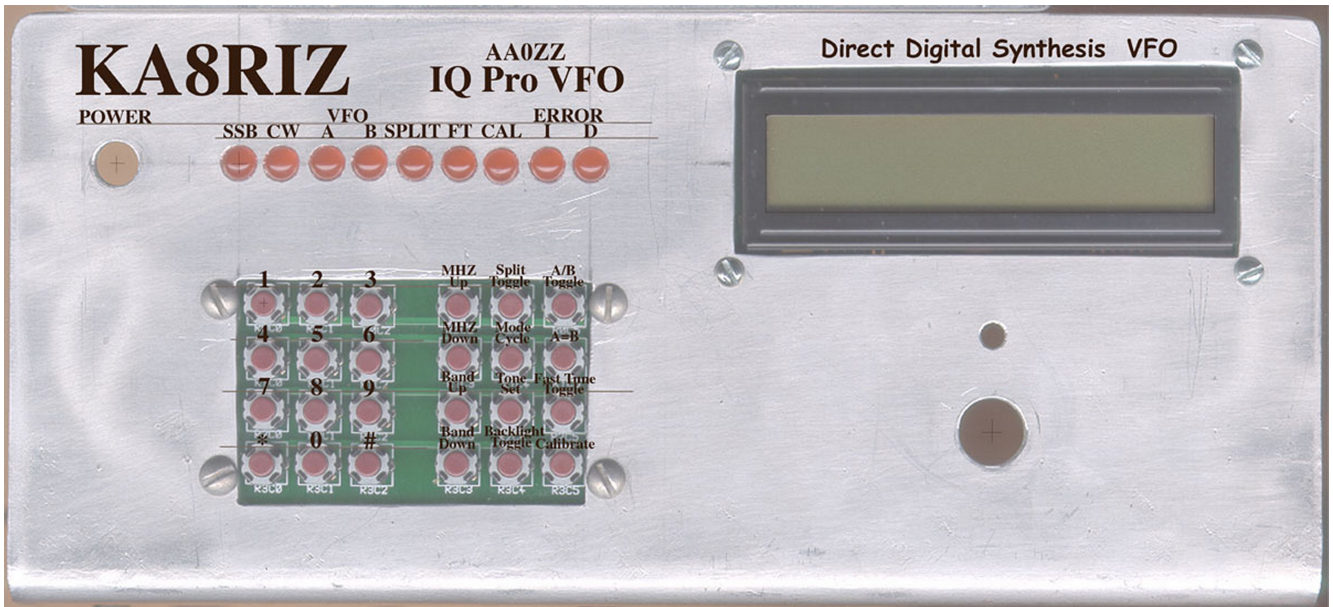
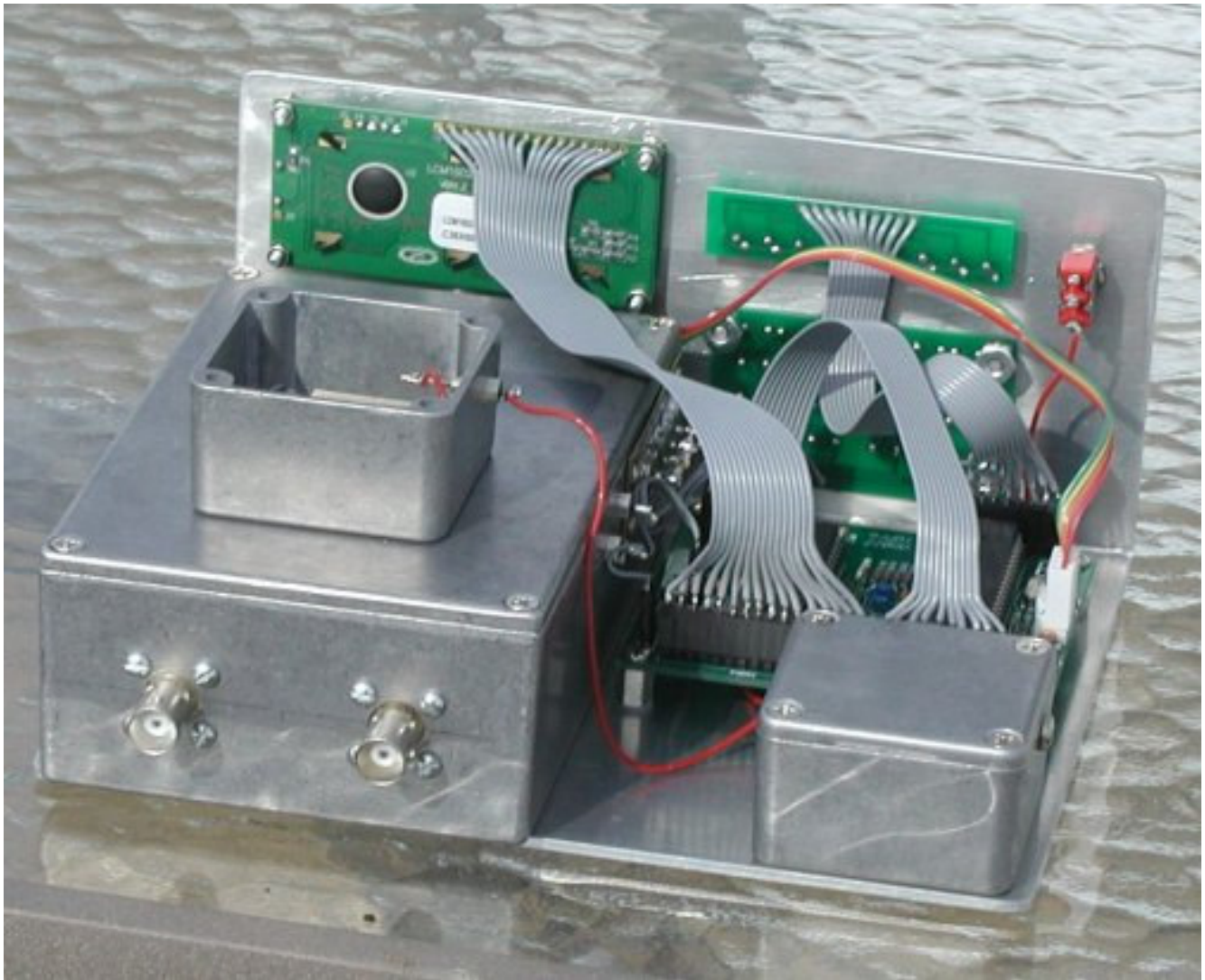
