

Preparing the R72 for DRM reception

I will describe here the (simple) steps needed to be able to receive DRM (Digital Radio Mondiale) with the fantastic Icom IC-R72... but first let me state it very clearly: **do it at your own risk**. I will accept **no liability** for any damage you will do to your radio, to yourself or to this sector of the Universe by following the procedure outlined in this document.

The basic idea is to extract the IF signal (at **9.0106 MHz**) in a non-invasive way, and to carry it to a down-converter that will convert it to 12 kHz; then it will enter the PC Sound Card, and a piece of software like DREAM will do the magic and convert the digital signal into clean, crisp audible signal.

You will have to remove both top and bottom covers of the radio; you will have also to remove the top board (Regulator Unit), to reach the PLL unit. Follow the instructions at page 24 of the user's manual (section: Disassembly).

My R72 does not have the optional CW-Narrow filter installed. This is indeed very convenient, since I can extract the signal from there. All you need is a short piece of coaxial cable (RG174 is perfect to this purpose), terminated with short, rigid conductors (see **Figure 1**) that can be used like pins, to be inserted into the empty filter slot (See **Figure 2**). This way you don't need to solder anything on the circuit board of the radio, and the cable can be instantaneously removed later, should you decide to undo the modification. **Figure 3** shows the cable already inserted (pushed) in the empty filter slot; please note the correct position of the ground and centre conductors.

The cable is then routed to the unused RCA connector located on the back of the radio, and marked as "**48 - spare jack**" (page 6 of the user's manual). Solder the coaxial cable to the jack as shown in **Figure 4**, noting that you have to cut open the thin conductor that shorts the jack. I inserted a small 10nF capacitor in series with the inner conductor of the coaxial cable, to provide DC isolation (decoupling), and protect the radio.

Congratulations... your work in the radio is now finished ! You can close the radio now.

Now, when you select the CW-N position, the IF signal is automatically routed to the back jack connector, and it is available for a downconverter. I decided to keep the downconverter outside the radio, but it can be located internally if you wish so. I purchased mine already assembled from I5XWW, but there are several other

manufactures out there - check ebay too; or you can roll you own. Just be sure that they are set to **work with ICOM radios**, i.e. **they convert 9.0106 MHz to 12 kHz**.

Installing the DREAM software was a breeze, and everything worked fine right away... just remember to check the "Flips Input Spectrum" box in the Evaluation Dialog Box (we are using CW, so the spectrum is reversed). Please note that there will be no audio coming out of the radio's speaker, since the IF signal is diverted out of the radio. Moreover - for the same reason - the AGC is NOT working, so if the radio signal is very strong, you will have to use the manual attenuators/preamp.

Contact me if you want to exchange ideas at: iz2eas@arrl.net

Enjoy your R72 !

