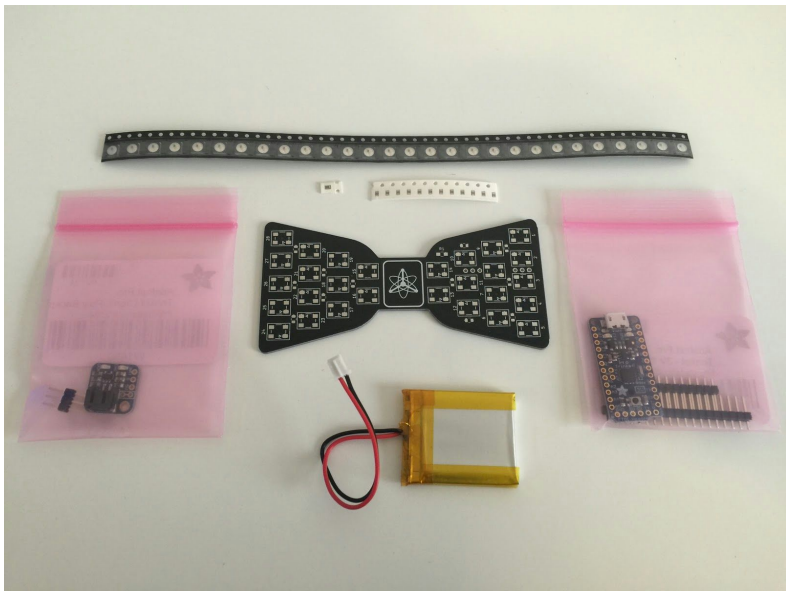
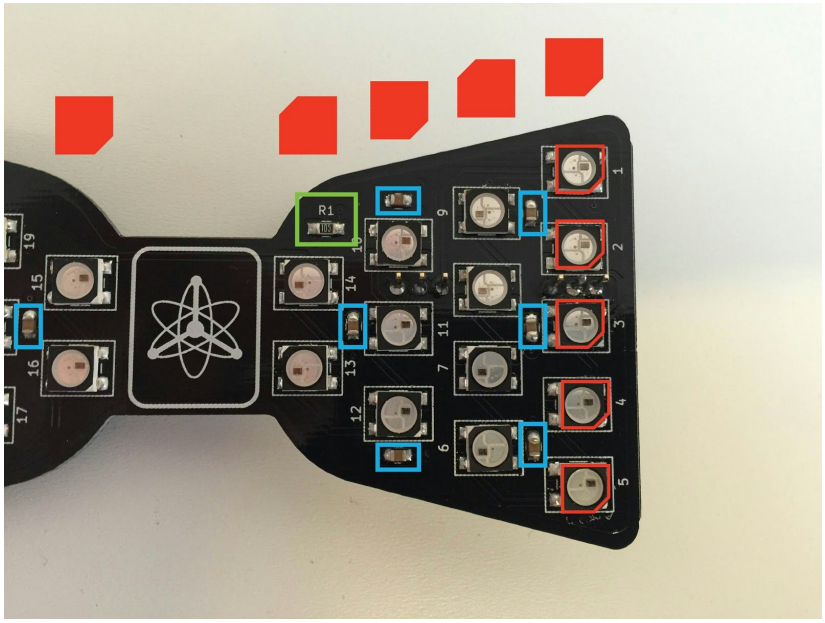
Tinker Tie Beta Assembly Instructions

- DIY Tinker Tie Kit starts here:

1. Open the box and inspect the components. There should be:
    a. 28x RGB LEDs (SMD)
    b. 12x Capacitors (SMD)
    c. 1x Resistor (SMD)
    d. 1x Tinker Tie PCB
    e. 1x 500 mAh Battery
    f. 1x Adafruit Pro Trinket (Optional)
    g. 1x Adafruit Charging Backpack (Optional)