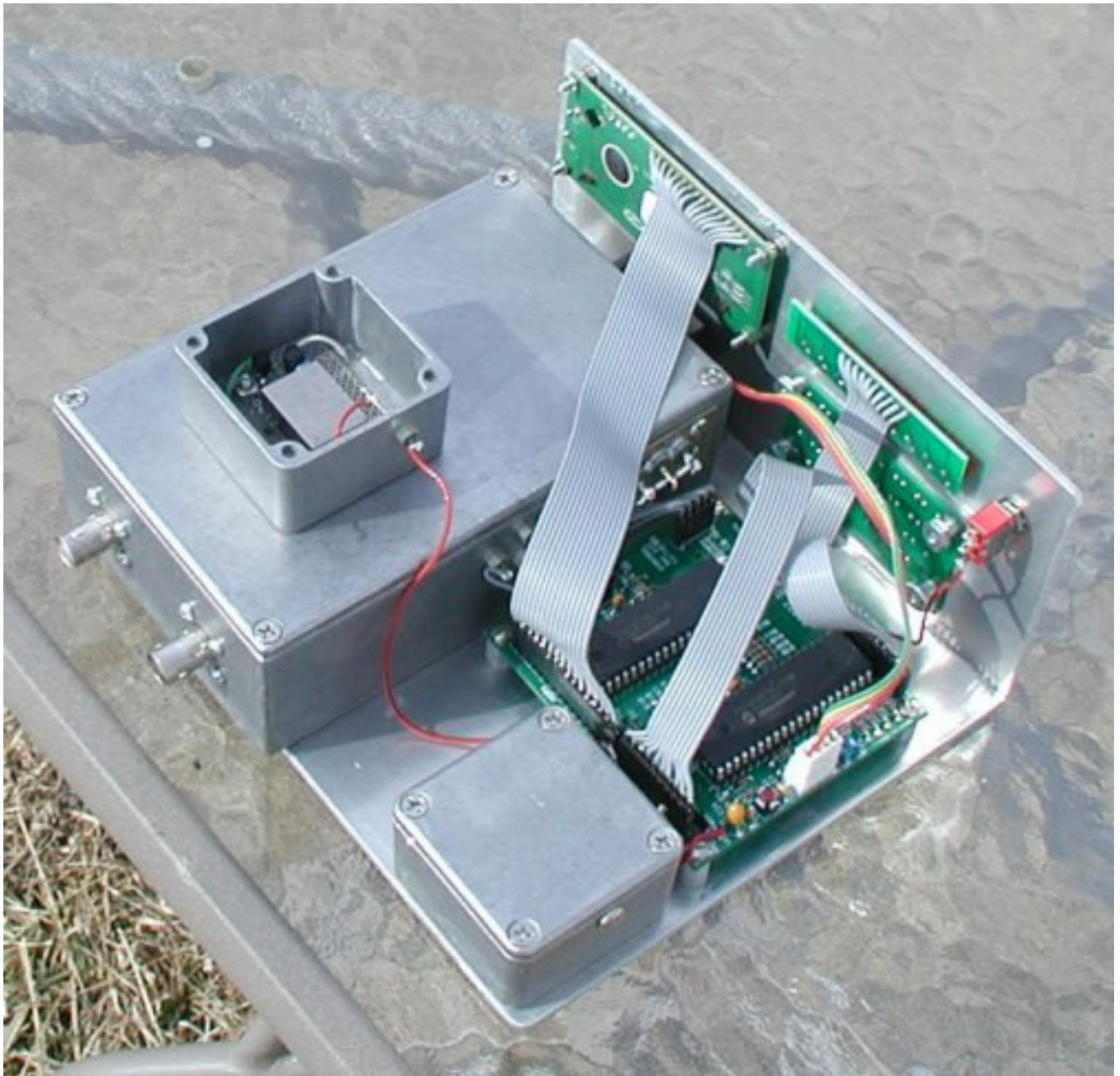


