Restoration of an ICOM IC-201

2m Allmode Transceiver from the "Seventies"

IC-201 after successful restoration

This report describes my experiences with an old IC-201, which I bought via an auction in the web. The seller promised some bugs – and indeed the IC-.201 had not only these promised bugs but many more; so I got more than I had paid for.

In general: When buying an old rig, always expect the worst possible case and be happy if it´s better!

So the biggest bugs where:

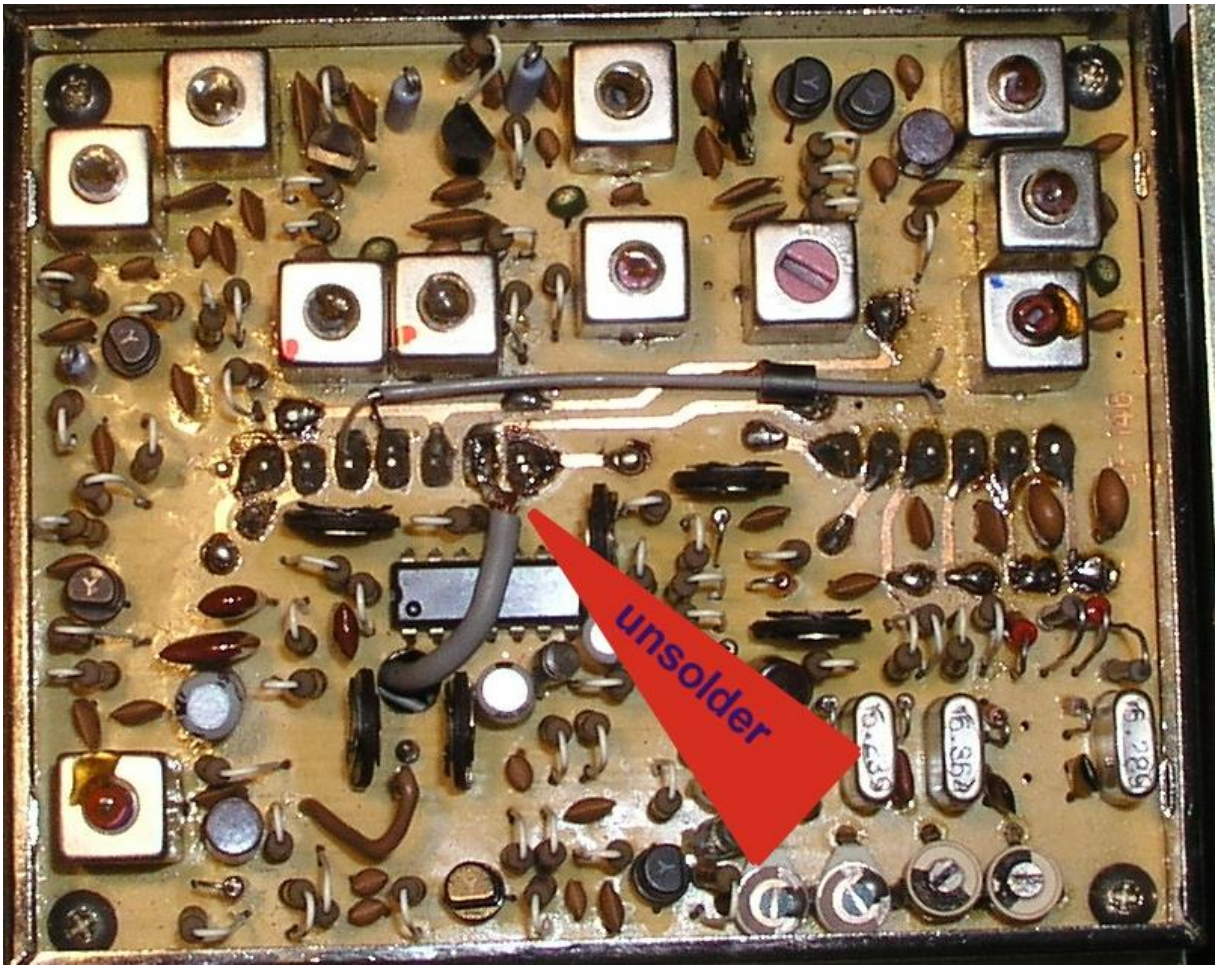
1. Deaf receiver: above 100µV for good reception in all modes
2. Output less than 100mW in all modes
3. No Squelch, no ALC
4. Intermitted operation, crackling and noisy sound

Some hints are available in the net /1/ and one of the most culprits seems to be the so called mainboard. There are many feedthrough pins which have a horrible quality and tend to fail over the years. In general, contacts are the biggest problem in the IC-201.

In this project, I had no faulty elements – only bad contacts!