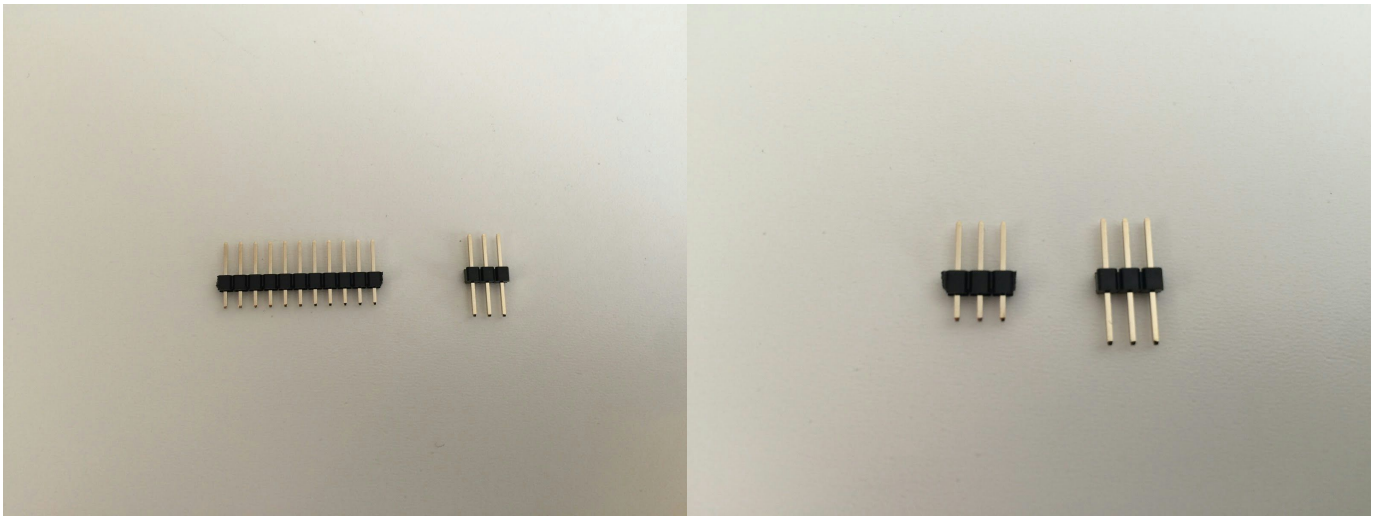


2. Begin by SMD (surface mount) soldering one side of the Tinker Tie at a time. If using solder paste, it is ideal to apply solder paste to all contacts on one side of the Tinker Tie, then place all components starting with the smaller capacitors and resistors, then placing the larger LEDs.
    a. The direction of the capacitors and resistor do not matter
    b. When placing the LEDs, it is important to follow a pattern for their direction. Each LED has a notch cut out of it. Each LED in a column needs to have their notch pointing in the same direction. Look at the illustration below for the pattern. The right-most column has it's LED notches all facing the bottom right side, the next row to the left has all it's notches facing the top left. Alternate this pattern every column to the end. It is extremely crucial to do this, as it won't work any other way.

