The Key to Unlocking the HTX-100

by Edward Oros AC3L

One of my favorite radios is Radio Shack's HTX-100. I've had a lot of fun working DX from my car with this rig. It is also one of the easiest to modify, if you want to unlock the RIT.

One of the major drawbacks with a rig of this class (HR-2510, HR-2600, HTX-100) is the tuning. There are usually four-step sizes used when tuning to the desired frequency (500 kHz, 10 kHz, 1 kHz and 100 cycles). The 500 kHz step is rarely used; its main purpose is to move you from one part of 10 meters to another. For example, if you are in the CW portion of the band and want to move to the SSB end, this switch is handy. The 10 kHz step tuning can be used when looking for contacts, but you skip over most of the band. The 1 kHz step isn't too bad, but if the other station is 1/2 kHz off frequency you'll have to switch over to the 100-cycle tuning. Even then, the station may be 50 cycles off from you. I always find myself using the 10 kHz step to find a section of the band with activity, then switching to the 1 kHz step to pick out a "loud one," then switching again to the 100-cycle tuning to fine-tune the person in. Many times I still can't get the station in just right, and there just isn't any other way to get any closer to their frequency! Sure, you can use the rig's RIT control to tune your receiver right on, but then your transmit frequency is still off a bit since it doesn't move with the RIT control!

The Conversion

What's the answer? A simple modification to allow the transmit frequency to move in sync with the receiver frequency when using the RIT control. This mod takes only a few minutes, is reversible (in case you change your mind later) and really makes the radio a pleasure to use afterwards.

There are only two parts to this conversion. You'll need a 6-inch piece of wire and a 10k variable resistor. Any 10k pot should work fine.

To begin the conversion, first place the radio on a flat SOFT surface (the cases of these rigs seem to scratch easily) with the speaker side down, and place the rig so the front is facing you. Remove the top four cover screws and the top cover. Locate the radio's lamp light, and follow the white leads down to the green circuit board. Notice that one of the lamp's leads is connected to a point on the board marked +8. Now look on the circuit board to the right of the +8 point. You should see a white jumper plug. In front of this and slightly to the left is a printed circuit board trace line. It is a straight line with a solder point on each end. If you have a voltmeter take a voltage reading from this trace against the chassis ground. It should read near 7 volts. Mark down this number.

Next, disconnect the power from the radio. Take the 10k variable resistor and solder the center tap lead of the resistor to the board at the +8 solder point. Next take the 6-inch wire and solder it to either of the two remaining leads of the variable resistor. Use a sharp tool to break the straight line trace that you just found. Cut it in the middle of the line if possible. Then solder the free end of the 6-inch wire to the end of the trace closest to the front of the radio. The existing end solder point works nicely for this. This trace line originally provided voltage only during receive. Since the 8-volt source that we are now tapped into is there during both receive and transmit, the control will now change frequency in both cases.

Connect the antenna and power but do not replace the cover yet. Now you have to reset the radio back on frequency. To do this, you can use a frequency counter, or a local ham. Set the RIT (now RIT/XIT) to the center OFF position and adjust the 10k resistor to set the radio on the correct frequency. Have your ham friend transmit on a pre-determined frequency while you set the resistor to tune them in. Another method would be to use the voltage reading that you took earlier—you can just check the center tap of the resistor now and set the pot to the original voltage and you will be close to the correct frequency. Once back on frequency replace the cover, screws, antenna and power. At this point, let me inject a word of warning, your frequency display WILL NOT CHANGE as you use this new RIT/XIT. So be careful around the band edges, don't get too close or you may actually be out of band!

