

1 Introduction

Verbera is a VST virtual effect for Windows. It requires a VST compatible host to run. VST and Windows are trademarks of the respective owners.

2 General description

Verbera VST is a stereo reverb.

It has two inputs and two outputs even though it can work in a mono channel, too.

The interface has been kept as simple as possible, with an "analog" feel, by means of multi-function and graphical controls, but it is a very powerful effect.

Verbera takes a different approach on artificial reverberation, including:

- algorithmic, statistical based, reverb generation algorithms
- Amplitude, stereo width, filter, "density" envelopes
- Early reflections and late reflections separate controls
- Internal 10 band full paragraphic equalizer
- Reverb modulation
- Internal sidechained compressor/gate for full signal-driven control on reverb

3 Installation

Copy the dll file to your host's plugins directory.

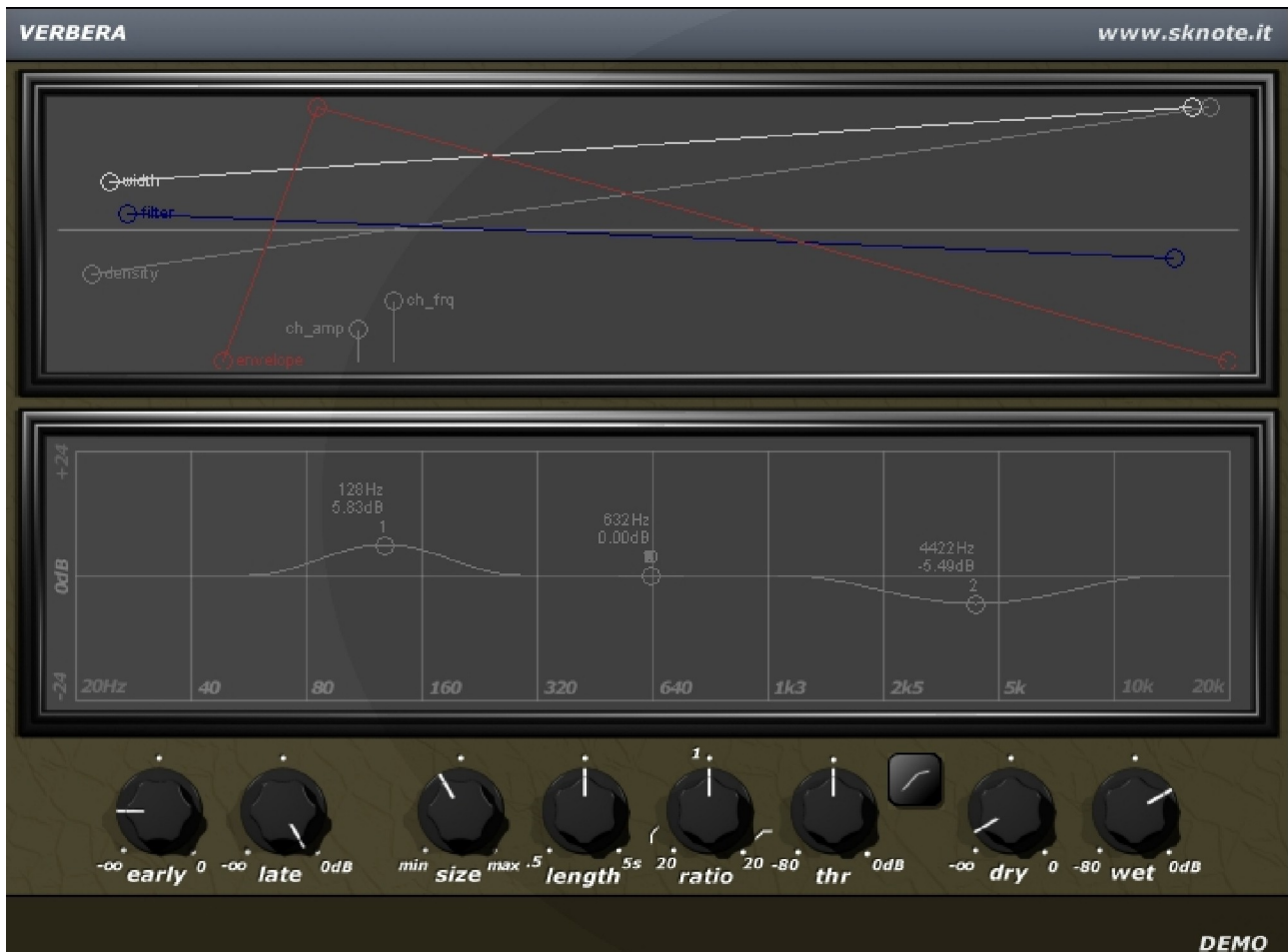
No authorization procedure is needed. The software is custom licensed per customer (reference on the right-lower part of the interface).