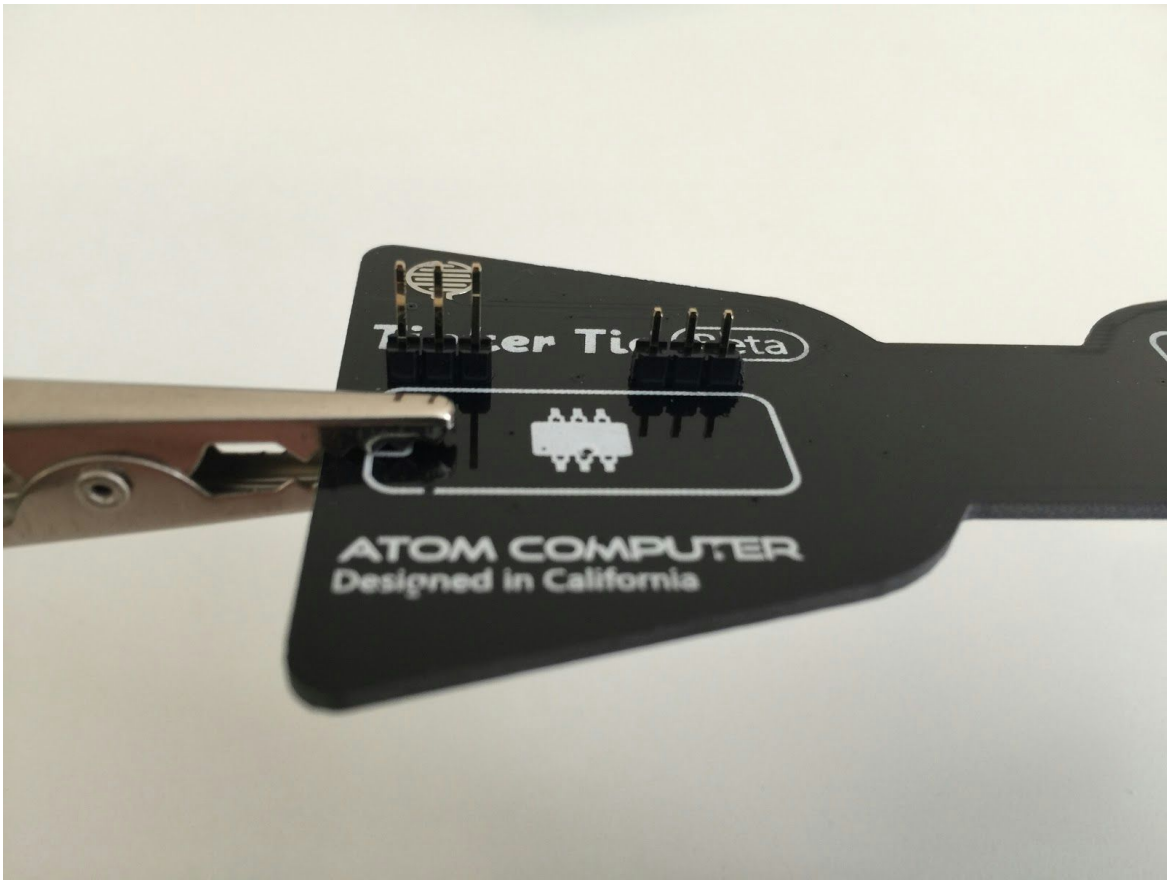


- Assembled Tinker Tie Kit starts here:

3. After soldering all the SMD components, it's time to install the through hole components.
    a. Begin by taking out the header pins from both the Trinket and the charger bags.
    b. Snap off a section of three pins from the headers that came with the Trinket