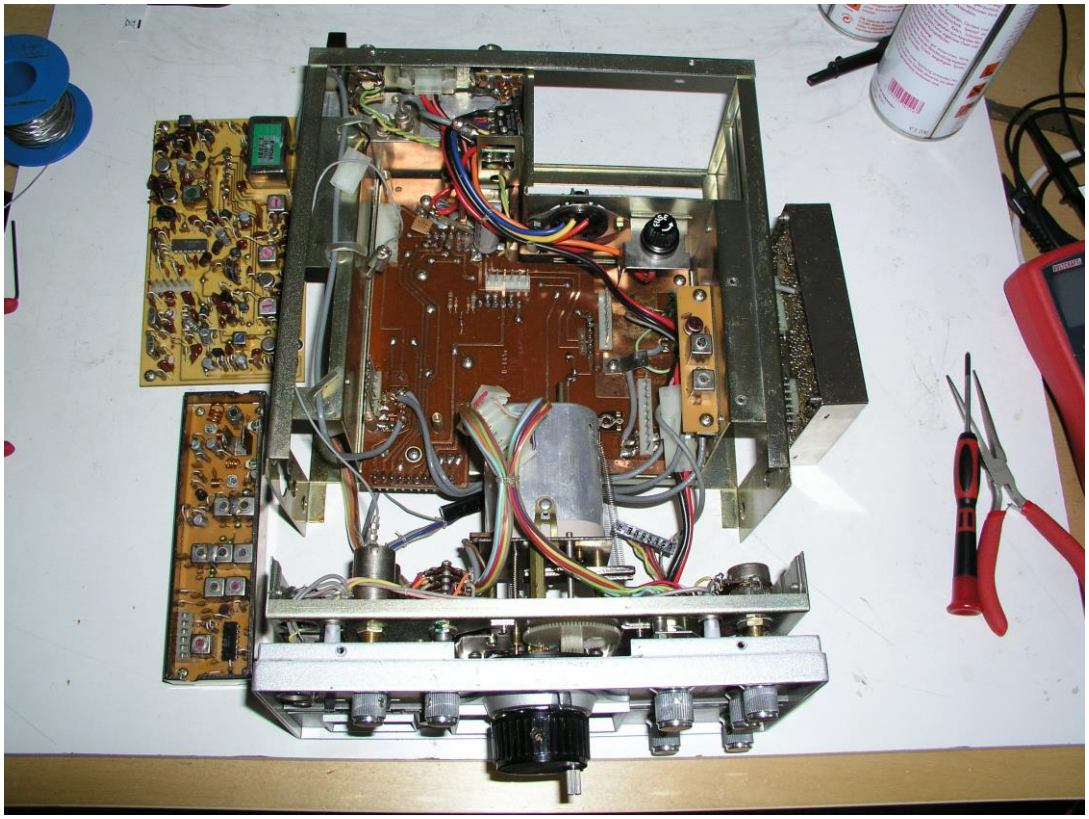
If you have an IC-201 with problems, always do this first step:

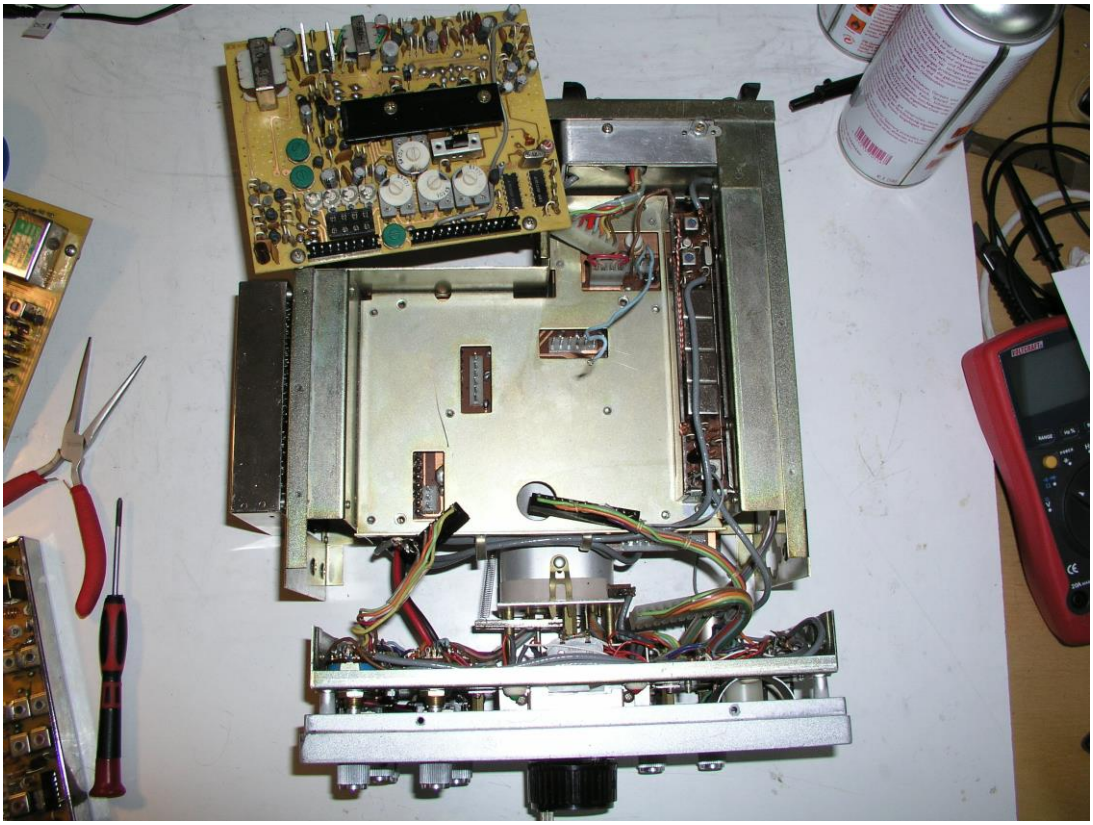
Remove ALL boards and the front panel; you have to unsolder only one coax-connection on the premixer board. All other connections and boards are plugged.



