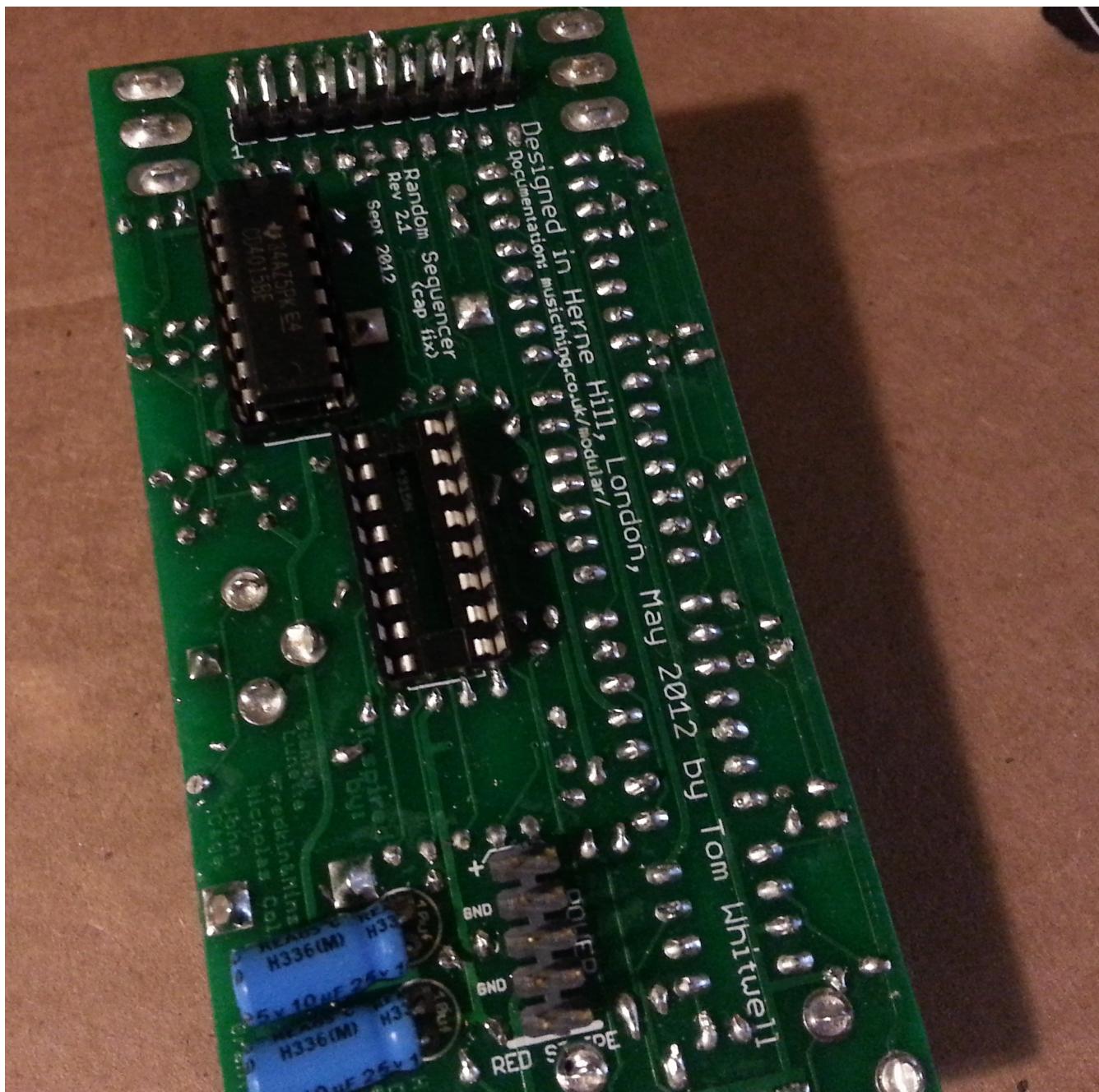
