

StompByte Assembly

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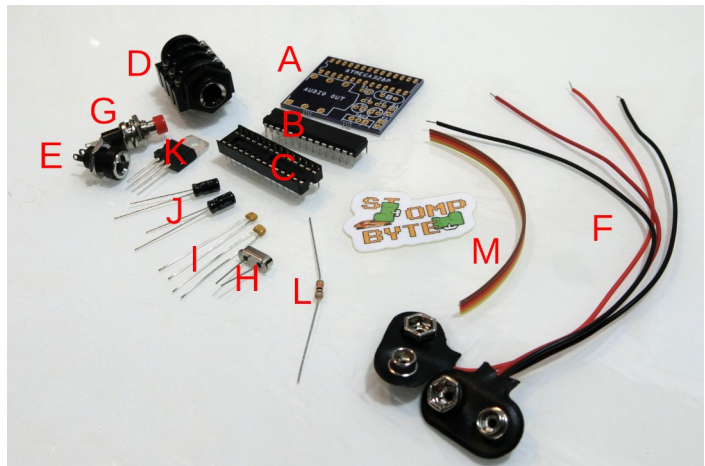
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Tools Needed

- Soldering iron, solder
- Wire strippers (26 AWG)
- Flush cutters

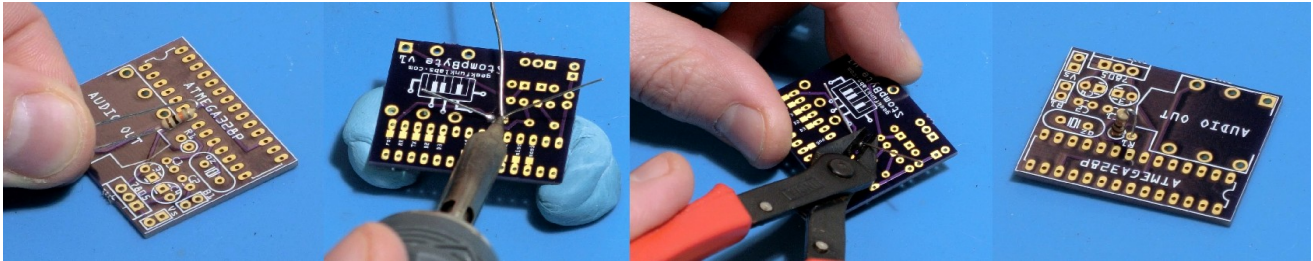
Bill of Materials

- A. (1) Printed circuit board (PCB)
- B. (1) ATmega328P microcontroller
- C. (1) 28-pin IC socket (8-pin)
- D. (1) TRS ¼" audio jack
- E. (1) DC barrel jack 5.1×2.1mm
- F. (2) 9V battery clips
- G. (1) Pushbutton
- H. (1) 16MHz quartz oscillator (qz)
- I. (2) 22pF capacitors (C1, C2)
- J. (2) 10µF capacitor (C3, C4)
- K. (1) LM7805 voltage regulator (D1, D2)
- L. (1) 10k ohm resistor (R1)
- M. A strip of 26 AWG ribbon cable