Premixer Board

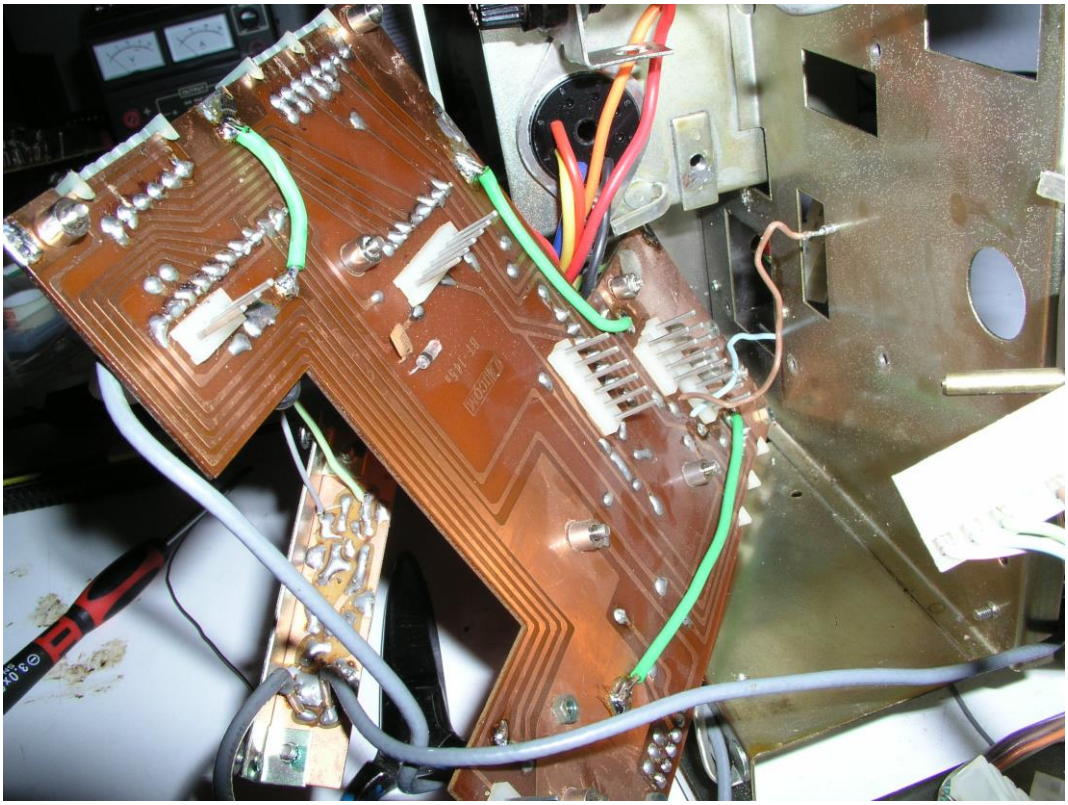
Unsolder coax wire for removal



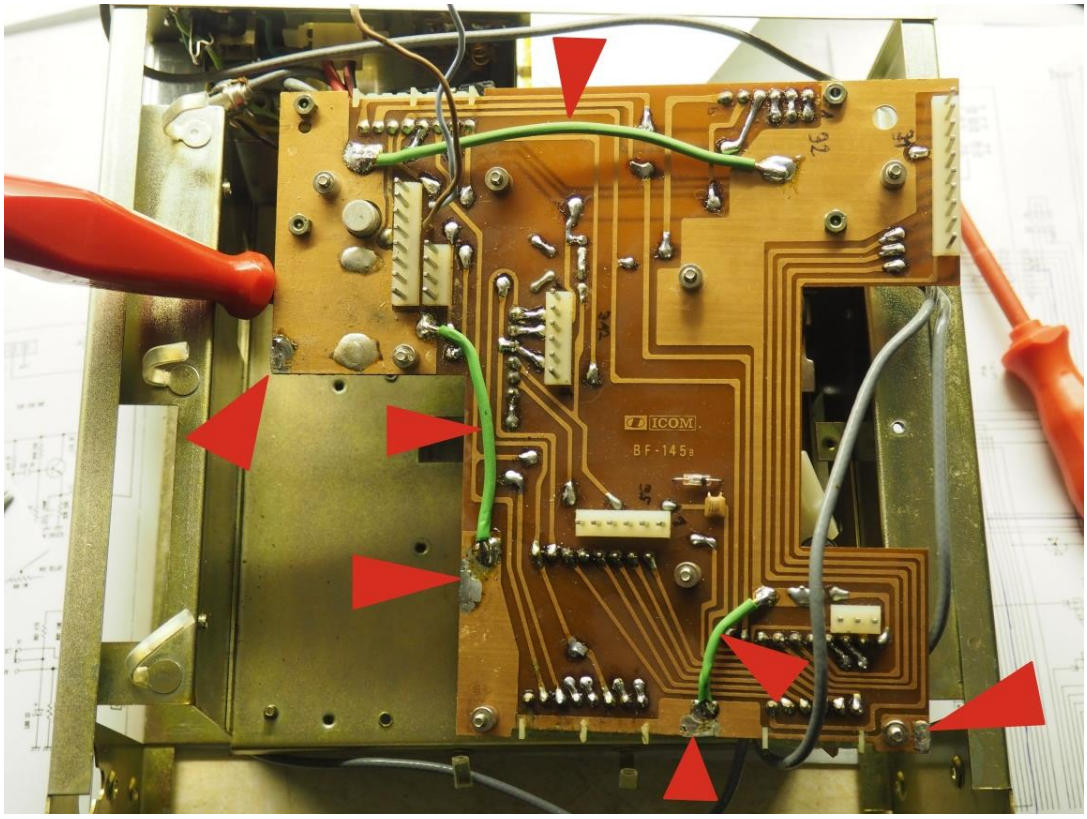


Removed boards

Then you have access to the mainboard on the bottom and can fold it out carefully:



