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U-HE Diva

BY JIM AIKIN

THIRTY YEARS AGO, ANALOG SYNTHESIZERS (AND THERE WASN'T ANY OTHER kind) were accused of sounding cold and sterile. Today they're sought after for their warmth. Go figure. If I had plenty of money and a spare room, I'd buy a few monster analog synths. As it is, I have several excellent virtual analog plug-ins to choose from. But nothing I've heard yet nails the analog sound as solidly as U-he Diva. This soft synth is so hot, it'll raise blisters.

Snap Judgment

PROS Extremely authentic analog sound and features. Modeled on vintage hardware instruments. Hundreds of great presets.

CONS High CPU usage. No arpeggiator.

Key Info

POLYPHONY
Up to 16 voices, CPU-dependent.

SYNTHESIS TYPE Analog modeling.

FORMATS VST or AU plug-in. (Pro Tools version planned.)

SYSTEM REQUIREMENTS *Mac:* OS 10.5 or later. *PC:* Windows XP or later. *Both:* Dual-core Intel or AMD (but not PowerPC) processor, 2GHz or faster.

Overview

Diva's lineup of modules is flawlessly classic. Even so, there's a lot more here than meets the eye. Across the top (the black panel) are four mega-modules. The first houses the oscillators, the second a highpass filter, the third the main resonant filter, and the fourth a pair of attack-decay-sustain-release envelopes. The lower area (the red panel) houses two LFOs, two effect processors, extra modulation routings, and voice processing options.

Each of the mega-modules offers three or four different choices. For example, in the oscillator panel you can choose the Triple VCO, Dual VCO, DCO, or Dual VCO Eco (less CPU usage) mega-module. The Triple VCO is reminiscent of, though certainly not identical to, the oscillator layout on the Minimoog. Other modules seem to be based on early Roland synths or the Korg MS-20. I'm told the developers listened to hardware instruments in the studio while writing code.

Diva has no arpeggiator—an odd omission for an analog-emulation synth that does such a fine job of sounding authentic. The effects choices (chorus, phaser, plate reverb, stereo delay, and rotary speaker) aren't luxurious, but they're the right choices for a vintage sound. On the plus side, Diva has a rich set of controls for adding subtle analog instability to the sound, such as individual voice detuning and multiple "slop" controls—more on these later.

The user interface is clean and professional. Double-clicking any knob zeroes it, and right-clicking arms the MIDI Learn. By shift-clicking a knob, you can make fine adjustments, which are displayed numerically. In use, Diva was rock-solid: I didn't encounter a single glitch.

The patch browser occupies the whole panel by itself, and includes hundreds of mouth-watering presets. After saving your own patches, you can drag them into whatever category folder you like. Patches can be marked as favorites or junk, but I'll be using the favorites mark a lot more than the junk mark. Whether you're doing dance, hip-hop, new age, or fusion, you'll find plenty of leads, basses, and pads to get the creative juices flowing.

By now, you're probably realizing as I did that there are too many features to list, much less talk about how they sound, so we'll hit the high spots.

Oscillators

The Triple VCO has a Minimoog vibe, right down to the rocker switches, but the waveform selector, unlike the one on the Minimoog, is continuously variable from sawtooth and triangle through pulse. Oscillators 2 and/or 3 can be synced to oscillator 1, which itself can be an FM source to modulate 2 and 3. You can switch modulation on or off individually for the pitch and waveform, but all three oscillators will share the same source signals and modulation amounts, which is a limitation.

Modulating the waveform of the Triple VCO from triangle to saw produces a slight and very analog-sounding pitch instability. As the modulating signal speeds up, the pitch changes get larger. Though I'm a bit skeptical, I'm going to call this a feature.

The Dual VCO doesn't offer continuously variable waveforms, but it does have pulse width modulation and sync. Oscillator 1 can cross-modulate oscillator 2, with an input for the modulation amount.

The DCO module has a single oscillator with two waveform selectors (the two are mixed), a sub-oscillator with its own waveform, and a noise source. All of the oscillator modules have dual inputs for pitch modulation; in the Triple VCO these inputs can be switched on or off individually for the three oscillators.

Filters

According to the manual, some fancy signal processing is being employed to produce low-latency resonant filters. The difference is subtle, but I feel the filter tone is more "present" than in other modeled analog synths I've played. The filter modules are called Ladder, Cascade, Multimode, and Bite.

