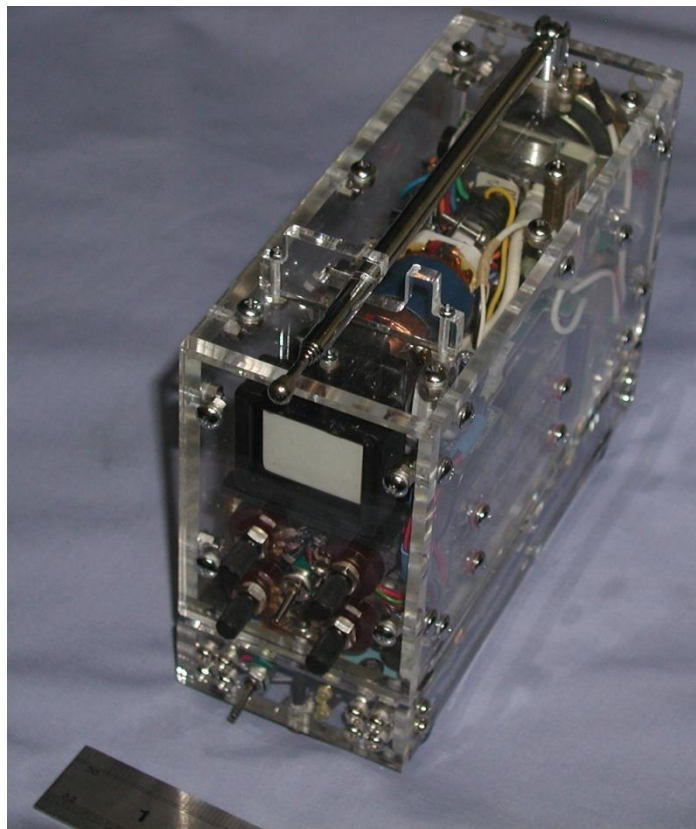


ORAC: THE TRANSPARENT PAPER WEIGHT SIZED TV SET.

