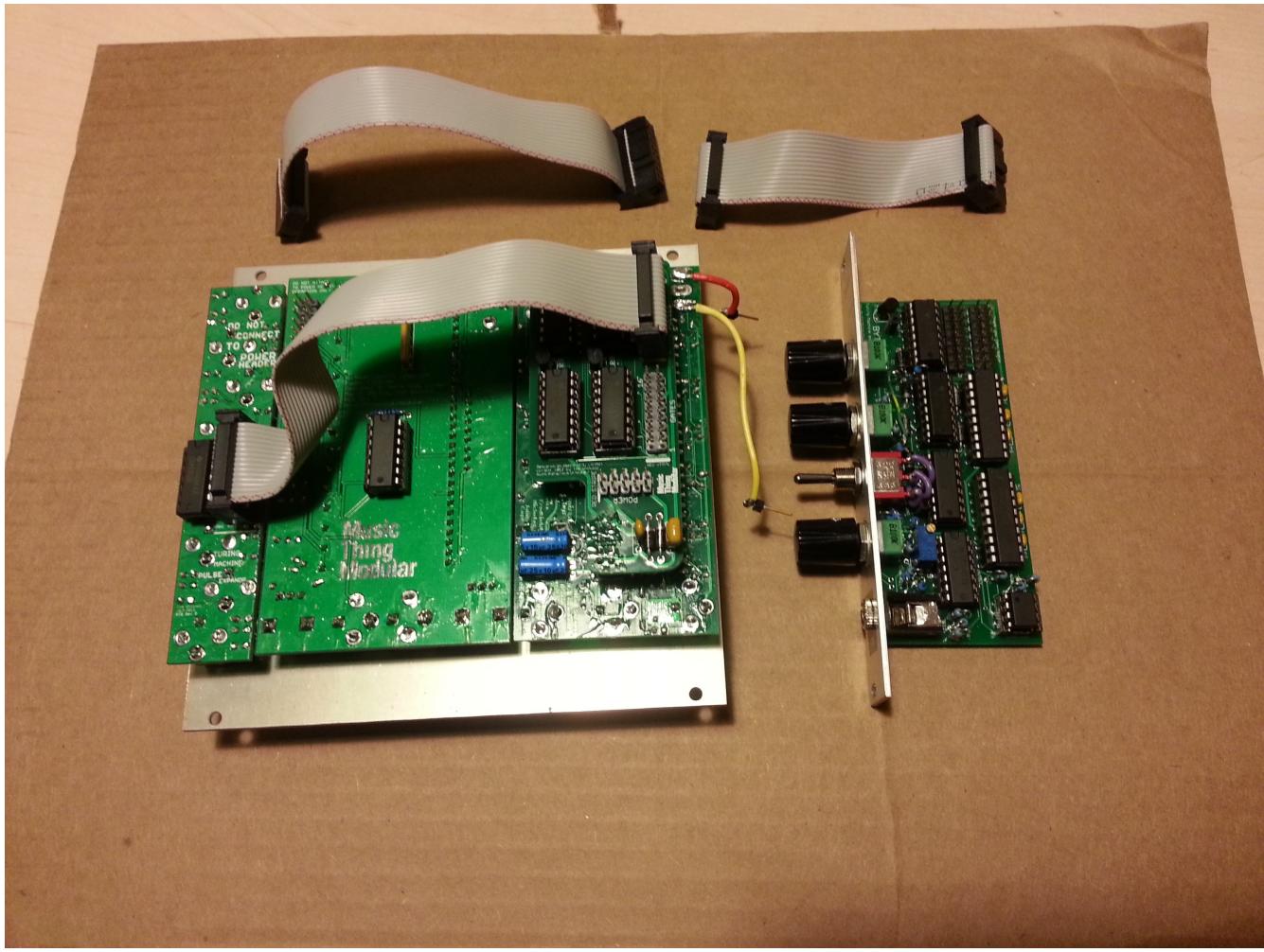


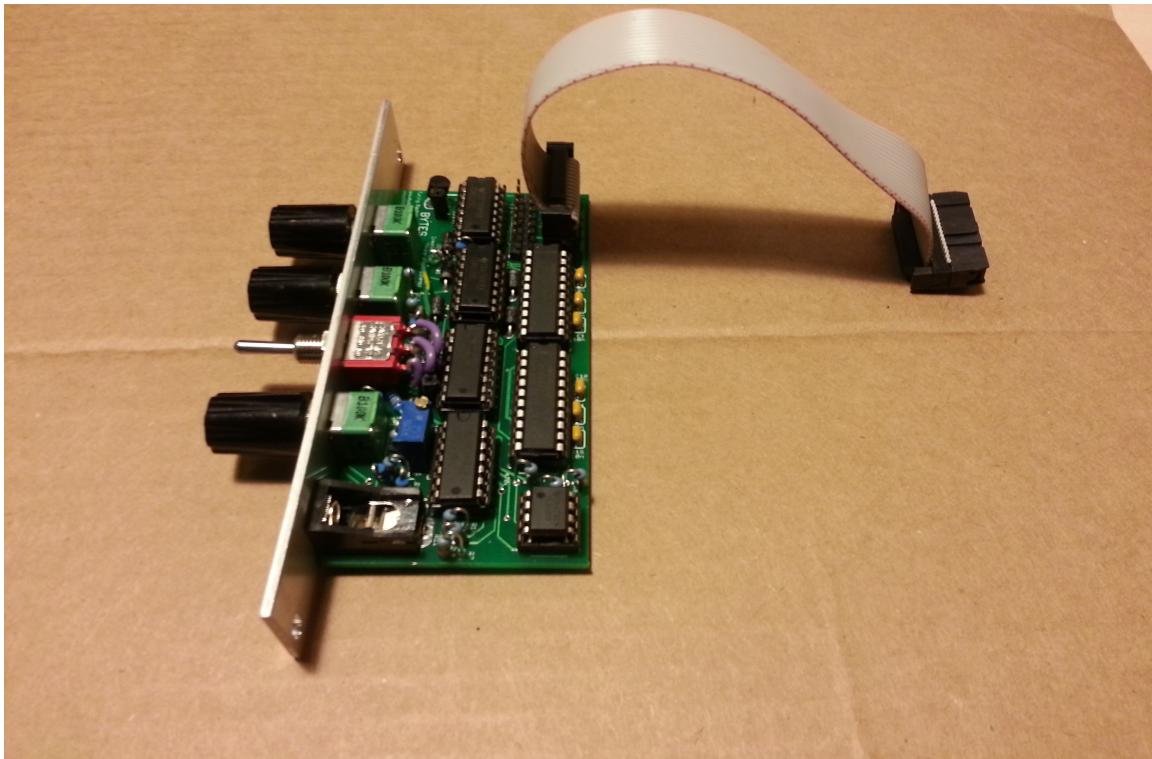
Ok, you've just bought a Turing machine Bytes expander and you want to know how to hook it up! This document contains detailed instructions on just how to do that so that there is no guess work. Pictured above is the Bytes expander on the left and a modified Turing Machine on the right. As you can see, there are two wires sticking out of the side of the Turing Machine. That is because this Turing machine has been modified to be able to interface with the Bytes expander and requires two more wires to connect to the expander. I did this so that the original length switch was still used to select between long and short lengths, with the Bytes expander this means selecting between 1 – 8 for short and 9 – 16 for long.

This means that your Bytes expander WILL NOT WORK on a Turing Machine that has not been modified in this way and does not have these wires sticking out of the length switch. How to modify your Turing Machine will be covered in another document, which you can find at www.circuitshaman.com.

