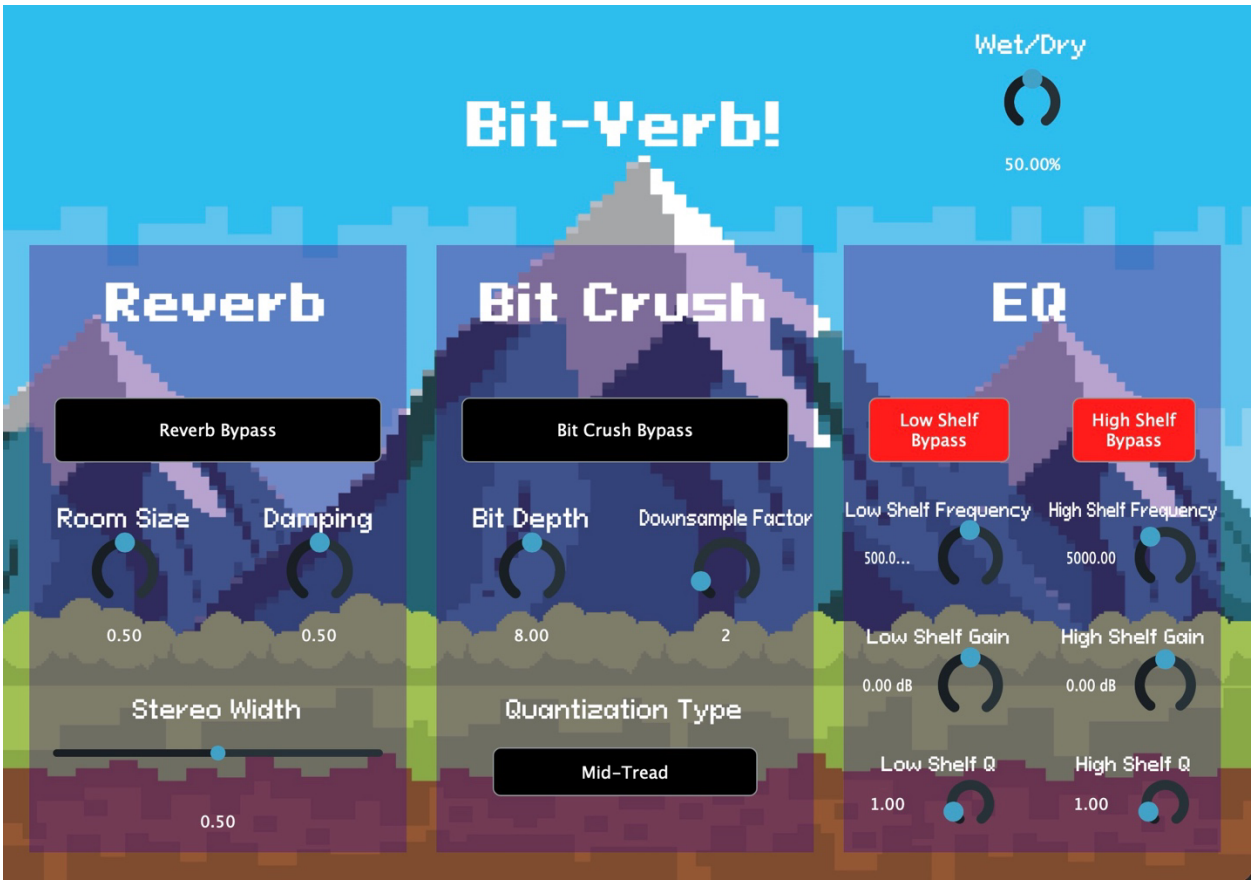
BIT-VERB!

A multi-effect plugin
by Hanna Berger



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1. Introduction

Hello! Thanks for choosing to dive into *Bit-Verb*! It's a multi-effect plugin that contains modules for reverb, bit crushing, and EQ. The cool thing about *Bit-Verb* is that you can use each of the modules individually as well as in combination with one another. This means that it can produce a wide range of sounds from a large concert hall to gritty distortion. Explanations on how to use each of the modules are included below. Enjoy!

2. Reverb Module

The Reverb Module (Fig. 1) is the first module that the audio passes through. It contains three different parameters that you can manipulate and a toggle button that will bypass the module.

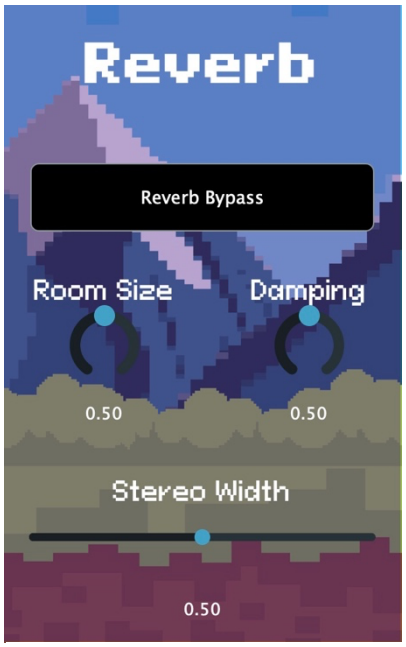

Figure 1

2.1. Bypass

The bypass toggle button at the top will allow you to skip over the reverb module when processing audio. The default setting is off, so the audio will pass through the reverb module. Click on the bypass button to turn it on. It should turn red when you do so, and you should no longer hear any reverb effect on the audio. Click on it again to turn it off and hear reverb again.

