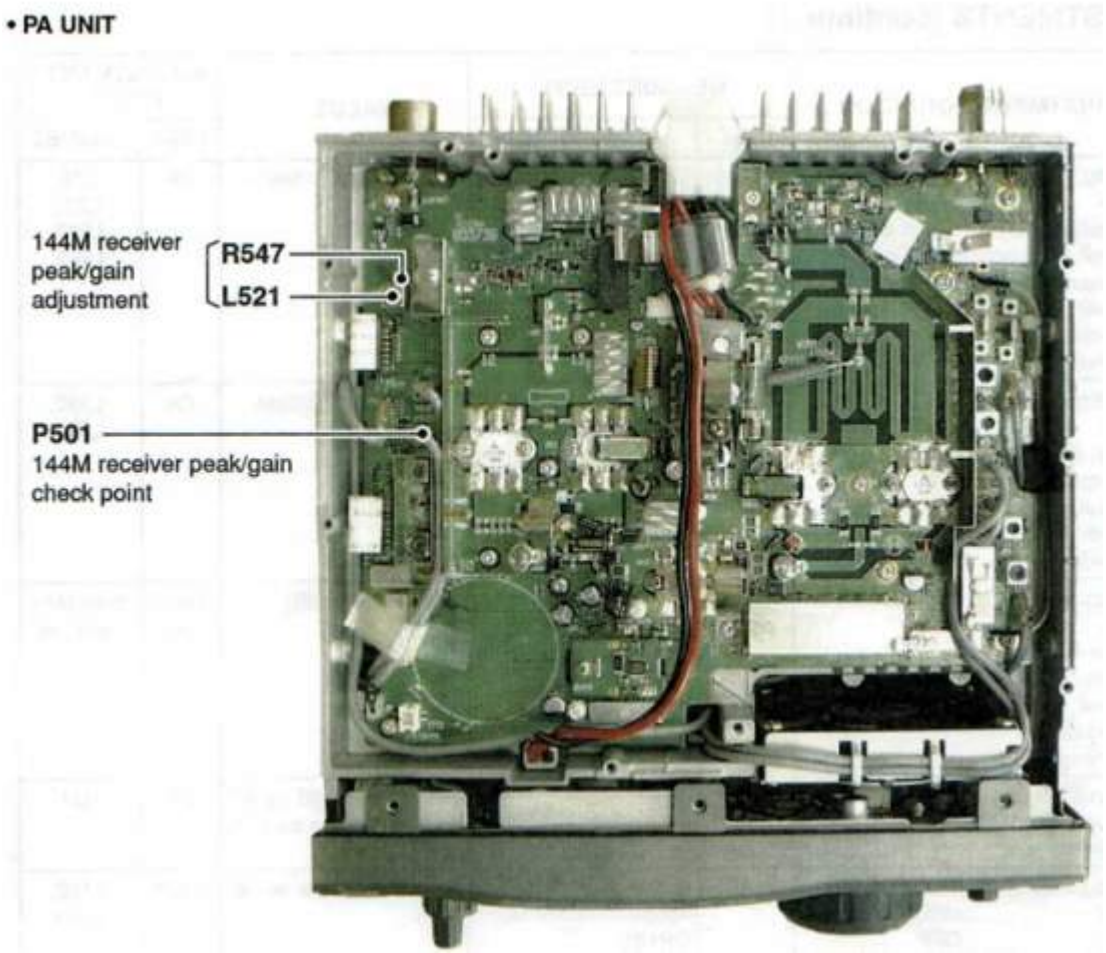
Icom IC-910H (IC 910 H IC910H) Sensitivity

For those of you using this radio on SSB or CW in the weak-signal part of the bands, you probably already noticed that the receiver needs some help. The overall sensitivity is too low, making the need for preamplifiers obvious.

