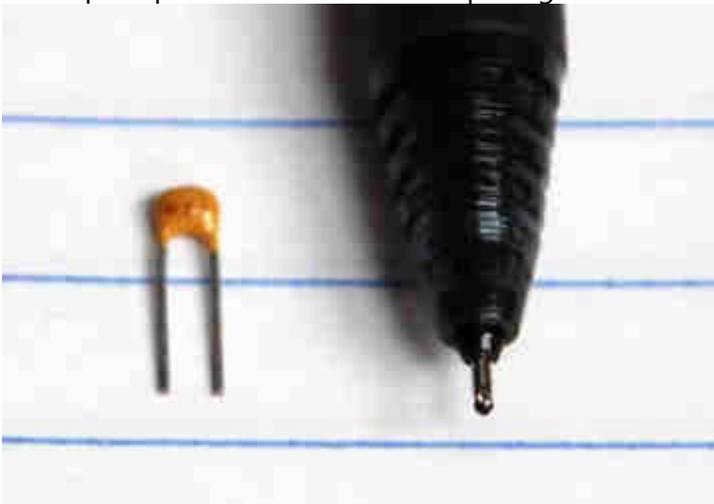


**Subject:** Re: Heathkit SB-620  
**From:** Stephen Lafferty <steve@tronola.com>  
**Date:** 2/19/2020 10:21 AM  
**To:** Kelley <kelley@nonresonantguy.com>

Hi Kelley,

Okay, here is my first take on doing this:

- On getting the signal out of the radio, the attached pic, **Area for egress.jpg**, shows what seems to be the best place. Three methods come to mind, depending on your preferences: (1) an SMA, phono or even a 3.5mm phone jack could be mounted there; (2) a hole could be drilled to bring out the coax as a pigtail; (3) a notch could be cut at the bottom edge (top edge in the pic) of the rear panel, allowing a pigtail to pass. At this frequency, the connectors aren't critical.
- The pic, **Connections to IC631 with sketch.jpg**, shows one way to do the inside part. The circle is the 10pF cap. I would use the 0.1" spacing small ones like this picture:



The idea is that the floating cap and cable connection can be secured with a dab of construction adhesive. It may take 24hrs or so to cure so the cable would need to be taped down initially. The tube below (about 9" long) was found at Home Depot. It's a white paste which dries translucent (not clear as stated). It remains rubbery and flexible yet bonds very strongly. It can be removed by pulling hard with needle nose pliers and scraping away residue. By "secured," I envision more-or-less potting the cap, cable connection and the end of the cable over that ground island.



However, I recall that it did not make a great insulator in a high voltage application, so perhaps there is better stuff to use. Have had good luck with quick-cure epoxy but it's not easily removable.

Another approach to securing would be to solder an insulated terminal, to which the cap and cable could connect. The plated through hole in the island of ground there is tempting but I can't assume you could get convenient access to the other side of the PCB for soldering. Scraping away some of the solder mask on that island could uncover enough bare metal to get a sturdy solder attachment. Here is a PTFE-insulated terminal like I have in mind: <https://www.mouser.com/ProductDetail/Keystone-Electronics/11218?qs=sGAEpiMZZMuHIszJOUpTOiDKTIEIet0X>

(There is no minimum order at Mouser.)

The mounting shaft is 0.27"L x 0.30"D. Don't know if the hole would accommodate it, even if there was access to the other side of the board.

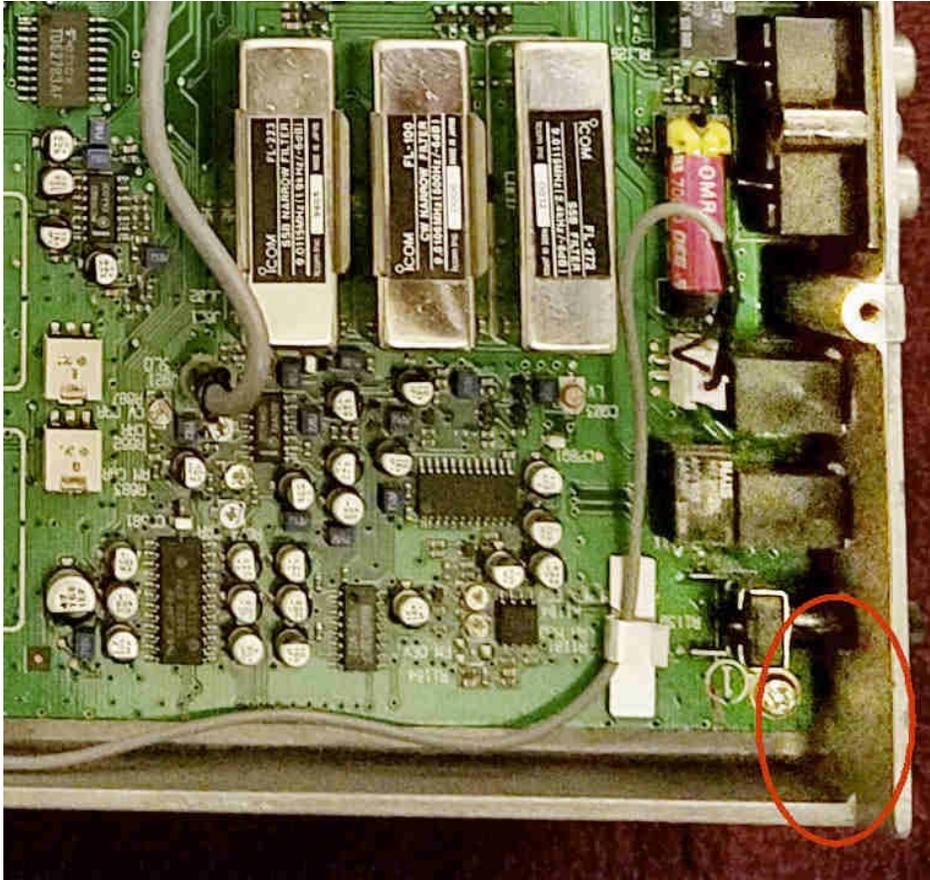
The cable may need additional securing near the connection. A favorite of mine is to use super-glue. It's reasonably strong but isn't hard to pull up, in my experience. I apply some and use a piece of label backing paper to protect my fingers as I push down on it for 60 sec to make the bond. Then wipe away any excess glue. The super glue is nearly invisible later.

Those are my thoughts. Perhaps you can come up with something better, particularly with regard to the construction adhesive. The more I think about the insulating issue, the more concerned I am. Could do a resistance measurement. Fortunately, this circuit doesn't have particularly high impedance or voltage, so it's probably not a problem.

Will be interested in your thoughts. Perhaps the surface mount soldering makes you want to run away screaming. It does take a controlled temperature iron with a reasonably small tip and a somewhat steady hand. Perhaps the thought of hacking on your oh-so-nice radio makes you queasy. I can easily understand all that. When I hacked into my brand-new (\$700) Denon audio video receiver a few years ago to add an external IR pickup, my heart was pounding and I felt like cutting and running a couple times. But I didn't and it works well today, without any problem getting the signal from the remote control :)

Steve

Area for egress.jpg



Connections to IC631 with sketch.jpg