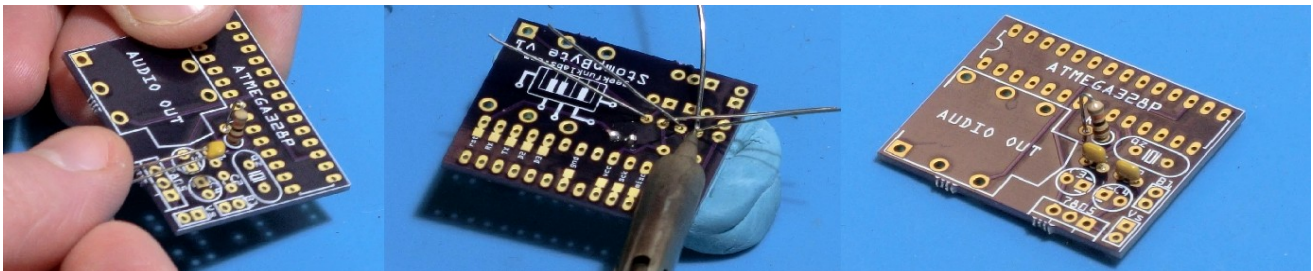


Directions

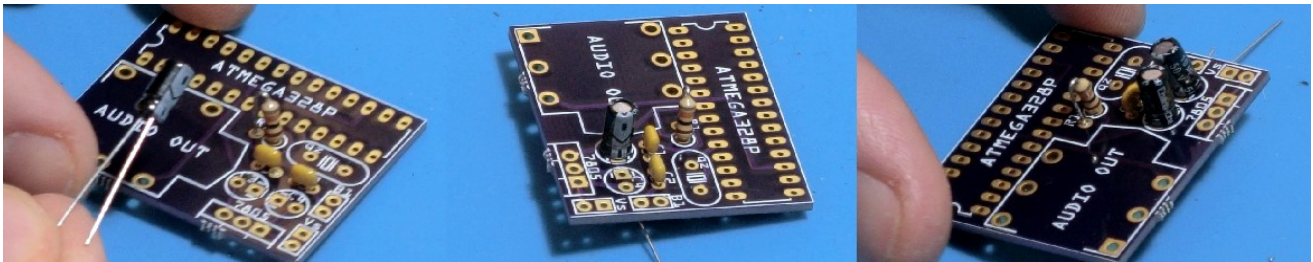
1. Bend one of the legs of the resistor back next to the other one and insert the resistor vertically in the board at R1 as shown. Bend the legs out on the back side of the PCB to hold the resistor in place while you solder. Trim the excess leads away with flush cutters.



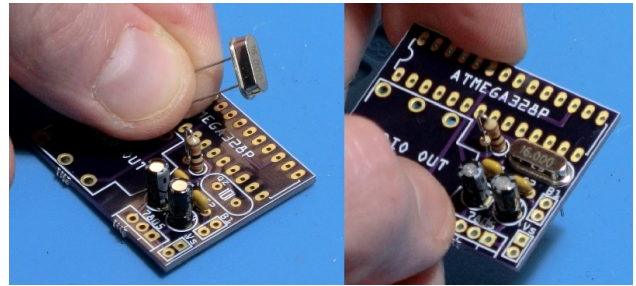
2. Insert the two 22pF capacitors in the holes marked C1 and C2. They can go in either way. Push them flat against the PCB, bend the legs out on the back of the board and solder them in place.



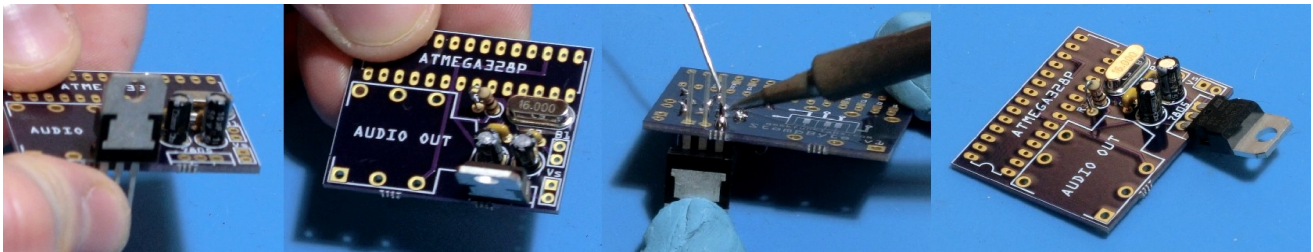
3. The can-shaped 10 μ F capacitors have positive and negative leads. The negative lead is shorter and is marked with a gray stripe. The negative lead must be inserted in the square pad marked with a “-” on the silkscreen for C3 and C4. Push the capacitors all the way in, bend the legs out, and solder them in place.



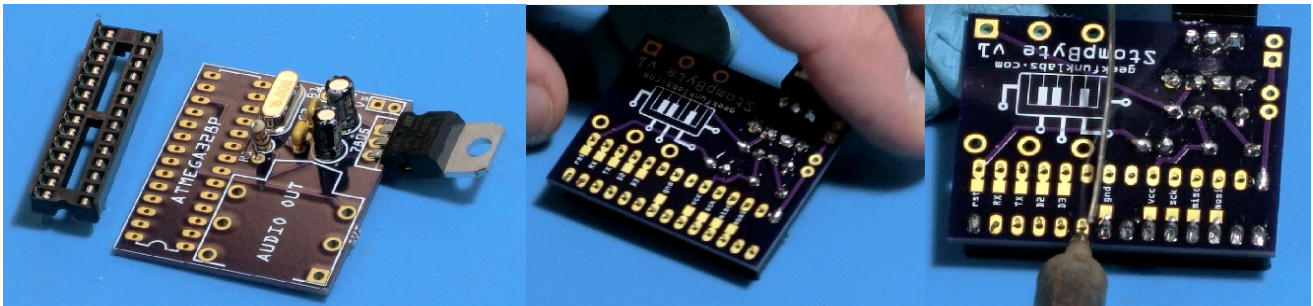
4. The quartz oscillator goes in the oval-shaped silkscreen that matches its outline. Press it flat and bend the legs out to hold it in place while you solder.



