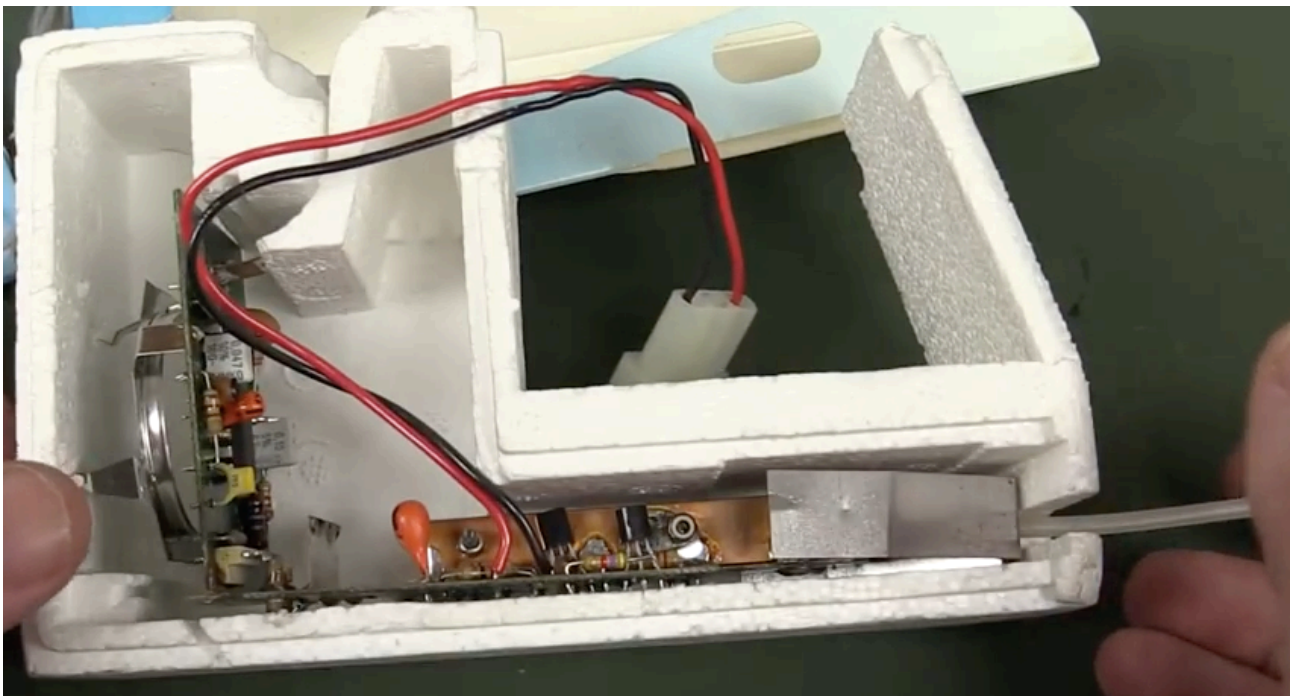
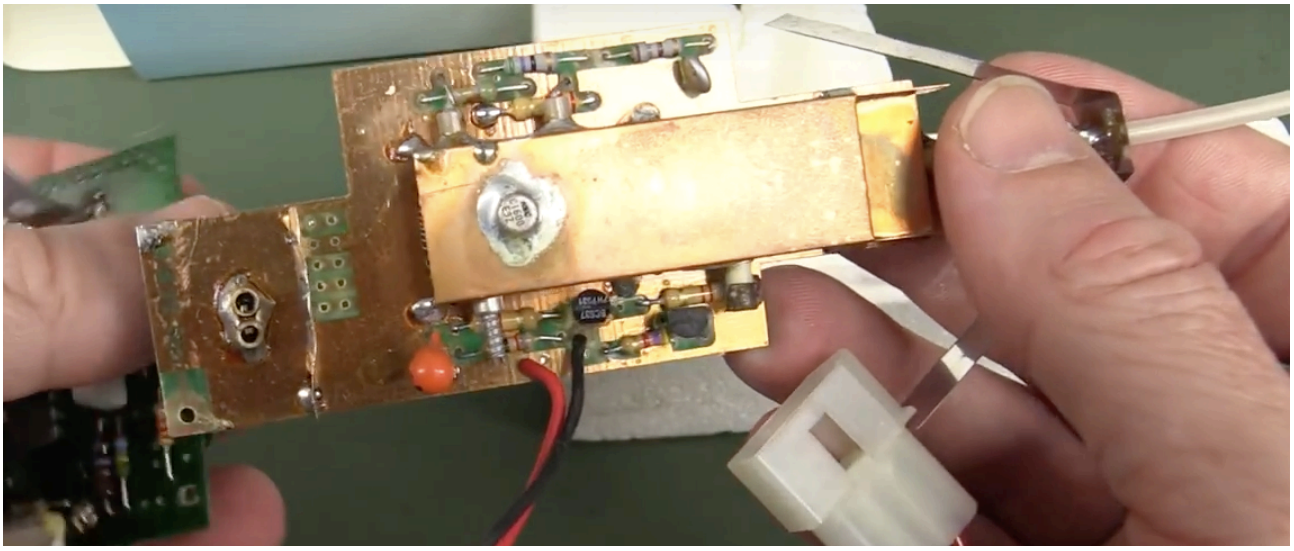