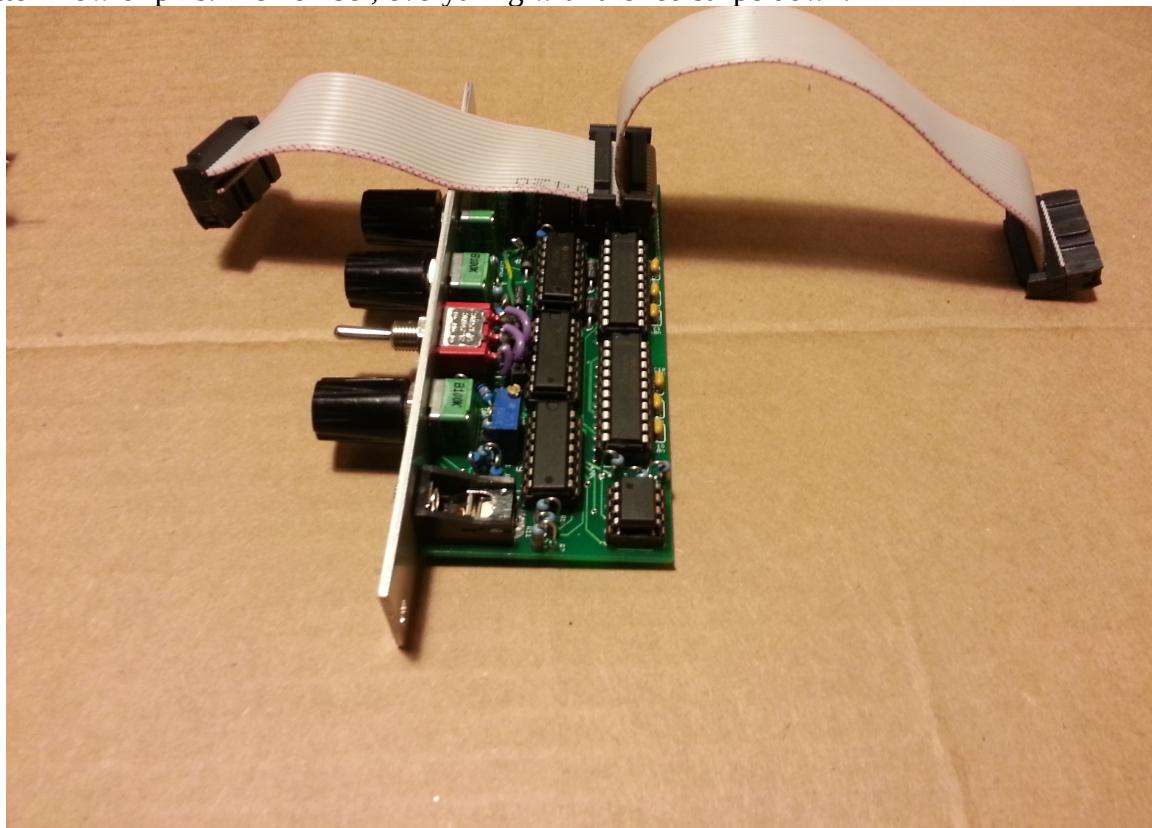
Lets get down to business!

