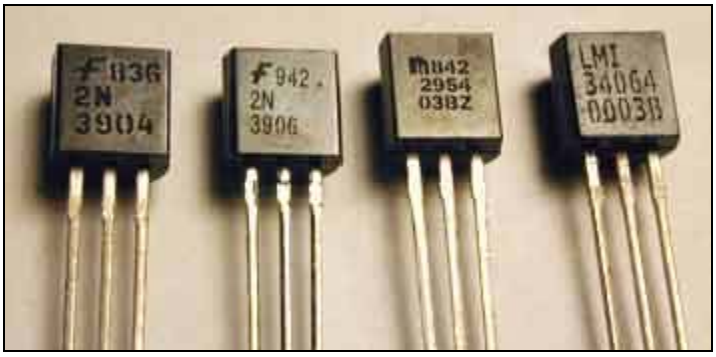


Photo 1

Photo 2 shows the 2 capacitors used on the Stamp Stack II Kit. On the left is the 4.7 uF Capacitor. This part is polarized which means is has to be put onto the

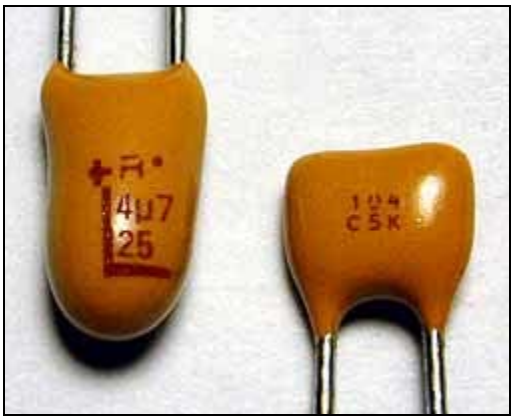


Photo 2

circuit board in a certain way. In the photo, you can see a small "+" sign near the lead on the left; this lead must match with the hole with the "+" next to it on the circuit board. On the right is the 0.1 uF (104) capacitor; this capacitor is not polarized and can be inserted either way.

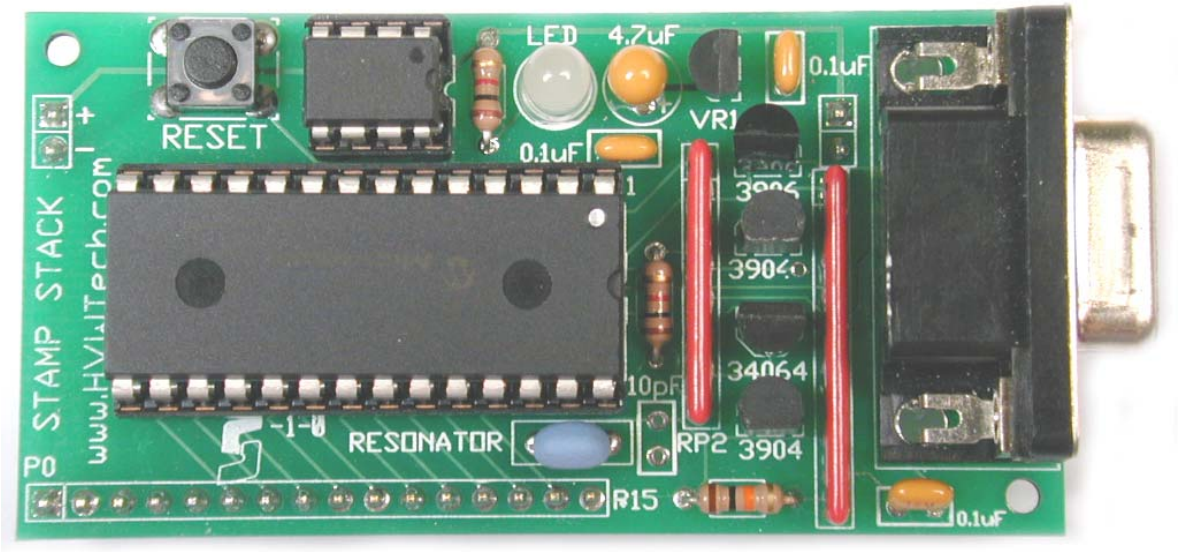
> **Stamp Stack II-SX Builders:** On the Stamp Stack II-SX Kit, there is third capacitor, a 10 pF cap, which looks just like the 0.1 uF shown here, but has "100" on it (instead of "104").

Photo 3 is of the 2 SIP resistor packs. On top is the 8-pin 4.7K pack, and on the bottom is the 10-Pin 10K pack.