4 Interface

The interface is subdivided in:

- Upper graphical display/control. Drag points to set envelopes and chorus parameters.
- Lower graphical display/control. Full paragraphic equalizer. Drag points to set frequencies and gains. Hold "shift" key for fine control. Hold "ctrl" key for "Q" setting (the width of each filter).
- Compressor button. Switch it on to engage compressor/gate.
- 3D Knobs. The knobs set parameters for reverb and internal sidechained compressor/gate.





Interface and reverb settings are very simple, while complex algorithms work behind them.

5 Details

5.1 Reverberation

Verbera VST is an algorithmic reverb generator.

It is different from other plugins because it takes a different approach.

The reverb isn't based on feedback circuits, instead it is based on statistical algorithms with added control on reverb parameters.

Main advantages are:

- "Uncoloured" sound (until differently requested)



- Full control on reverb characteristics (amplitude envelope, stereo width, "density")
- Stage positioning of the source for "3d" effect

Reverb is built around two components:

- Early reflections. Based on psychoacoustics, they provide localization and ambient cues to the ear
- Late reflections. The reverb "tail", it provides that "reverb" feeling

Early reflections include the following parameters:

- Size. Based on "good" acoustic proportions, it sets the overall ambient volume
- Level: The absolute level of early reflections in the overall reverb

Late reflections include the following parameters:

- Length. The overall duration of the tail (includes attack and pre-delay time).
- Amplitude envelope with pre-delay. Pre delay sets the silence before the amplitude envelope starts.
- Amplitude modulation. Sets amplitude modulation added to the amplitude envelope.
- Lowpass filter envelope. In real environments high frequencies decay faster. A soft lowpass filter helps while simulating such effect.
- Stereo width envelope.
- "Density" envelope. Sets how reverb tail "builds" in time.
- Level. The absolute level of late reflections in the overall reverb.

An "algorithm" menu sets the algorithm employed.

5.2 Dynamics

An optional "dynamics" mode is available for the reverb. When switched on (by the 3d button in the lower area), it engages a sidechained compressor/gate on the reverb.

Dynamics module is very useful for complex reverb control.

Compressor or gate mode is set depending on the position of "ratio" knob. When this knob is set to left, gate mode is engaged. When the knob is set to right, compressor mode is engaged. When "ratio" is set to "1" (vertical position), non dynamic control is active.

Dynamics module works in a sidechained configuration:

- input audio is sent to the control chain. It generates the control signal (sidechain)
- reverb output is controlled by the control signal



Gate mode: the higher the audio input level, the lower the reverb level.
Compressor mode: the lower the audio input level, the lower the reverb level.

"Threshold" knob sets the threshold level (in dB).

Gate mode: when audio input is above threshold reverb is untouched.
Compressor mode: when audio is below threshold reverb is untouched.

Time constants for dynamics module (attack and release) are automatic.

5.3 Chorus

Chorus module is useful to "animate" the reverb and get more interesting sounds. Chorus is based on pitch modulation. Amplitude and frequency of oscillation of the pitch can be set by the controls on the upper display. Reverb isn't "chorused" with itself. It is simply pitch modulated.

5.4 Para-graphic equalizer

A full 10 bands para-graphic equalizer is included.

The reverb generated by the algorithms is perfectly "flat" in frequency (excluding the lowpass filter envelope).

The equalizer is wired at reverb output (it is the last stage of the overall effect) and is very useful to tailor the reverb to the application.

Frequency and gain for each filter can be set by dragging the controls.

- Hold "shift" key for a more detailed control.
- Hold "ctrl" key and drag to set the "Q" factor for each filter.
- Use very broad bells for high and low shelf filters.

5.5 Tips

- Set an increasing density for a more "light" effect
- Try to tune "size" to "length" to make early reflections and late reflections glue together
- Use dynamics module, "gate" mode, with a low threshold, to cut the reverb when the audio input fades out (makes the reverb effect less audible)
- Use dynamics module, "gate" mode, with a high threshold, to enhance the reverb on loud passages (makes the reverb stand out on high level audio)



- Use dynamics module, "compressor" mode, to enhance the reverb on soft passages (makes the reverb stand out when the audio goes down) and for special effects

6 Feedback and assistance

Please refer to www.sknote.it.