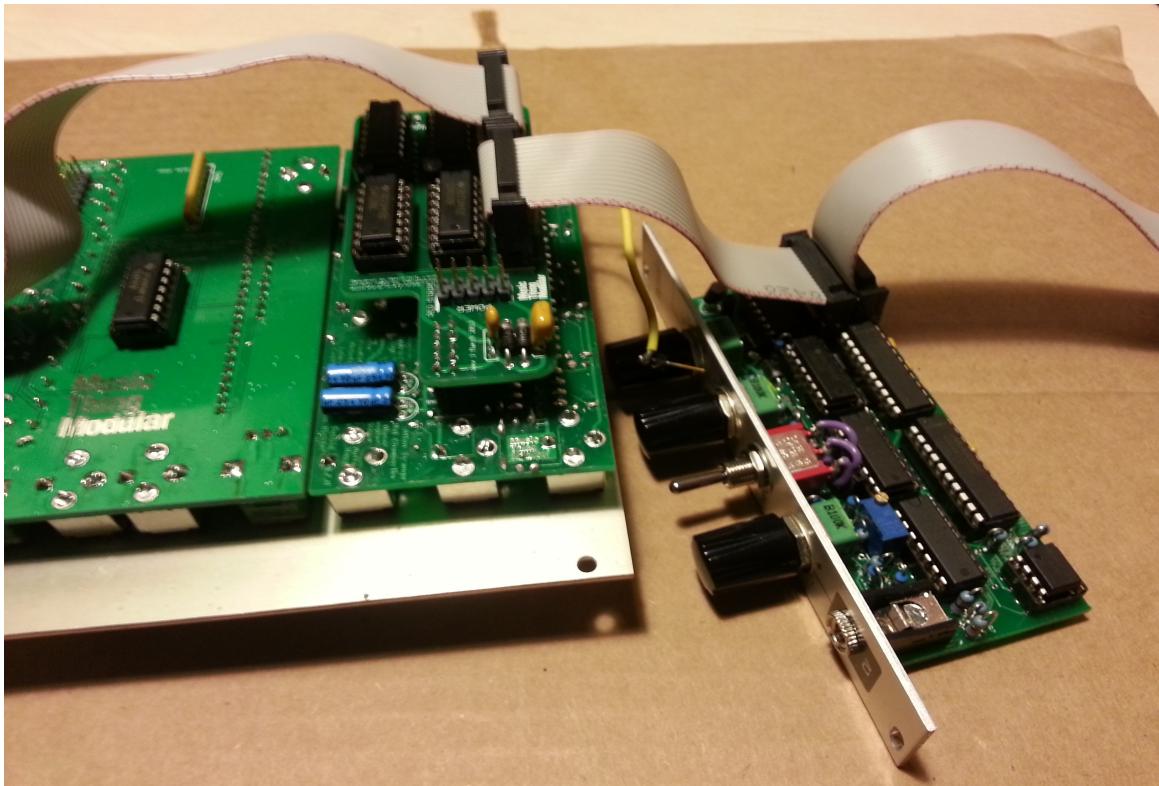


Here is everything that you will need to connect the expander and a better view of the wires sticking out of the switch. The pulses expander is already connected to the “triggers” pin header on the backpack board. Remember, all of the expanders are connected with the red stripe DOWN, as you can see in this picture. If you are ever confused please refer to the circuit board, the red stripe is marked quite clearly.

