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Mods Manuals and Circuits

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IC-910 H

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Expanded functions for the IC-910H (All versions)



IC-910H mods

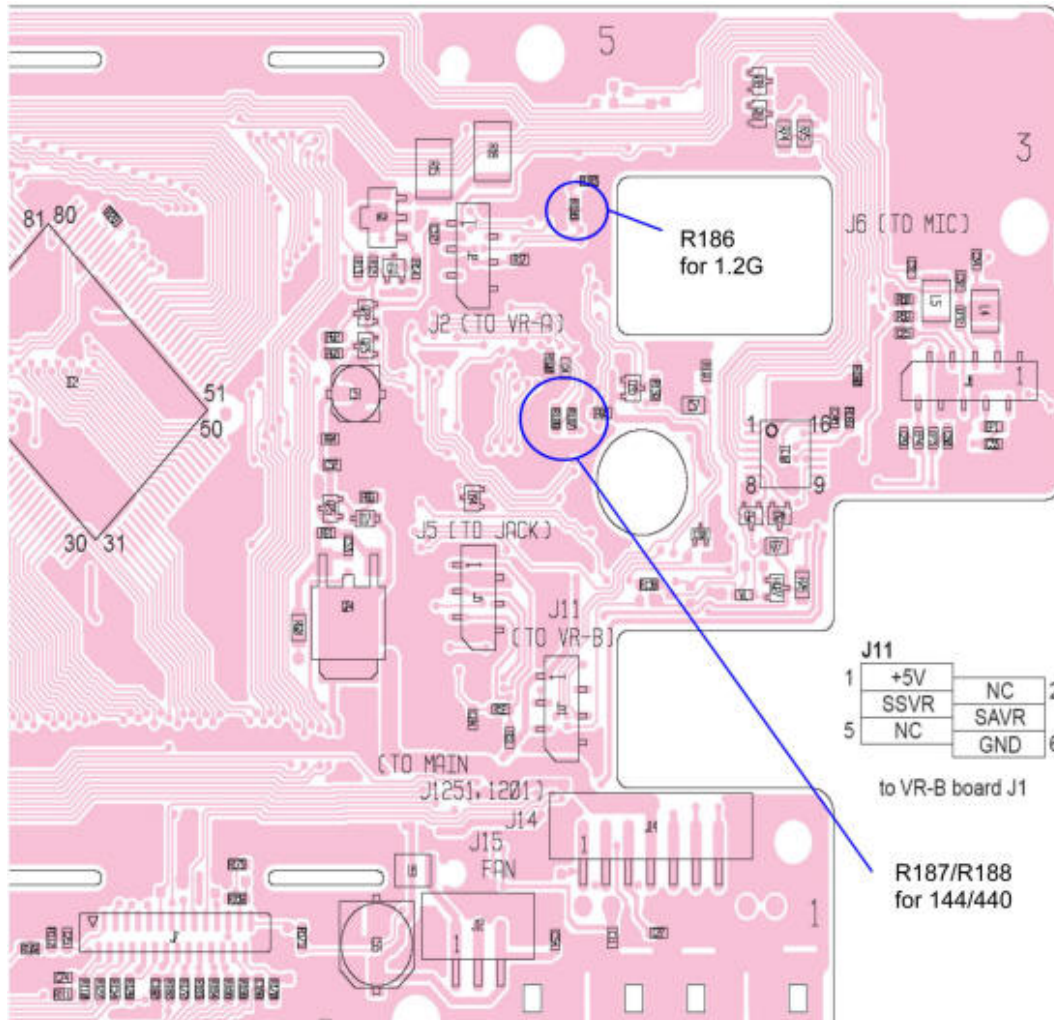
To modify your rig for:

TX-144 remove R188 (1k) on the display board. 136-174 MHz

TX-430 remove R187 (1k) on the display board. 420-480 MHz

TX-1200 remove R186 (1k) on the display board. 1240-1320 MHz

Narrow FM mode for 1200MHz install HD8 1SS355 on the display board.
You do not have to reset the CPU.



IC-910 TX power protect software override

To allow "normal" transmitter power above and below 144-148 MHz.

Short the CI-V line of the CI-V jack on the back panel, to ground.

Push and hold the RIT and Sattelite keys whilst turning on power.

Push 9 key to enter the expanded frequency power set mode.

Enter the adjustment mode for 144Mhz out-of-band RF power. A wattmeter must be connected.

Push RIT key to transmit 145.01 automatically. Then rotate the tuning knob to adjust the desired RF power.

Push RIT key to memorise.

Similar for the 70 and 23 cm bands.

Note that the transmitter power does drop off below 140/425 MHz, and care must be taken not to keep the transmitter keyed in FM mode for long periods as the transistors get hot working into a out-of-resonance stripline.

If the band 136 - 140 is going to be used frequently, then a small adjustment of C659, and the fitting of an additional trimmer capacitor, 5 - 25pF at the antenna end of L657 to ground, and adjusting for max power at 138MHz, will reduce the strain on the PA transistors.

Improved SLOW/FAST AGC response selection for IC-910H

The IC-910H offers a fast or slow AGC response selection from the front panel, this selection isn't very effective, and in fact AGC is always 'fast'.... In order to improve the selection of the slow response (eliminating the AGC 'pumping' under SSB operation), the R/C timing components of the AGC circuit must be adapted as follows:

Remove power, open top and bottom covers of rig

on the underside, locate the MAIN UNIT PCB (it is on your right side, with the front panel facing to you, and doesn't need to be dismantled)

replace (or just solder as piggyback on) R312 and R914 (22k original value) by 2.2 k resistors, SMD or 1/16watt version.

replace C910 and C306 (originally 22 μ F) by 47 μ F/16v electrolytic type

To locate these components, you will need the service manual which is downloadable from different internet sources as a pdf-document.

Sensitivity for IC-910

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, and can be downloaded [here](#): It's big (over 12mb), so it will take a little while to download. If you don't want the entire manual, the 4 pictures you need to see are here: [144-R547](#), [144-R360-R857](#), [430-R61](#), and [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.

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.

Turn the radio on.

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.

Switch 430 to the main band and refer to page 5-7. Adjust R61 for max receiver gain on 430.

Turn the radio off.

Reinstall the UX-910 23cm module. Remove the cover plate on the UX-910 and set it aside.

Turn the radio on.

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.

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.

Turn off the radio, reinstall the UX-910 cover and the top and bottom covers of the radio. All done!

• **User comment**

Subject: does this work on 450-460

From: [kk2ed](#)

I recall trying the menu setting after shorting the CI-V line to ground and holding the RIT/SAT buttons.

I was able to get full power on VHF above 148MHz, but my power still drops to below 50% above 450MHz. I was able to get to the menu option for the 440 out of band setting, but it was though the CPU was overriding my adjustment.

Anyone successful with getting the power increased above 450MHz?

European Version Mods

Click on link

[IC-910H European Mods.pdf](#)

ATTENTION

The KB2LJJ takes no responsibility for any damage during the modification or for any wrong information made on this modification.