IC-9100: Hardware modification that adds RX out – RX in connectors

Note! Before you do anything, please read this:

Warning: If you have any doubts, do not perform the modification or let someone with the technical knowledge do this. If you try the modification on your own equipment, it's on your own risk of damaging parts and loosing warranty. My IC9100 is older than two years and have no warranty or whatsoever anymore.

The IC-9100 transceiver lacks of the RX out – RX in feature, which can be found in some middle class and high-end transceivers. The advantages of this feature are:

- Connect separate receiving antennas like beverages and flags, etc.
- Using bandpass filters and preselectors, etc.
- Insert a 3 dB splitter (or other splitters) to get a part of the receiving signal for SDR receivers, panadapters, spectrum analyzers or other receivers.

The modification is quite simple and is just using the HRX signal, which is passed over the W133 cable between the CTRL UNIT jumper J2101 and the BPF board jumper J141. See Figure 1.

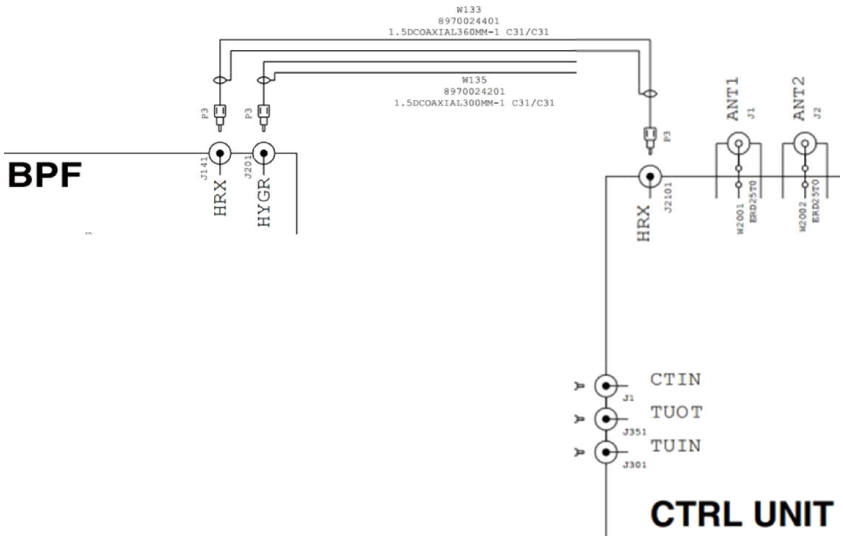

Figure 1: WIRING DIAGRAM showing HRX signal. Page 125 and 126 of the service manual

The HRX signal is only for the Band "HF/6m". The W133 cable is replaced with two coaxial cables, which goes to the rear panel (Figure 2). I used BNC connectors for the RX out and RX in signals and a BNC jumper cable to connect both (Figure 3). The radio internal connectors are those special TMP connectors, which ICOM uses for years.