Mainboard folded out



Ground connection improvements

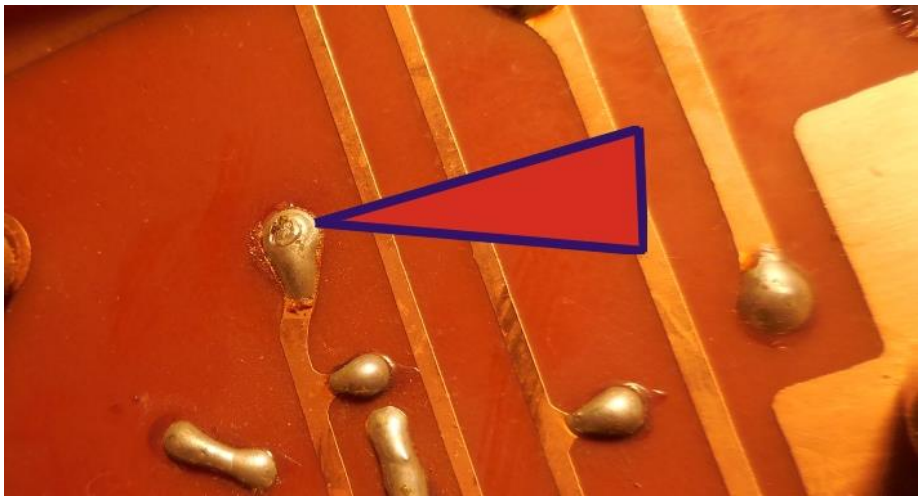
The ground connections between some areas of the mainboard are made via the chassis and screws, which is very bad due to aging and corrosion.