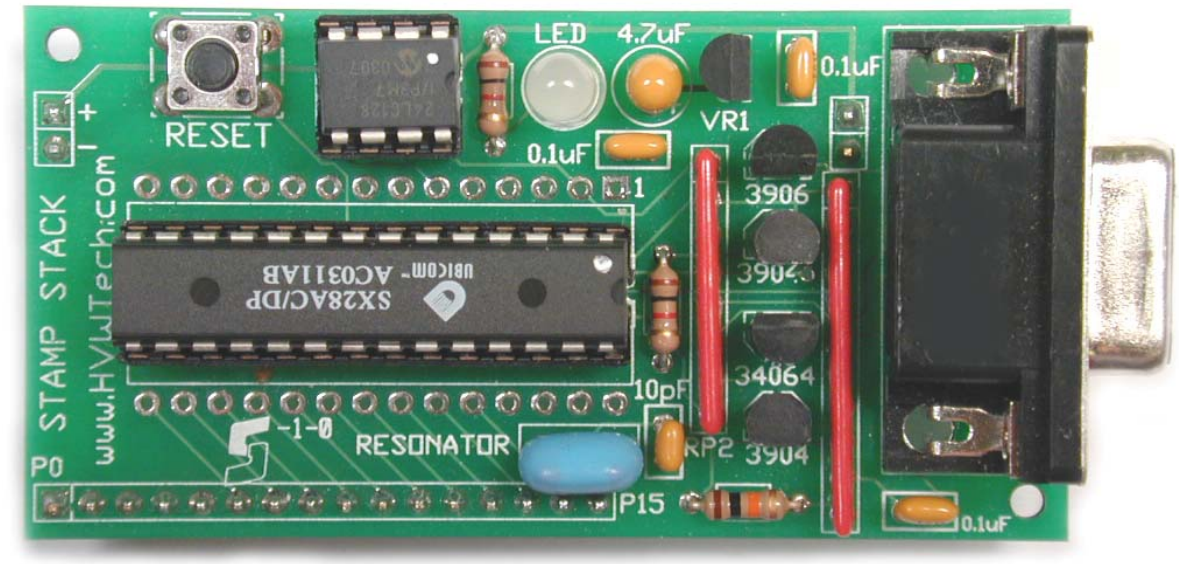
Photo 3

A Picture is Worth 1000 Words

for large close-up photos of finished Stamp Stacks. Check your board against the photo and look for any differences.



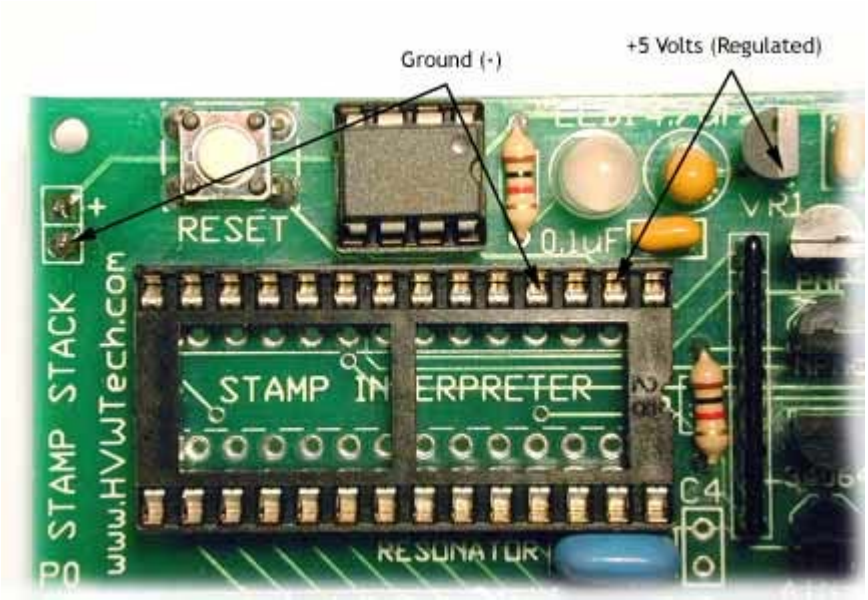
Stamp Stack II



Stamp Stack II-SX

Checking Voltages

The Stamp Stack Manuals describe the process of checking the regulated +5 Volt supply on the board before installing the Interpreter Chip and EEPROM. In the photo below, the arrows on the right show the output pin of the voltage regulator and the pin on the Interpreter Chip socket (pin 2). The Arrows on the left show the board ground and the ground pin on the Interpreter Chip socket (pin 4). The voltage between pin 4 and pin 2 should be between 4.8 and 5 Volts. The LED should be green when power is applied.



If you do NOT measure 4.8 to 5 Volts between Pins 2 and 4 of the Interpreter Chip socket, you need to find out why. Pin 1 of the 5V Regulator is the input and is the pin closest to the edge of the board. This pin is connected to the positive ("+") power inputs (one of which is in the top left-hand corner of the board photo above. With the power OFF, measure continuity between pin 1 of the regulator and the positive power input; it should be a dead short. If it is open, check for broken traces and bad or missing solder joints. Pin 2 of the regulator is ground and is connected to the negative ("-") power inputs (one of which is being pointed to in the photo above). This pin is also connected to pin 4 of the Interpreter Chip. You should measure continuity between these 3 pins. Pin 3 of the regulator is the regulated 5 Volt output. This pin connects to pin 2 of the Interpreter Chip. You should measure continuity between these 2 points.

With the power ON, you should observe / measure the following (applies to both Stamp Stack II and Stamp Stack II-SX):

1) LED is lit and is green (if it is red, you have the "+" and "-" from your power source reversed, or the LED is installed backwards (the flat of the LED should face the middle of the board)).

2) Between ground and Pin 1 of the regulator, you should measure your power supply voltage (+5 to +12 Volts DC)

3) Between ground and pin 3 of the regulator, you should see between 4.8 and 5 Volts.

Still not working ?

If you've made it this far and your Stamp Stack still isn't working and you have:

- Checked all components for proper placement and orientation
- Checked your solder work for shorts or cold solder joints
- Had someone else check your work

…then you might need some technical support.

Getting Technical Support

If you are still having trouble, send an email to Support@HVWTech.com with:

1) Your name and/or invoice #
2) A detailed description of the nature of the problem and what you have done to try and fix it. For example, we need to know where you are in the construction process.
3) If you have finished building the kit, did it work for a while and stop, or has it never worked ?
4) Does the LED light up ? Is it green or red ?
5) Is there 5 volts between Pins 4 and 2 of the Interpreter Chip ? If not, what voltage do you measure?
6) Have you done all the checks in this document ?

Any other information you can provide is useful. A picture of your Stamp Stack is best, if possible.