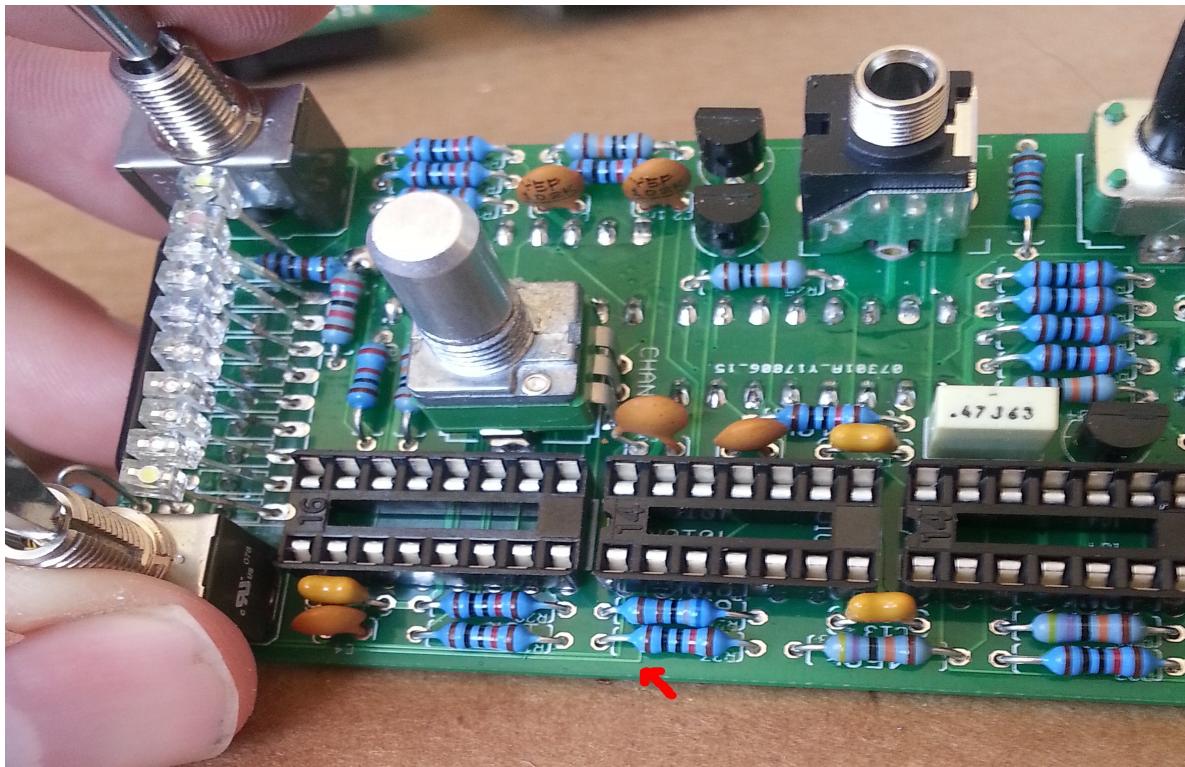