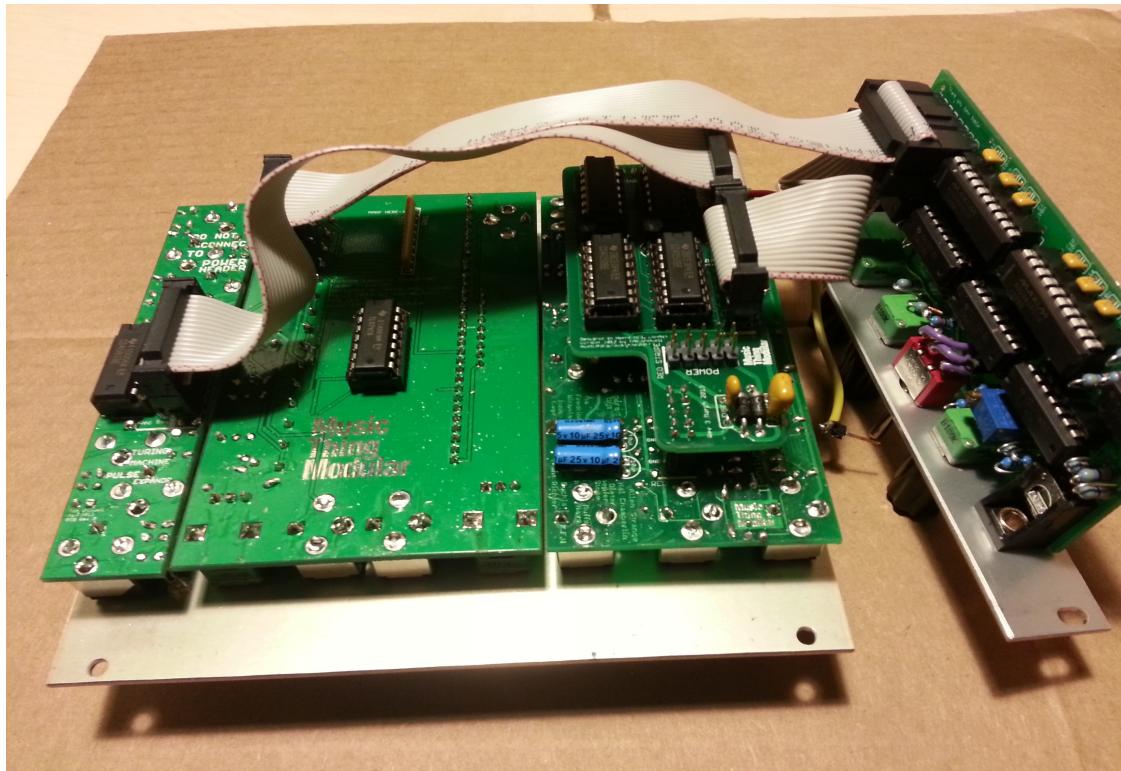


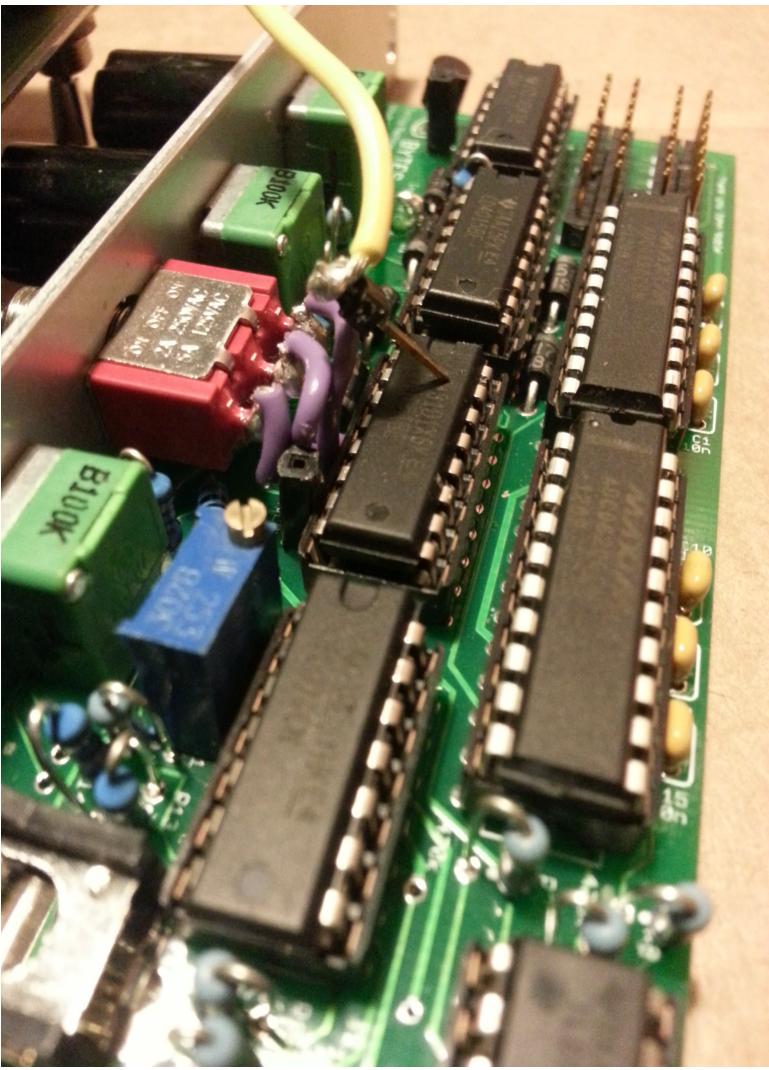
First connect the long ribbon cable to the outside headers, then connect the shorter ribbon cable to the inside headers. You will feel them push against each other a bit, this is normal. You may also feel it push against the chip on the bottom, in which case just make sure that there is still good contact with the bottom row of pins. Remember, everything with the red stripe down.





Next connect the small ribbon cable to the “gates” pin header on the backpack board, then connect the long cable to the “voltages” expander, again everything red stripe down.