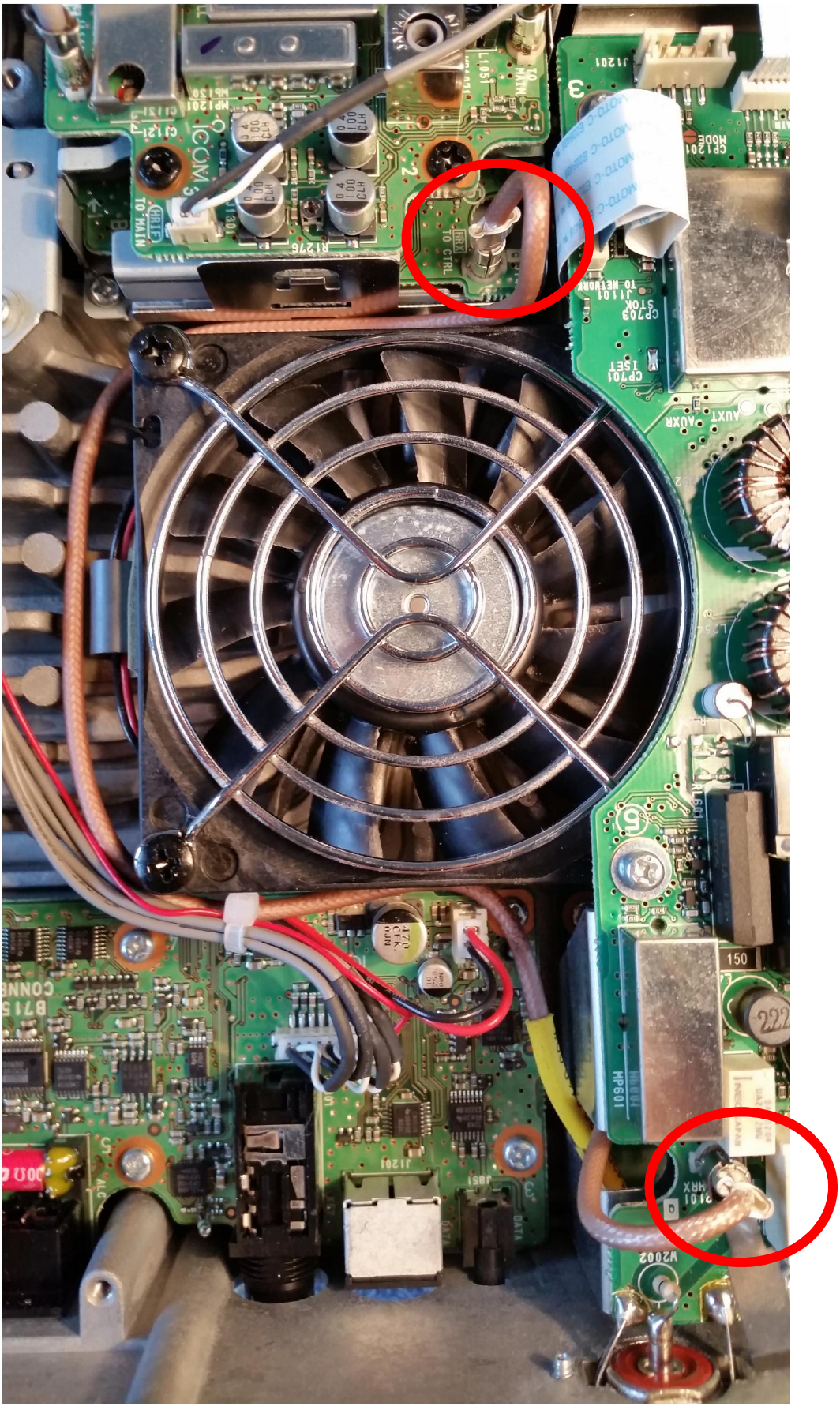

Figure 2: Internal view with the two newly installed coaxial cables

Figure 3: RX out - RX in with the BNC jumper cable

Beware! The HRX signal is behind the protection circuit at the CTRL UNIT. The protection circuit can be seen on page 155 of the service manual and consist of the parts MA3J7420GL, RL621 and many other parts. If you do this modification ensure you can protect the RX in port with your own circuit to avoid a deaf receiver.

As said before the HRX signal is only for the Band “HF/6m”. If you want e.g. a separate SDR receiver for VHF or UHF use the internal VRX or URX signals (between PA-B UNIT and RF-B UNIT) instead of the HRX signal (Figure 4)

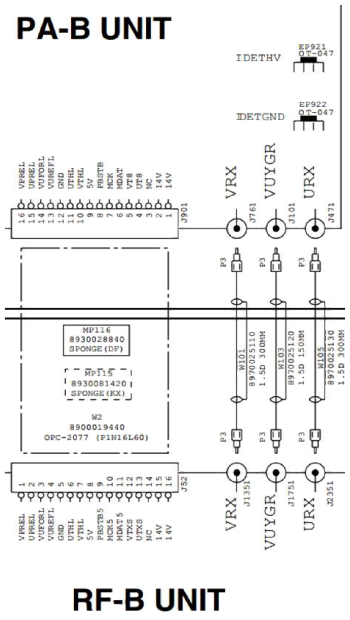

Figure 4: WIRING DIAGRAM showing VRX and URX signal. Page 126

I hope you enjoy your IC-9100 with this additional feature. vy73 de Hans dc1rjj