

Assembly Guide for Modified Atari Punk Kit

cc by sa 4.0

Based somewhat on LushProjects Atari Punk Module with LFO with some modifications

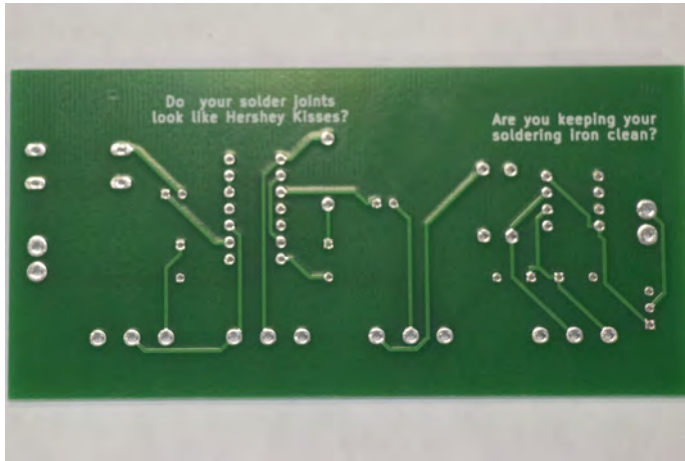
<https://lushprojects.com/vpc/use/>

Some tips:

Keep your soldering iron clean

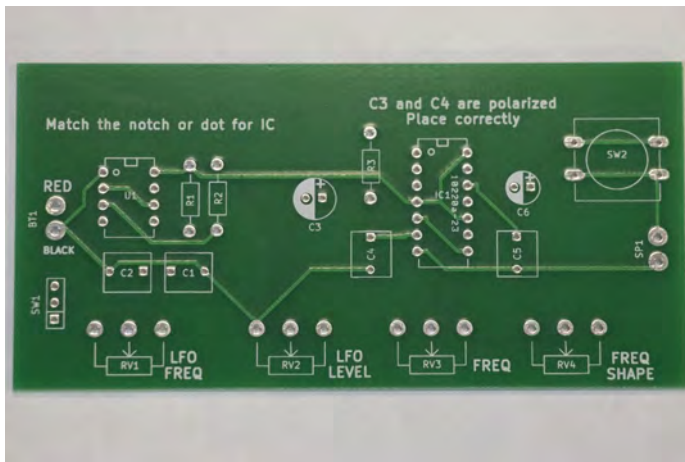
Some components are polarized, and will only work if installed the correct way. Make sure to note these during assembly.

Take your time.



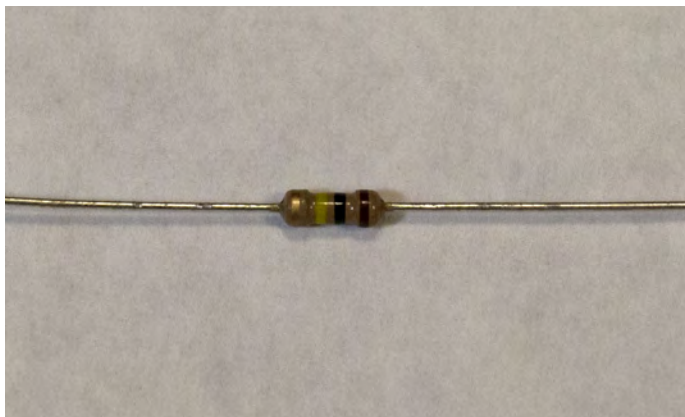
STEP ONE

This is the back of the PCB. This is where you solder.



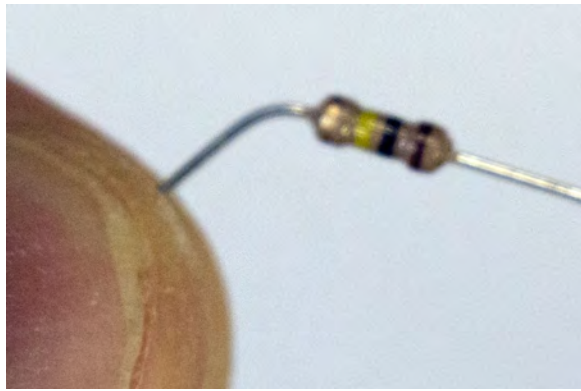
STEP TWO

This is the front of the PCB. This is where you place components.



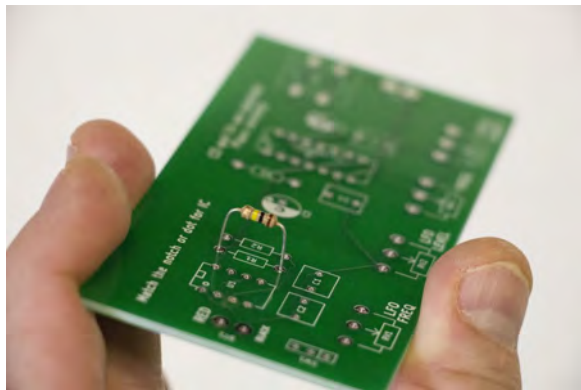
STEP THREE

This is the first component, a 100k OHM resistor. This has color bands that are BROWN-BLACK-YELLOW-GOLD