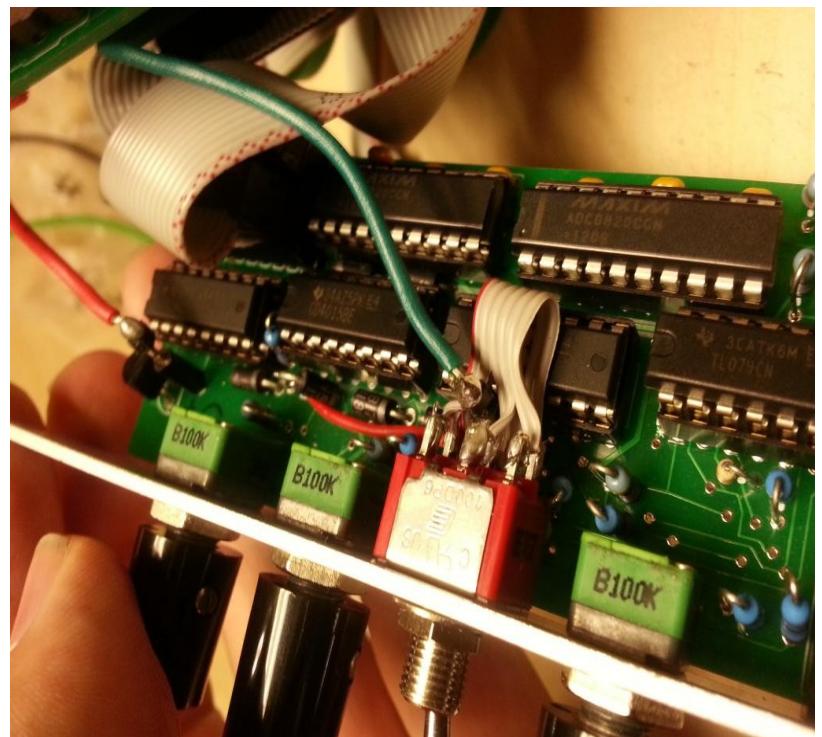
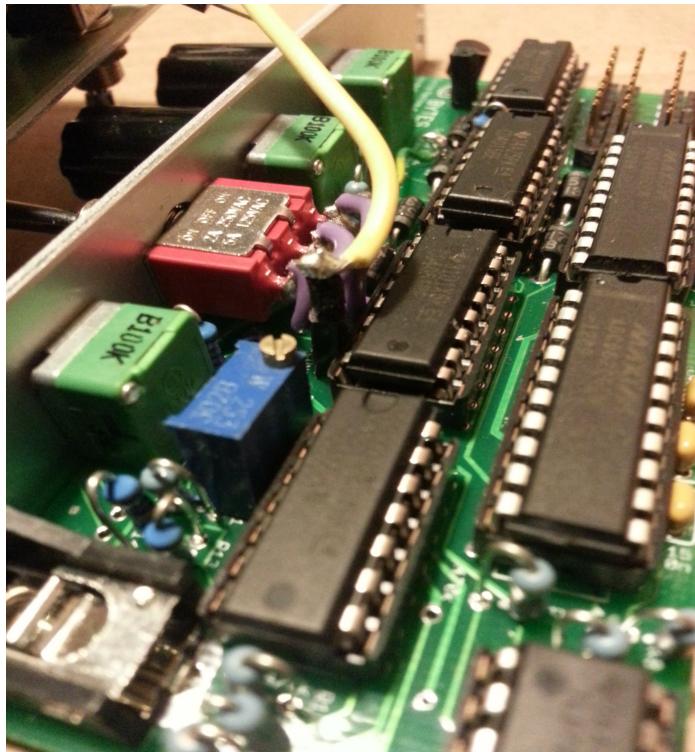