In the second step improve ground connections:

- Solder three ground wires between the areas
- Connect both sides of ground layers with small copper strips
- See above picture with red arrows

Third step: Feedthrough pins:

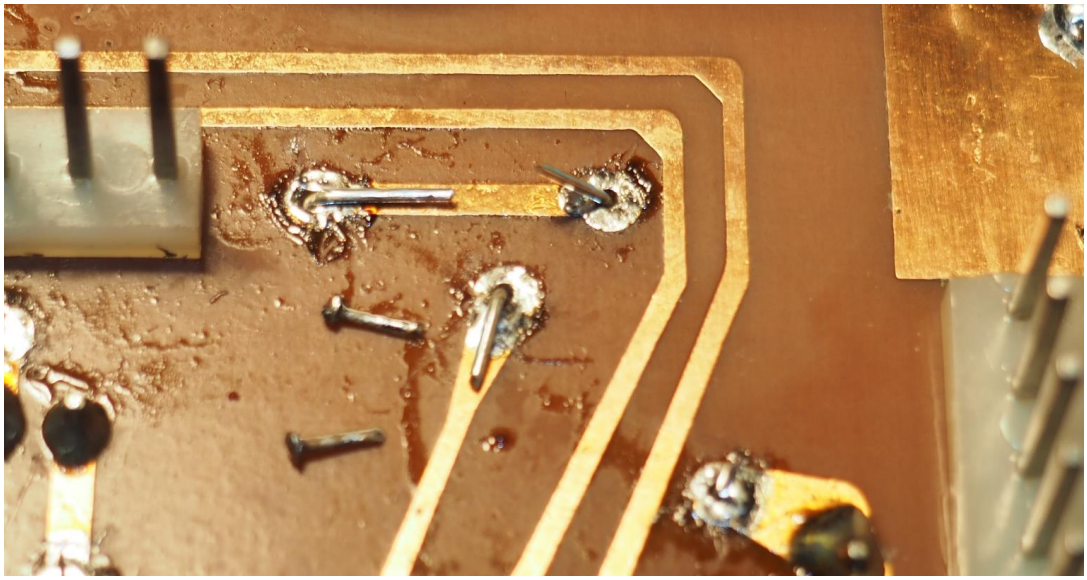
These are the most reasons for problems, because they are very poor!



Example for bad feedthrough pin

They are made with small pins which tend to loose contact over the years.

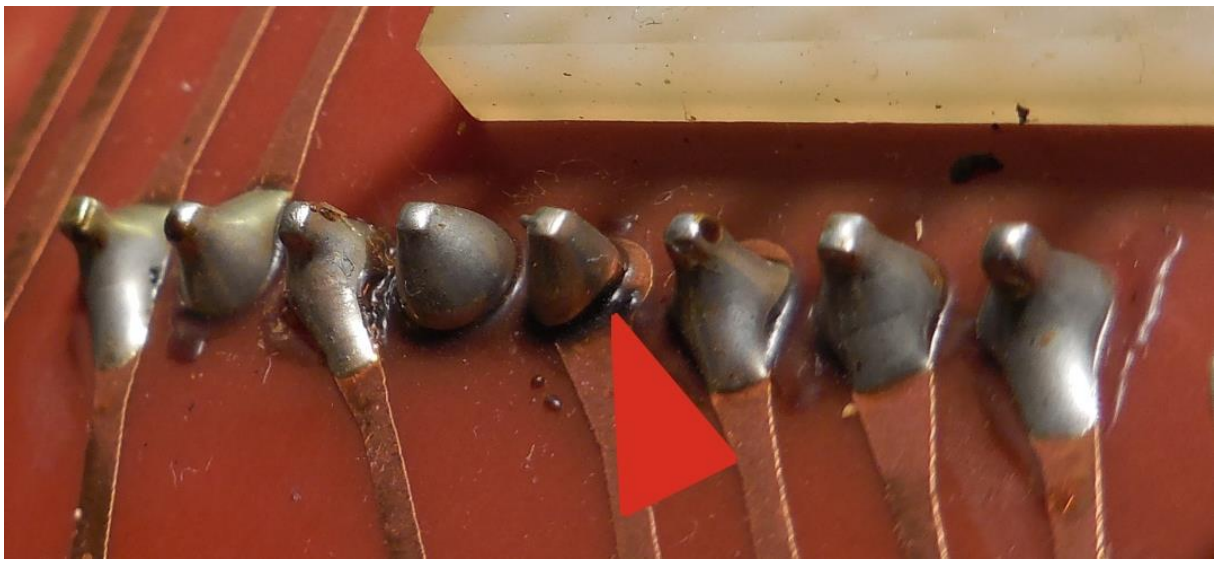
Best is to remove ALL feedthrough pins and replace them by wires:



Some old pins and new wires can be seen in this picture – this work is worth to be done!