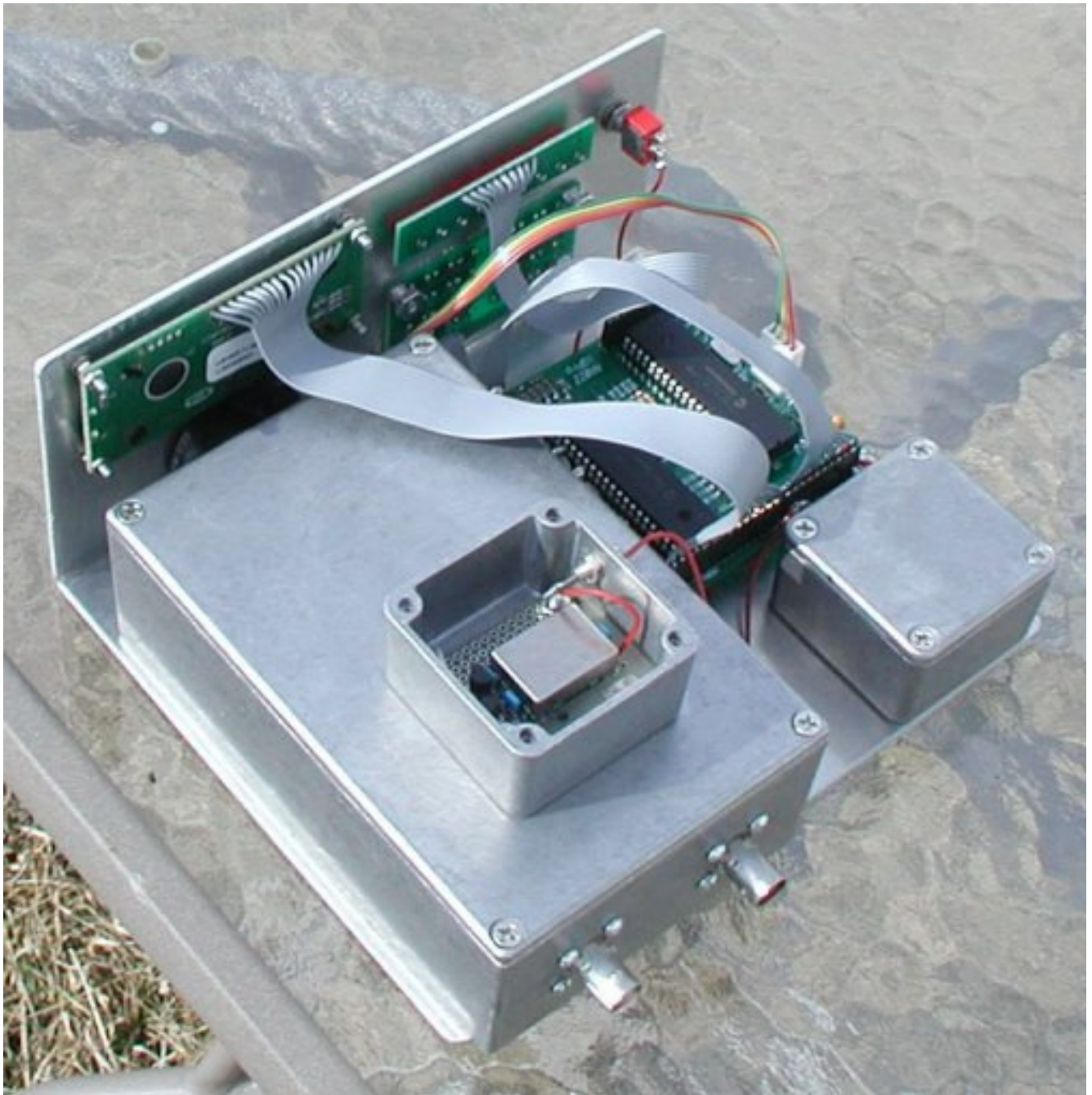
Steve Geary, KA8RIZ