The Ladder filter is Moog-like, right down to calling the resonance knob "Emphasis." This filter will self-oscillate, and can be modulated at audio rate from oscillator 1 for rich, swirling sidebands. The Cascade filter has a clean/rough switch and a 12/24dB switch. The Multimode filter is similar, but replaces these two switches with a four-position switch for four-pole lowpass, two-pole lowpass, highpass, or bandpass.

At first I didn't hear anything special from the Bite filter, but it turns out this filter is sensitive to input level. Turning the oscillators' output knobs to a low level can give you some grungy, unstable tones that are very satisfying. I got some truly nasty tones by combining the Bite filter with the Triple VCO's feedback routing.

All the filters have three modulation inputs for cutoff frequency (two assignable and one hardwired to key number), plus modulation inputs for resonance and FM, the latter being in the lower panel.

Envelopes

The two envelope generators are individually selectable from three types: an analog-type ADSR, a similar digital ADSR, and a very Minimoog-style ADS (attack, decay, and sustain only) with an on/off release switch. All three have controls for velocity sensing and keyboard scaling. Velocity controls the envelope amount, not the attack and decay times, which are controlled by keyboard scaling.

The digital envelope has mysterious buttons labeled Q and C. According to the manual, the Q button quantizes the envelope output, producing a rougher sound. I just about couldn't hear the difference. The C button changes the envelope segments' shape, but again in such a subtle manner that I had trouble hearing it.

Modulation

By default, many of the modulation inputs on the upper panel come from envelope 2 and LFO 2. From a pop-up menu, however, you can select numerous other sources, such as MIDI pitch-bend, mod wheel, aftertouch, breath controller, or velocity; either of the LFOs or envelopes; or any of the processors in the Modifications panel.

These processors add a lot of versatility. With the lag processor, you can smooth out the edges of an LFO's square wave. The add processor lets you mix two modulation signals, albeit with no control over their individual depth. The quantizer produces a stepped output from a smooth input, with precise control over how far apart the steps will be.

An alternate view of Diva, showing the Dual VCO, Bite filter, envelope sliders, and the voice trim panel (lower center).

The LFOs aren't exactly vintage in design, though they can be pushed up into the audio range for weird clangorous effects. In addition to the standard waveforms, they'll do random stepped and random glide. You can sync them to various metric values, and modulate both the rate and the depth from various sources.

Also in the lower panel are eight supplemental modulation routings: inputs with trim pots for two oscillator parameters (FM and cross mod depth, noise and dual VCO mix), two filter parameters (resonance and FM amount), feedback depth, main volume (normally envelope 1, but can be set to gate), and volume and pan modulation.

Voice Trims and Global Parameters

In addition to the usual master parameters, Diva gives you some features that are less standard, such as separate glide times for oscillators 1 and 2. You can load a microtuning scale, stack and detune multiple voices, and choose low-, high-, or last-note priority. In duo mode, oscillator 2 tracks the highest keyboard note and oscillator 1 the lowest, a nice performance option borrowed, if memory serves, from the ARP 2600.

Diva is up to 16-note polyphonic (if you have a fast enough computer—I don't). Its voice trim section has eight columns of knobs for detuning the voices. (Voices 9–16 duplicate the settings for voices 1–8.) You can detune each oscillator in microscopic amounts. This very effectively simulates the sound of synths like the Prophet-5, which had individual analog circuits for each voice.

Adding similar offsets to cutoff, envelope, pulse width, and glide time would involve way too many knobs. Instead, you get four knobs—one for controlling the overall amount of "slop" for each of these things, together with a randomize button that invisibly juggles the offset amount for each voice.

The Drift knob has a very subtle but audible effect. Unlike detuning from voice to voice (and thus from one note to the next), this knob introduces a slow, tiny, random pitch drift while a note is sounding.

Along the bottom of the voice trim section is a row of knobs called Voice Map Modulators. These are a modulation source you can use anywhere. If you want rotating pitch offsets, for instance, you can route Voice Map to oscillator pitch. This setup effectively emulates some of the possibilities of early Oberheim synths.

Conclusions

I was a bit ho-hum about a soft synth with no wild-eyed digital features—until I started playing Diva. After that, I just about couldn't stop. An arpeggiator and a step sequencer would be welcome additions, and wouldn't break the vintage analog concept. Other than that, Diva has it all. If you're jonesing for analog, this synth will blow your doors wide open. ♫

Bottom Line

I can't believe it's not analog.

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SOUNDCLOUD

Original audio examples of Diva's virtual analog prowess.

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