ICOM R7000 Scan Delay Circuit Description

Purpose:

The purpose of this modification is to add a "Scan Delay" to the ICOM R7000 so that it behaves like a conventional scanner. With this modification, after stopping on an active channel, the R7000 will pause for a reply before continuing on to the next channel. The length of the delay can be set between 1-10 seconds.

Summary:

The Squelch signal and the Center Detect signals are combined in the Main Circuit of the R7000 into a "STOP" signal that extends to the Logic Board. The R7000 CPU in the Logic Board uses this signal during scans to determine when to move to the next station. In this modification, we add a delay to the falling edge of the "STOP" signal. If there is no activity during this delay, the "STOP" signal falls and the CPU scans to the next station, otherwise the "STOP" signal stays high and the R7000 remains in the current station. The function of this modification is deactivated (reset) by pressing in the VSC button on the front panel.

Note:

Do not attempt to make this modification unless you are very familiar with making modifications to (expensive) electronic equipment. Obviously, this will void your ICOM warranty. Some large ham radio stores offer a similar modification for about $50-$100. Unless you are a real hardware hacker, I recommend that you send your radio to them for modification.

Description:

Please have your R7000 schematic diagram handy. The R7000 Service Manual is very useful in locating components. The entire modification is applied to the R7000 Logic Board. The "STOP" originates in the Main circuit and continues to the Logic Board where it is applied to the base of Q7 via R36. Our circuit intercepts the signal at this point and, instead, applies the Delayed STOP signal to the R36.

1. Build the circuit in the attached diagram. I built mine on half of a Radio Shack 276-148 pc board and installed it on top of the Remote Control Option board with three 3/8" plastic stand-offs. I then used a 6 wire ribbon cable to make the connections between the Logic Board and the Radio Shack pc board. I also used header type connectors to make it easy to disconnect the ribbon cable from the pc board.
   The hollow circles in the diagram indicate wire connections to the Logic Board.
2. Disconnect R36 from the "STOP" signal (the side not connected to Q7).
3. Connect the circle marked "STOP" to pin 2 of IC3 by attaching it to D65. This is the input to our delay circuit.
4. Connect the circle marked "DELAY STOP" to R36 where it was disconnected from the R7000 Logic Board.

5. Connect the circle marked "+5V" to R35 in the Logic Board. If you see a better place to pick-up +5v, go for it!
6. Connect the circle marked "GND" to W60 in the Logic Board.
7. Connect the circle marked "VSC" to the negative side of D8 in the Logic Board.

The 100 K pot generates a delay between 1-10 seconds, leaving it in the middle, or replacing it with a 47K fixed resistor, will generate a delay of about 5 seconds which is normal for scanners.

Please send your comments or suggestions via CompuServe to:

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