

MODULATION MATRIX
Has many unusual mod destinations, such as individual envelope stages

SUB OSC
This handy sub-oscillator will push your timbres into Minimoog territory

VCOS
Simple but great-sounding oscillators with a pair of waveforms each

LFO2
The limited LFO on the original SEM sucked, so Arturia have added a second one

ARPEGGIATOR
Couple it with the 8-Voice Programmer or Key Follower and you'll be in rhythmic heaven



DELAY
One of the three effects added to the SEM V, this is a dual-line delay

VCF
Tom Oberheim realised that owners of Minimoogs and ARPs would like an alternative to the classic 4-pole filter, so he gave them a 12dB multimode one

ENVELOPES
Only three stages each, but easily beefed up via the modulation matrix



Arturia PC MAC Oberheim SEM V £199

After a period focusing on hardware, the masters of emulation are back with a virtual reincarnation of a famously fat synthesiser

> Legendary synth manufacturer Oberheim's first major product was the groundbreaking DS-2 sequencer, an accessory product aimed at owners of Moog and ARP synths. Users were thrilled with its ability to record and play back notes on their Minimoogs and Odysseys. Using it meant that your monophonic synth was totally tied up playing back the sequence, however.

Enter Oberheim's Synthesizer Expander Module (SEM). Built to be a sound source for the DS-2, the SEM was aimed at players looking to retain keyboard control over their monosynths or just beef them up by adding an extra timbral layer. Offering two oscillators, a two-pole multimode filter, a simple LFO and a couple of three-stage envelope generators, the SEM was a huge success, embraced by high-profile players like Jan Hammer and Larry Fast. Eventually, Oberheim would connect multiple SEMs together under keyboard control to create the Two, Four, and Eight Voice synthesisers.

"Arturia's reincarnation starts off with a nearly parameter-for-parameter clone of the original SEM"

Arturia's reincarnation starts off with a nearly parameter-for-parameter clone of the original SEM, then throws in a sub-oscillator, another LFO and mix controls for three added effects. The SEM V copies the dual-oscillator design of the original, providing only sawtooth and pulse waves, which can be synced. Modulation of both

frequency and pulse width are provided by either of the two LFOs or dual envelope generators. A Pulse Width control is also onboard.

SEM IDed

The two oscillators are plumbed through a 12dB/octave multimode filter. Like the oscillators, the modulation source for the filter is selectable via a switch. The famous SEM filter offers high-pass, low-pass, band-pass and notch modes, with a knob that sweeps between low-pass, notch and high-pass, enabling you to establish a percentage balance between low- and high-pass.

The sub-oscillator has a selectable range (-2 or -1 octaves down), three waveshapes (sine, saw, pulse) and a Pulse Width knob. It offers just enough to beef up an already hefty tone.

As with the original SEM, the SEM V provides a pair of three-stage envelopes, each featuring Attack, Decay and Sustain, with the Decay control also handling the Release, à la the Minimoog.

“This emulation gives us exactly what we want from an Oberheim – and a bit more besides”

This may seem a bit skimpy, but it is faithful to the original, and the envelopes are made more powerful by the fact that each stage is available as a modulation source in the Modulation matrix.

The SEM section is topped off with a single Rate control for LFO 1. As per history, there's only a triangle waveshape available for this one – a sorry situation that's thankfully rectified by LFO 2, which features sine, square and sawtooth waves, sync, fade-in and re-triggering.

SEM, OTT

A wealth of additional stuff is tucked away in a pop-up panel at the top of the interface. Here you get modulation settings and effects that weren't available to owners of the original SEM. First, an extensive Keyboard Follow editor enables keyboard scaling of up to six parameters. When used with the Arpeggiator and the 8-Voice Programmer (see *Oct tone, baby!* to the right), this makes for entertaining rhythmic acrobatics.

As you'd expect, there is a modulation matrix. The list of targets is comprehensive, and complex modulations (eg, modulating the stages of one envelope with the other) are possible.

The effects comprise Overdrive, Chorus and Delay. The Overdrive is the simplest, with only Drive, Damping and Wet/dry controls. The Chorus offers Tempo Sync, Depth, Rate, Spread, Delay and Feedback knobs, plus selectable shapes. The Delay is a dual-line job with Stereo Link, Ping-pong and Damping options. All pretty straightforward, then, but certainly enough to make a big difference to the SEM V's sound.

The arpeggiator offers Rate controls, Sync, a Hold function, and Up, Down, Up+Down and Random modes. An arpeggiator might seem like an odd choice here, rather than an emulation of the DS-2 sequencer, but there's more than enough to get your sounds moving.

SEM OD

We did experience one minor issue with the software: the SEM's browser controls and



The SEM V recreates the simple-yet flexible interface of the original Oberheim module



The Oberheim poly sound was the result of each note being based on a complete voice module. Arturia's 8-Voice Programmer fakes this very well indeed

Oct tone, baby!

When Oberheim unleashed polyphonic keyboards based on their SEM, they were met with astonishment, then frustration. Making a polyphonic synth from SEMs was easy – just tie a bunch of them together – but getting them under any sort of control was very hard indeed. Each voice in the patch had to be programmed independently and matched to the rest of the SEMs in the synth – a time-consuming, hit-and-miss affair at best. However, the upside was that each SEM voice in a patch sounded slightly different to the others, resulting in a massive, complex tone.

Arturia have sought to recreate something of that huge sound with the

8-Voice Programmer module, which is found in the hidden modulation section. This gives quick control over any six of the individual voices' parameters, and is a good solution, if an incomplete one (we would have liked to have seen all of the parameters simultaneously represented, although we appreciate that it would probably have proven impractical GUI-wise). Nevertheless, with judicious programming, the few controls that are there provide enough flexibility to simulate the obese sound of the Oberheim polys, and also have the added benefit of enabling a bit of timbral sequencing when matched with the built-in arpeggiator.

'hidden' panel couldn't be accessed when we were using it in energyXT2 on our Mac. We had no such problems with other hosts, however. If we had any other complaint, it might be that patches are somewhat slow in changing after a new one is selected.

So, does it sound like a vintage SEM? That's hard to fully quantify. As with all Oberheim synths, the SEM went through various internal redesigns, and one physical SEM may not actually sound like another. However, there is a certain 'Oberheim sound': big, brash and somewhat nasal; ideal for brass and honky leads. A quick trawl through the excellent presets demonstrates that the SEM V does indeed capture that character.

So, this emulation from Arturia gives us exactly what we want from an Oberheim – and a bit more besides. Sure, there will be purists who swear it doesn't nail it, but they've missed the point. An instrument like this is about providing much of the original experience while also bringing it up to date and adding something new in the spirit of the original. The SEM V does that very well indeed. **cm**

Web www.arturia.com
Contact Source Distribution, 0208 962 5080

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Can create honking, brash, Oberheim-style sounds

Verdict

For Gorgeous, authentic sound
Inspiring 8-Voice Programmer mode
Excellent preset patches
Comprehensive modulation matrix
Keyboard Follow module is very nice

Against 8-Voice Programmer limited

A fabulous recreation/reinvention of the Oberheim SEM that sounds amazing and brings great new features to the table

9/10