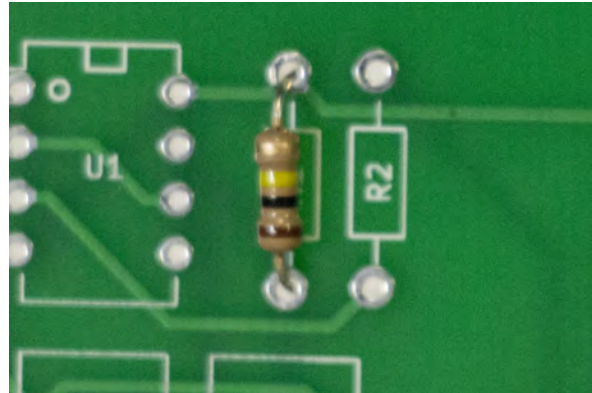
STEP FOUR

Bend the leads of the resistor



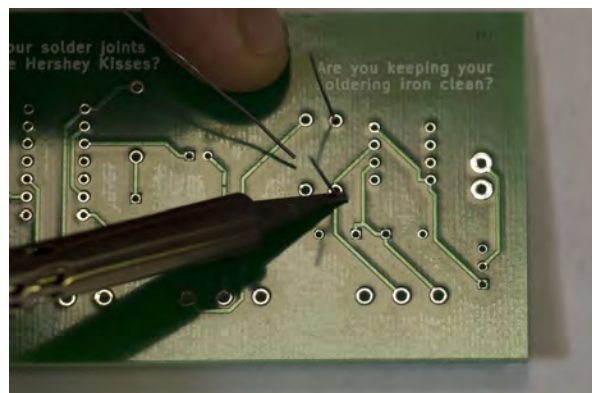
STEP FIVE

Insert the resistor in R1 on the PCB



STEP SIX

Make sure the resistor is flush with the circuit board.

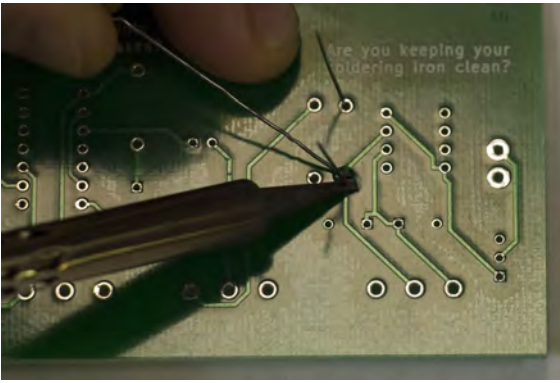


STEP SEVEN

Heat the lead of the resistor with the soldering iron. Use the side of the tip, and make sure you are heating both the wire, and the pad.

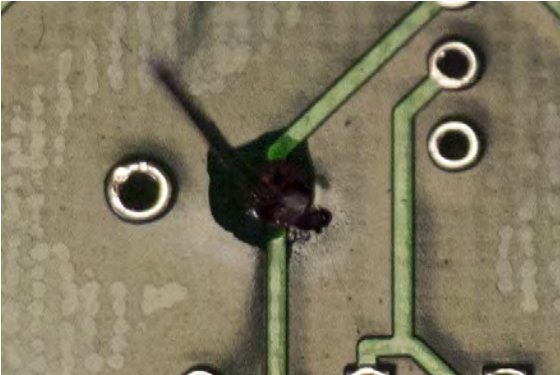
STEP EIGHT

Add solder to the lead and the pad.



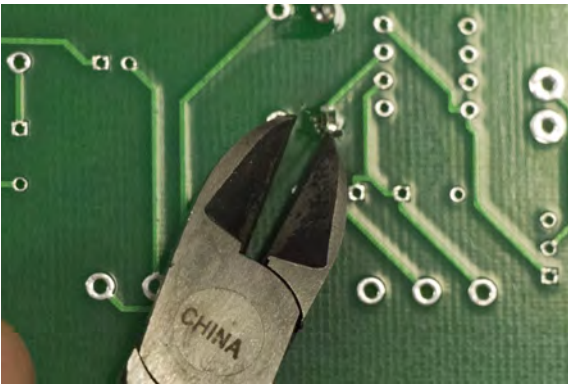
STEP NINE

Should look like a Hershey's Kiss.



