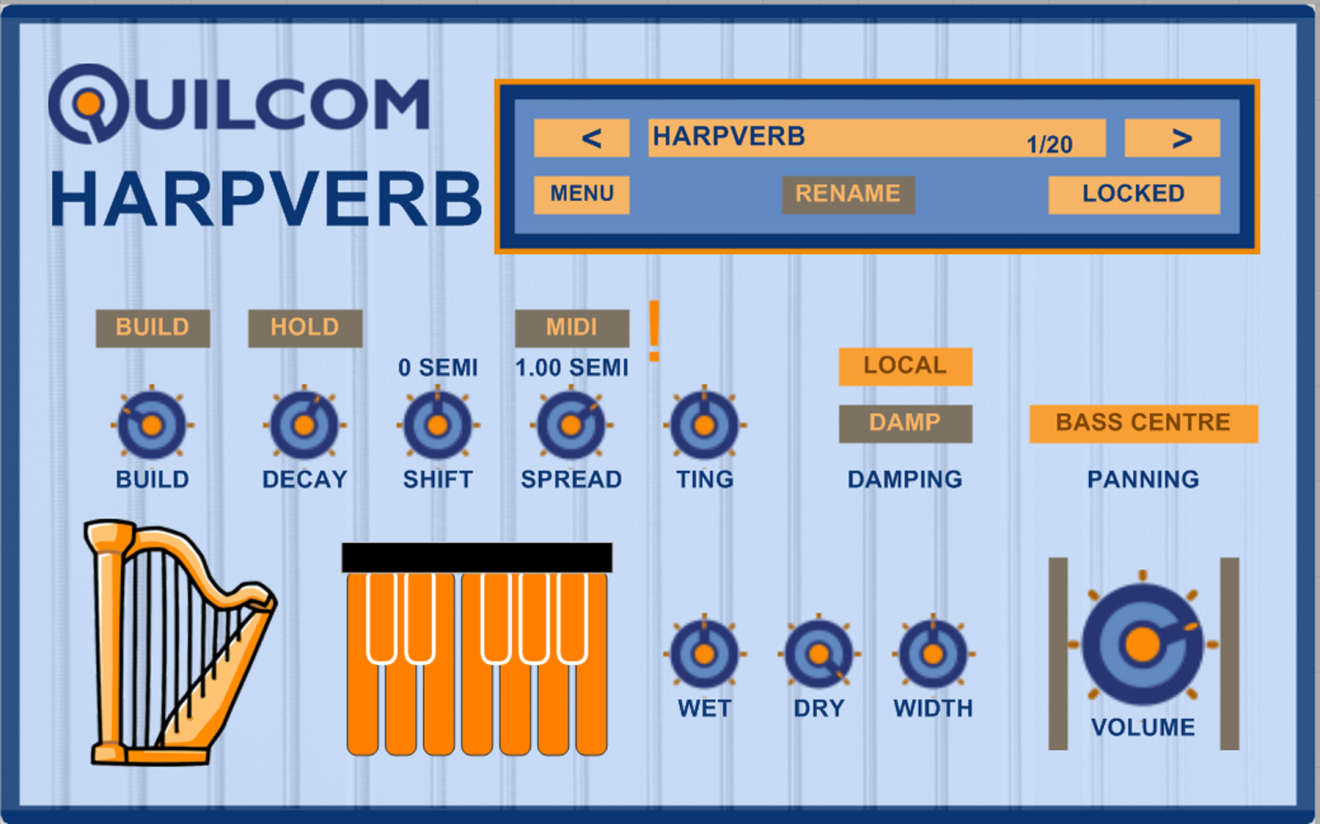
**QUILCOM HARPVERB USER GUIDE**



**Design**

The Quilcom Harpverb is a VST plugin “reverb” effect with a MIDI control input. Unlike a conventional reverb, it uses a bank of 61 tuneable resonating comb filters to give a string-like sound.

The basic idea is to simulate the sound of chromatically tuned strings, to provide the kind of sound you’d get by making a noise into a harp’s sound box, or a piano, with the damper pedal pressed. This is called sympathetic resonance.

This means you could add sound to a dry piano source to simulate sympathetic string resonances. Since it has a MIDI input it allows you to use the sustain pedal to control damping, like on a real instrument (or control it from the GUI).

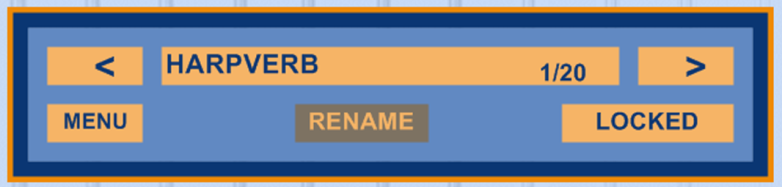
However, it can do much more than this, using the controls on the front panel to deviate from the basic function.

I’ve made a YouTube demo using the inbuilt presets, to give some idea of the wide range of effects you can experiment with.

<https://youtu.be/RYwKQcZl7rA>

What follows is a functional description of the controls and displays.

**Preset Manager**



Several presets are provided to demonstrate some possibilities, and to act as starting points.

To page through the presets, use the Left and Right arrow buttons.

To select a preset from a dropdown list, click in the preset name box.

The **MENU** button provides options to save/load individual presets or whole banks, or to copy and paste the currently displayed preset into another slot.

The **LOCKED** button prevents you from renaming the current preset and also doesn’t update the preset for the DAW while you are experimenting with settings. If you want to keep your new settings in the DAW’s song file, click the button to change to **UNLOCKED**. In this mode the **RENAME** button will be lit and you can use it to change the preset name.