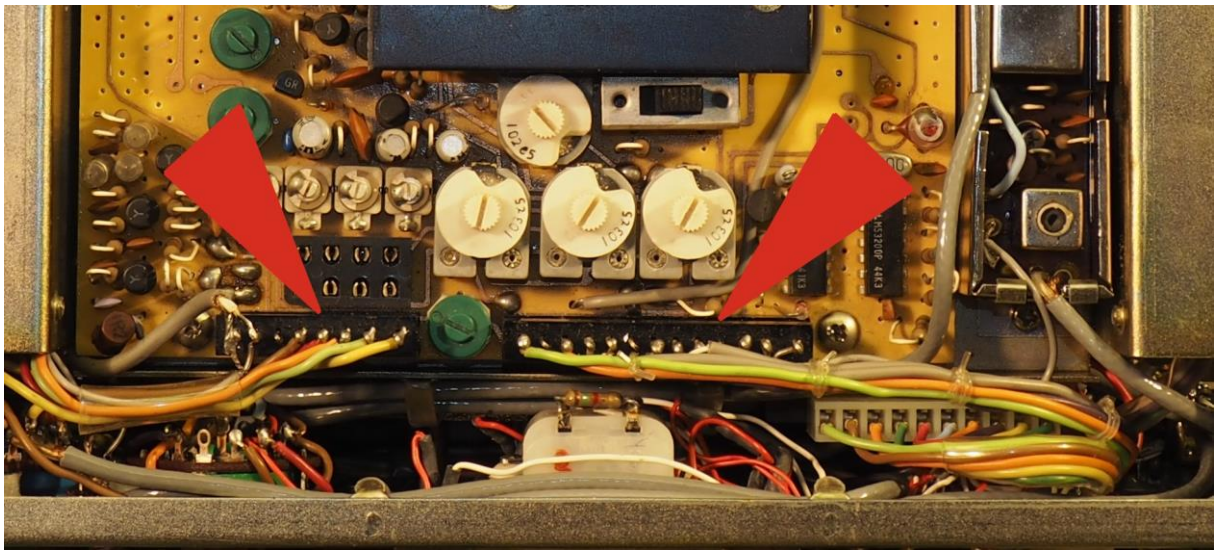
Fourth step: All pinheads

Another culprit are the pinheads on the mainboard and their connections.

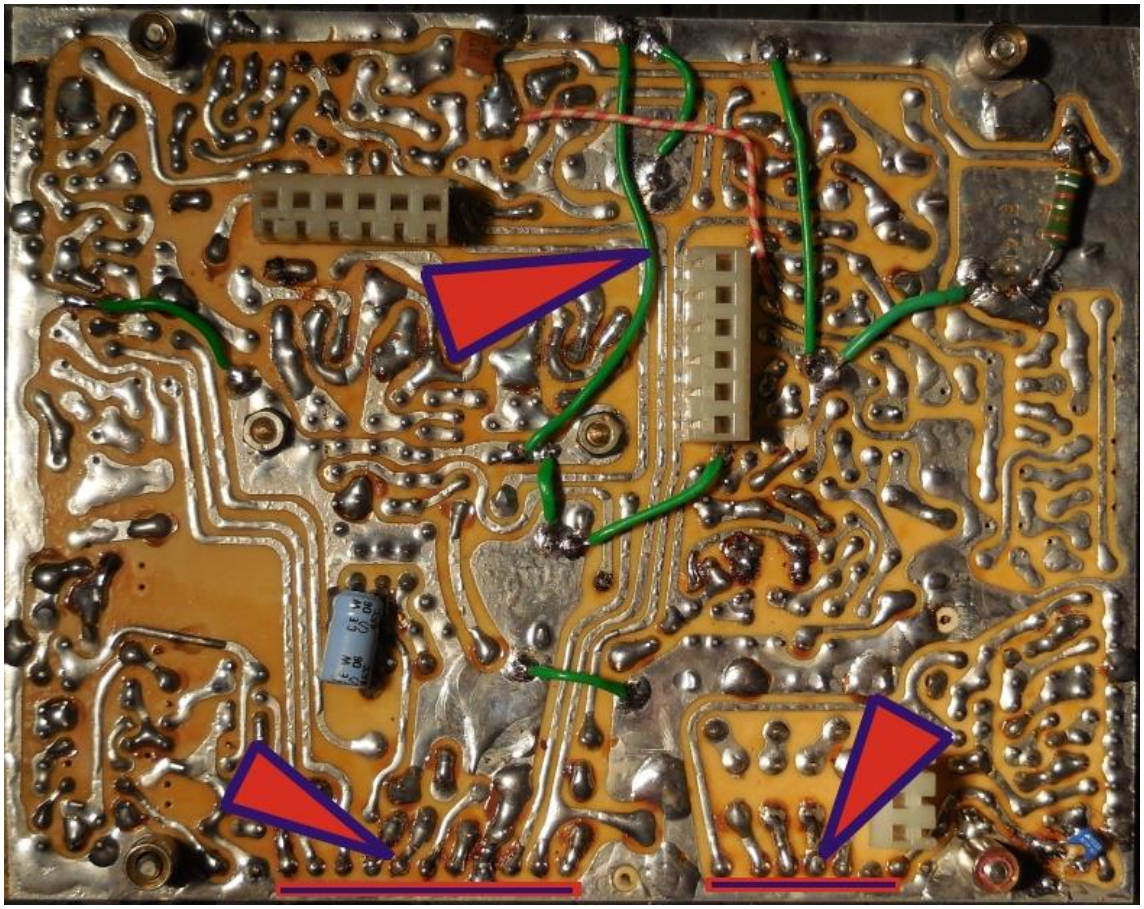


All swimming on solder flux?