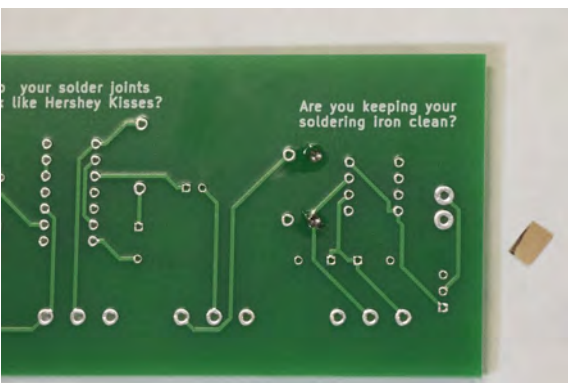
STEP TEN

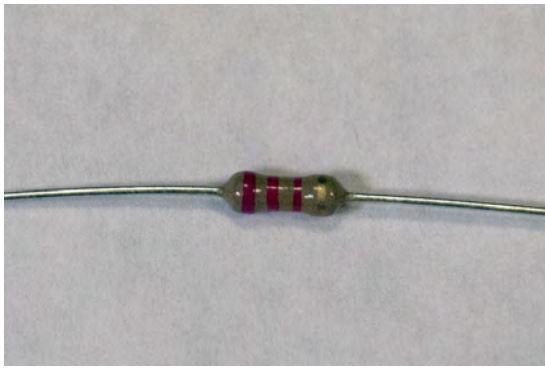
Cut the lead. Make sure you are wearing your goggles, and make sure that you clip it flush.



STEP ELEVEN

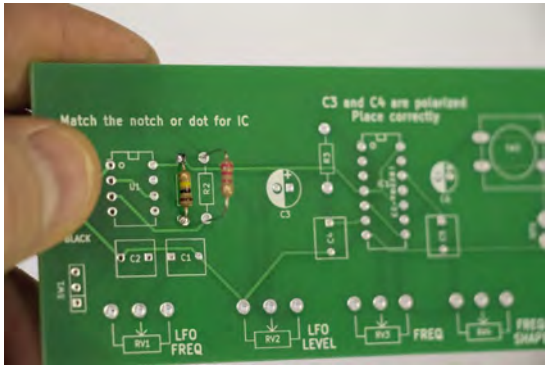
Solder the other lead, and clip it. This is what it should look like when you are done.





STEP TWELVE

Find R2—This is a resistor that is RED-RED-RED-GOLD - that's 2.2k Ohms. Red means 2 on a resistor. 2, and then 2 and then 10^2 .



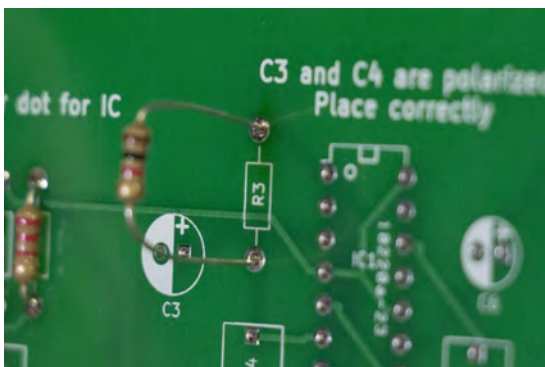
STEP THIRTEEN

Insert R2, press flush to the board, solder both leads, and clip both leads.



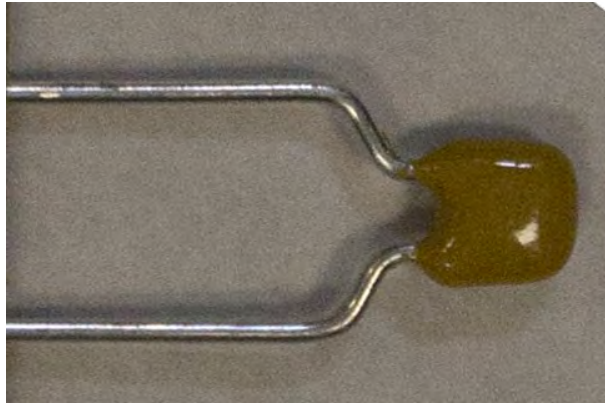
STEP FOURTEEN

Find R3—this is a resistor that is BROWN-BLACK-RED-GOLD - or 1k - Brown is 1 - Black is 2



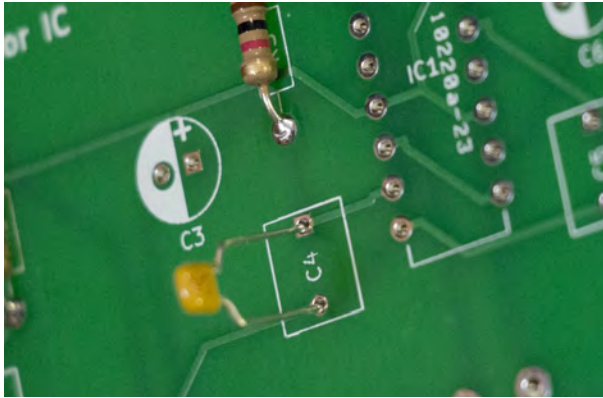
STEP FIFTEEN

Insert R3, press flush to the board, solder both leads, and clip both leads.



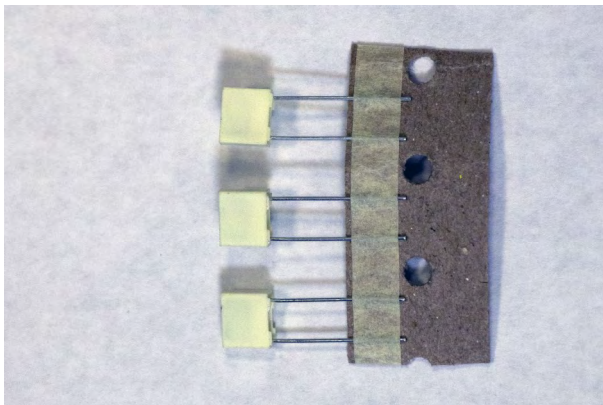
STEP SIXTEEN

Find C4—this looks like a small version of a tic-tac, or gum. It isn't. It might look a little different in your kit. It is 10nF or .01uF, as it should have a 103 printed on it. It's the teeniest of the components.