73,

Michele

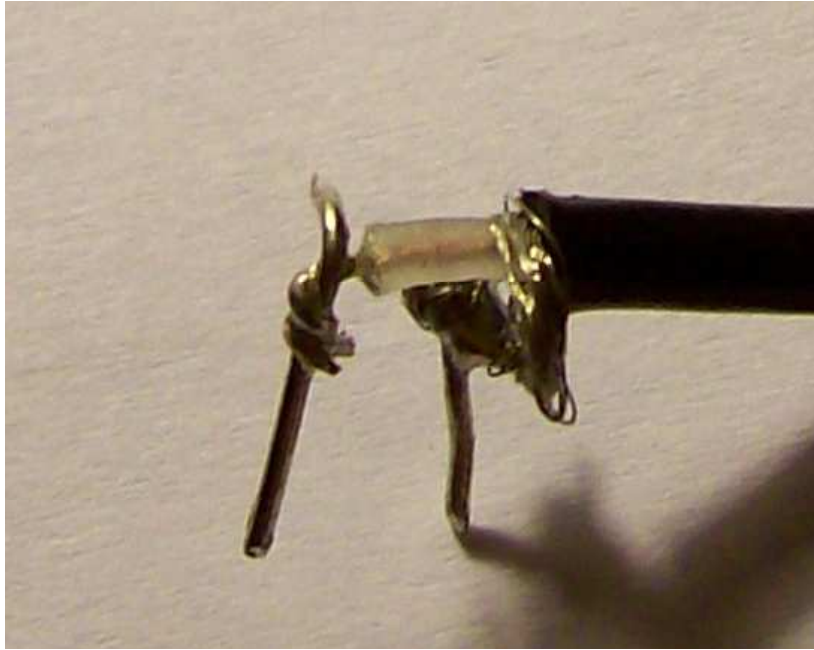


Figure 1: RG174 coaxial cable is terminated with rigid, short conductors

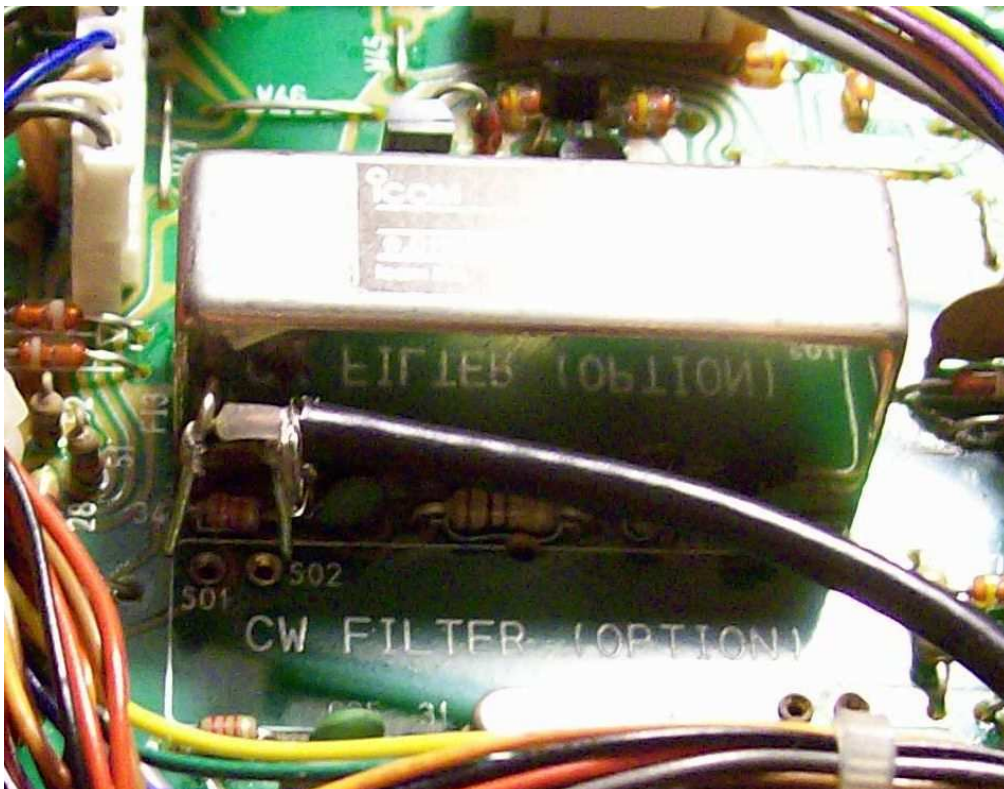


Figure 2: pins are ready to be inserted in the slot.



Figure 3: pins are inserted in CW filter slot.

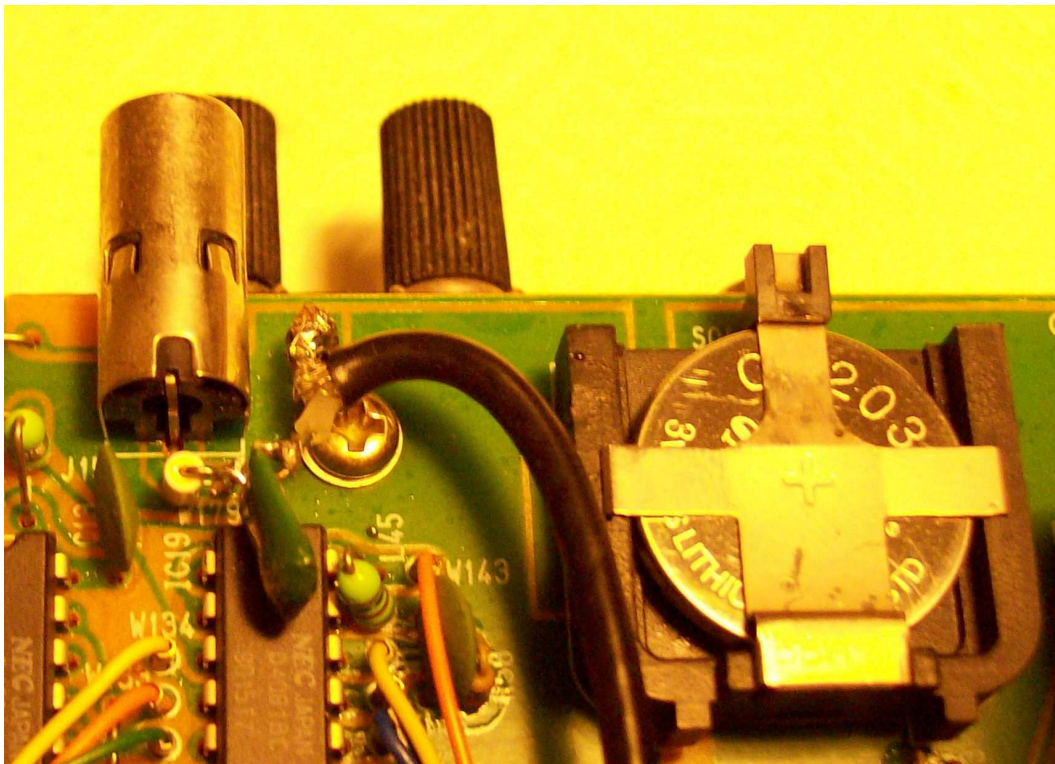


Figure 4: cable is routed to the SPARE JACK, and soldered to it. I inserted a small 10nF condenser in series with the inner conductor, to provide DC isolation.