Bonkulator Assembly Instructions

The Bonkulator uses components on both sides of the board. Because of this, the order of assembly is important. Also, the order is intended to add components like the push buttons near the end of the process so they will not risk being damaged by the hot iron.

The top side assembly procedure is broken into 3 parts to make it easier to align all of the components. It is possible to do in fewer steps. It is up to the builder to decide if consolidation would be beneficial.

Because of the density of the circuitry, a conical .8mm tip soldering iron is suggested.

Difficulty: intermediate. Not recommended for first SMT build.

1. Install 4 12mm stand-offs to the front panel using screws. Set this aside for later.
2. Install all SMT components.
3. Install headers J6, J7, J18, J19 and J20.
4. Install test points TP1, TP2 and TP3.
5. This completes assembly of bottom side. Aside from the test points, this also is what is delivered from JLCPCB when using their assembly service. The required BOM in bom/LCSC and the position file is in fab/pos
6. Install display header J5.
7. Trim the leads of J18 that will impede proper placement of J9.
8. Install rotary encoder and jacks:
   1. Place rotary encoder SW5 into board.
   2. Place jacks J1, J2, J3, J4, J8, J9, J10, J11, J12, J13, J14, J15, J16 and J17 into board.
   3. Temporarily assemble front panel to board to assure proper alignment of components.
   4. Solder components and remove front panel.
9. Install push buttons:
   1. Place Push buttons SW1, SW2, SW3, SW4, SW6, SW7, SW8, SW9, SW10, SW11, SW12, SW13, SW14, SW15, SW16 and SW17 into board.
   2. Temporarily assemble front panel to board to assure proper alignment of components.
   3. Solder components and remove front panel.
10. Install display and LEDs:
    1. Install display.
       1. Install display standoffs into board. Be careful to avoid damaging parts that may lie below the nylon nut (early rev boards).
       2. Solder header to display and trim leads flush with display board. Insert display into J5.
       3. Use wooden, round toothpicks to align display on standoffs. Insert toothpick from top and trim flush with display surface. (No standoffs were available that matched hole size on the display)
    2. Place LEDs using LED standoffs.
    3. Assemble front panel to board to assure proper alignment of components. This should be final assembly, OK to use all 4 nuts.
    4. Solder LEDs.
11. Install Arduino on the back side of the board.
12. Attach knobs
13. That’s all! You’re ready to test and calibrate.