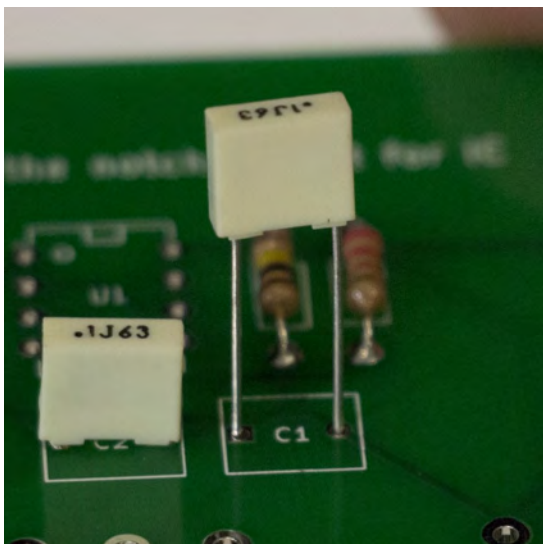


STEP SEVENTEEN

Insert C4, press flush to the board, solder both leads, and clip both leads.

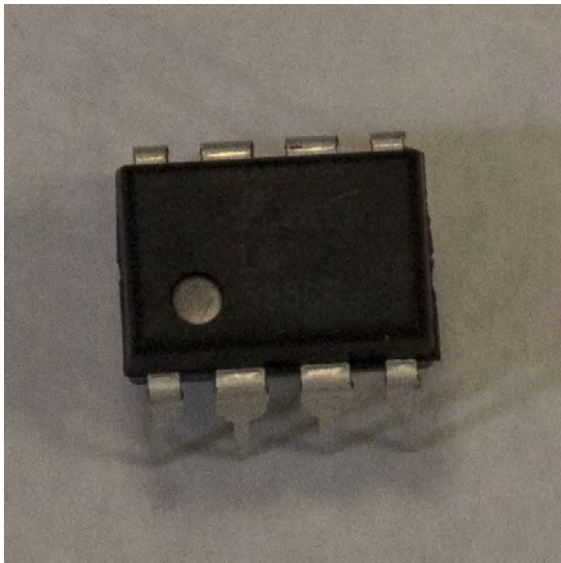


STEP EIGHTEEN Find C1,C2,C5 - they may not look like this, but they will likely have 0.1uF on them, or 104 on them.



STEP NINETEEN

PLACE C1, C2, C5. Press flush to the board, solder both leads, and clip both leads.

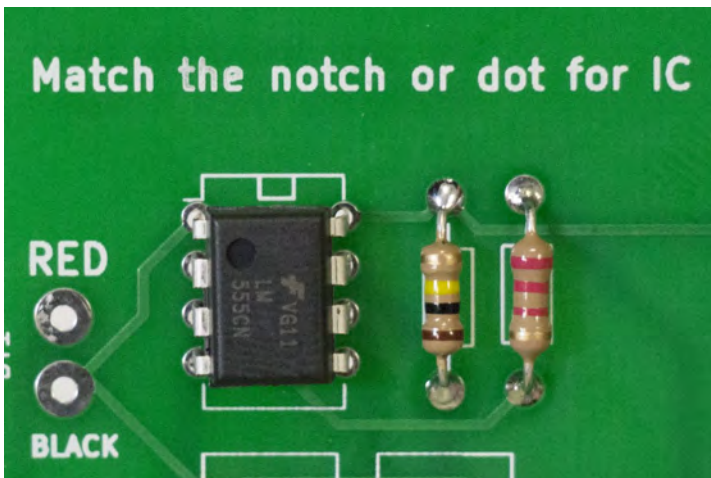


STEP TWENTY

Find IC1. It looks like a bug with 8 legs. It is not a bug.

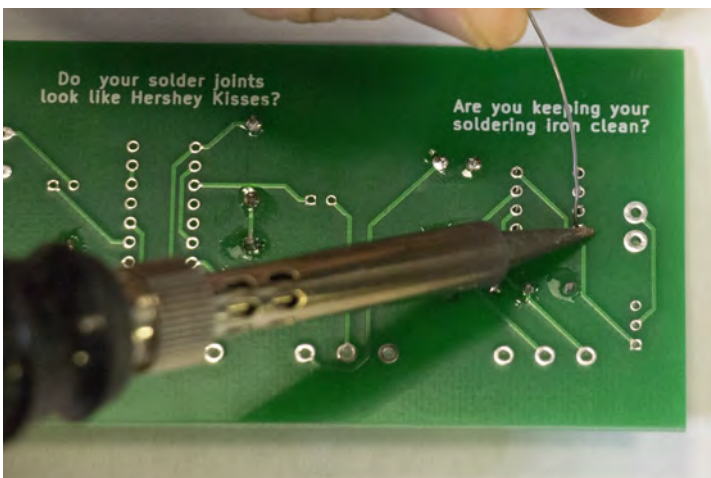
This is the first component that you will use that is polarized. That means, that you can put it in the wrong way. If you do this, your day is basically over, because once it is soldered into place, it is very difficult to fix. The DOT on this IC indicates pin one. There is a matching DOT on the PCB.