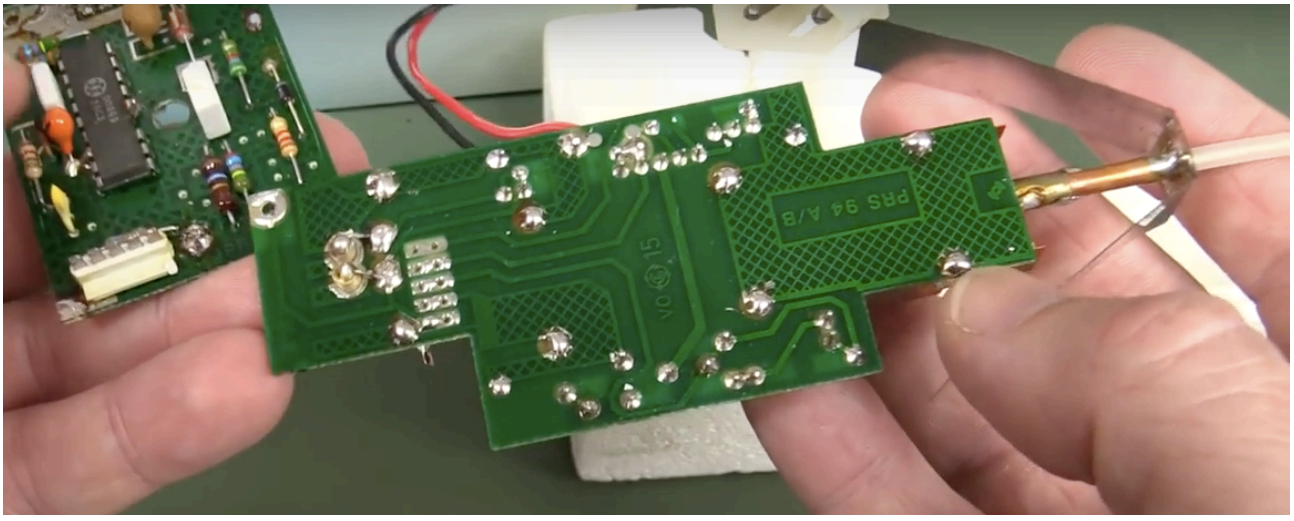
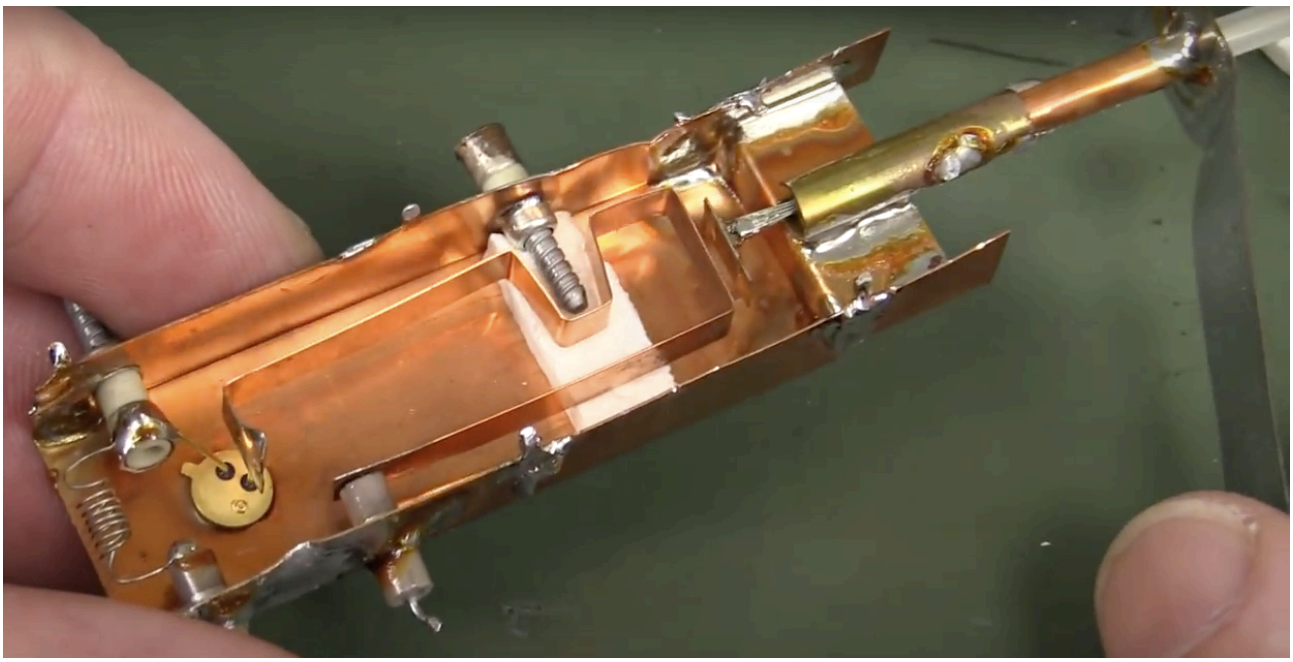