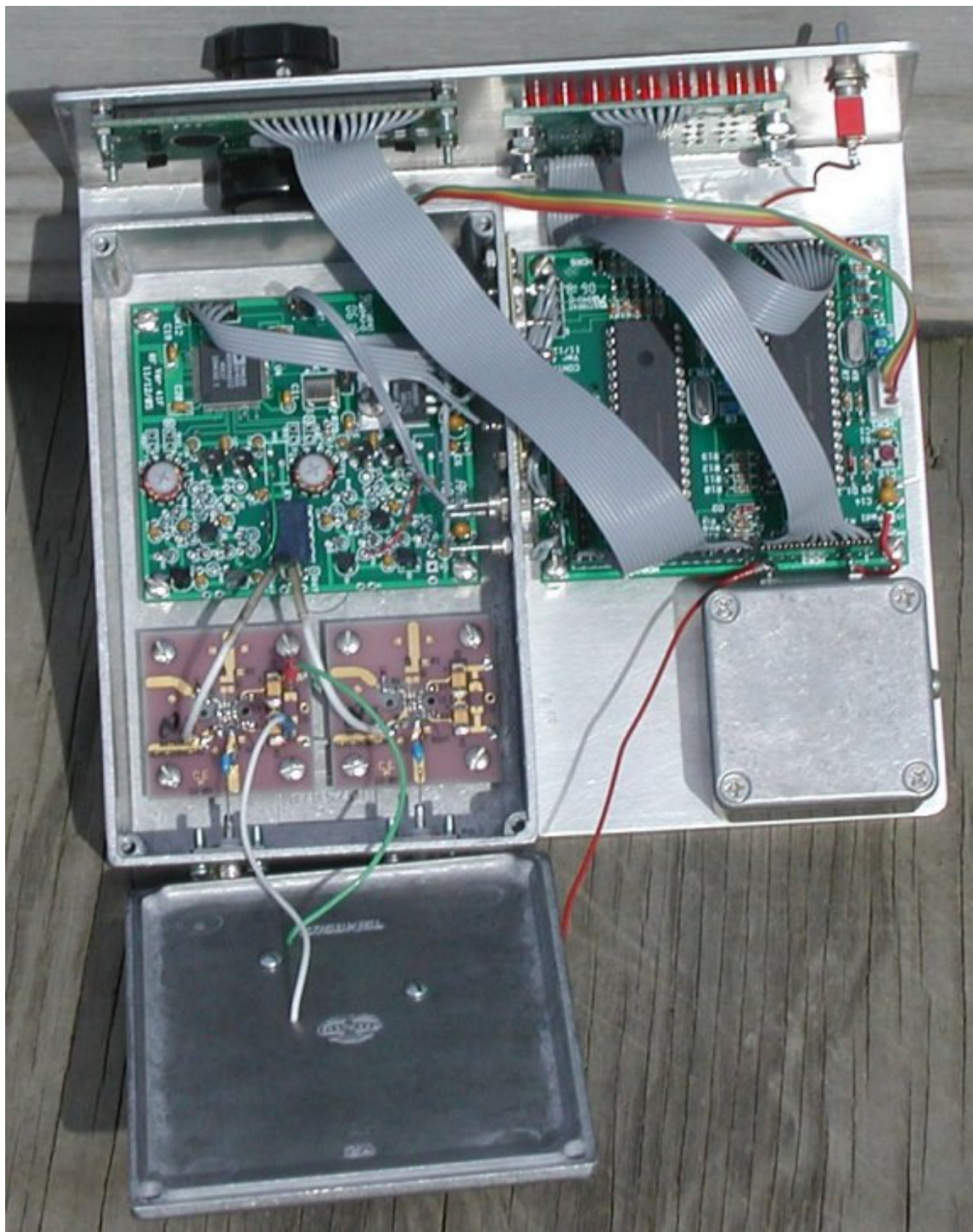
