

# K4 Highlights

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## K4 Highlights #1: Stereo Audio Pitch Mapping

Working in CQ WPX this weekend, I was reminded of the "wall of sound" effect you can experience during a CW contest. This was the motivation behind the K4's AFX PITCH feature (pitch-mapping audio effect).

While AFX PITCH can be used in other modes, it really shines in CW mode, especially when wider bandwidths are used (800 Hz and up). What it does is "map" lower-pitched signals to the left, and higher-pitched signals to the right. All it takes is a little DSP magic.

Here's one way to think of it:

Imagine you're listening to a great jazz ensemble using mono headphones. Yes, you can hear all the instruments, but your brain does a lot of extra work in separating them. Now put yourself near center stage in an actual performance venue: the performers surround you, with each instrument's voice standing out distinctly thanks to binaural hearing.

This is what happens when you turn K4 pitch mapping on. The effect with headphones on is dramatic.

### Steps:

1. Tap MAIN RX.
2. If the AFX button shows AFX OFF, tap to turn it ON.
3. Hold the AFX button to switch from DELAY to PITCH.

Headphones and wide CW bandwidths are recommended when you first try this. This will give you the full effect. And you'll want a pileup or contest to be going on to provide plenty of signals.

Full disclosure: The CW operators in your passband won't know they're part of your own private band. And unless it's a traffic net, they won't be working together on a single composition. Yet whatever notes they're playing, they won't sound like they're all sitting in the same chair.

## K4 Highlights #2: Transverter Band Displays & Dual-Transverter Receive

Like the K3 before it, the K4 provides extensive support for external transverters. The K4 adds several important new wrinkles:

### 1. Up to 12 transverter bands

Each transverter band has a corresponding button in the band selection group. Each band can be customized for lower band edge (up to 99,000 MHz), IF (0 to 53 MHz), oscillator error offset (+/- 99.999 kHz), and power level (0.1-5.0 mW). XVTR buttons display their lower band edge in MHz.

## 2. Convenient switching between HF and transverter bands

When you tap the BAND button, you'll see the currently selected band within either the HF or XVTR band group. An additional button will be labeled either XVTR or HF, allowing you to easily switch to the last HF band if you were on XVTR, or XVTR band if you were on HF. VFO A can be on HF while VFO B is on a transverter band, and vice-versa. If the sub is on you can monitor both an HF band and an XVTR band at the same time.

## 3. Independent dual receive with two external transverters (K4D)

If you have two external transverters (and a K4D), you can use RX ANT 1 for one and XVTR IN/RX ANT 2 for the other. With the sub RX on, you can then listen to both transverters at the same time, with stereo audio. You can then use the SPLIT control to determine which transverter is selected for transmit. (For this purpose, you'd need to drive both transverters' IF inputs from the XVTR OUT jack.)

See you on the high bands!

## K4 Highlights #3: DX LIST mini-app

No doubt many K4 ops have an encyclopedic knowledge of DX entities -- every prefix, whether countries or territories still exist, whether you can get there without military or divine intervention, etc.

For the rest of us, there's the K4's built-in DX LIST. This is an Elecraft-curated list, cross-checked against several other reputable sources.

The next time you hear a "new one" on the air, try popping up the K4's DX LIST rather than scouring the internet or rooting through piles to find that ARRL reference you ordered in 1972. Ours is right there at your fingertips.

### Steps:

1. Tap Fn.
2. Tap DX LIST.
3. Scroll the list with VFO A or the up/down arrows, or...  
tap the magnifying glass icon to do a text search.

If more than one hit is found during a text search, the up/down arrows go into hit-navigation mode (indicated by the magnifying glass reversing colors). This allows you to jump from one match to the next quickly, without scrolling. The same navigation technique is used in other cases.

In fact, the DX LIST feature is just one example of a mini-app running on the internal Linux module. Others include the software updater and the built-in owner's manual. With virtually unlimited code space, we expect to add other mini-apps in future releases.

### Important Notes:

1. Please let us know if something is missing or inaccurate. We try to stay up to date, but "entity" is still a moving target even in the 21st century.
2. If you see a large, flashing, red asterisk next to a prefix, it's one I haven't worked yet. Please contact me straight away!