12-31-2021, Chuck Olson, Jackson Harbor Press

Grandson of Zerobeat 3mm LED enclosure kit manual

Assembly:

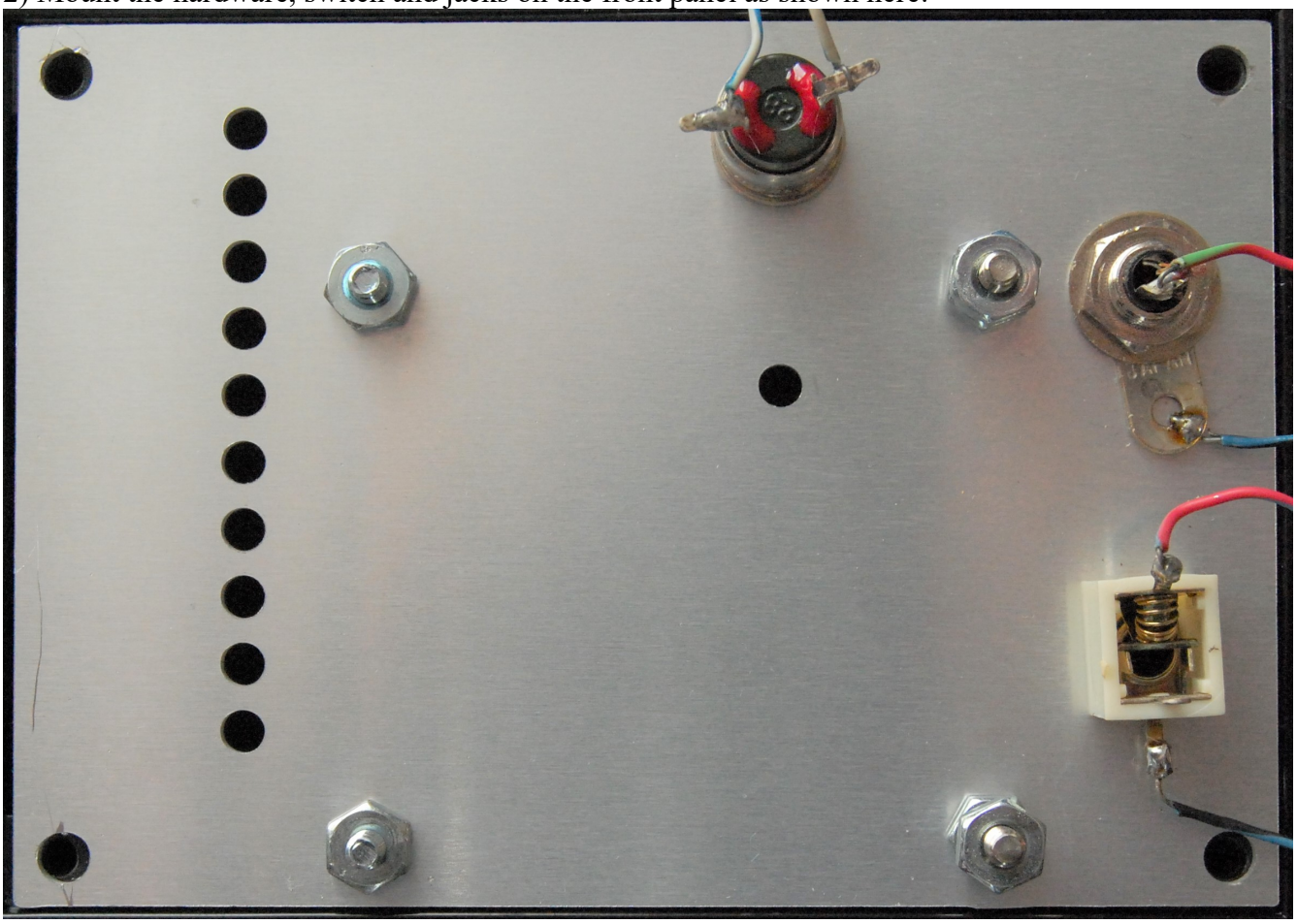
1) First, build the Grandson of Zerobeat 3mm LED kit per the manual WITH THE FOLLOWING EXCEPTIONS:

a) Build the main board per the manual BUT the level set trim pot can be mounted on the back of the board for easy access through the front panel with a small screwdriver. Note that the pot doesn't have to be adjusted that much so mounting it normally on top of the board will work OK too.

