

Bicron PWB Kit Build
(thanks to Geo!)

131019

Warning: Not the build for the perfectionist.(for the frugal)



Above is the finished project.

How did I get there ?

A couple years I got a dud LND7840 (loose mica window)

A couple months ago I came across a LND 7840.(\$25)

Put it in a balsa wood enclosure, with perforated aluminum grill (recycled automotive speaker grill) Inside the probe there is a 2.2Mohm series load resistor

Painted with latex paint.

I needed to change the HV setting on my current gm counter when I used this tube, or make a new gm counter that could provide the 1200V that this odd ball tube needed. Geo had perfect timing with his Bicron pwb kit. (\$30)

First step, make a connector + wire assembly. Found a couple of single inline header pins to plug into the pwb, socket. Spent lunch time putting wires on with heat shrink tubing on the 24 pins. (it was only afterwards that I realized that I didn't need all 24 wires as many pairs were loop backs).



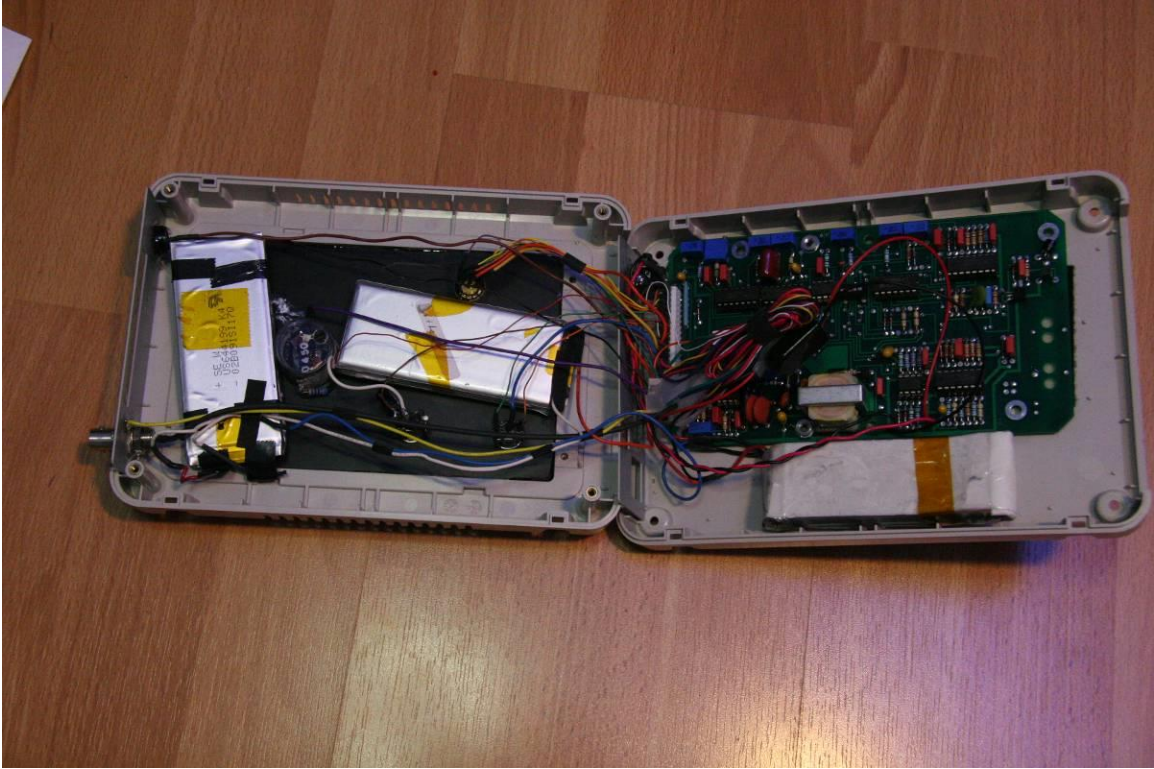
Didn't use the bayonet connector supplied by Geo. I had an insulated mount BNC jack in my junk pile. Even with the larger diameter of the insulators, it wasn't big enough to reuse the existing hole in the enclosure's end plate. Goop glue to the rescue. On the same end plate is the sounder. It was from the junk drawer. It is not a piezo. It is a magnetic sounder, it has a DC resistance of about 16 ohms. It is quite loud.