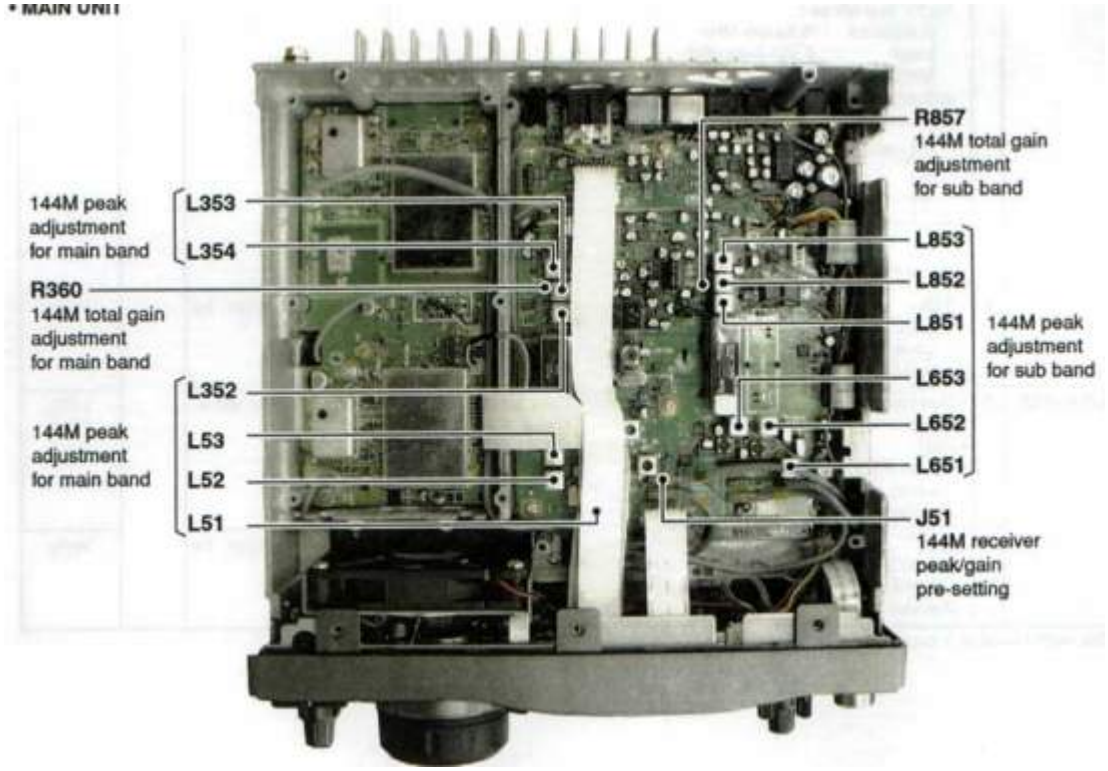
Actually, the radio has enough sensitivity built into it already; there are modern GaAsFETs ahead of the mixers on every band, including 23 CM. The factory alignment of the radio does not exploit it's full capabilities. This is a common phenomenon of almost all multimode VHF/UHF radios, including those made by Kenwood, Yaesu and others. One might think this may be part of the way they market their preamplifiers, but that is only my own speculation.

The adjustments described below will bring the overall sensitivity of the radio up to par, and will eliminate the need for external preamplifiers. An external preamplifier may still help if your feedline is lossy; in this case, you may still benefit from a mast-mounted one. After I made these adjustments, I found that my limitation was external noise and not the sensitivity of the radio. This was even the case on 23cm; in fact, it now hears almost as well as the transverter I usually use on this band, which has an excellent front-end.

