HELIX

Throbber. No, Really.

Even though some designs are simple and have a small number of common components, many classic effects pedals have some interesting stuff going on under the hood, circuit-wise. Some of these pedals rely on unexpected components to help create their signature sound.

A case in point is the Uni-vibe pedal, originally made by Shin-ei in Japan and later sold by Univox*. Hidden beneath the metal case sits a functioning incandescent light bulb, which is surrounded by four photocells.

Yup, you read that correctly! A light bulb shining inside your guitar pedal, similar to one you'd find in a very small flashlight.

Original Uni-vibe pedals and their copies have a watery, syrupy, gooey character, popularized by influential guitarists like Jimi Hendrix and Robin Trower, and also by modern players like Mike Landau. It's a distinctive effect that is instantly recognizable, and it's an essential component to what is commonly referred to as the "psychedelic" guitar sound. I personally dig it enough that I used it extensively in the Helix introduction video, which you can check out on the Line 6 YouTube channel.

From a digital point of view, the problem with light bulbs (which are in charge of much of the modulation characteristics of the Uni-vibe) is that they are decidedly non-linear. This means that if you were to watch high-speed footage of a light bulb dimming and brightening, you'd see that it doesn't go from bright to dark evenly. It may take some extra time to get to full brightness as the filament begins to glow, and then dim slowly as the current ebbs away.

Not only that, as there is no industrial spec for these bulbs, they all behave a little differently. Some bulbs get brighter than others, while some take longer to light up and dim than other bulbs from the same batch. In fact, one of the reasons why individual Uni-vibe pedals are famous for sounding different from one another is due to bulb-to-bulb variance (the other is the existence of an internal lamp bias trim pot that most guitarists didn't know was in the circuit for much of its history).

The point behind all of this is that you won't be able to make a killer Uni-vibe type effect in software until you can predict and recreate the chaotic behavior of a light bulb. It just won't sound the same, as that crazy non-linearity is part of what makes a vibe sound thick and watery.

We wanted to go much further than simply describing how a bulb behaves in Helix, so we built a fully-functioning virtual light bulb in software. It's called "Throbber", and

it's one of the core elements that make the Uni-vibe emulation in Helix so lifelike. Helix even allows you to adjust the electrical bias of the lamp itself, which gives you the ability to customize the shape of the vibe effect just like the real ones could (although unlike the real pedal, it doesn't require a screwdriver).

With the Uni-vibe effect in Helix you can go from a Jimi Hendrix-type vibe to Daniel Lanois-styled sound with the flick of a knob, and it works as it should both before and after a drive pedal in front of the amp.

Once you've checked out the video link above, check out the rest of the Helix media at line6.com/helix to see what the buzz is all about.

* Uni-Vibe is a registered trademark of Dunlop Manufacturing, Inc. The Uni-vibe product discussed above is the original Shin-ei Uni-Vibe product, which is longer made. No reference to the Uni-Vibe product currently marketed and sold by Dunlop Manufacturing, Inc. is used or implied.