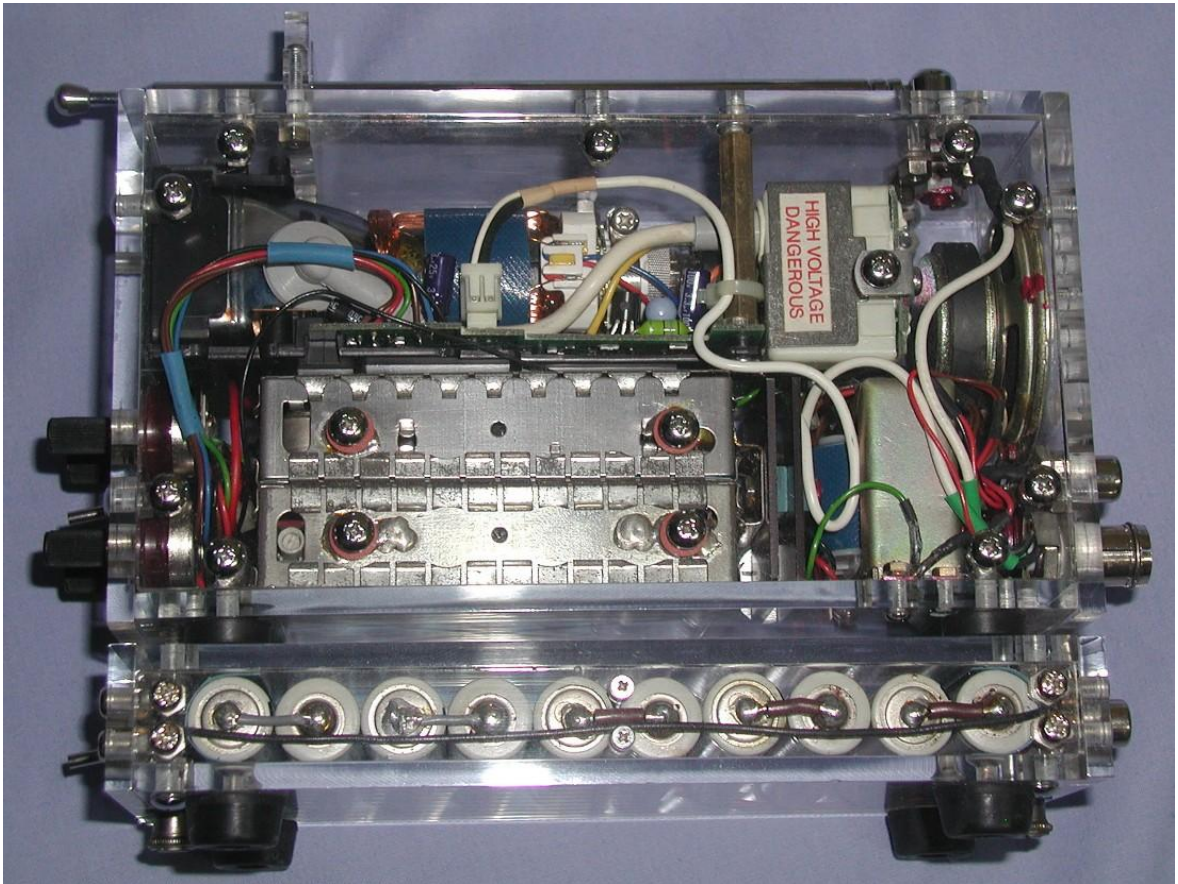
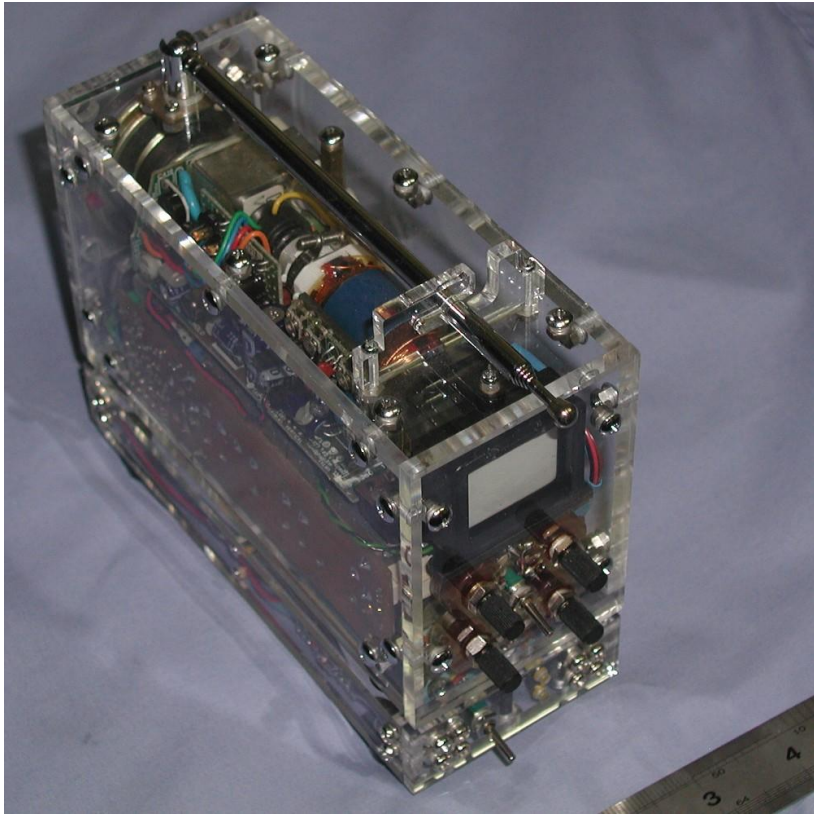
Dr. H. Holden.