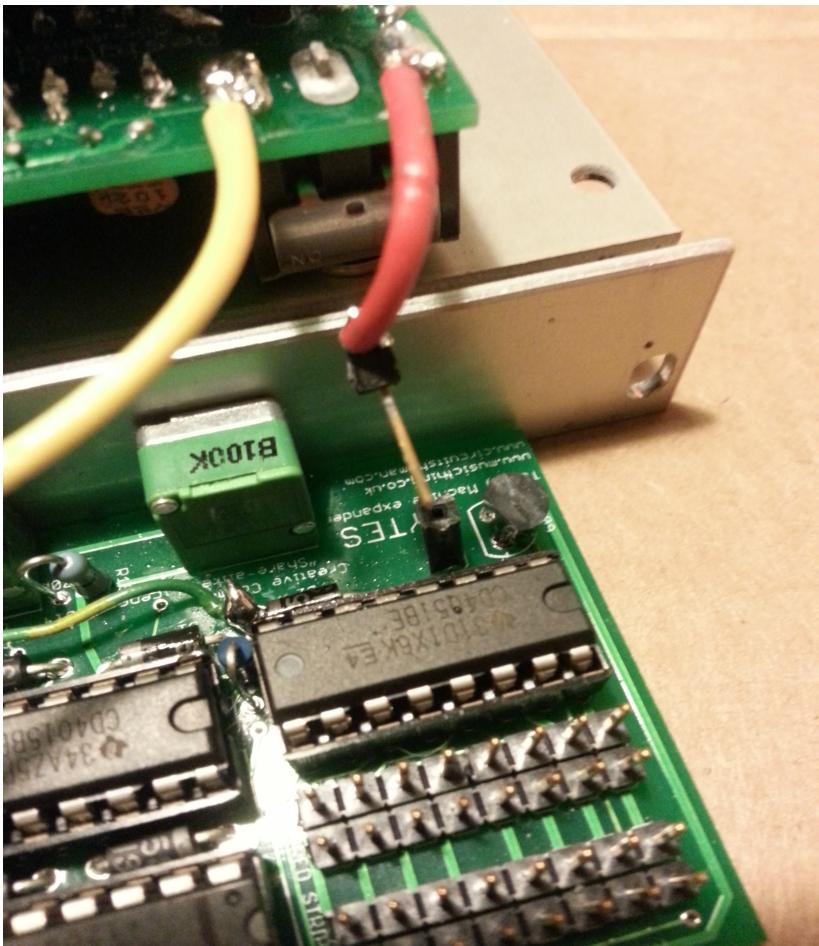


Ok now for the fun part. I usually start with the long wire since it stays still better than the short wire. Look for a small header socket plug right above the trimpot and behind the switch's bottom lug. It is labeled "JLONG". That is where you plug the long wire that is attached to the main Turing Machine board's switch. It should look like the picture at the bottom.