This is a 555 timer.



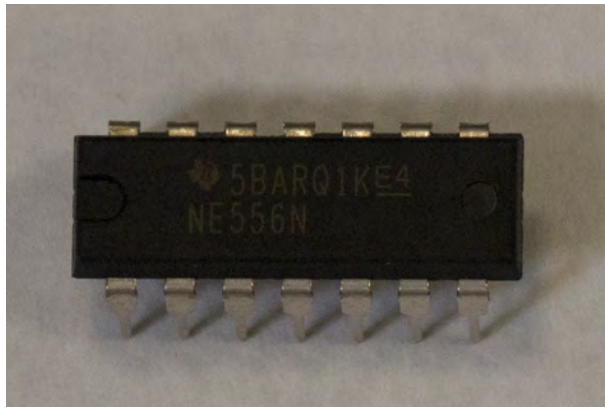
STEP TWENTY ONE

This is how you place IC1. See the DOT? You may have to bend the pins slightly to get them into the board. That's OK, just be gentle. See how the dot faces? That's really important.



STEP TWENTY TWO

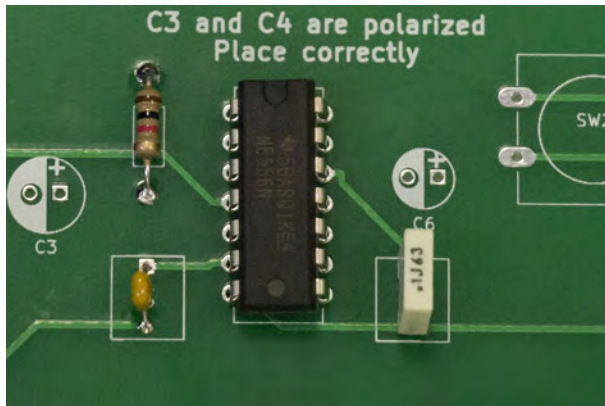
Soldering the IC is the same as the other components, except you do not need to trim the leads. Solder all eight leads.



STEP TWENTY THREE

Find IC2—this looks like a bug with 14 legs.

This is 2 555 timers in one package.



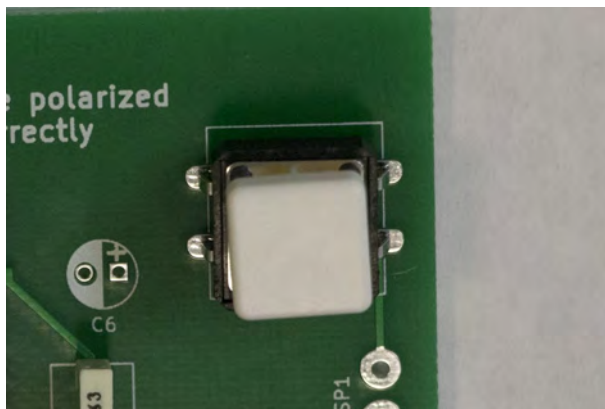
STEP TWENTY FOUR

Place IC2. Make sure it look just like the picture and that the notch goes up. If you put it in backwards, it will not work, and you will be unhappy. Solder all of the pins in place.



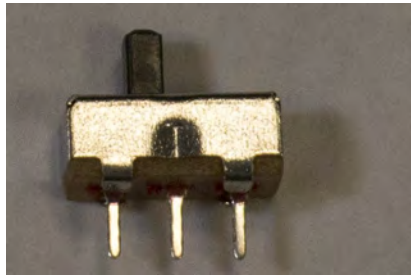
STEP TWENTY FIVE

Find the button.



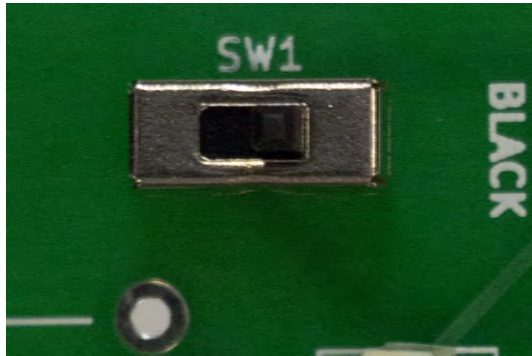
STEP TWENTY SIX

Place the button and solder. You will need to use a lot of solder on the button, as the pins will not stick through the board. That's OK. Don't force it, or you will squish the pins.