b) The kit does NOT have the dimmer regulator circuit, the box wasn't wide enough for that so ignore that part of the daughter board instructions (manual step 4e,f and g (the part in italics).

c) Before soldering the .01 uF caps I trimmed the leads flush before soldering to prevent any chance of short circuits to the front panel. Similarly with the STRAIGHT header (in place of the right angle header) I trimmed the leads flush before soldering to the daughter board. Alternatively the builder can put some tape, cardboard or plastic over the bare aluminum to prevent shorting problems.

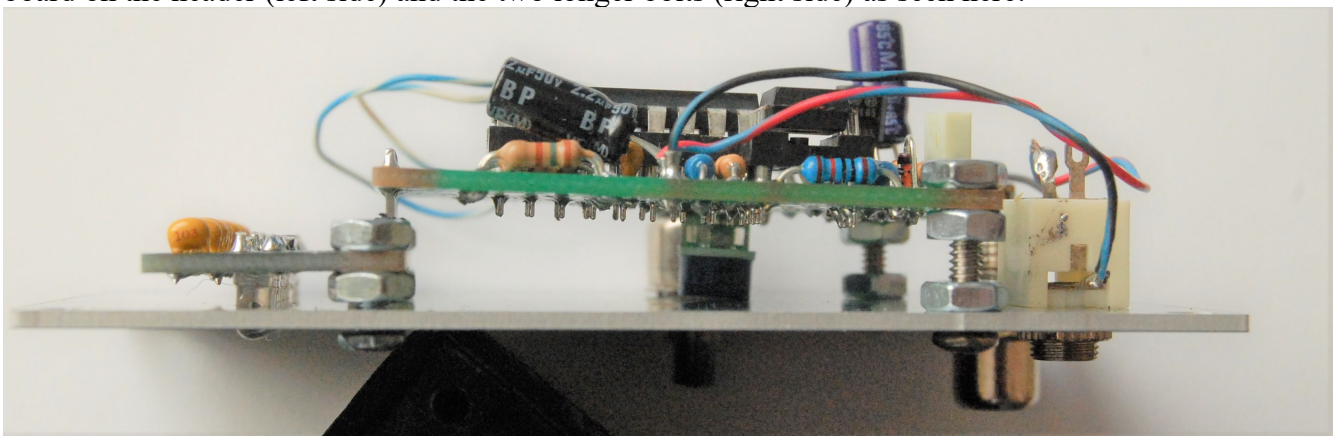
2) Mount the hardware, switch and jacks on the front panel as shown here:



Note that the jacks and switch may vary a little from the pictured prototype.