The layout of the AF-Board isn´t very good related to ground wires; so additional wires are recommended. The small pinheads need also special attendance.



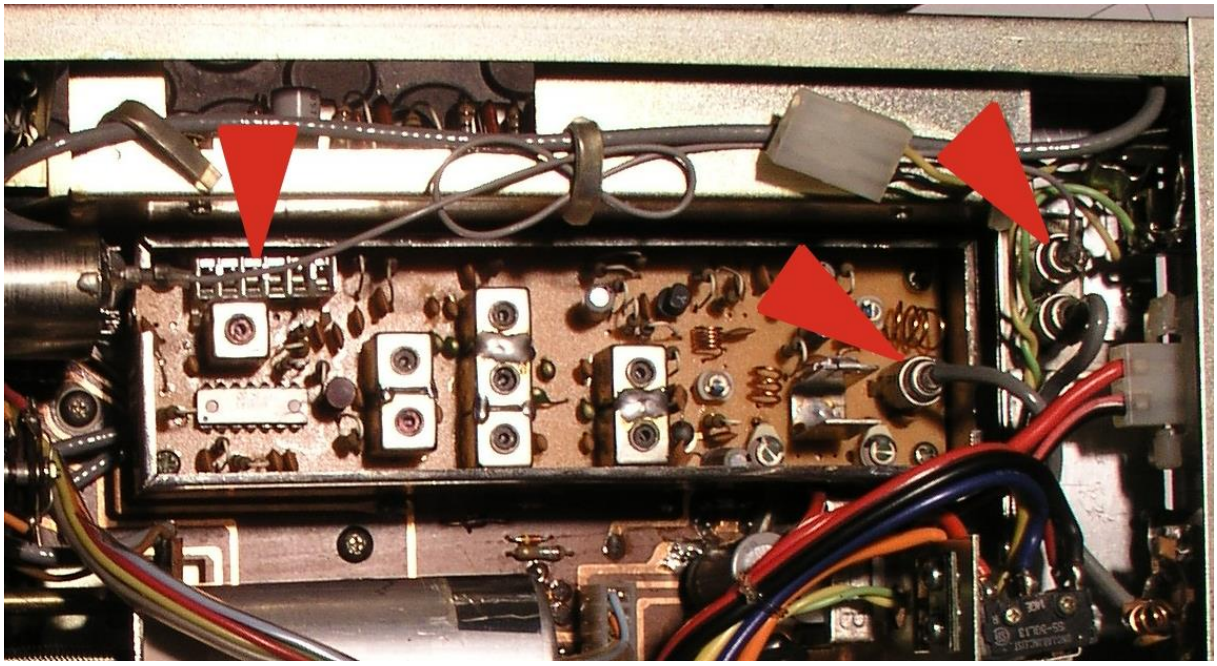
Critical small pinheads on the AF-board



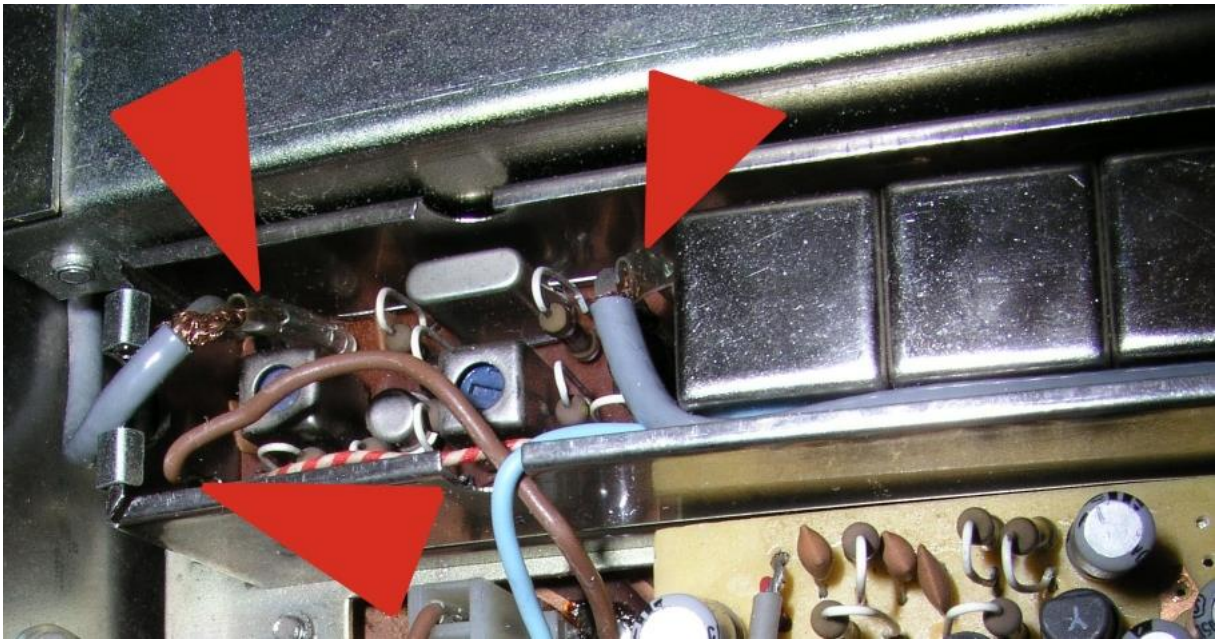
Additional ground wires (green) and resoldered pinheads on the AF-Board

Fifth step: All plugged connections

Boards with plugged connections can easily be removed but over the years they may degrade. Check ALL plugged connections; for coax connectors also check the center conductor! Clean/deoxit them and bend the counter contact back into the right position if necessary.