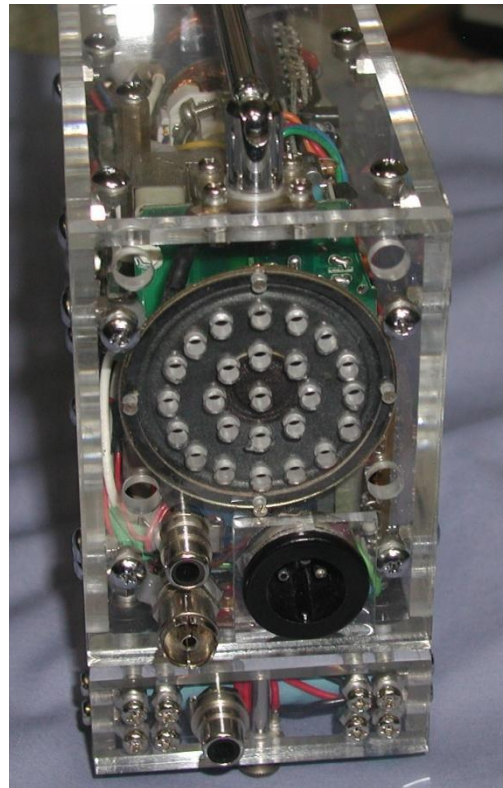
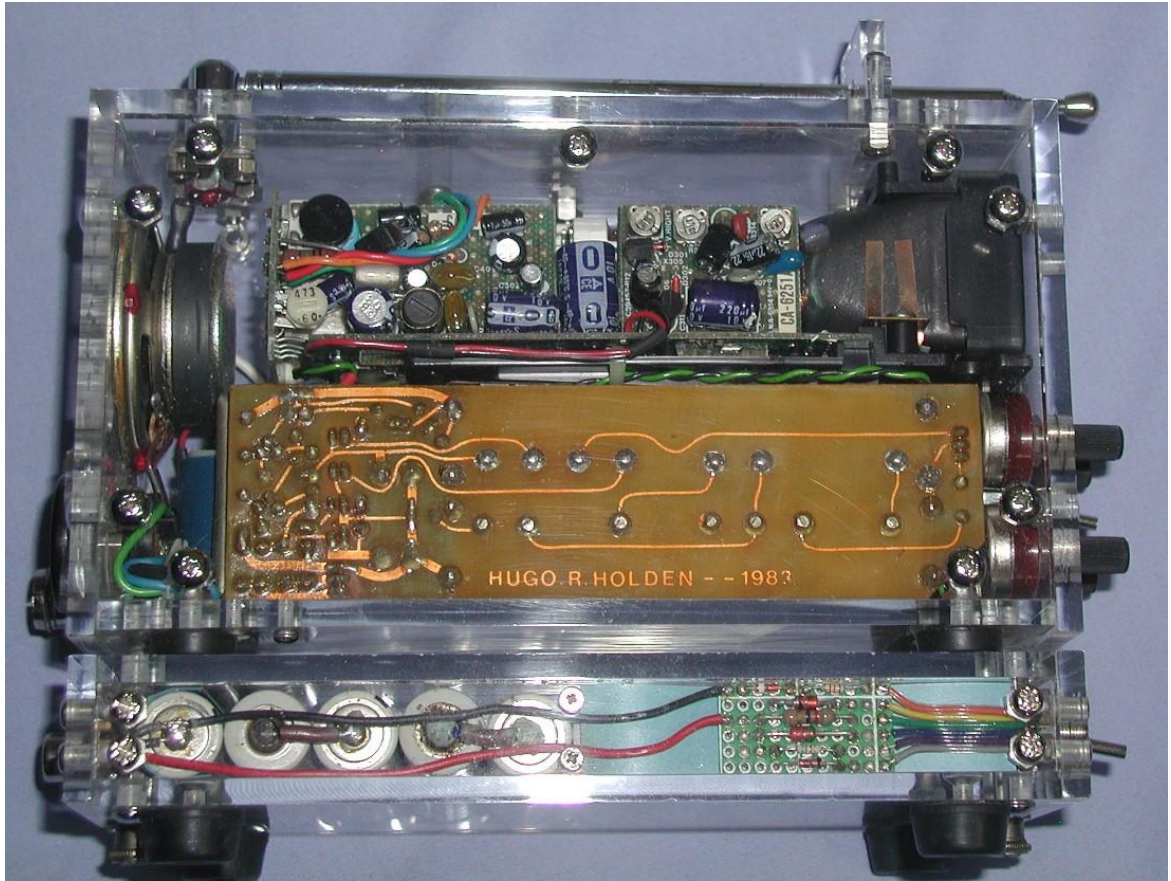
This article describes a home crafted miniature TV set. The idea was to make a TV set that could be an interesting desk paper weight. I made it in 1983 when I was 24 years old. It runs from a detachable 12V power pack (10 Ni-Cd cells) or is mains operated as it contains its own power transformer:

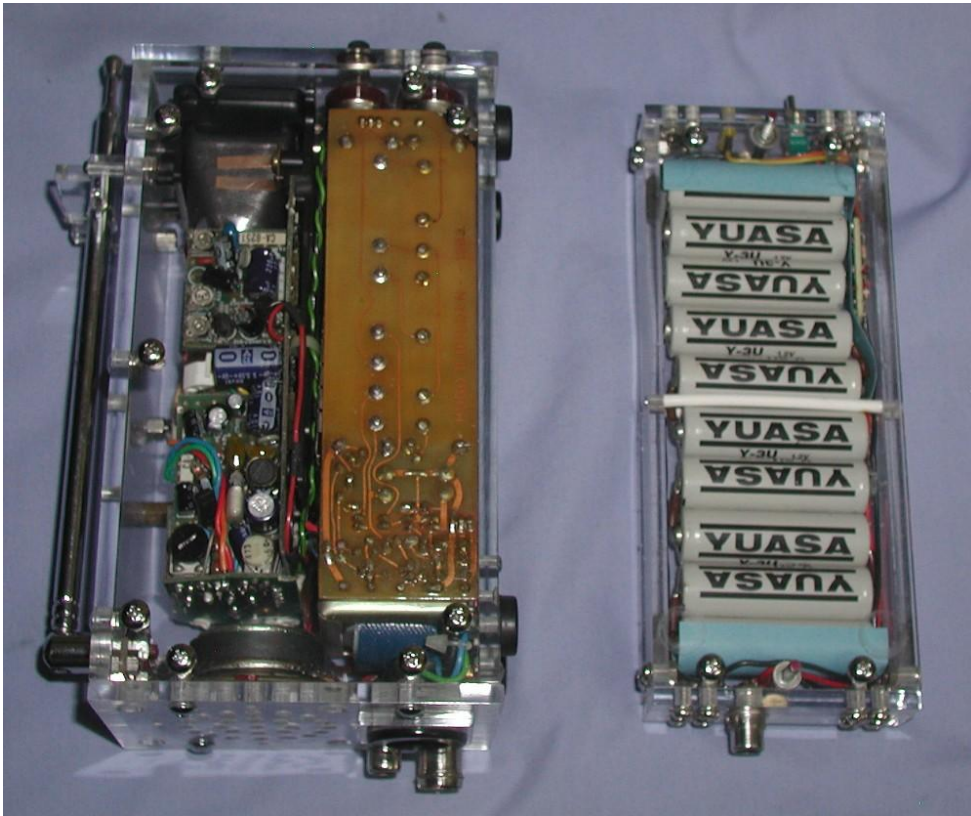


The set is 3.5 inches high x 2.5 inches wide x 6.5 inches long. The battery pack that screws to its base adds another 1.5 inches height including the rubber feet.

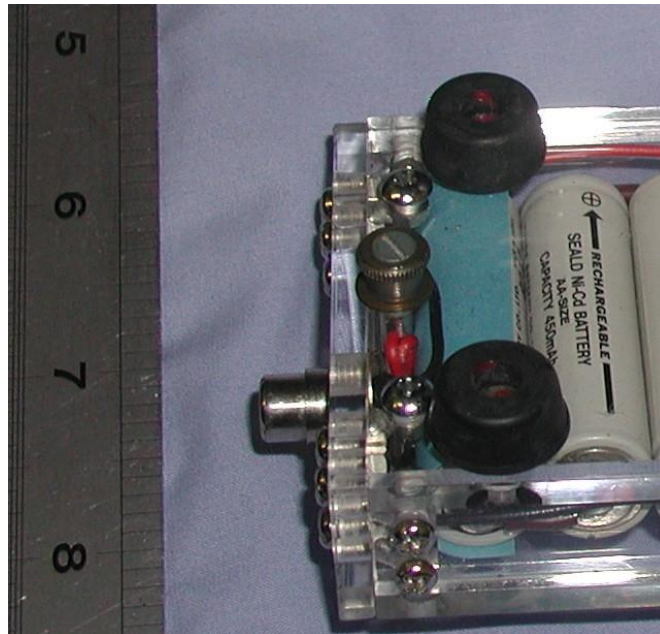
The photos below show the rest:







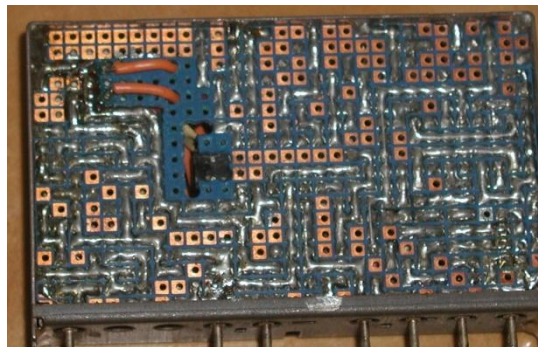
The above photo shows the battery pack unscrewed. The set itself is stand alone 230V mains powered, or battery and when the battery pack is attached, it trickle charges it. The battery screws were made from some old 1920 style knurled nuts from a valve socket:



The photo below shows how the IF circuits and audio amplifier were constructed. The power supply is on the home made PCB, which I was sensible enough to name & date it at the time.

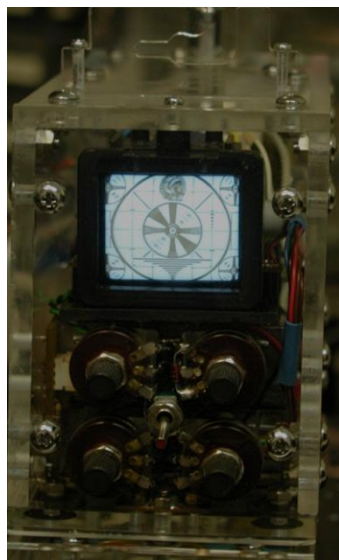
The video band pass response is created by the 38.9 MHz surface acoustic wave filter that has a two transistor preamp in front of it to overcome the insertion loss. As can be seen it was built on spot board. The unit below was my first attempt the second was neater with less wire links, which is the one I put in the set.

The housing is a hollowed out Philips VHF tuner unit. As can be seen from the photos this sits next to a Philips VHF tuner unit on the custom PCB I designed.



The unit above, in conjunction with the Philips VHF tuner provides a standard video output signal for the “monitor” and the audio to drive the speaker.

As noted from the photos the “video monitor” part is provided by an ex video camera viewfinder unit. Part of its high voltage supply was borrowed to provide the tuning voltage for the Philips VHF tuner unit. The Zener stabilization diode for that can be seen on the tuning potentiometer’s connections, upper right of the 4 controls, via the clear front panel.



The acrylic panels for the case were hand sawn and smoothed on a flat surface with progressively finer grades of paper. Then with a cloth stretched on the surface and soaked in polishing compound the edges were polished by pushing the panels along this surface.

To hold it all together I simply soldered 3mm nuts at right angles. After experimenting though I found it was better to use pure Tin as the nut joints were stronger.

The acrylic clip for the whip antenna took a while to hand craft and polish.

The CRT is nearly 1.5 inches diagonal or about 35mm. A fellow I was working with at the time said that the TV reminded him of the transparent computer, or artificial intelligence unit, O.R.A.C on the TV series Blake's 7. So I decided to call it Orac.

This was the last home constructed project that I built for some years, because the following year I had changed to medicine.

Oddly this little TV might have played a small hand in that. When I went to the Medical School for the interview with the Dean, he asked me what my interests were, so I pulled the set out of my bag, switched it on and handed it to him. No troubles receiving the local VHF TV channels and it produced a good picture and sound. And the Dean smiled as he examined it. Later I got the acceptance letter.