STEP TWENTY SEVEN

Find the SW1



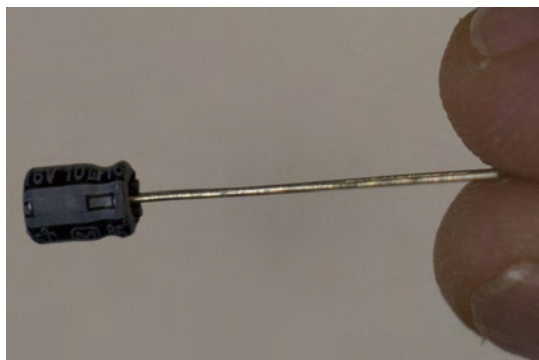
STEP TWENTY EIGHT

Place SW1



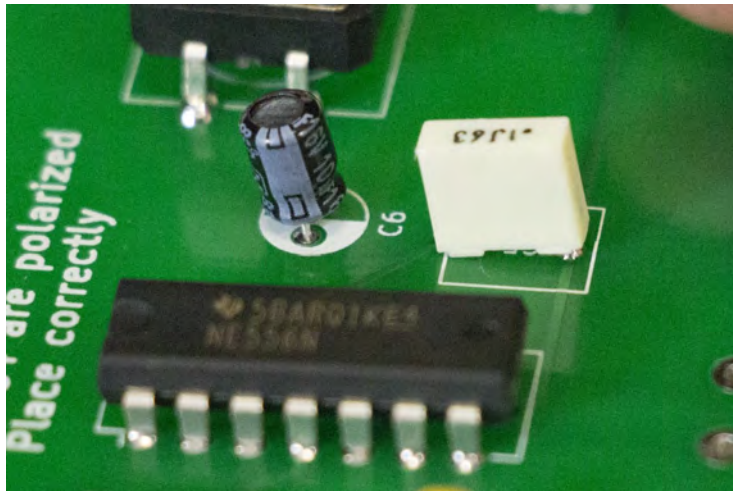
STEP TWENTY NINE

Use some tape to hold the switch in place and solder.



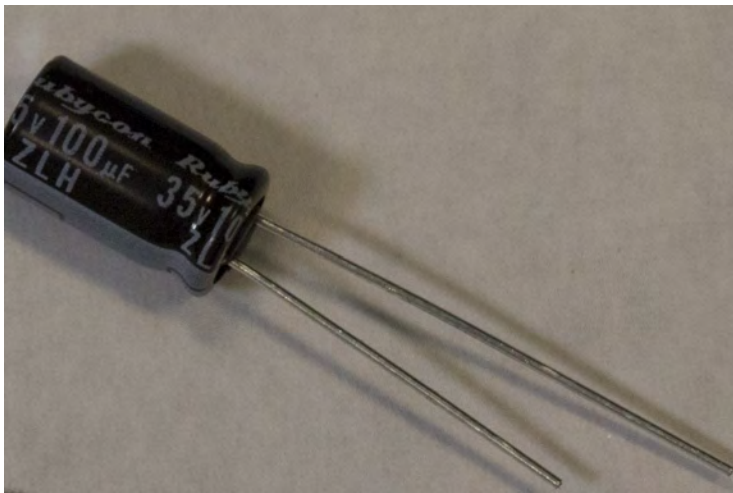
STEP THIRTY

Find C6 - it is the smaller of the two black tube thingys. It is labeled 10 μ F. It also has negative signs running down one side of it.

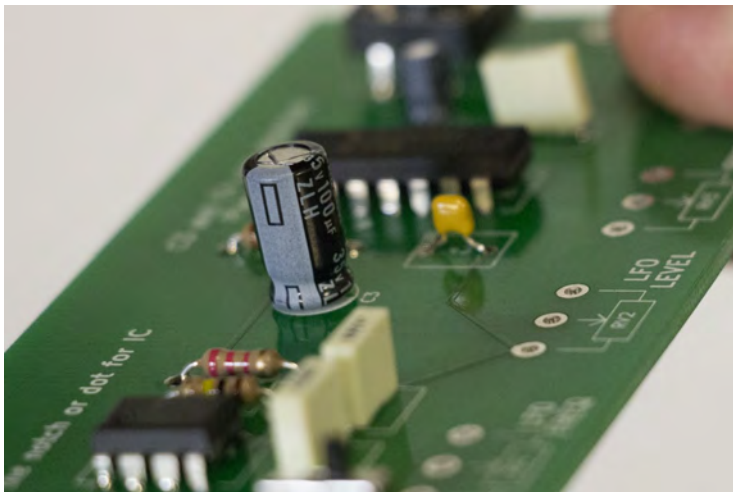


STEP THIRTY ONE

Place C6. C6 is POLARIZED. You can put it in two different ways, and one of them will result in bad things happening. Match the NEGATIVE stripe to the white side on the circuit board. Solder and trim the leads.