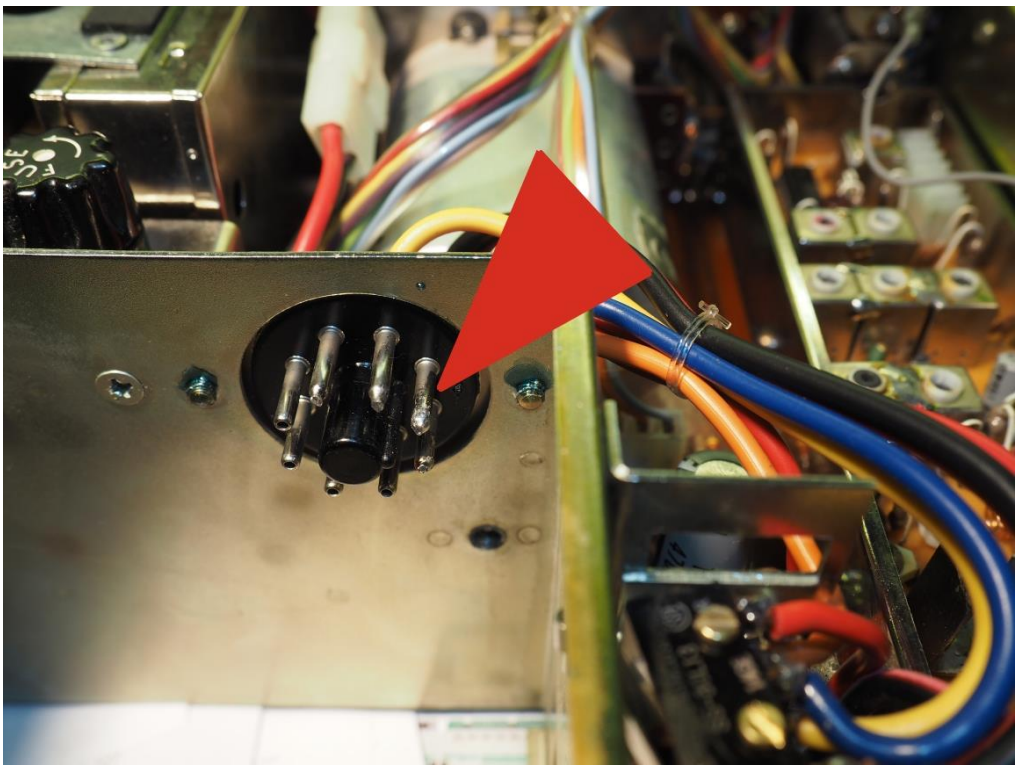


These bad plugged connections on the TX-Mix board caused low output



The deaf receiver was caused by bad coax connectors in the RF-Unit

Finally, the plug of the power supply was bad:



Caused sometimes a total blackout of the transceiver

Sixth step: Replace all bulbs with LEDs

Used white, red and green LEDs with series resistors to replace all bulbs.

Seventh step: READY

After this work was done, the IC-201 worked very fine and a realignment was done; more details on my website /2/

/1/ http://www.pa0ply.nl/icom_ic-201.htm

/2/ http://www.dl7maj.de/ICOM.html

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