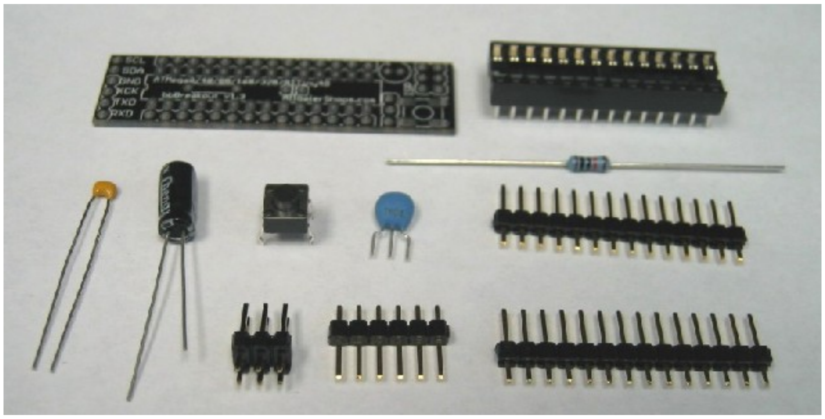
ATTiny48/ATMega88/168/328 bbBreakout v1.1
Assembly Instructions

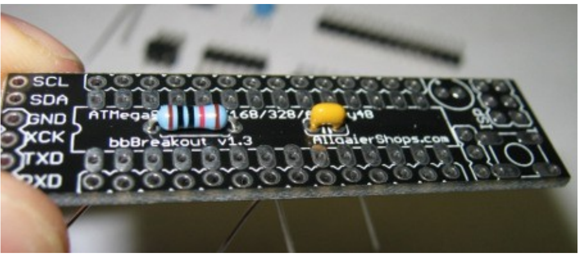
Parts List:

2x 1x14 pin header

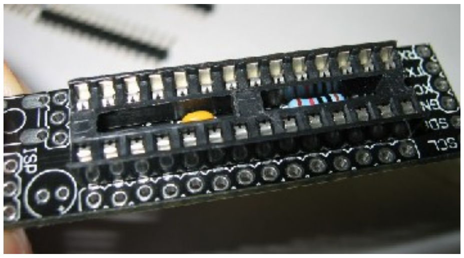
1x 1x6 pin header
1x 2x3 pin header (ISP)
1x 0.1uF ceramic capacitor
1x 10uF electrolytic capacitor
1x 10kOhm resistor
1x button
1x 16MHz resonator
1x Printed Circuit Board
1x PDIP28 socket

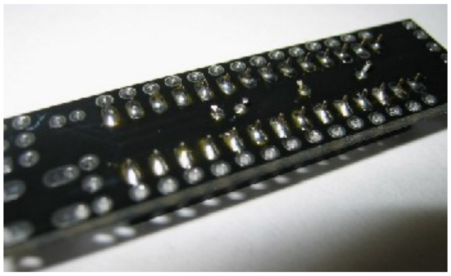


Step 1: Start soldering the lowest-profile components first, and work your way up. That way, as you insert each component and flip the board upside down to solder it, the weight of the board will keep the component fully inserted. The ceramic cap and resistor are the shortest, so insert them as shown. Then flip the board, solder the leads, and snip off the excess.

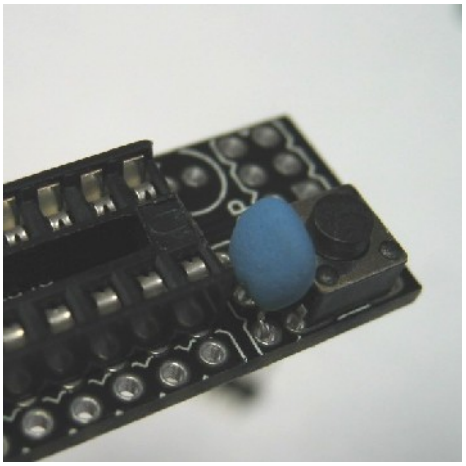


Step 2: The PDIP-28 socket is the next shortest component. Solder it as you did the capacitor. No need to snip off any excess leads here.

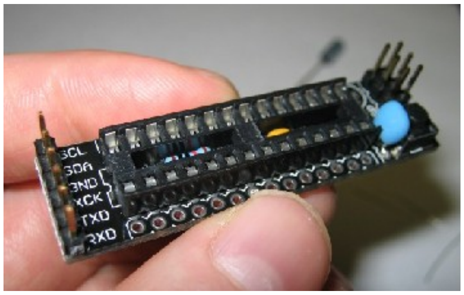




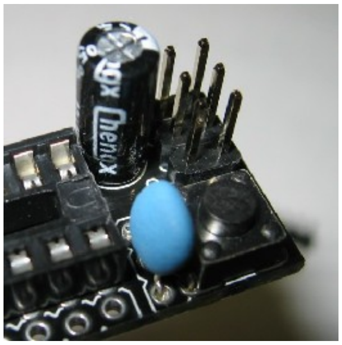
Step 3: Repeat the same steps for the resonator and the button.



Step 4: Insert the ISP header and the 1x6 header, flip the board upside down, and solder them in place.

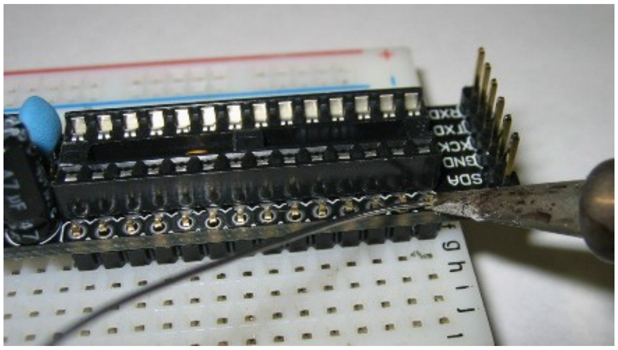


Step 5: Now add the electrolytic capacitor, and solder/snip it just like the resistor and ceramic cap. Observe polarity!



Step 6: Here's the tricky part. Take the 1x14 headers and insert them into the bottom of the PCB. We've found that it is helpful to insert the pin headers into the breadboard first, then place the PCB on top. This also ensures that the adapter will fit in your breadboard.

Soldering these pins is a bit fiddly, since the PDIP socket runs right next to them. This picture shows how we hold the iron and the solder, but find whatever works for you. Congrats, you're done!



Application notes:
The 16MHz resonator will only work on the ATMega88/168/328. The ATTiny48 cannot use an external crystal or resonator, so the resonator will have no effect. Even with the resonator in place, you will still be able to use those pins as regular I/O pins. Just be advised that those pins might be a bit jumpy if you drive them at high frequencies.

The button is tied to the reset pin of the MCU, and pulls it low.