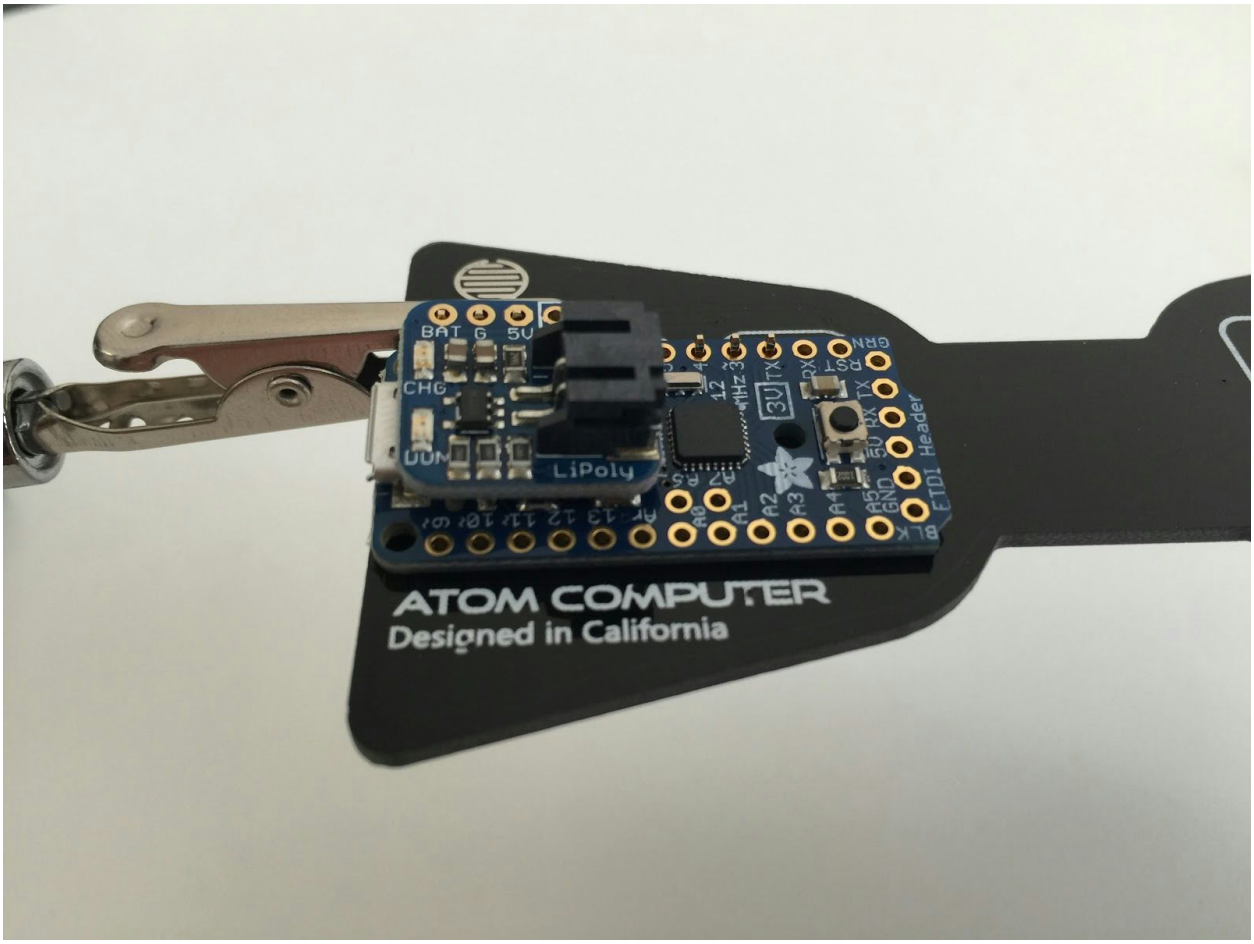


c. Next, Place the headers block with the longer pins into the first set of holes, followed by the shorter one.