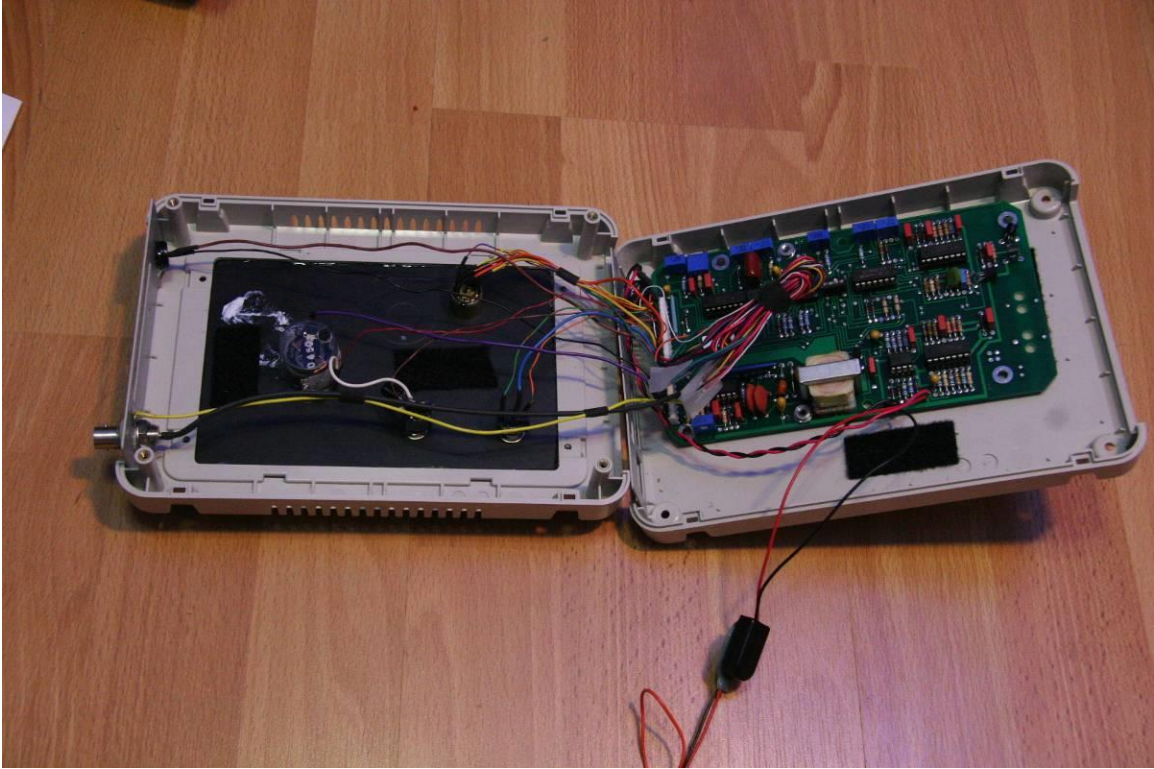
The enclosure was a junked emulator jig, so there was a huge opening on the top. I looked for a scrap piece of Al sheet to fill the hole. Didn't have any. Found a junked lap top. Took the backside of the LCD lid and chopped it with a large paper cutter. Oddly, the lid I chose was molded plastic but it was laminated with carbon fiber and was conductive. (~ 20 ohms across the diagonal of the panel)