STEP THIRTY TWO Find C3. This is 100uF,

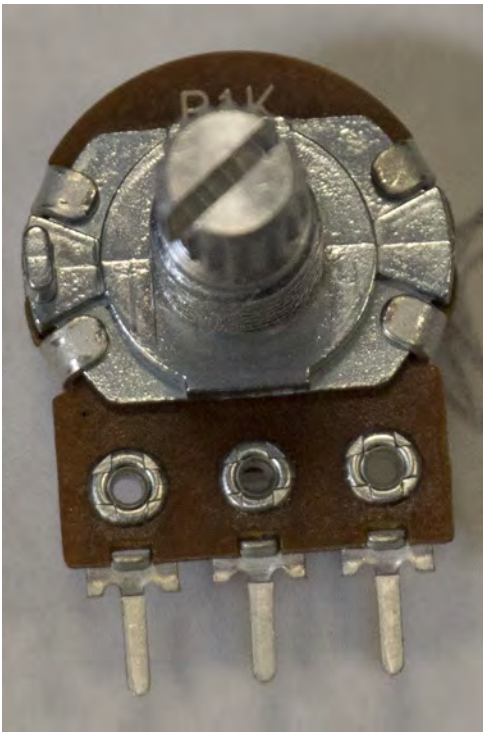


STEP THIRTY THREE

Place C3. C3 is POLARIZED. You can put it in two different ways, and one of them will result in bad things happening. Match the NEGATIVE stripe to the white side on the circuit board. Solder and trim the leads.

STEP THIRTY FOUR

Find RV2. There are 4 of these - labeled 500k. We will put this one in first. Ignore the picture, you want to use a 500k potentiometer.



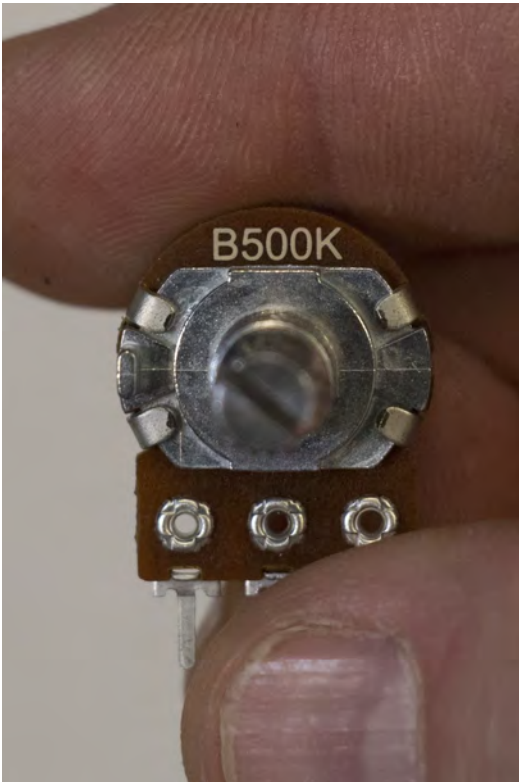
STEP THIRTY FIVE

Place RV2. and solder.



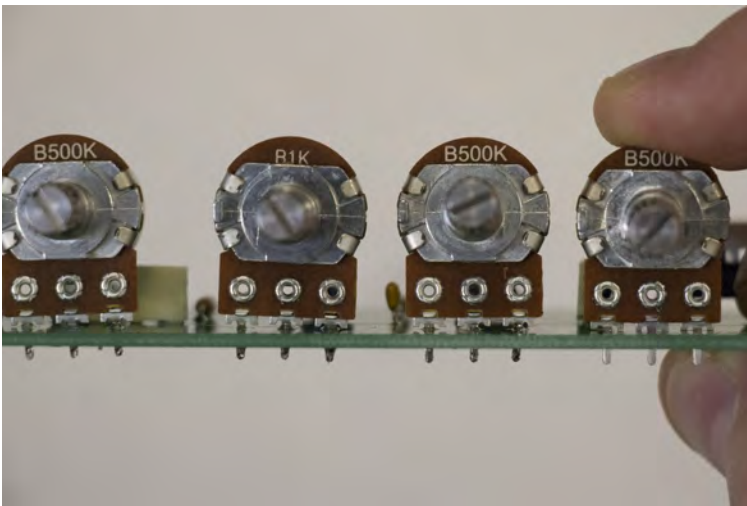
STEP THIRTY SIX

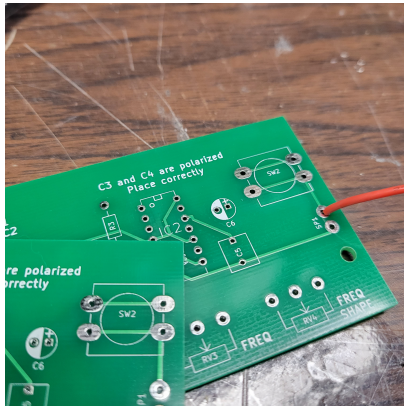
FIND RV1, RV3, and RV4—Note—these all have B500K on the top of them.



STEP THIRTY SEVEN

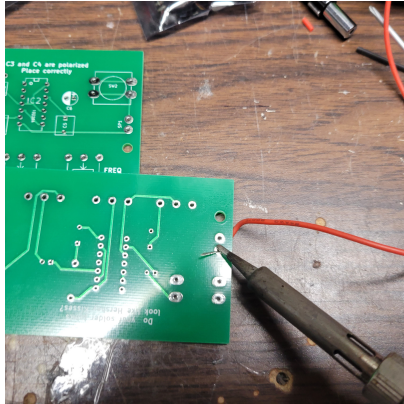
Place Rv1, Rv3, and RV4. Solder. You do not need to trim the leads. Ignore the picture - they should all be 500k.





