

QSY to 14.226.97?

My friend, Stu W2PTH, and I occasionally carry on a long QSO after an initial contact on 14.230 MHz via analog Slow Scan TV (SSTV). We move down 3 kHz for ½ hour or more of SSB and SSTV transmissions.

Stu claims to have a very keen ear for audio. We spent some time carefully tuning my Kenwood TS-590S to please his ear. I found I needed to adjust my frequency down by 30 Hz on 20 meters, per Stu's recommendation. Hence, I have a stop set in memory at 14.226.97 Hz. I turn to that when we QSY down 3 kHz, to essentially 14.227 MHz!

I wondered just how accurate my frequency calibration was. Was Stu's ear that keen? Was his reference receiver exactly on frequency?

I examined a couple of methods for assessing receiver frequency calibration accuracy. My goal was to use an easy, low-cost means of assessment. Mike AJ4NR directed me to an ALE HF Communications web site, call HFLINK. They recommend the following approach.

Reference receiver. This receiver does not need to be accurately calibrated. Simply tune it to a WWV frequency (for example, 5, 10 or 15 MHz out of Ft. Collins, CO) and set to AM mode.

Examined receiver. Tune this receiver to the same WWV frequency, however it must be set in USB mode. You will need this to accurately discern a differential in audio tone between this and the reference receiver.

Turn off any notch and DSP filters. Select the 1 Hz fine tuning speed for this receiver's RIT. If your receiver doesn't have this sophistication, then stop. You're out of luck!

WWV 500/600 Hz tone. Wait until WWV transmits its 500 (or 600) Hz tone for a minute. During this interval, you will have the opportunity to examine the accuracy of your receiver.

Tune the examined receiver's RIT up and down, and carefully listen to the tone. You will want to have near equal volume coming from both the reference and the examined receivers.

Find the RIT frequency where the clearest musical tone occurs, without rumble or slow vibration or oscillation. Read the RIT frequency differential. This is the offset error, either calibrated low (RIT +Hz) or high (RIT -Hz). You should be accurate to within one or two Hertz.

So how did I come out? I was able to carefully examine three rigs.

<u>WWV Frequency</u>	<u>Kenwood TS-590S</u>	<u>Kenwood TS-2000</u>	<u>ICOM 706 MKIIG</u>
5 MHz	4 Hz low	2 Hz low	12 Hz low
10 MHz	7 Hz low	2 Hz low	28 Hz low
15 MHz	10 Hz low	2 Hz low	40 Hz low

The general purpose Kenwood TS-2000 was the real winner for frequency calibration accuracy.

I could not check the calibration of my old Kenwood TS-680S nor the Yaesu FT-857D. These rigs do not have a 1 Hz fine tuning rate.

Larry Peterson

FCARC Technical Director