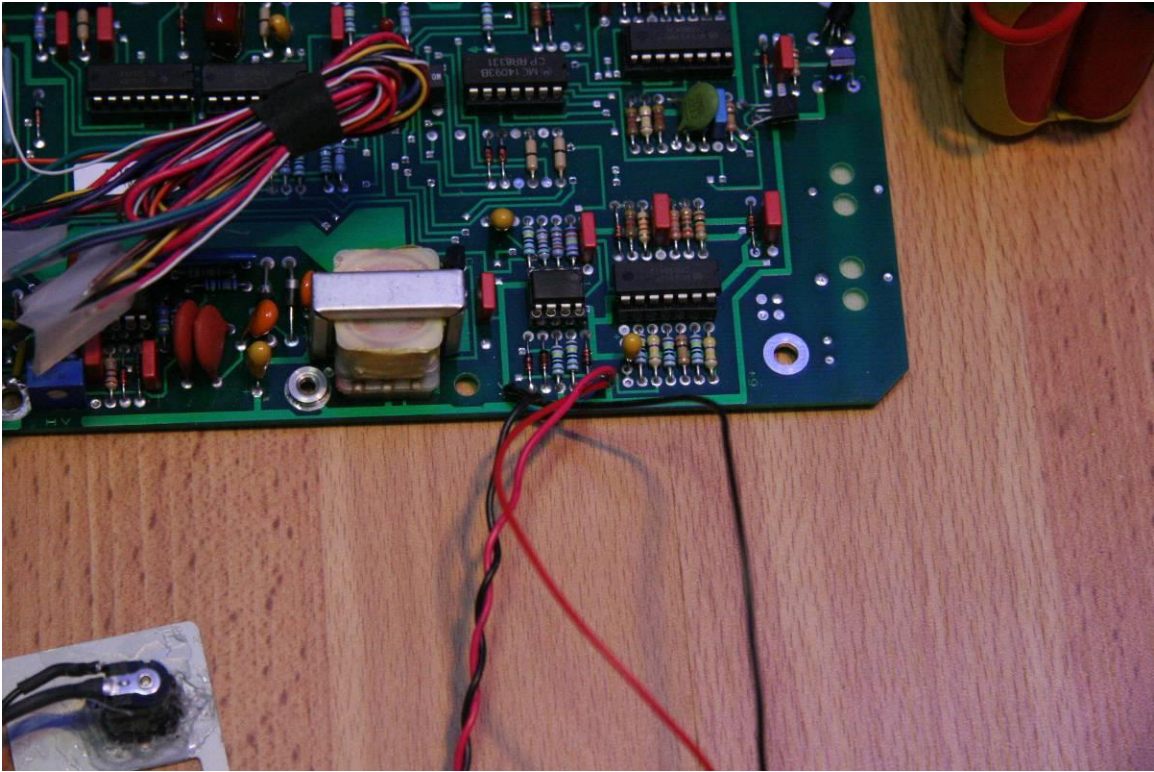
The other end plate. Too lazy to fill the existing holes. However the RHS hole is used for the charging jack (8.4V) Jack is glued, again with Goop, to the backside.



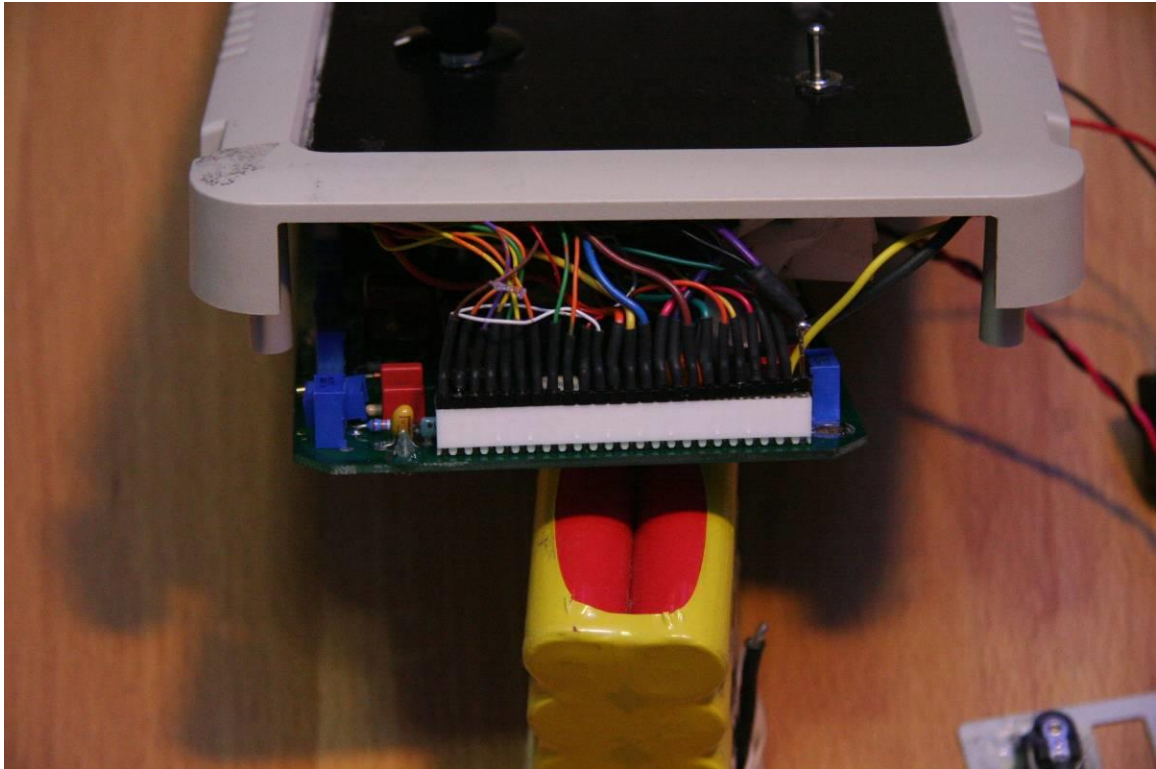
What a rats nest. Didn't remove the loop back wires yet, I may want to add the features that Geo wrote up about. So they are the bundled mess in the middle of the pwb. The silver rectangles are recycled Lithium Polymer cells. Each cell is 2200 maH@ 4.2V. Wired up at a 2S3P 8.4V 6600mAH and connected to a 9 volt battery clip. They are attached to the back side of the front panel and the rear enclosure half with adhesive backed Velcro tape. Similarly for the PWB.