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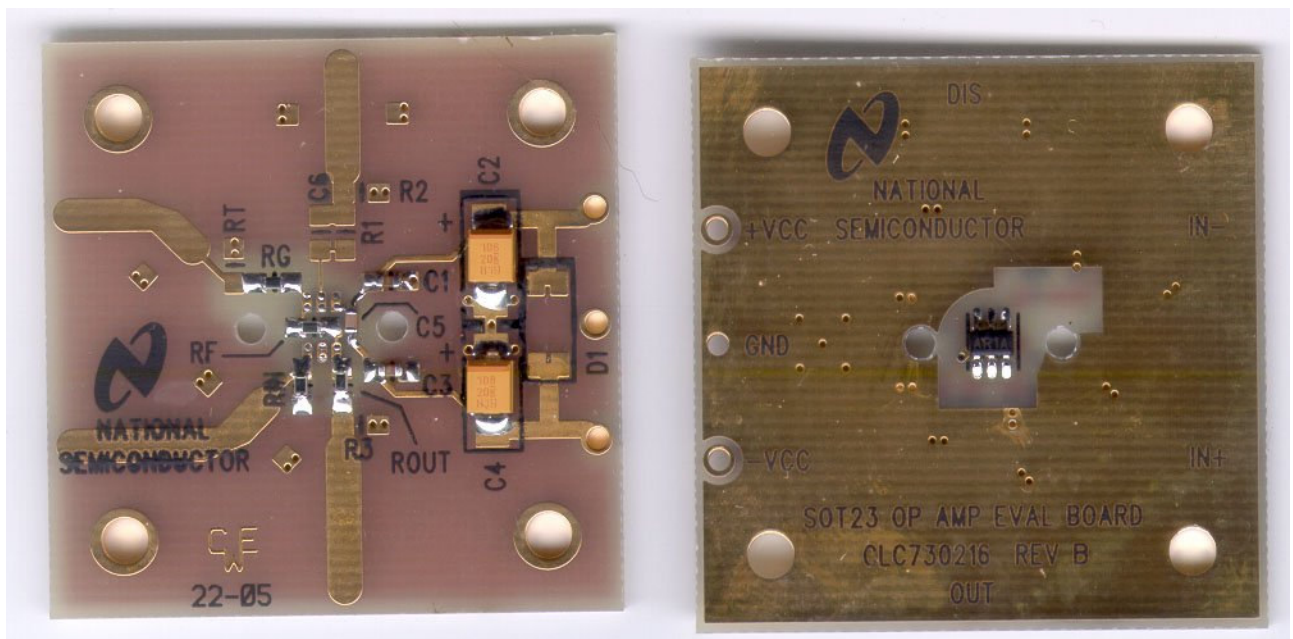
