



BY MIKE METLAY

I first got to know Mr. Zhao Yitian, the prime mover behind CME, some years ago, and I have always been interested in the uniquely powerful and sexy new controllers and keyboards he brings to market. But even with CME's impressive track record, the new Xkey portable USB MIDI controller keyboard still stunned me. The Xkey is truly unique: it's designed from the ground up to be not only very portable but to be very playable as well.

### The Xkey

Unlike pretty much every other ultra-small keyboard controller out there, the Xkey starts with 25 keys that are full-sized, like a standard synth's. How do you provide 25 full-sized keys in a product that's still small enough to fit in a laptop bag? By cutting away *everything* else around the keys, and building the keys into a frame that provides strength and stability while adding virtually no size.

The Xkey does this by mounting its keys inside an aluminum frame that holds the entire keyboard completely rigid. It's under 4 millimeters thick... but that's a 4 mm plate of solid metal, which means the Xkey is anything but flimsy. Each key is a self-contained sensor isolated from the other keys; it's designed so that the entire key moves smoothly, straight up and down rather than pivoting, when pressed pretty much anywhere. The black keys are raised slightly from the white ones for a reasonably familiar feel, and the whole mechanism is barely half an inch thick.

The keys feel a little strange due to their vertical motion, and they make a fairly noticeable "clacking" noise that's distracting in a very quiet environment (the early sample with which I started the review sounded worse than the production model I received before press time), but they're streets ahead of any of the super-tiny keyboards I've tried. It took me very little practice to get used to playing the Xkey without worrying where my fingers were ending up.

Because each key on the Xkey is a self-contained unit and there's no single "keybed action", it can do tricks few other keyboards can do. Not only does each key sense velocity independently of the others, but they sense pressure independently as well.

That means the Xkey can transmit MIDI Key Pressure (polyphonic aftertouch)



## CME Xkey USB MIDI Keyboard

Big-keyboard feel in a tiny-keyboard size



messages, where the player can bring out nuances of individual notes inside chords. This fantastic capability was well known at the dawn of MIDI in the 1980s, but gradually faded away with the disappearance of the very expensive keyboards that could be played this way. MIDI Channel Pressure (monophonic aftertouch), where there's a single sensor under the whole keybed, was much easier to implement, although for a while even that was hard to find. The Xkey can transmit either data type with no trouble.

This makes for fantastically sensitive and expressive keyboard playing technique! Not only does the Xkey blow away every other ultralight key controller out there for sheer playability, but you can count the other poly-aftertouch keyboards out there, of any size, on one hand... and aside from the Keith McMillen QuNexus (reviewed December 2013), which technically doesn't even have "keys", none of them costs less than \$2000.

### Beyond the keys

On the left are six pad-buttons, for (top to bottom) octave up/down, modulation, pitch bend up/down, and hold pedal. They're all completely reassignable to the user's choice of MIDI messages with value ranging and latching—for example, making the hold pedal stay down until the button's pressed a second time. Not only that, but the pitch and modulation buttons are actually pressure sensitive, so you can really *play* bends and vibrato rather than just turn them on or off. This is another feature where there's little or no competition from the rest of the field.

The slightly elevated rear "foot" houses all the electronics and a recessed micro-USB connector with red power LED. None of the left-hand buttons illuminates, which is a small bummer, but it does mean the Xkey consumes very little current, making it suitable for iPads as well as computers.

A free iPad app—Mac and Windows versions are in beta—allows you to program the Xkey's velocity curve, MIDI output, sensitivity (key by key if you want!), timing (see below) and aftertouch performance. I wish there was a bit more flexibility in setting up aftertouch response, but I was able to minimize spurious aftertouch messages by simply delaying the timing of aftertouch transmission for about 100 milliseconds after key-down, so hard hits didn't send pressure data along with Note On messages. The app also lets you update the Xkey firmware, a process that takes only a minute or two; this lets CME add features and fix bugs easily, and the company has a great history of doing both so far.