Now you're ready to see how much easier the rig is to operate. With the RIT unlocked, I generally leave the step size set to the 1 kHz position, tune close to a "loud one" and then just use the RIT/XIT for the final touch up. You get about 1-1/2 kHz on each side of the control's center. It's great! Have fun and I'll see you on 10 meters! 73

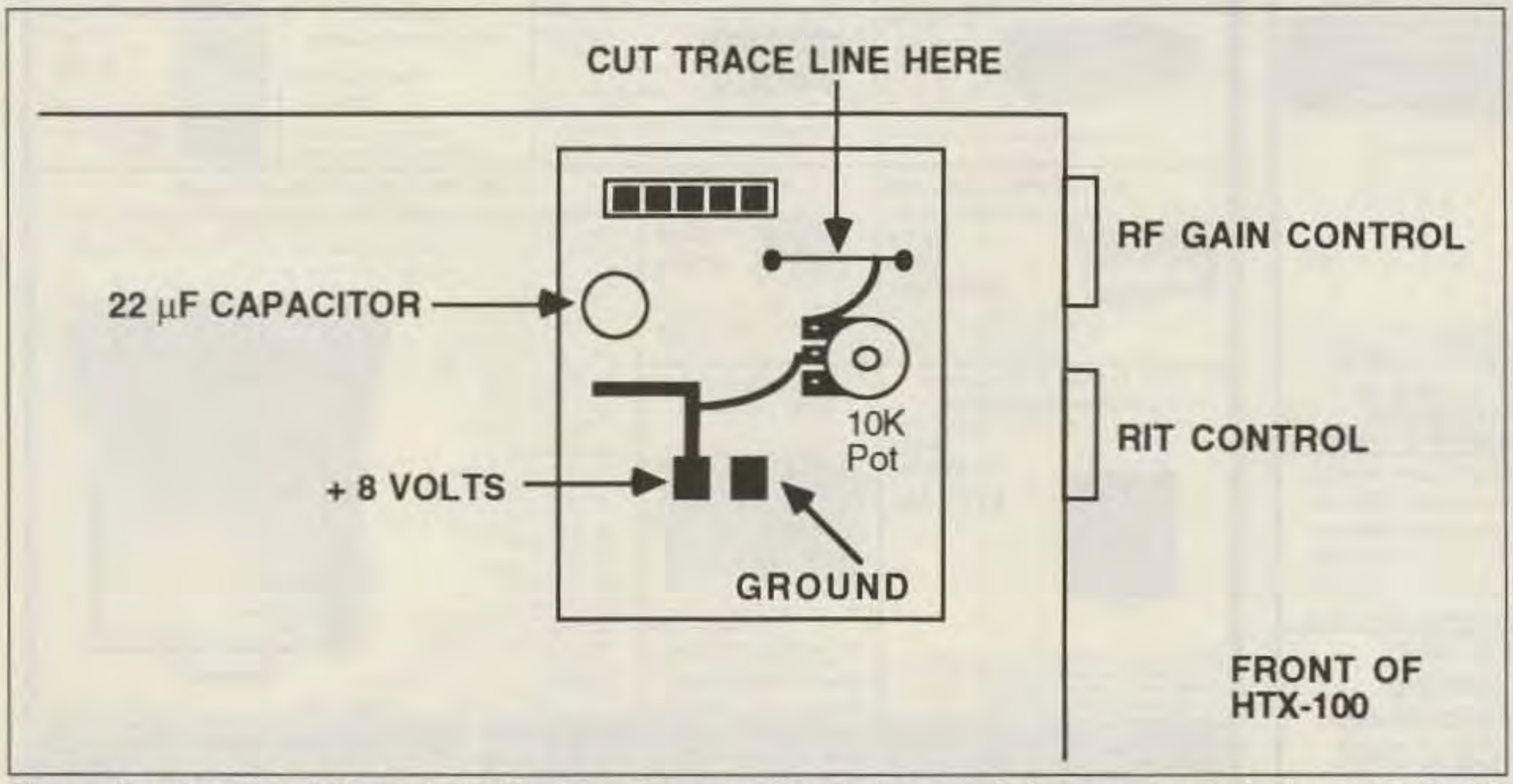

Figure. Cut the trace and wire in a 10k pot as shown to allow your transmit frequency to track along with the RIT control.