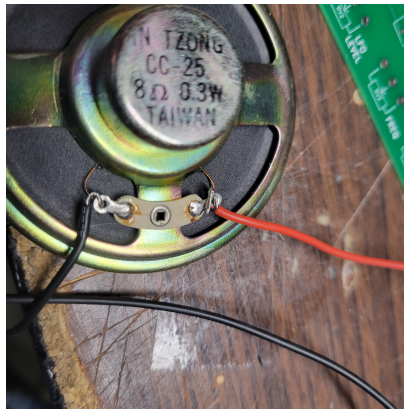
STEP THIRTY EIGHT

Place the red wire onto the board in the place marked - speaker



STEP THIRTY NINE

Solder the red wire, and then solder the black wire.



STEP FORTY

Solder the red and black wires to the speaker; it doesn't really matter which terminal is which, but for best practices, put the red one on the + and the black on the minus.



STEP FORTY ONE

This is what the soldered speaker should look like. As is, you can't connect this to line or even instrument level inputs - it's way too hot. You might put a potentiometer on the output to get the right level, or a voltage divider. You also need to be really careful that if you use this to drive an amplifier, or connect to a mixing board, you need to ensure the polarity is correct - a battery is safe, but a wall wart will require that you match the polarities of this synth, and the output you are connecting it to.

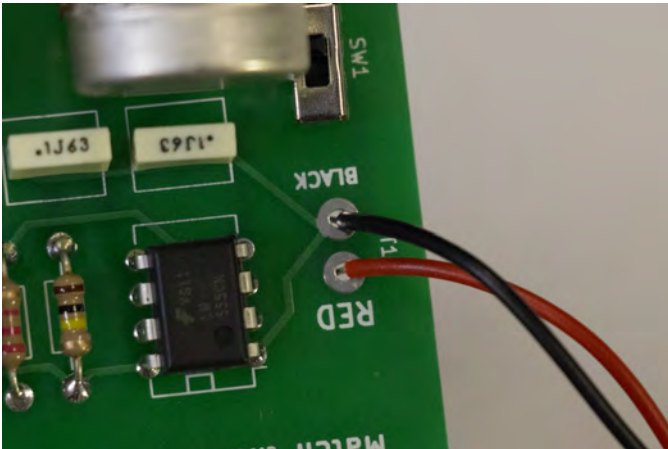
STEP FORTY ONE

Find the battery snap



STEP FORTY ONE

Solder the battery snap in place, make sure you match the red wire to the red hole and the black wire to the black hole. Put the battery in the snap.



Troubleshooting:

Did you put the IC's and the capacitors in the correct way round?

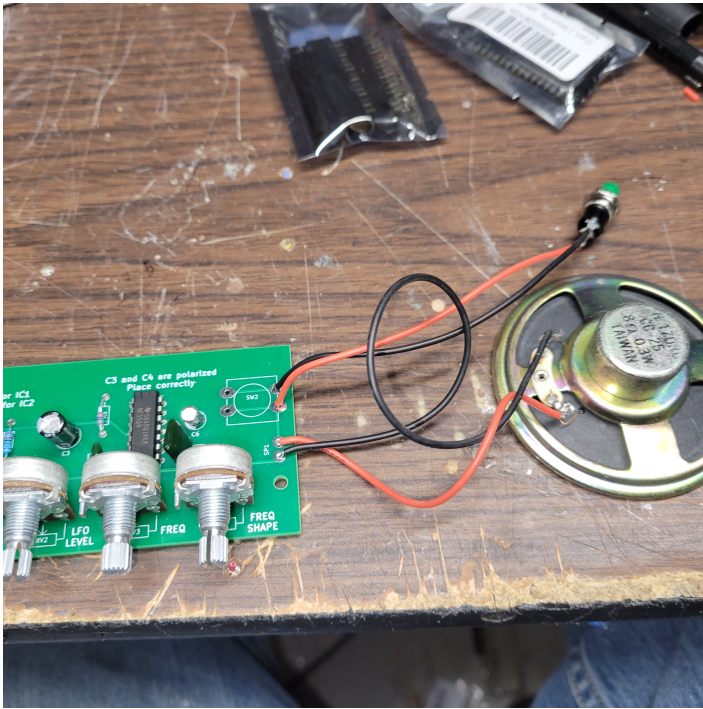
Did you put the battery in the correct way round?

Do you have big blobs of solder making bad connections?

Is it turned on?

Are you pushing the button?

Are the potentiometers in the middle? (At the ends it doesn't make a bunch of noise.)



This kit wasn't originally designed to go in a case - it was to teach soldering, and to show a simple circuit. If you want to put this in a case, you might want to "fly" the components off the board. It's simple - rather than putting the components directly on the boards, you can put them at the ends of wires inserted into the board like this picture. You can do the same thing with the potentiometers, if you want to make a nice case for this.

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