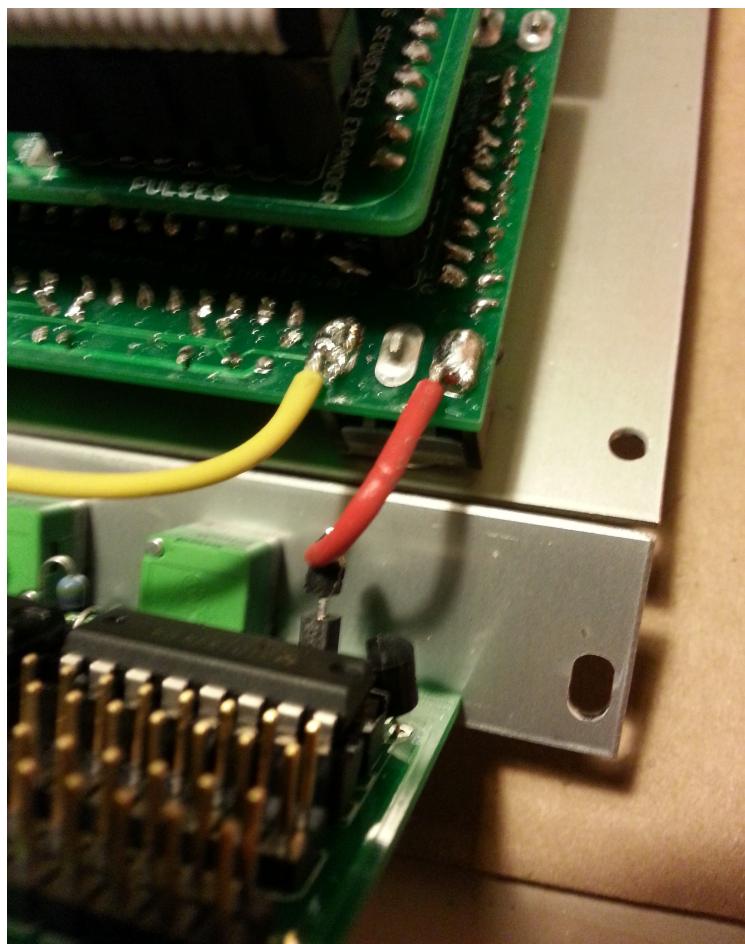
NOTE

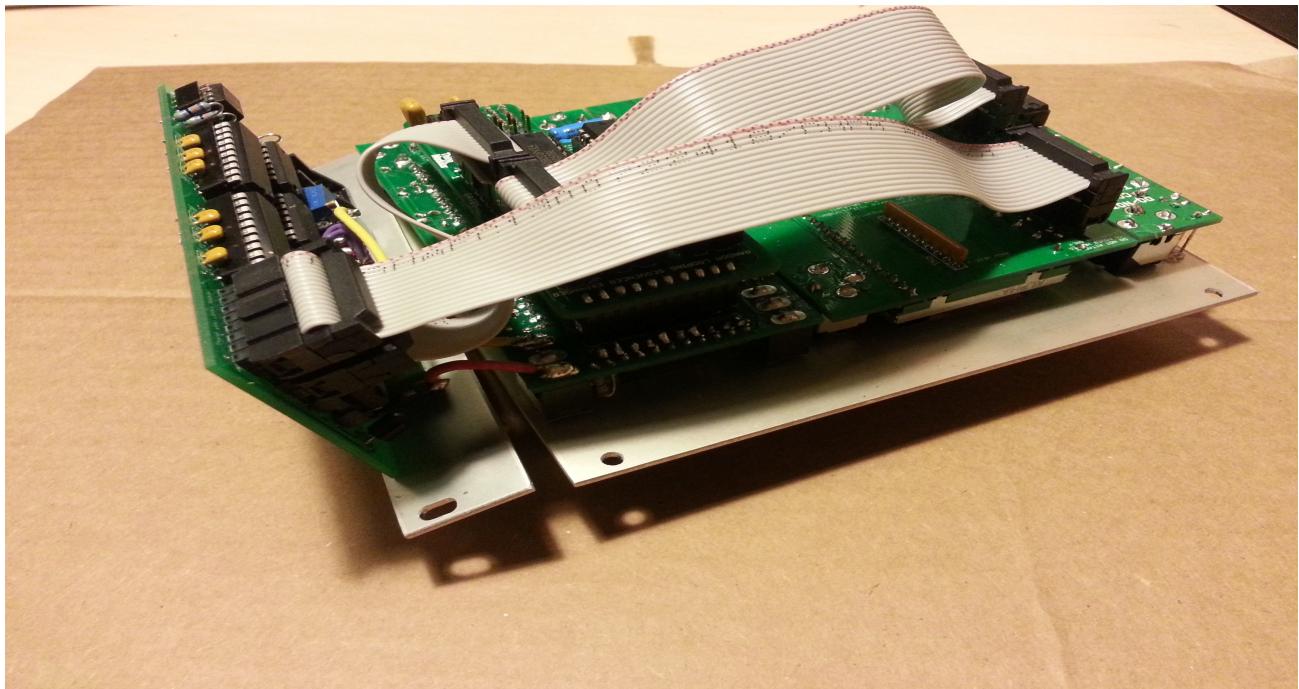
A few older versions of the board were sold which had a DPDT switch and unfortunately the header socket is hidden underneath the ribbon cable attaching the switch to the board. The picture on the right shows the position. Be careful not to let the wire switch connector touch the DPDT switch lugs. When fully pressed in it shouldn't happen but it is still possible.





This is for the smaller wire. The socket for this wire is next to the voltage regulator (it looks like a transistor) all the way at the top. It is labeled “JSHORT”. Again, the bottom picture shows it plugged in. Be careful in instalation as this wire tends to pull itself free.





Here's a picture of what everything should look like after you're done. It's from a weird shot just so that I could get both of the switch wires in there. I usually grab this whole thing like a sandwich and put it in the rack all together and then attach it's power cable as close to the rack as possible. It helps to have some small pliers so that if the switch wires come loose during installation you can push the Bytes expander to the side a bit and push them back in (make sure that your power in your case is OFF when you do this.) It helps to have a long power cable for this process.

Now you should have a Bytes Expander in your rack. Happy wiggling!



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