Ok folks, here is the manual to modify your turing machine so that it can interface with the Bytes Expander. In order to do this, YOU WILL NEED TO CUT A TRACE. Make sure that you have a sharp razor, ideally a box-cutter/ xacto knife for this job. Don't use a kitchen/ hunting knife or anything like that. You will also need to desolder one of the fuses on the backpack PCB. I would highly suggest reading through this manual to make sure all of this stuff is within your skill level BEFORE you buy a Bytes expander kit or attempt to upgrade your Turing Machine for any other reason.

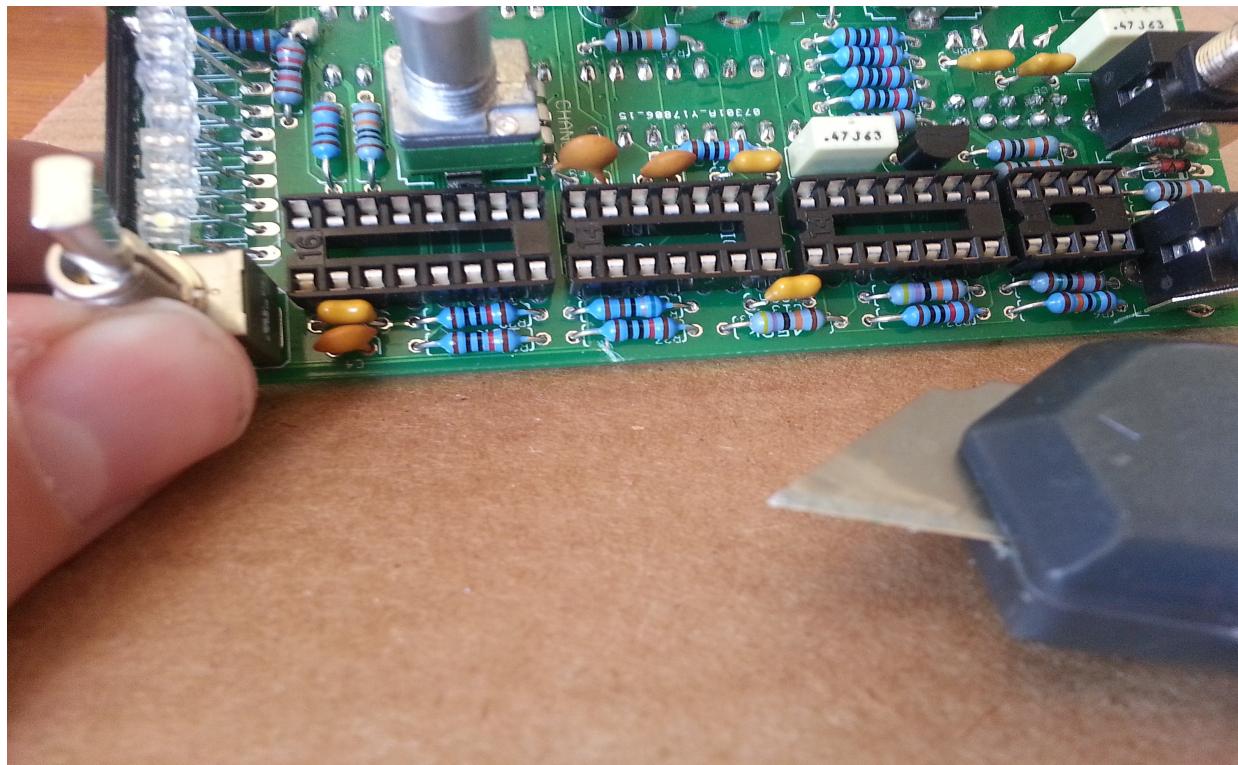
If you haven't already, start out by taking out the lower cd4015 chip on the back of your Turing Machine. You may need to re-use it for Bytes expander by placing it into the corresponding IC socket.



On to the trace cut. You will need to take the Turing machine out of your panel to expose the soft underbelly of the PCB. You should be able to see this trace on the top side of the board.

