

# CW Zerobeating the Elecraft K2 Using the SPOT Feature

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*This document contains links to two WAV files. If your PC does not have the ability to play .WAV files, please accept my apologies. Please don't waste your time downloading them.*

Since the K2 first came on the ham radio scene in early 1999, there's been a more or less ongoing discussion by some users about their inability to use the SPOT feature of the K2 to assist them in properly zerobeating the received CW station against the sidetone of the K2.

Some folks have commented that they are 'tone deaf'. But I'm not sure this is the real problem since you don't have to know WHAT tone you're hearing, but that you are hearing a tone, and to be able to 'hide' the received tone of the received signal beneath the SPOT sidetone. I tend to feel that it may be more of a problem of just not quite know WHAT to listen for. In other words, how to tell when you have the other guy tuned in properly.

I'm not at all sure that the two included WAV files will assist anyone in better being able to properly zerobeat their K2, but at least it may be a step in the right direction... so I'm gonna give it a try.

The K2 was designed by Wayne Burdick (N6KR) so that when the tone of the received CW signal is matched identically to the frequency of the K2's SPOT tone, the transceiver should be zerobeat (on transmit) with the station being received. To that end, you must be able to match the two tones (received and SPOT) so they are the same.

NOTE: If you have the time and energy to do so, it's always best to attempt to match the volume level of your SPOT tone to the level of the signal against which you will be receiving. This will generally yield the most usable match. Of the two examples I offer here, the first example is a fairly strong CW signal and the second signal is quite a bit weaker, demonstrating that you CAN obtain a usable zerobeat even when the two tone levels don't match all that well.

The first example ([zerobeat\\_ex1.wav](#), about 30 seconds long) demonstrates the zerobeating technique using a fairly strong received CW signal. I normally try to tune the received signal from the bottom up (low tonal frequency, tuning higher in tone as I approach the SPOT tone), but you can just as well tune from top down (demonstrated in the 2<sup>nd</sup> half of example two. NOTE that when the two signals match in tone, you hear a SINGLE SOLID tone and only the 'thumps' from the actual CW keying of the received signal.

The second example ([zerobeat\\_ex2.wav](#), about 60 seconds long) demonstrated the same zerobeating technique, but with a signal which is quite a bit weaker in strength and which included a bit of auroral 'flutter' as well. In this example, I first zerobeat the signal from bottom up, and then I step through the other three CW filter bandwidths in my K2 to demonstrate that the signal remains pretty much right in the center of the passband of each of the CW filters without having to retune as the bandwidth is narrowed. In the second half of this same example, I retune the signal to zerobeat from the top down, and then I again quickly step through the remaining filter bandwidths.

I hope these examples help to shed a little light on the technique for zerobeating the K2... I'd have included more examples but one minute of WAV file creates nearly 1MB of data... which takes TIME to download.

If anyone is interested, all zero beating was accomplished at a bandwidth of approximately 1.8kHz. The other bandwidths in my K2 are approximately 1kHz, 400Hz and 100Hz.

Good luck,

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