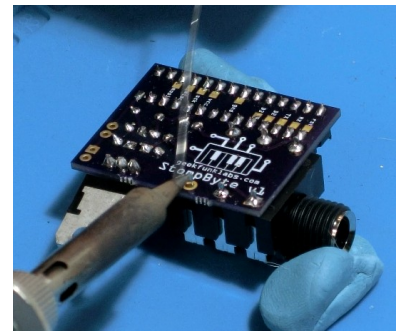
5. The LM7805 voltage regulator should be inserted in the board with its heatsink oriented toward the edge as shown by its silkscreen outline. Solder the LM7805 in place, then bend it over to the side so it will fit in the enclosure.



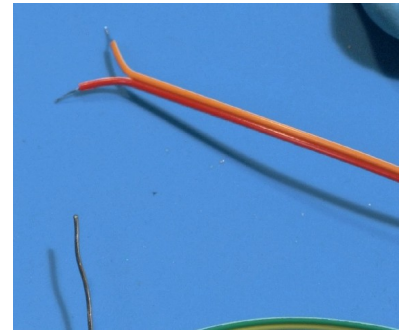
6. The IC socket for the ATmega328P should be inserted in the board so that the end with the notch lines up with the notch in its silkscreen outline. Bend a leg at each corner to hold it in place. Solder one of the pins, then double-check that the socket lays flat against the PCB. If not, reheat the solder and press it down. Solder the remaining pins.



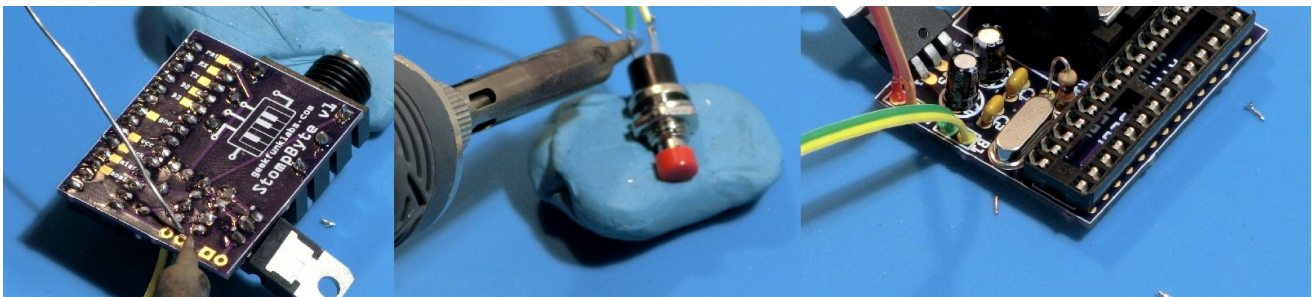
7. Line the audio jack up with its outline and push it into the board. Solder it in place, making sure to use enough solder to fill the holes.



8. Separate a pair of wires for the pushbutton from the ribbon cable by cutting and pulling them apart. Split the wires apart at the ends, strip them, and tin the ends by melting some solder onto them.



9. Solder one end of the wire pair into the B1 pads. You can achieve some strain relief by holding the iron flat against the solder joints to melt them and pushing the wires in farther, melting some insulation against the PCB. Thread the wires at the other end of the ribbon cable through the lugs on the pushbutton and solder them in.

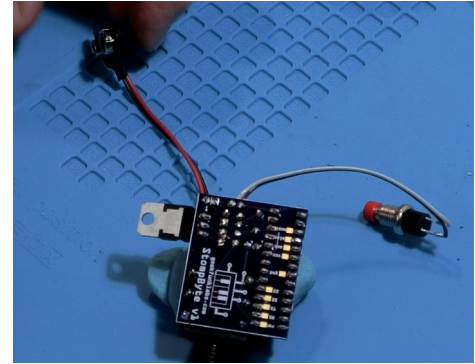


10. Lay out the components in your enclosure to see how they will fit. Drill a 5/16" hole for the pushbutton, and a 7/16" hole for the audio jack. If you're using it, drill a 5/16" hole for the DC jack and mount it by inserting it in the hole and screwing on the nut.