2.2. Room Size

The knob on the middle left controls the room size parameter. This controls how large of a room the reverb is emulating and will make the audio sound bigger or smaller. Room size has a range from 0.0 to 1.0 with a default of 0.5. Click and drag on the slider, or double click on the text box to edit the room size value.

2.3. Damping

The knob on the middle right controls the damping parameter. This controls the absorption of high frequencies in the reverb and shortens the reverberation time when increased. Damping has a range from 0.0 to 1.0 with a default of 0.5. Click and drag on the slider, or double click on the text box to edit the damping value.

2.4. Stereo Width

The slider at the bottom of the reverb module controls the stereo width of the reverb. This controls how much of the stereo field the reverb takes up with 0.0 being centered, while 1.0 is spreading across the whole stereo field. Stereo width has a range from 0.0 to 1.0 with a default of 0.5. Click and drag on the slider, or double click on the text box to edit the stereo width value.

3. Bit Crush Module

The Bit crush Module (Fig. 2) is the first module that the audio passes through. Bit crushing is a type of distortion that is a combination of downsampling and quantization. *Bit-Verb* contains three different Bit crush parameters that you can manipulate and a toggle button that will bypass the module.

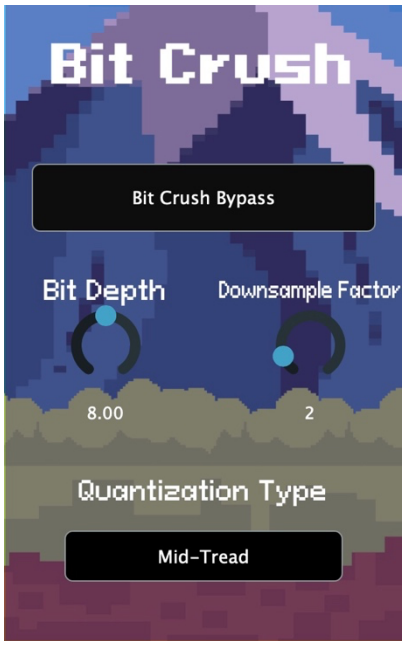

Figure 2

3.1. Bypass

The bypass toggle button at the top will allow you to skip over the bit crush module when processing audio. The default setting is off, so the audio will pass through the bit crush module. Click on the bypass button to turn it on. It should turn red when you do so, and you should no longer hear any bit crushing effect on the audio. Click on it again to turn it off.

3.2. Bit Depth

The knob on the middle left controls the bit depth parameter. The number of bits determine the number of quantization levels that the audio will snap to. Bit depth has a range from 0.0 to 16.0 with a default of 8.0. Click and drag on the slider, or double click on the text box to edit the bit depth value.

3.3. Downsample Factor

The knob on the middle right controls the downsample factor. This is the amount which the audio is downsampled by before quantization. The downsample factor has a range from 1 to 10 with a default of 2. Click and drag on the slider, or double click on the text box to edit the downsample factor value.

3.4. Quantization Type

The knob on the middle right controls the quantization type. By default, the audio is quantized using mid-tread quantization, but you can switch to mid-rise quantization by clicking on the button. It should turn red and read “mid-rise” when mid-rise is being utilized. Click on the button again to return to using mid-tread quantization. The quantization type is best heard when the Bit Depth is very low.

4. EQ Module

The EQ Module (Fig. 3) is the third module that the audio passes through. It contains both a low shelf and a high shelf filter each with controllable parameters. There is also a bypass button for each of the two filters, so you can use one at a time, both, or neither when processing an audio signal.

Figure 3

4.1. Bypass

The bypass toggle buttons at the top will allow you to skip over the low shelf and/or high shelf filters when processing audio. The default setting is on, so the audio will not pass through either of the filters in the EQ module. Click on one or both bypass buttons to turn them off and apply the filter(s) to the signal. The buttons should turn black when you do so, and you should be able to hear the effects of the filter(s). Click on the buttons again to turn them on and remove the filter(s).

4.2. Low Shelf Filter

The first filter included in the EQ module is a Low Shelf Filter. It is controlled by the knobs on the left side of the EQ module. The cutoff frequency, filter gain, and resonance (q) value can all be controlled. The low shelf cutoff frequency ranges from 10Hz to 1kHz with a default value of 500Hz. Gain ranges from -20dB to 20dB with a default of 0dB. Finally, Q ranges from 0.0 to 10.0 with a default of 1.0. Click and drag on the sliders, or double click on the text boxes to change the Low Shelf Filter parameter values.

4.3. High Shelf Filter

The other filter included in the EQ module is a High Shelf Filter. It is controlled by the knobs on the right side of the EQ module. The cutoff frequency, filter gain, and resonance (q) value can all be controlled. The high shelf cutoff frequency ranges from 2kHz to 10kHz with a default value of 5kHz. Gain ranges from -20dB to 20dB with a default of 0dB. Finally, Q ranges from 0.0 to 10.0 with a default of 1.0. Click and drag on the sliders, or double click on the text boxes to change the High Shelf Filter parameter values.

5. Dry/Wet Mix Knob

There is one more feature included in the *Bit-Verb* plugin. The Wet/Dry Knob (Fig. 4) controls a mix between the unprocessed audio signal before it entered the plugin (dry), and the audio after it being processed by the selected modules (wet). It ranges from 0%, which is fully dry, to 100%, or fully wet. The default value is 50%, so you should be able to hear an equal mix of the dry and processed signals when you open the plugin.

Figure 4