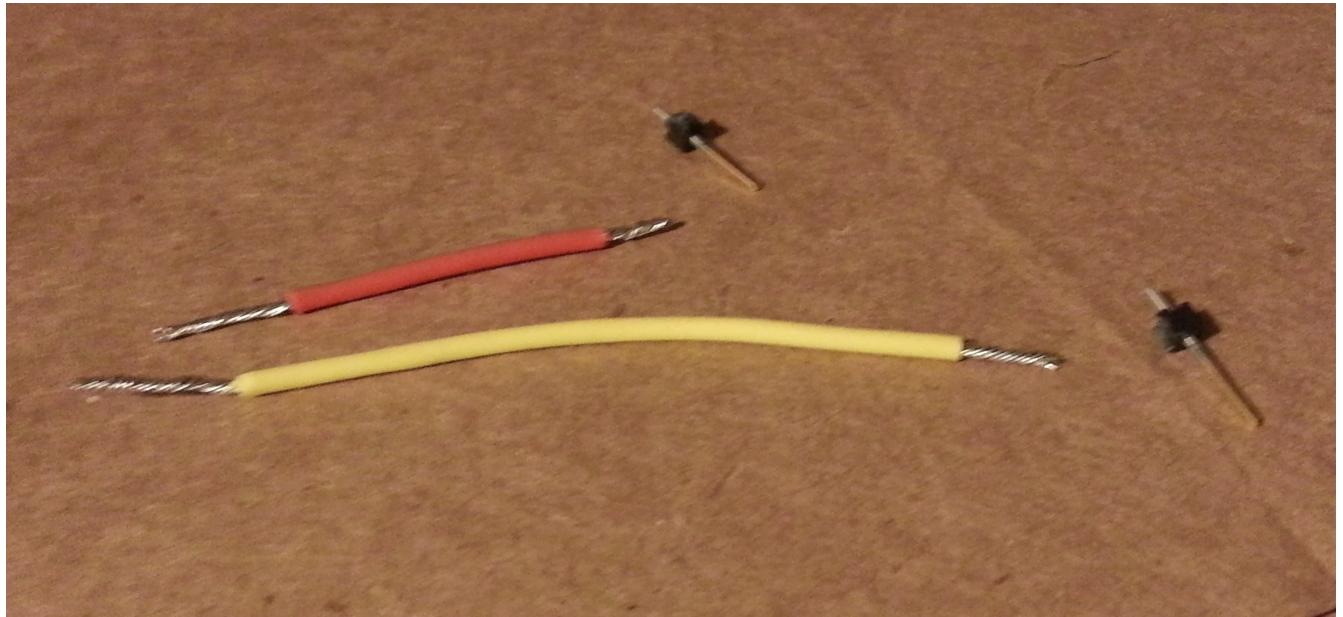


That is where we are cutting. As you can see it is relatively far from other traces and if you cut away from the resistor you are not in danger of hitting any other traces. A perfect trace for a novice bender!