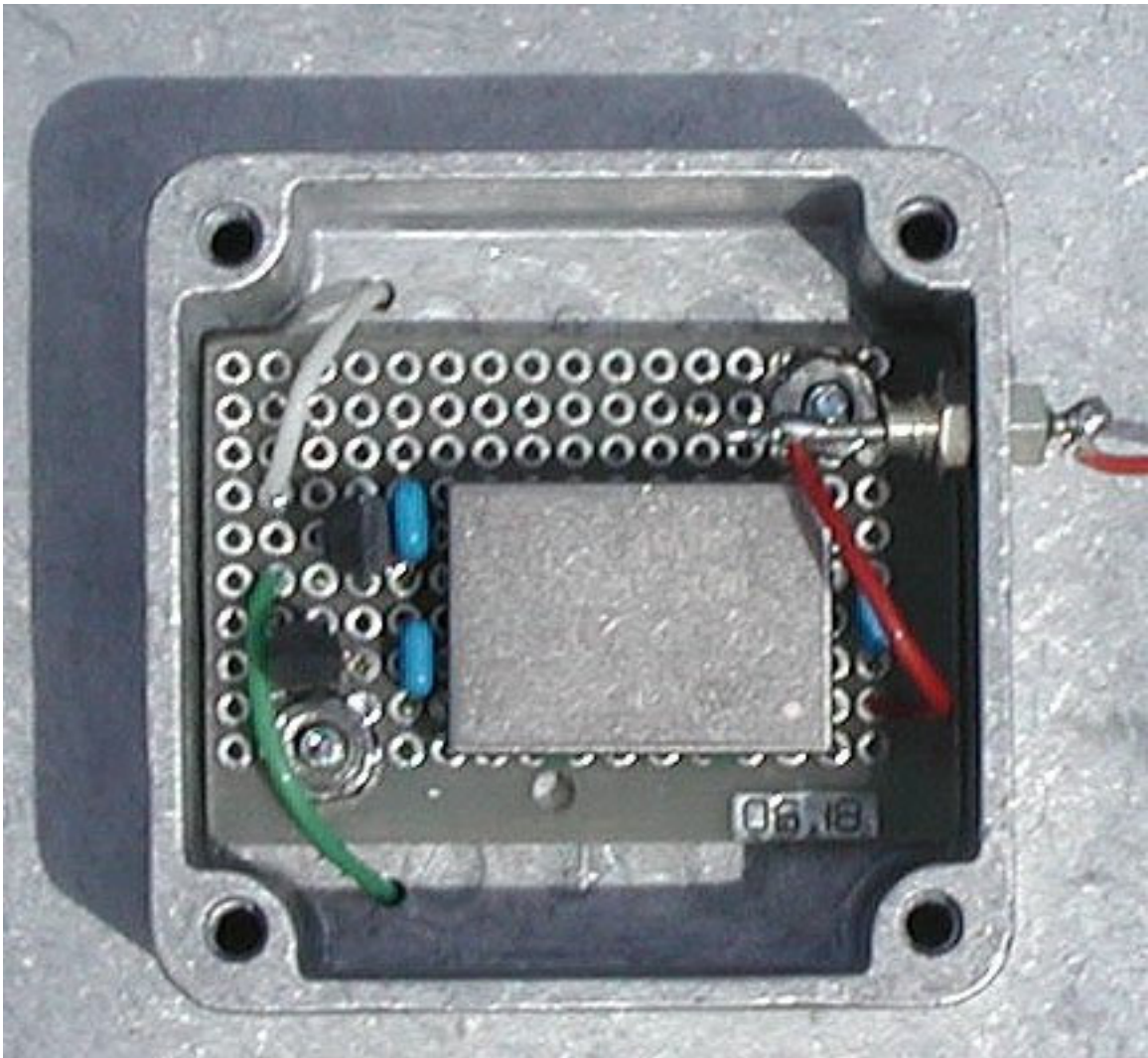


