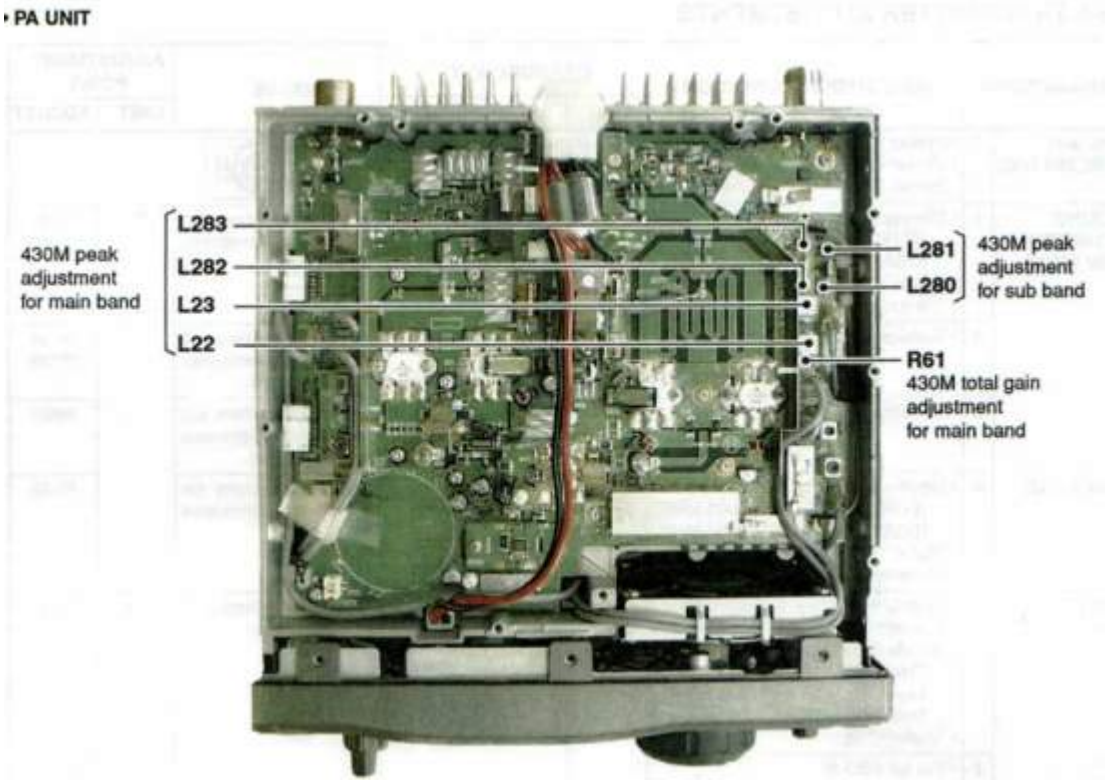
No magic here; all you will be doing is turning up the I.F. gain on each band, which is set lower at the factory. The service manual contains pictures and descriptions of the trimmer resistors to adjust. If you don't want the entire manual, the 4 pictures you need to see are here:



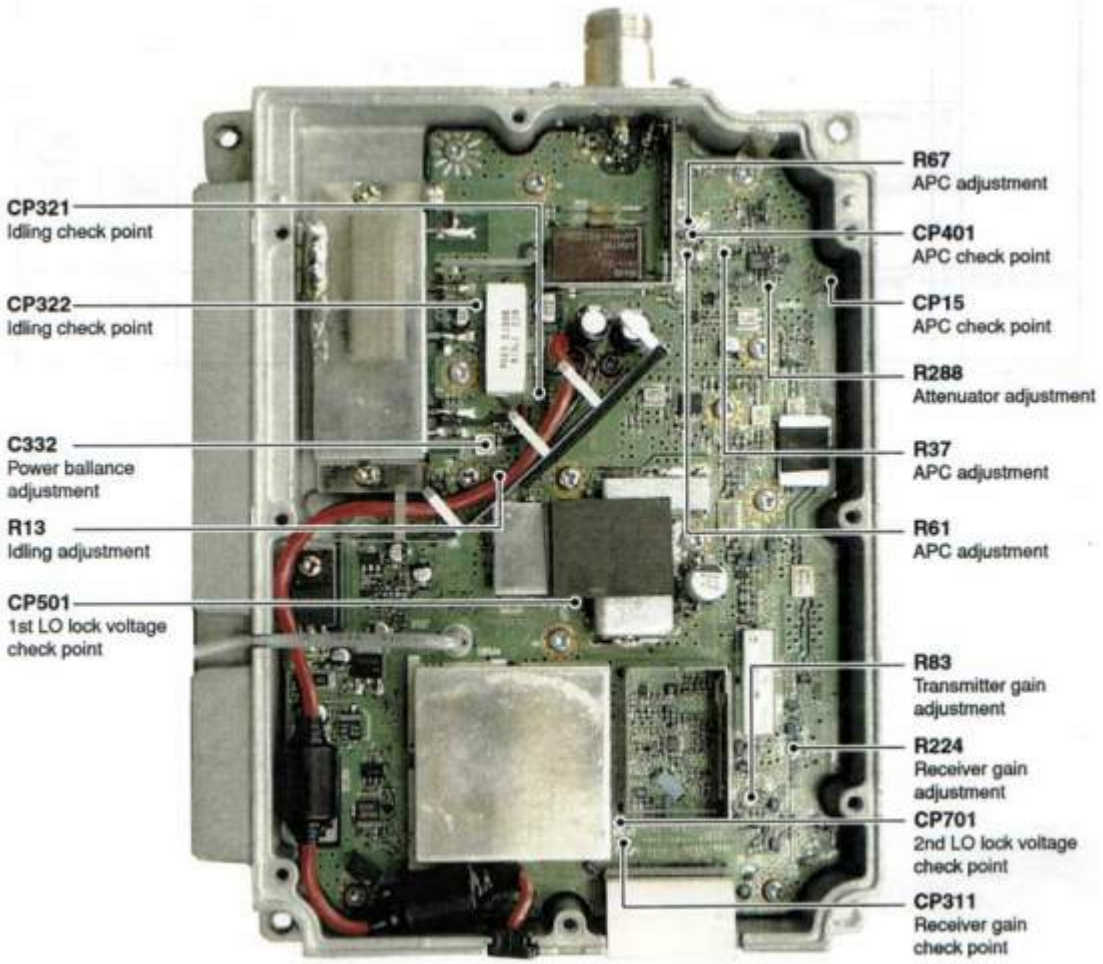
144-R547



144-R360-R857



430-R61



UX-910

Note: use a small insulated alignment stick to make these adjustments. The controls are tiny, and if shorted to ground or to another component, will damage the circuit. The first control is especially susceptible, as it is very close to a coil shield.

1. Turn off the radio and remove the top and bottom covers. If you have the UX-910 module installed, remove it in order to make the 144 and 430 band adjustments possible. It's easy, there are just 4 screws holding it in place, and 3 connectors to unplug. Set it aside until you are ready to make the 23cm adjustments.
2. Turn the radio on.
3. Refer to page 5-5 of the service manual, and find R547 and R360. Adjust these controls for max receiver gain on 144 (main band). Then switch 144 to the sub band and adjust R857 for max receiver gain on the sub band.
4. Switch 430 to the main band and refer to page 5-7. Adjust R61 for max receiver gain on 430.
5. Turn the radio off.
6. Reinstall the UX-910 23cm module. Remove the cover plate on the UX-910 and set it aside.
7. Turn the radio on.
8. Set the main band to 1296.1 Mhz USB, and connect a proper dummy load to the antenna terminal. Refer to page 5-19 and adjust R224 for max gain. On my unit, I was actually able to adjust the gain too high, as the s-meter was reading about s3 on background noise. I backed off the gain until the meter dropped just below s1, you may have to do the same.
9. This last adjustment is for the overall transmitter gain on 1296, and I adjusted this because I found that I did not have sufficient ALC action when on SSB, even with the mic gain all the way up. I turned up R83 to correct this...you may or may not need to do the same.
10. Turn off the radio, reinstall the UX-910 cover and the top and bottom covers of the radio. All done!