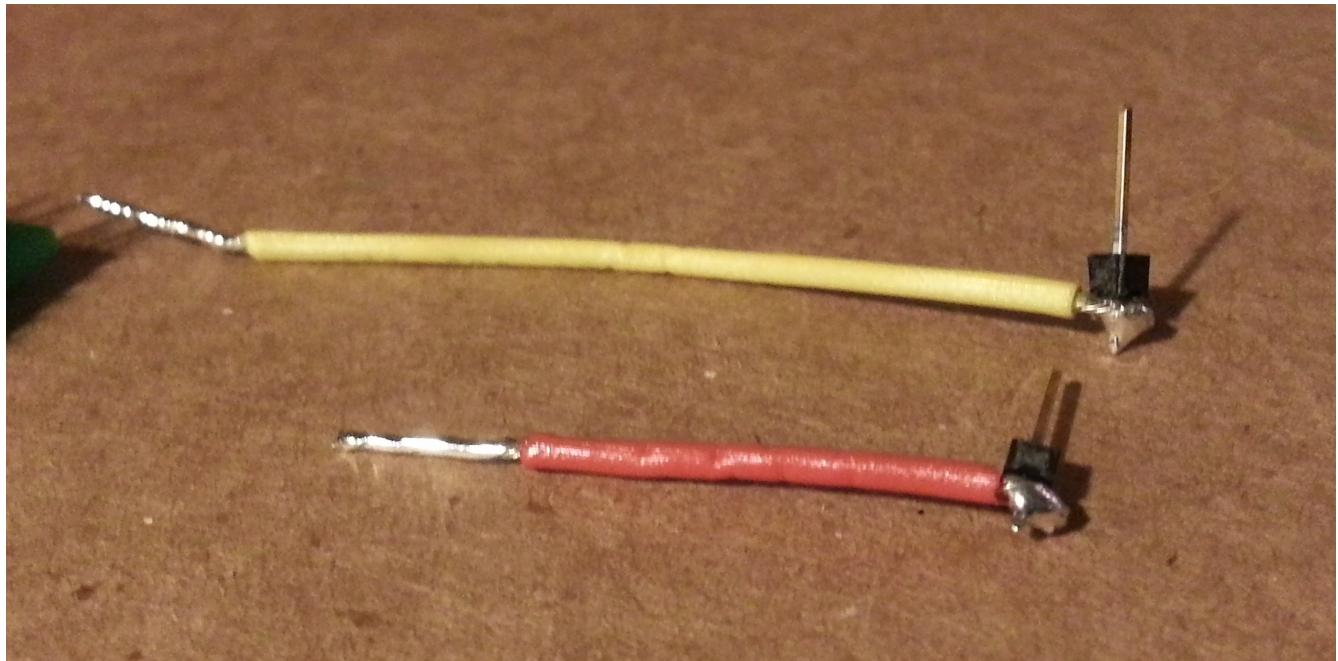


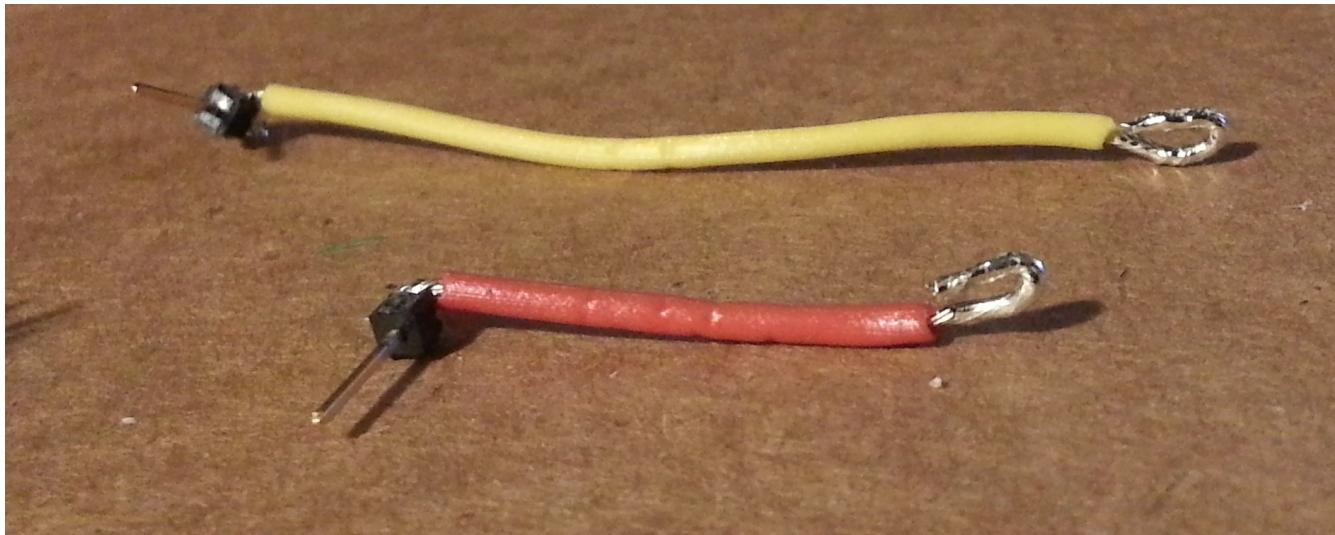
Next we will be making some little wires with header pins on them to plug into the Bytes expander's "JSHORT" and "JLONG" plugs. This method is subject to change since there may be a smarter way to go about it. You are also welcome to simply connect a wire from the top and bottom lugs of the length switch (on the turing machine) directly to the points on the bytes expander, keeping in mind that "JSHORT" is the top lug and "JLONG" is the bottom one.

Here is how I do it:

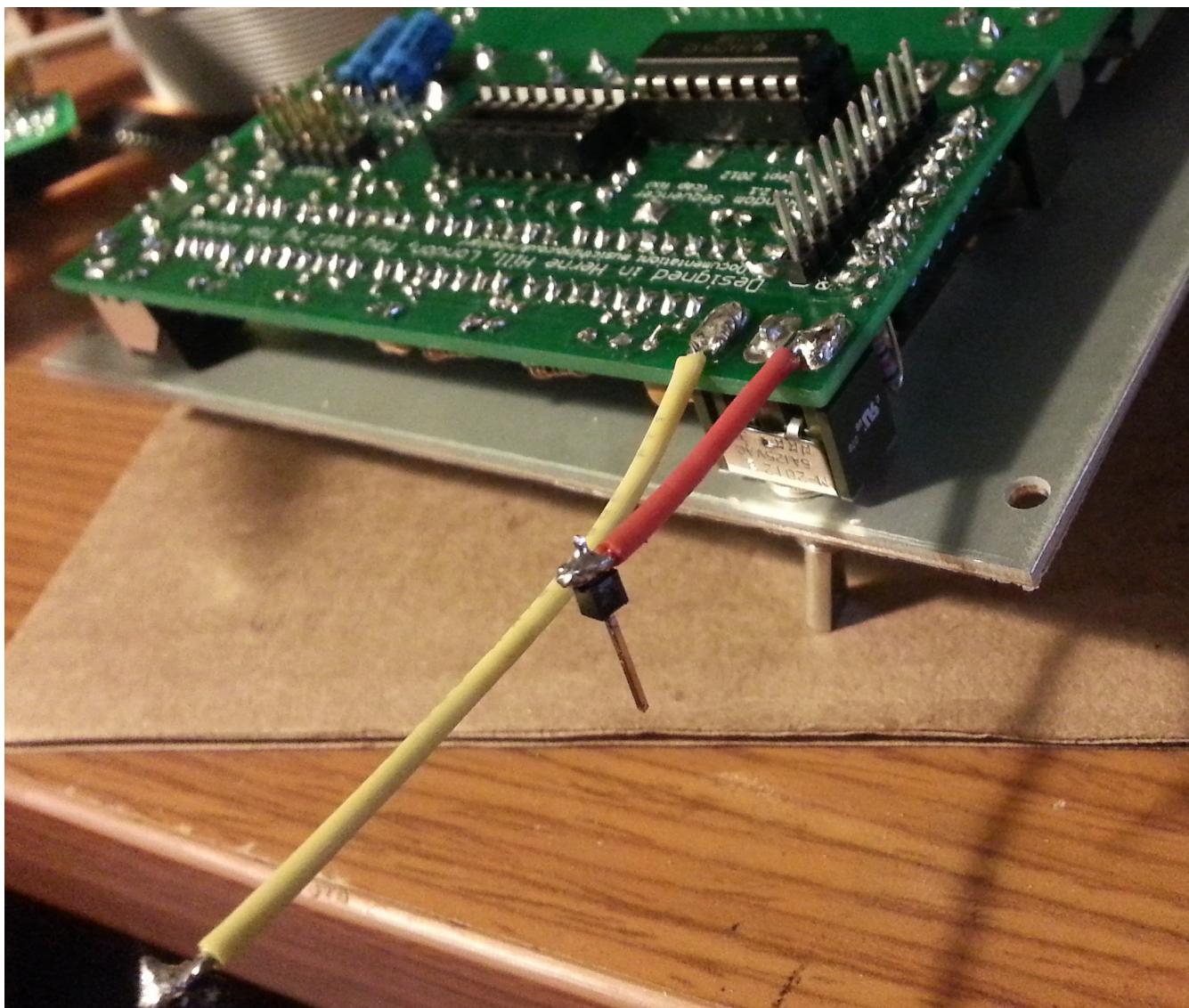


I would highly suggest using braided wire and tinning it for this part, as it will last much longer. Also leave one of the sides with 2 – 3 cm of exposed wire, this part will be bent around to make good contact with the switch lug.