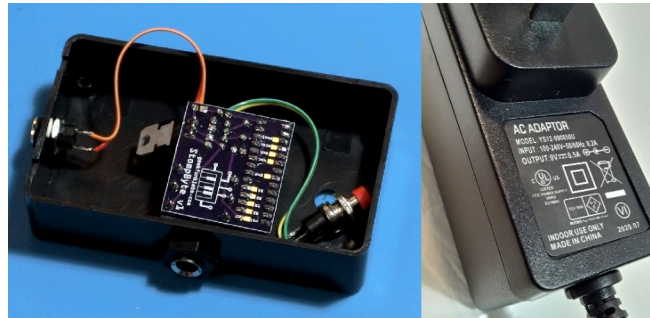


11. You must supply 5-18V to VS to power the StompByte. Here are several options:

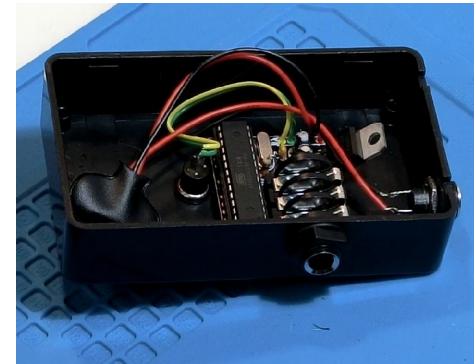
- If you want to use a 9V battery, solder one of the battery clips to VS. The black wire should be soldered to the square (ground) pad. For strain relief you can melt some of the wire insulation to the PCB as in step 9.



- To use a 9V AC adapter for power, make a wire pair from the ribbon cable as you did for the pushbutton in step 8, and use it to connect the DC jack to VS. Check the markings on your AC adapter. If it is center-negative, as shown in the image, solder the wire from the square (ground) pad to the shorter pin on the DC jack. Otherwise, swap the wires.



- If you want to be able to use a battery or an AC adapter, solder one battery clip to VS as above, then solder the other battery clip to the DC jack. If your power supply is center-negative, solder the *red* wire of the battery clip to the shorter pin on the DC jack. To use the AC adapter, snap the battery clips together.



12. Insert the pushbutton and audio jack through their holes in the enclosure, and tighten the nuts on. Line up the notch on the ATmega328p with the notch on the 28-pin socket and press it in, making sure it's fully seated. Tuck the wires in and close up the enclosure.

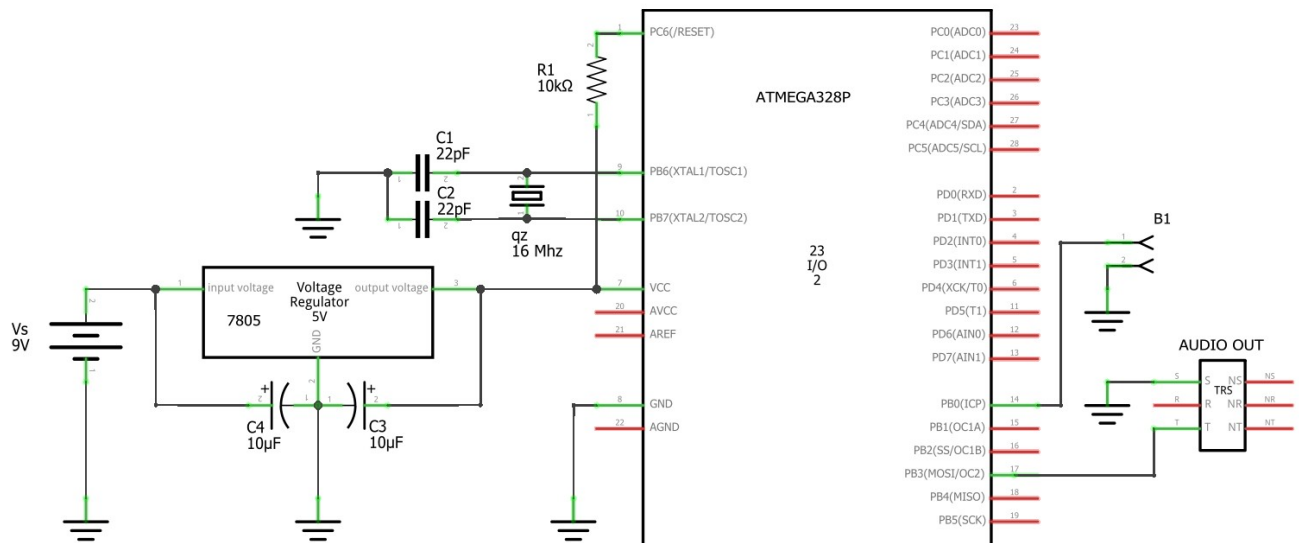


Your StompByte is finished! Tap the button to trigger samples and patterns. Holding the button for two seconds will switch to the next sample or pattern, and play a short preview. If using a 9V battery, the StompByte will consume a small amount of power even when not playing sounds. You may want to remove the 9V battery when not using it in order to avoid depleting it. For additional support, visit geekfunklabs.com.

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Schematic



PCB Detail