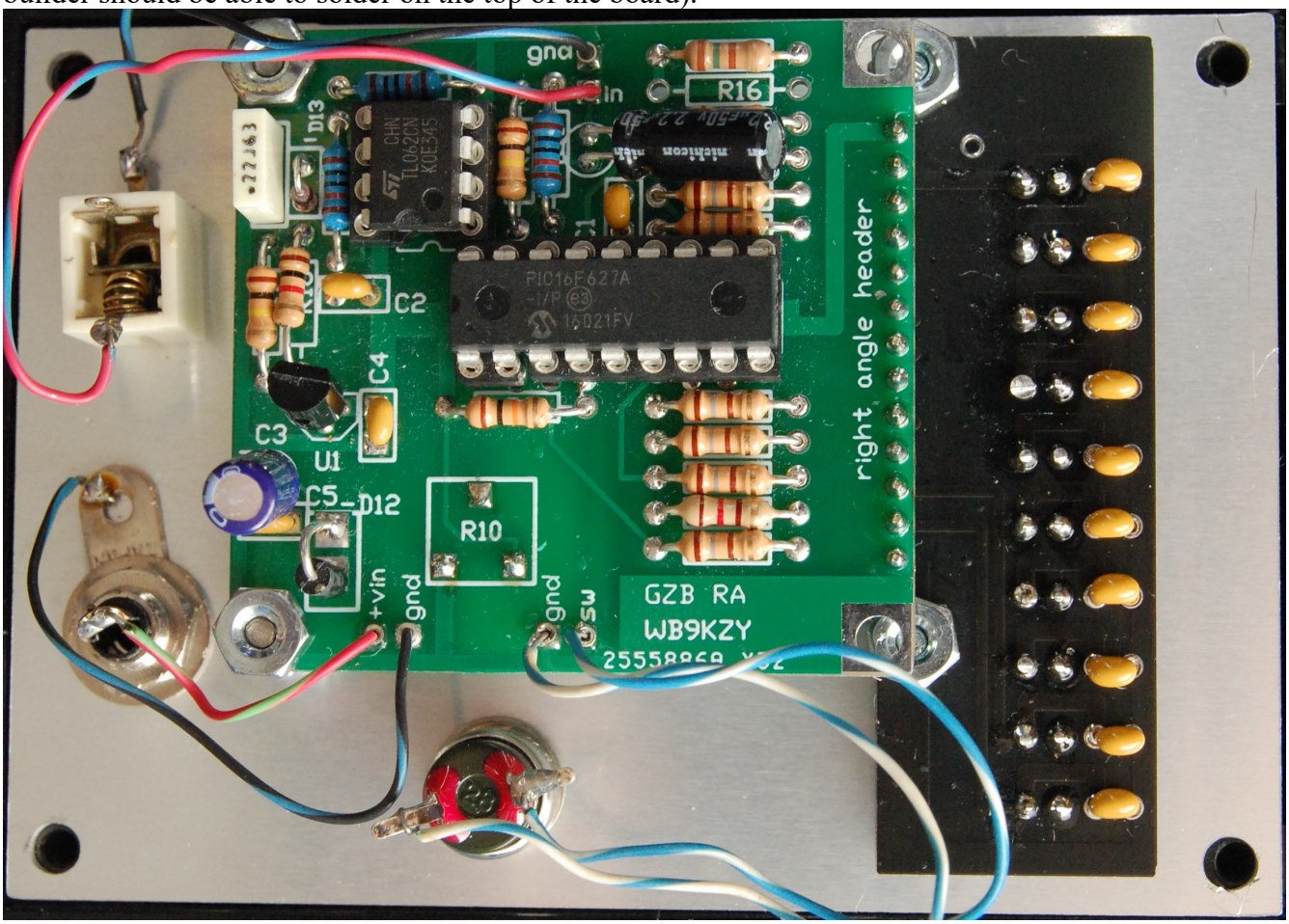
Attach the two shorter 4-40 bolts towards the left side, these are used to secure the LED board. Attach the longer 4-40 bolts towards the right side – thread on another nut to the longer bolts about half way.

3) Mount the LED board on the front panel and secure with two 4-40 nuts. Next, mount the main board on the header (left side) and the two longer bolts (right side) as seen here:



Then with the remaining two 4-40 nuts the right side can be secured and the header soldered.

4) Finally solder the switch and jacks to the board (pin sockets were used on the prototype but the builder should be able to solder on the top of the board).



5) Finally (after testing it out) mount the board in the case using the 4 black 4-40 machine screws.

6) modification ideas:

a) The LED dimmer circuit could be added on a small circuit board

b) There is space on the panel for a power switch and/or another audio jack (which could be wired in parallel with the existing audio jack)

c) One modification which was tried was to enlarge the hole for the trim pot but I managed to ruin the black solder mask around the hole so I don't recommend it.

d) the power jack can be changed to whatever the builder prefers, as a Ten-Tec and Heathkit owner I always used RCA jacks for power :) Also, the power connections could be made through the back of the box with a cable or jack, then the front panel hole marked power could be used for a switch.

Grandson of Zerobeat 3mm LED enclosure kit stocklist:

Quantity	description
1	4 x 3 x 1.5" phenolic box
1	top plate, silk screened, pre-drilled
4	black 4-40 x 5/16" Philips screws
2	short 4-40 machine screws for mounting the LED board
2	long 4-40 machine screws for mounting the main circuit board
10	4-40 nuts for mounting the circuit boards
1	3.5 mm mono input jack
1	RCA female power jack
1	C&K 8121 momentary switch with cap

items NOT included with enclosure kit: wire, solder