PRS 94 A/B



Commentaires :

The reason for the copper strip-line inductor in the radio-sonde is to achieve high Q in the LC circuit. It would be for frequency stability as it is just an LC oscillator without a crystal to keep the transmit frequency stable.
I remember I came across a similar unit in the 80ies and they used clever techniques to send the temperature, humidity and the pressure using purely analogue modulation schemes.
I think they used the the transmit frequency to communicate the temperature. In that case maybe the temperature-contraction of the copper strip-line as it got colder would be enough to change the frequency (colder = higher freq.)

This is a power oscillator and the freq will vary due to the ambient teperature, thus a temp sensor and by measuring the receiver carrier freq you can get the temp info. Also an oscillator only circuit reduces the complexity and makes the supply current to rf power conversion a lot more efficient as back then UHF generation was not trival and the battery needs to be small and lightweight. Also this circuit nees to work down to -100C!

That copper RF stripline section is a very high-Q tuned folded resonant cavity. You can see the RF transistor coupling at one end of it, the tuning cap to case ground (tiny capacitances are required to tune it) and the end-plate capacitance to feed the antenna. Purpose is to match the output impedances as well as provide sharp filtering (which becomes quite a problem at the frequencies involved if you want high unloaded Q factors)
Unlike cellphones and other mass-produced equipment the radiosonde will require a frequency not covered by off-the-shelf filters and being single-use cost is also a factor.
Resonant cavity filters are also used for sharp filtering at transmission sites to prevent interference by co-located antennae and transceiver systems that would otherwise need to geographically well spaced to prevent desentitization of receivers being operated at the same time as transmitters. They can be set to reject or accept particular frequencies and are often applied in banks to obtain sufficient filtering. Their high-Q factor means losses are minimised and selectivity is maximised.