Notice the off-board amplifiers using National Semiconductor Evaluation boards.

One of the biggest challenges in building the IQ-Pro is what to do about an enclosure.

I wanted it to be a stand alone VFO which could be used for any project that I would be working on. Currently, that would be a MicroR2 and MicroT2 SSB receiver and transmitter, Though I plan to build an R2Pro with the T2 instead and use the MicroR2 as a separate receiver.

In thinking things over, the inspiration for the enclosure I made was from a small late 1940's FM tuner made by Howard - to use a box of wood with a Lucite front panel. First off, I would need to build the VFO onto an aluminum chassis which is an "L" shaped piece I found in the scrap pile at work.



This is the Howard FM tuner that inspired my case design.

I decided to use a Hammond enclosure to house the DDS board along with the two National Semiconductor LMH6703 op-amp evaluation boards. After populating the DDS board with the discrete amplifiers, I read the article by Gary Johnson, WB9JPS found here: <http://home.comcast.net/~aa0zz-2/IQPro/WB9JPS-PhaseNoiseMeasurement-Rev1-8-5-06.pdf>

I chose to take Gary's advice and used the LMH6703 op-amps instead. These amplifiers require a + and - 6 volt supply. I wanted to power the VFO from one 12 volt supply, so I used a TDK DC-DC converter (CC3-1212DF-E -- Digikey part 445-2472-ND). They don't make a +/- 6 volt supply or even a +/- 5 volt either, so I chose the +/- 12 volt version and regulated the outputs to +/- 6 volts with an LM78M06 and an LM79M06 regulator.

I decided to enclose both the TDK supply and the 5 volt regulator that came with the kit in Hammond enclosures just to be on the safe side in case one or the other might generate interference and pass the supply lines through feedthru capacitors.

The cabinet is made from Poplar wood found at Lowe's with a Red Mahogany stain and finished with Orange Shellac. Shellac is wonderful to work with as it dries quickly, is very forgiving and can be re-flowed and/or thinned with Denatured alcohol. All the hardware is brass.

The front panel is Lucite with a piece of card stock behind. The labels were printed on the card with my computer and ink-jet printer.

To get the holes in the panel exact, I took advantage of a friend's mill with a DRO. (Digital ReadOut)

I also replaced the original button switches with the Panasonic part # EVQ-11L09K (Digi-Key part #

P8081SCT-ND) switches as they have a longer shank to stick through the panel.

The VFO works wonderfully and has given me very stable signal source for my projects!

I would like to thank Craig, Gary and Bill at Kanga US for the fun project!



Here I am at the controls of my IQPro.



This is a picture of my shack.

73

-Steve Geary KA8RIZ

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<http://www.bright.net/~geary>