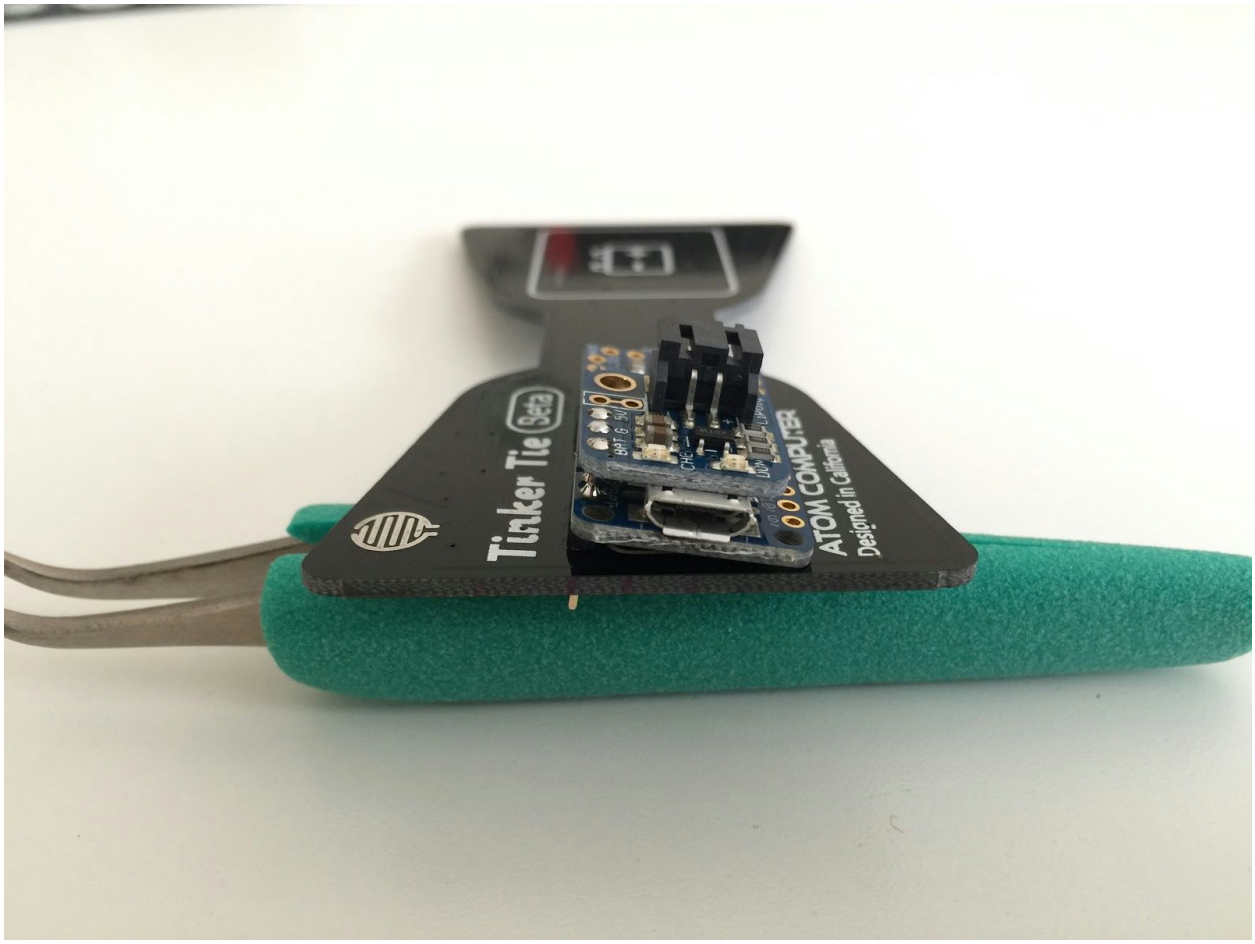


d. Place the Pro Trinket onto the pins such that the USB is facing out the side of the Tinker Tie, and the first pin on that side corresponds with the BAT+ pin on the Pro Trinket. Solder the pins on the Trinket side and the Tinker Tie side. You can use a piece of tape to keep the Trinket from falling off as you work.

e. Next, place the Adafruit charging backpack onto the longer pins extruding from the previously soldered Trinket. Make sure the battery connector port is facing away from the side of the Tinker Tie, and that all three pins line up. For faster charging, there are two tabs underneath the charger that can be soldered together prior to being mounted that will speed up the process.