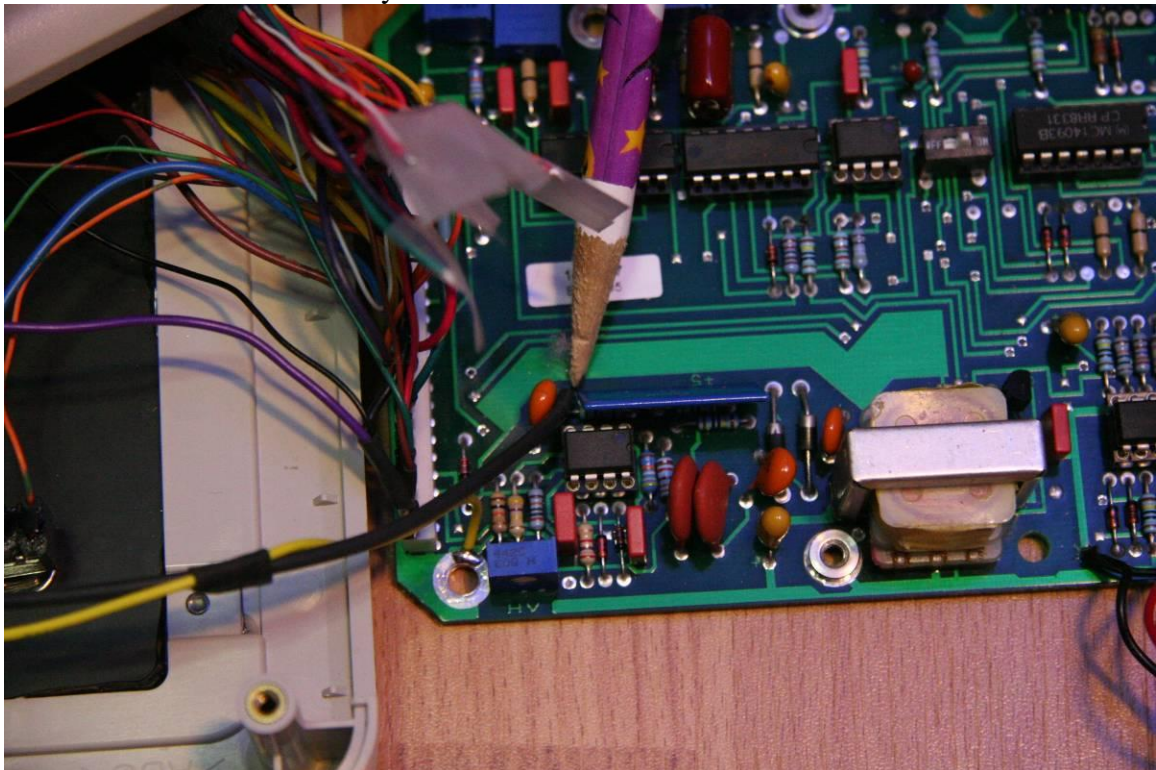
Pic with the LiPo batteries removed



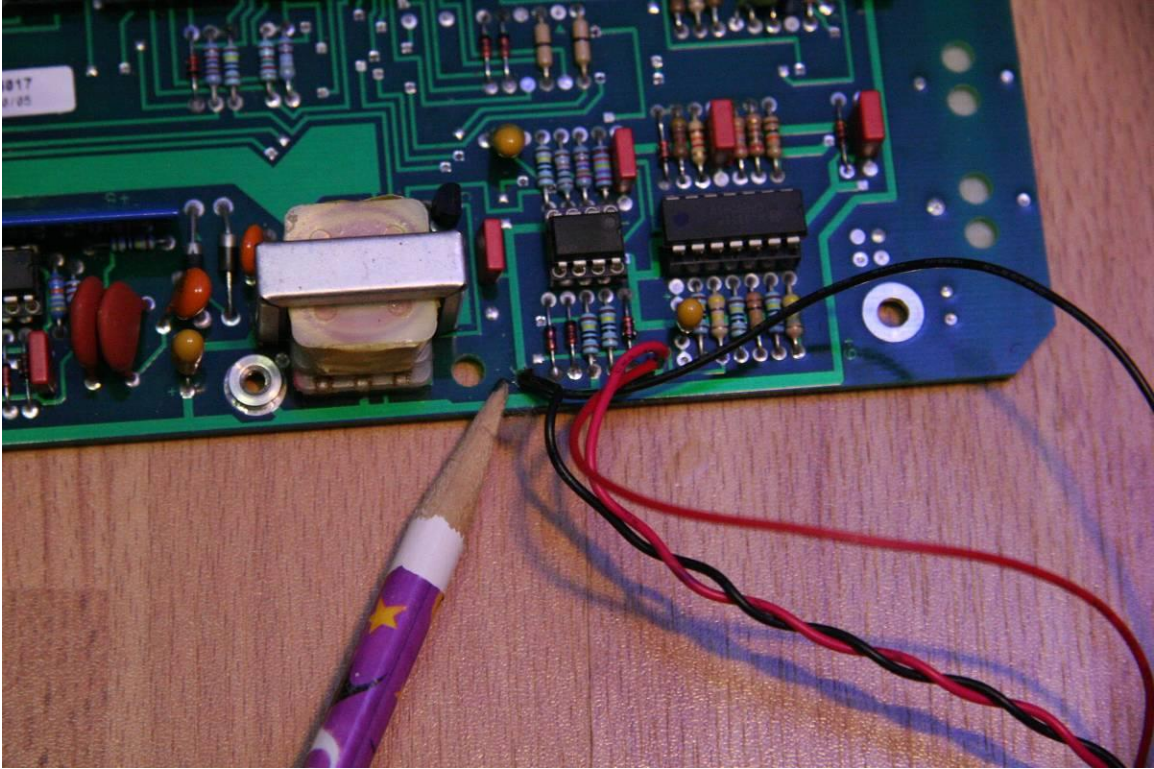
The battery connection points on the pwb weren't too clear. So shown for those looking for the power point of the pwb.



Picture of the header assembly. It consists of two inline headers.



Probe hot lead pick up point wasn't immediately obvious to me. Insulated wire protected with an additional layer of heat shrink tubing. Ground for the probe wasn't obvious so I cheated and took it from the nearby screw ground.



Out of sequence. Close up of the ground (-ve) for the battery .

Problems:

- 1) one of the red caps for the metering circuit(0.47uf), biggest one in that area of the board had a broken lead . Easy to replace. Couple of the transistors were squished on to the board and their leads were shorted. So check the board for any physical issues before powering up.
- 2) Wasn't immediately obvious to me, (I may have made a mistake(s) here) but the meter slow fast time constant cap and the series resistor for the meter are not on the PWB. I ended up mounting them on the switch and meter respectively.