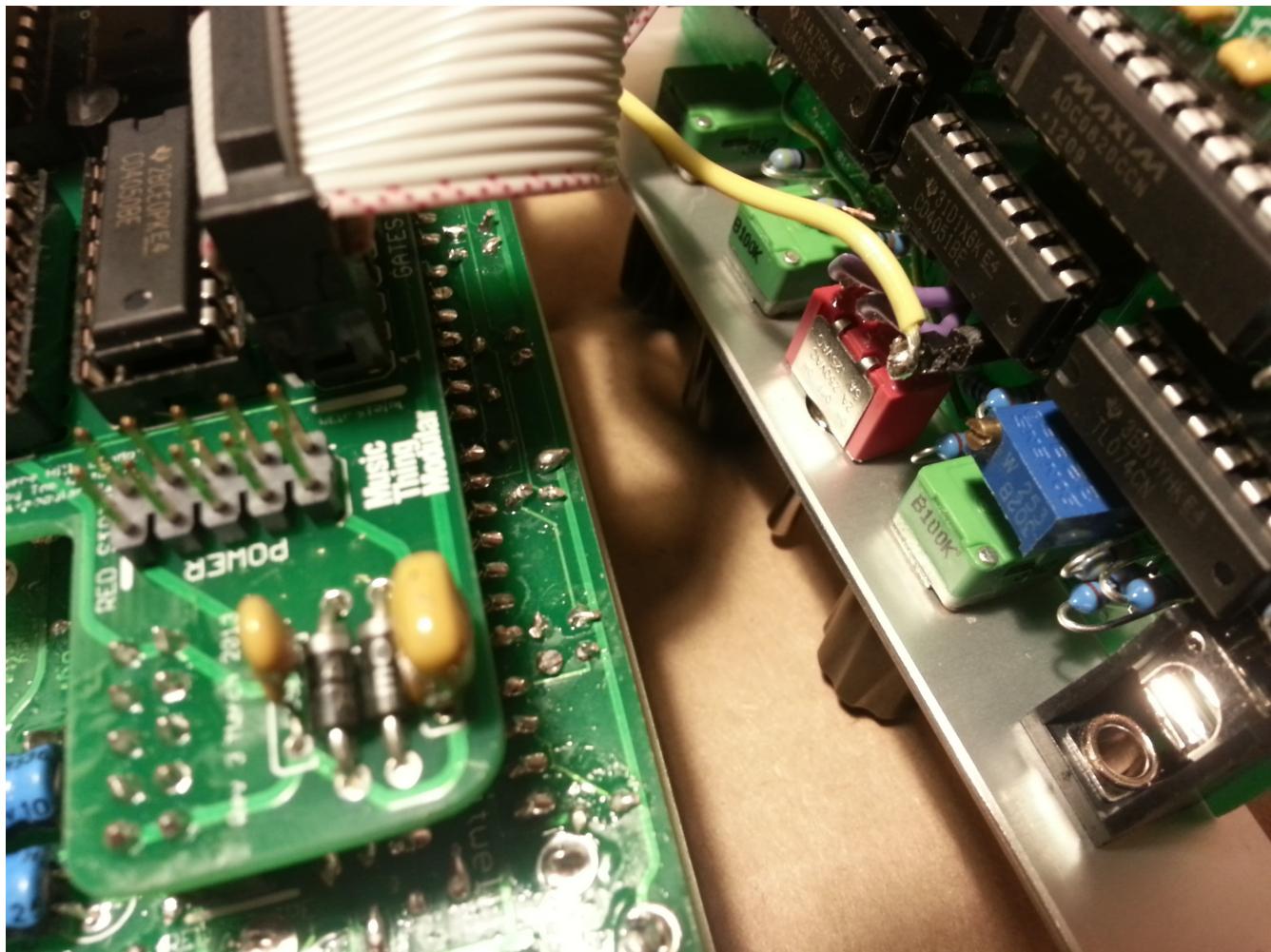




To attach the wires to the switch lugs I simply set the bent part of the tinned wire around the exposed part of the switch lug. I then held the wire with a pair of pliers (because it gets hot) and then set my iron on high heat and with a little solder already on it to the lug. It should just re-flow onto the wire.



There is one last thing to be done and that is to desolder the backpack fuse to the positive rail and replace it with the larger fuse found in the BOM. You can see in the image below that the fuse on the right is much larger, that is the fuse to replace. I will upload more detailed instructions for those of you who have never desoldered something soon.



Now you should move on to the “how to hook up a bytes expander” manual, since your turing machine is ready!

<http://www.circuitshaman.com/2014/08/how-to-hook-up-your-bytes-expander.html>