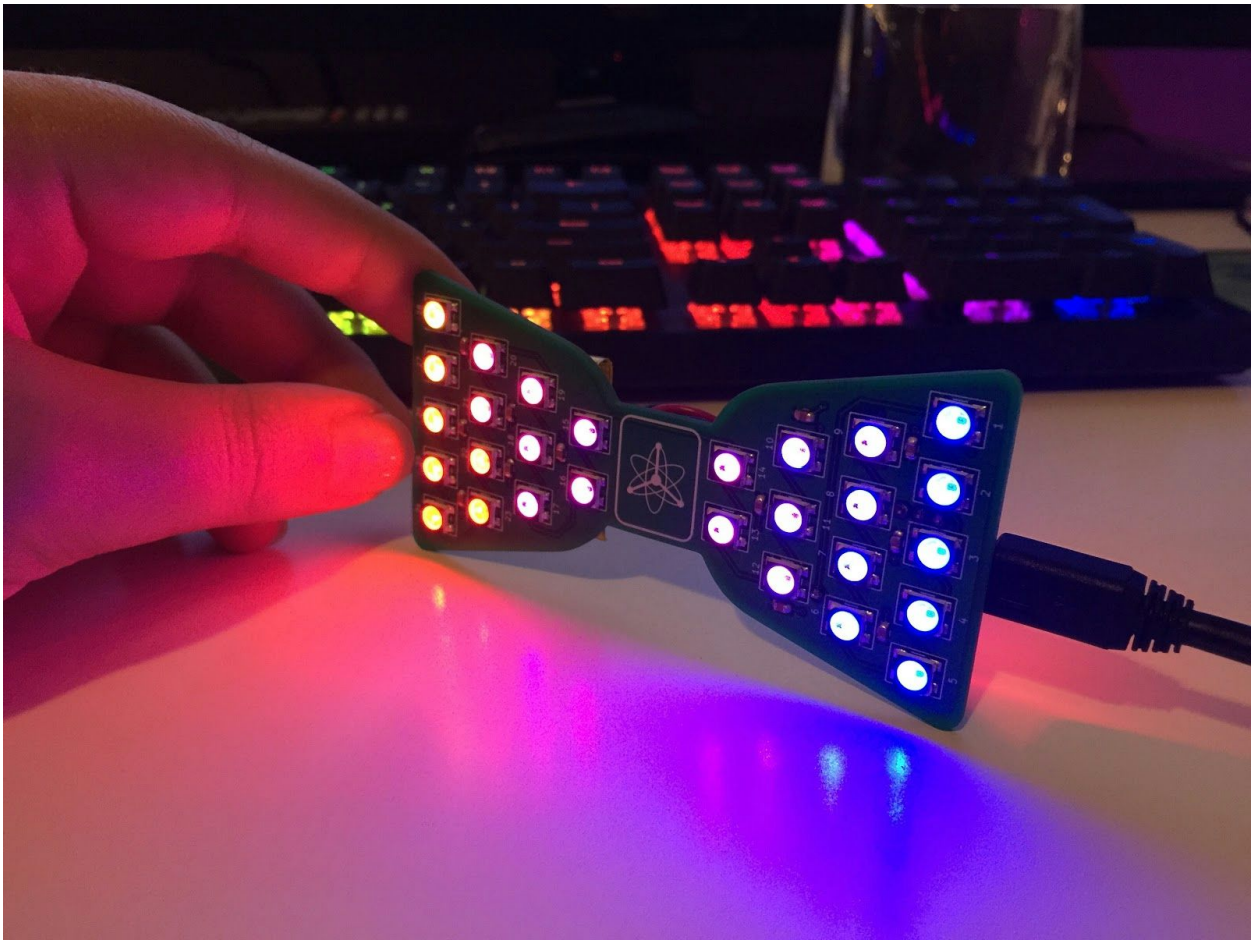


f. Once you're finished soldering, your Tinker Tie should look something like the image below from the side. Notice that the Pro Trinket is mounted at an angle, with the the side with no pins to solder resting on the Tinker Tie board. This is the correct configuration.



4. Now that you've assembled all the soldered components, the next to last step is to attach and plug in the battery. Use an adhesive method of your choice (double sided tape, glue, velcro, etc.) to mount the battery centered to the battery rectangle on the side opposite the Pro Trinket. Make sure the wires are facing towards the charger. The image below shows an Alpha Tinker Tie with the battery mounted but not plugged in. Once your battery is attached, plug the battery's JST connector into the port on the charging board.

5. Once the battery has been plugged in, you will see the lights on your Trinket begin to flash. Because all Tinker Tie Trinkets we ship out will be pre-loaded with our example sketch, they should begin to project a rainbow pattern a couple seconds after the battery has been plugged in. If this doesn't happen, press the reset button on the back of the Trinket and wait for the device to restart.



6. You're done! All that's left to do is tie the bow tie strap around the center of the Tinker Tie board (we like to also make sure it covers the battery wire) adjust it to your neck size and wear it! The Tinker Tie can be charged over USB, as well as programmed to your own custom patterns through the Arduino IDE. Enjoy your new Tinker Tie and please don't forget to send us any feedback you have of the process so we can further improve it beyond Beta!