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.

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 C16, RV2 and RV3 on back side of board.
   1. RV2 **must** be installed before IC socket for U1.
   2. Trim the leads to insure proper fit of socket U1.
   3. Use caution while soldering the rest of the components so as not to bump the trim pots with the hot iron.
3. Install U5, all resistors, capacitors (except C3 and C4), diodes (not LEDs) and transistors on top side of board.
4. Install sockets U1, U2, U3 and U6.
5. Install connector J9.
6. Install 2 10mm display stand-offs with nuts.
7. Install 7mm FRAM standoff (p/n: 732-13045-ND) with screw on back of board.
8. Install J8 on back of board.
9. Fully insert FRAM header into J8. Use pliers to gently snug plastic down until it is flush with J8.
10. Install FRAM onto header and standoff. Solder and trim pins.
11. Solder header to Display board. Set this aside for later.
    1. Trim pins on top of display to insure proper fit onto the front panel.
    2. Note: the display is very fragile. Avoid unnecessary handling.
12. Install J2, J7, U4, RV3 and the two 15 pin sockets of A1 on back of board.
    1. heat sink side of U4 matches white line on board
13. Install C3 and C4
14. Install ICs into sockets.
15. Install display. 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)
16. Loosely place the rest of the components (these should all be the ones that go through holes in the front panel) and attach front panel with the 4 nuts.
17. This should properly align all the front-panel components. Solder them in place.
18. Install Arduino on the back side of the board.
19. Attach knobs
20. That’s all! You’re ready to test.