
viper
esq

viper-esq

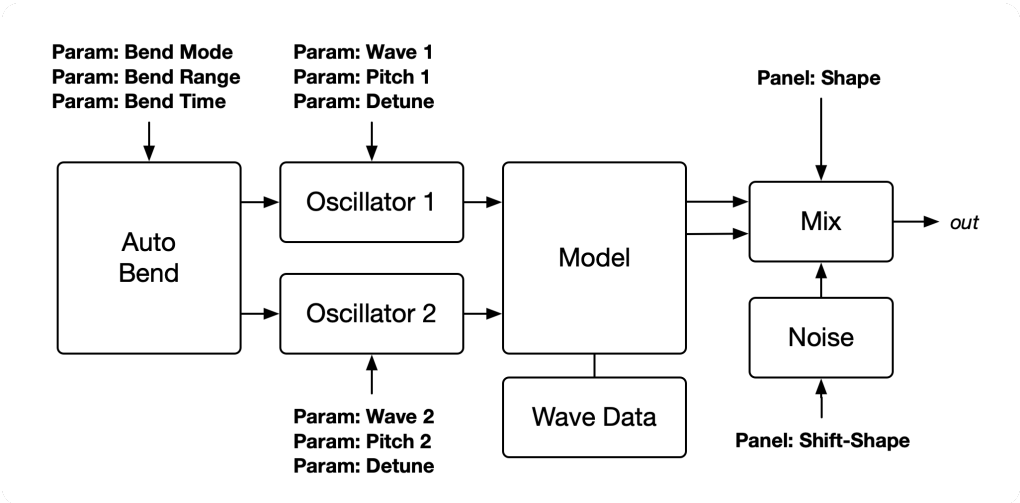
viper-esq is a Logue multi-engine oscillator which provides high quality emulation of the waveforms from the classic Ensoniq ESQ-1 keyboard.

The main features are:

- 32 waveforms modelled on the Ensoniq ESQ-1
- high quality, alias-free re-synthesis engine with 16 bit sample resolution[1]
- accurate multi-sample models provide authentic tonal shifts at different key ranges
- single-stage pitch envelope providing auto-bend
- slew-rate limiter for glitch-free LFO shape modulation using square and saw waveforms
- dual oscillators plus white noise

viper-esq uses a specialised synthesis engine with models that reconstruct the original waveforms in real time. The engine is fully anti-aliased and generates waveforms with 16 bit resolution, giving the potential for higher fidelity than the original instrument's 8 bit output.

The models are extremely space efficient, allowing multi-sampling to be emulated despite the limited memory footprint available in Logue synthesisers. Specialised sounds that rely on this, such as the ESQ-1's piano, voice and formant waveforms, are faithfully reproduced at all pitches.



viper-esq also provides a single-stage pitch envelope that emulates an auto-bend function. This can be set to create subtly shifting detune effects or dramatic frequency sweeps.

On the NTS1, a CPU limiter is available. The NTS1's processor is shared by both oscillator and effects units, and too much CPU load can cause audio breakup. By default, ***viper-esq*** on the NTS1 has a conservative CPU load, but this can be manually increased to give higher audio quality if heavy effects processing is not used.

[1] aliasing for the ESQ-1 noise waveforms is intentionally left in as it forms an important part of the character of the sound.

Parameters and Controls – Prologue and Minilogue XD

Use the *Shape* control to set the mix between oscillator 1 and 2.

Use *Shift-Shape* to set the mix between the oscillators and the white noise generator.

Parameter	Range	Function
Wave 1	1 – 16	Sets the waveform for oscillator 1.
Wave 2	1 – 16	Sets the waveform for oscillator 2.
Pitch 1	-100 – 100	Sets the pitch of oscillator 1, over a range from 1 octave below to 1 octave above. The adjustment is non-linear, providing finer control over detuned around zero. Be aware that the Logue software may default the pitch value to -100, resulting in sounds an octave lower than might be expected.
Pitch 1	-100 – 100	Sets the pitch of oscillator 1, over a range from 1 octave below to 1 octave above. The adjustment is non-linear, providing finer control over detuned around zero. Be aware that the Logue software may default the pitch value to -100, resulting in sounds an octave lower than might be expected.
Bend Time	0 – 100	Sets the duration of the bend effect. A value of zero disables auto-bend. Values from 1 to 100 specify the bend time, ranging from approximately 10ms to 10s.
Bend Range	-100 – 100	Sets the range of the bend effect. A value of zero disables auto-bend. A value of -100 gives a rising auto-bend of one octave. A value of +100 gives a falling auto-bend of one octave.

Parameters and Controls – NTS1

Use knob A *(SHPE)* to set the Oscillator 1 table position.

Use knob B *(Alt)* to set the Oscillator 2 table position.