**Settings**



This is where the main settings for the resonators (strings) are made.

**BUILD** means to have a feedback ratio in the resonators greater than 1. In this condition the reverb sound will build up rather than decay. The **BUILD** button turns this off and on with the mouse. The **BUILD** *knob* sets the **BUILD** rate. At maximum it will be fast! At lower settings it allows a more expressive use with a slower **BUILD** for nice pad sounds and atmospheres.

Tip: The WET signal can easily go into clipping with **BUILD**, so you may need to set it to a low level (see later).

**DECAY** also controls the feedback for each resonator. The **DECAY** knob adjusts from very short to nearly indefinite. Above the **DECAY** knob is the **HOLD** button. This changes from the knob’s current **DECAY** setting to a feedback ratio of exactly 1, to give a *very* long delay, sometimes for several minutes. Note that this is not a full *freeze*, but it provides a very slowly devolving tail. When the **HOLD** button is lit, no sound can be added to the resonators (the DRY signal can still be heard though). This means you can selectively **HOLD** the current tail while the dry sound continues with no extra effect added.

The base setting of the **SHIFT** knob (**0** **SEMI**) provides a full 5 octaves of “strings” running from C1 to C6 (C3 is middle C). The **SHIFT** knob can offset this tuning, in semitones, over a wide range. At high levels of shifting *down* the resonators, being delay-based, turn into more of a multiple audio delay system.

The **SPREAD** knob allows you to deviate from the 1 semitone-per-string setting (default). This provides a wide range of settings for the frequency span of the resonators. Very low settings will give strange phasing or flanging effects, since there will be much cancellation and reinforcement of various closely grouped harmonics. At higher settings you’ll get a wider range of cover and different sound colours. Used in combination with **SHIFT** there is a huge range of possibilities!

The idea of the **MIDI** button is to move the **SHIFT** value according to the ***last***key pressed on your MIDI keyboard. In some circumstances this can be used creatively, to change all the strings together, to maybe match a key change in the source music.

The **TING** knob is for setting the slide time when a **SHIFT** happens. At maximum, any change of **SHIFT** value will excite the resonators and an added “ting” sound will be the result. At lower values there will be a slide between **SHIFT** values.

**DAMPING**: This section sets how the decay is damped and there are 2 possibilities:

* When **LOCAL** is selected (as shown) the plugin operates like a typical reverb; the tail is always present unless you hold the **DAMP** button down.
* If you click on **LOCAL**, the button changes to indicate **PEDAL**. In this situation your MIDI sustain pedal operates damping. In this condition there will be no reverb unless you press the sustain pedal. This will then operate like a piano whereby you only get the sympathetic resonances when the pedal is pressed. The text in the **DAMP** button changes to **SUSTAIN** when the pedal is pressed and is then only under MIDI control.

Next to the MIDI button is an ***exclamation mark*** button to allow you to clear any stuck notes and clear the plugin’s audio buffers.

**Mouse Harp and Chords**



Originally the harp icon was just decoration. But for fun I made it so you can create sound with your mouse:

* Left click will sound a single note (pitch is left to right and height is volume).
* Left click and drag will sound a sequence of chromatic notes.
* Right click will excite all the resonators with a short burst of tuned noise. Vertical position will control the cutoff frequency of the noise.

Please note that this is a *very* simple and monophonic scheme, but it might entertain you for a few seconds!

The **keyboard** allows you to set “chords” so only the selected notes will resonate. If you highlight a note then all those with that name will resonate. So if you select C, Eb and G, 15 strings will resonate to give a minor key type of sound. Of course you can use the SHIFT function to alter the actual keys selected.

To make setting easier, the dark strip above the keys can be clicked to turn on or off *all* the chord notes.

**Mixer**



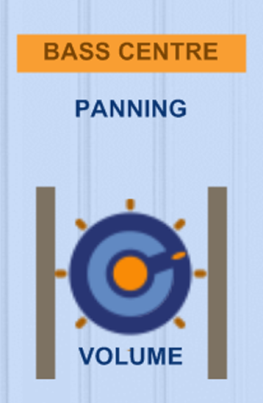
The **WET** knob controls the effect level.

The **DRY** knob controls the incoming signal level in the mix (no effect).

Both of the above knobs feature a clip indicator. If either signal goes to clipping the pale blue infill will turn red for 1 second.

The **WIDTH** knob controls the size of the stereo field. Minimum is mono, default centre is normal stereo and at higher levels the apparent field is wider than stereo. Note that this controls the **WIDTH** of the reverb (**WET**) signal only. The incoming **DRY** signal will be unaffected.

**Output**



**PANNING**: The selector here showing **BASS CENTRE** allows for a choice between 3 panning types:

* **NATURAL** gives the higher resonator string to the right and the lower to the left. This would be like recording from a real piano. If you use the Harpverb for adding sympathetic resonance to a piano, this would be the best option (assuming the piano sound itself is panned this way).
* **BASS CENTRE** put the lower frequencies in the centre and alternates left/right the other key groups\*.
* **LEFT-RIGHT ALT** alternates key groups\* between left and right irrespective of frequencies.

\*Key groups are groups of four in chromatic sequence.

**VOLUME** is the final output level from the plugin. The 2 **vertical bars** are averaged peak level indicators. They aren’t calibrated, so I would suggest if accuracy is needed that you refer to the DAW’s meters. If clipping occurs, the paler blue infill will go red and hold for 1 second. This can indicate very short clipping peaks which you may not notice or hear.