Parameter	Range	Function
Wav1	1 – 16	Sets the waveform for oscillator 1.
Wav2	1 – 16	Sets the waveform for oscillator 2.
Pit1	-100 – 100	Sets the pitch of oscillator 1, over a range from 1 octave below to 1 octave above. The adjustment is non-linear, providing finer control over detuned around zero. Be aware that the Logue software may default the pitch value to -100, resulting in sounds an octave lower than might be expected.
BTim	0 – 100	Sets the duration of the bend effect. A value of zero disables auto-bend. Values from 1 to 100 specify the bend time, ranging from approximately 10ms to 10s.
BRan	-100 – 100	Sets the range of the bend effect. A value of zero disables auto-bend. A value of -100 gives a rising auto-bend of one octave. A value of +100 gives a falling auto-bend of one octave.
CPU	1 – 16	Sets the CPU allocation used by the unit. A value of 1 specifies the lowest CPU usage. A value of 16 specifies the highest CPU usage. Allowing a higher CPU usage may improve the rendering quality of some waveforms, most noticeably at lower frequencies. However, if several effects are used at the same time as ***viper***, an overload may occur resulting in audio breakup. If this happens, reduce the number of concurrent effects units or reduce the CPU allocation given to ***viper***.

Waveform List

Wave	Emulated ESQ-1 Waveform
1	Saw
2	Bell
3	Sine
4	Square
5	Pulse
6	Noise 1 *(note: this is a digital noise waveform with intentional aliasing)*
7	Noise 2 *(note: this is a digital noise waveform with intentional aliasing)*
8	Noise 3 *(note: this is a digital noise waveform with intentional aliasing)*
9	Bass
10	Piano
11	Electric Piano
12	Voice 1
13	Voice 2
14	Kick
15	Reed
16	Organ
17	Synth 1
18	Synth 2
19	Synth 3
20	Formant 1
21	Formant 2
22	Formant 3
23	Formant 4
24	Formant 5
25	Pulse 2
26	Square 2
27	4 Octaves
28	Prime
29	Bass 2
30	Electric Piano 2
31	Octave
32	Octave + 5

Downloading and Feedback

Information and updates can be found at **https://tsoniq.com/software/korg/viper**.

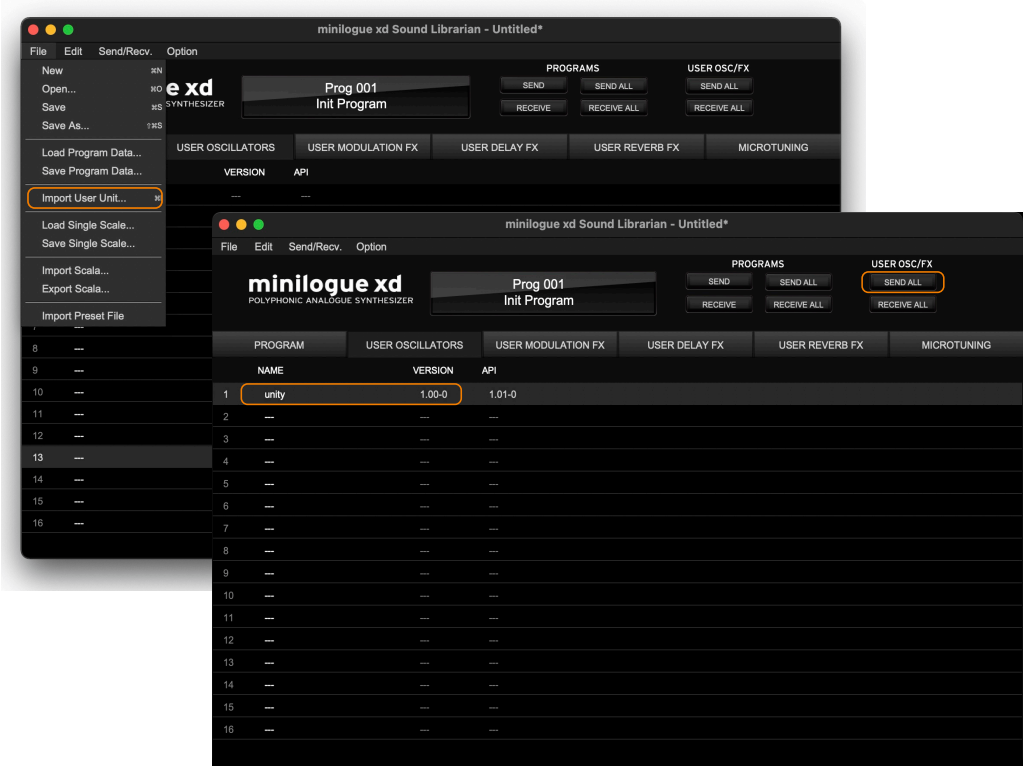
You can send feedback by email to **logue@tsoniq.com**, or leave a comment on the download page.

Installation

viper is supplied as a zip archive containing three units:

viper-esq.prlgunit	Prologue 8 and 16
viper-esq.mnlgxdunit	Minilogue XD
viper-esq.ntkdigunit	NTS-1

Use the appropriate Librarian application (available from ***https://korg.com***) to send the appropriate unit to the synthesiser.



Requirements

viper requires a Korg NTS-1, Minilogue XD, Prologue 8 or Prologue 16.

Installation requires the use of a PC or macOS computer and the Korg Librarian software appropriate for the synthesiser.

Copyright, Warranty and Liabilities

Release History

Version	Release Date	Changes
1.0	11-Dec-2023	Initial release.