OVER LOUD
AUDIO TOOLS

Overloud **BREVERB vers. 1.5.0** - User Manual – **US**

BREVERB

reverberation plugin

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1. Introduction

BREVERB, the newborn in Overloud's family, is one of the most complete high-end-studio-quality reverbs ever seen. It offers a suite of 4 high-quality reverb algorithms:

Hall

Room

Plate

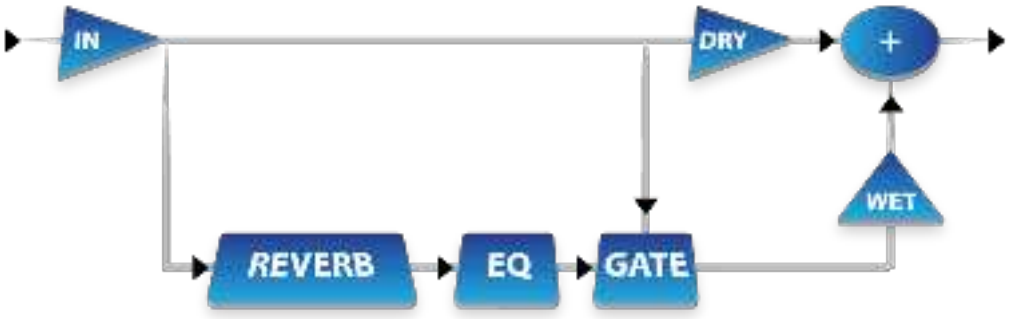
Inverse

All are specifically designed to give the sound of an acclaimed high-quality outboard reverb unit.

BREVERB offers high-quality musical reverb processing with a flexibility previously available only in extremely expensive hardware reverbs. BREVERB is also engineered to achieve the highest levels of musicality helping you to place it perfectly in any mix.

Unlike convolution reverbs (a reverb that reproduces the real impulse response of a real hall) which recently have gained a lot of popularity, BREVERB allows you to vary the nature of reverberation through several parameters, giving you the flexibility and real-time feedback that has always been a prerogative of the most famous studio digital reverbs.

2. Schematics



The scheme above depicts BREVERB's signal chain.

the Input signal is split in two: the Dry portion which is the Input sound without any change whatsoever, and the Wet portion which will carry the Input sound processed by the Reverb module, followed by the EQ and Gate sections. At the far right, at the end of the processing, the Output section (the '+' in the scheme) will mix the Dry and the Wet channels in order to perfectly set the sound levels.

If we look at the lower part of the scheme and follow the signal chain we'll meet these modules:

Reverberation Unit: this is the core of BREVERB; it provides the main processing for the entire unit. You can choose between four different reverberation algorithms which heavily modify the internal structure of this module as you can see from the different set of parameters at your disposal for each algorithm. For an in-depth description of the concepts behind reverberation algorithms and their functionality please head to the next chapter.

EQ: this EQ Unit is a two-band fully parametric equalizer. Each band is allowed to span the entire audio spectrum and can be operated with the usual set of three parameters: Gain (dB), Frequency (Hz) and Q factor (%). While the first and the second parameters will set the amount and frequency of the process, the Q factor is a little more complex: in a common situation it will set the width of the EQ's bell-shaped curve, but at the extreme settings it will turn the EQ into a second order Shelf EQ (high for band 1 or low for band 2) or a filter (a high-pass for band 1 and a low-pass filter for band 2)!

Gate: the Gate is a sophisticated switch that lets you mute the wet sound in different fashions, according to its parameters. As with any dynamic processing process it has gain-detection mechanism which analyses the dry sound level. The Gate can be very effective in getting special effects or to clean up the sound a bit in situations where the tail of the reverb tends to muddy-up the mix. There are several parameters to control its action: Threshold (dB), Attack (Sec), Release (Sec), Hold (Sec), Shape (Linear or Sigma) and Slope (%). The Threshold parameter sets the limit (expressed in dB) under which the gate will close. There is an automatic “re-open” threshold that is set by BREVERB's engine after analysing the signal characteristics. The Attack sets the time needed by the gate to switch from closed to open, while the Release parameter sets the amount of time it takes for the Gate to close. The Hold parameter adds an amount of time in which Gate remains open even if the signal level drops below the Threshold. The Shape parameter controls the shape of the attenuation curve: you can choose between Linear and Sigma shapes. If the Shape parameter is set to Sigma, the Slope parameter will control the exact shape of the 'S': higher values mean a steeper curve.

3. Behind the Curtain

Before we jump to the detailed description of the programs and parameters, let's take a look at the philosophy laying behind BREVERB's reverberation algorithms.

BREVERB is the result of a great deal of research into acoustics and reverberation. It will produce sound of two types: ambience and effect sounds.

Ambience is the use of reverberation or reflected sound energy to give recorded music a sense of depth equivalent to the one naturally present when recording a performance in a real acoustic location. Ideally, ambience imparts warmth, spaciousness and depth to a performance without colouring the direct sound at all.

Recent research has shown that this phenomenon depends most critically on the shape of the initial reverberation build-up and decay. Ambience is perceived and has a benefit while the music is running, but once the reverberation has decayed about 15 dB from it's start level it is no longer audible in the presence of the direct sound. So the time it takes for the sound to build-up and decay 15 dB determines the perceived reverb time, regardless of what the decay time to -60 dB (commonly referred to as RT60, a way to measure reverb time of real and virtual acoustic spaces) is. Some very good halls for recording have a rather uneven initial build-up and decay that gives a much longer effective reverb time than their RT60 reverb time might suggest.

It has become common practice to use predelay in an attempt to emulate the sound of these halls, but the result always sounds unnatural. In fact if we look carefully into echograms of real halls we can see that the sound builds-up gradually, while the use of predelay imparts a sharp attack to the reverb making it sound completely different.

BREVERB can manipulate the build-up and decay of the initial part of the reverberation envelope in order to obtain a sound which is very natural but at the same time very adjustable. The primary controls allowing you to modify this initial part of the envelope are SHAPE, SPREAD and SIZE. While SHAPE controls the shape of the reverberation envelope, SPREAD and SIZE set the time over which this shape is active. In other words, SIZE acts as a master controls for the apparent size of the space being created by BREVERB: once it is set, SPREAD and SHAPE are used to adjust the duration and shape of the initial reverb envelope, which together provide the main sonic impression of a room's size.

When SHAPE is at minimum, the initial part of the reverberation envelope builds-up very quickly to a maximum amplitude and then dies away quickly at a smooth rate: this envelope is characteristic of small reverberation chambers and plates and the sound created is ineffective in order to create ambience. Reducing the initial sharp attack by raising the SHAPE control causes the reverb to build more slowly and to sustain briefly before it dies away. The more the initial attack is reduced, the slower the envelope builds-up and the longer the sound sustains. When the SHAPE control is raised at more or less a quarter of its maximum value, SPREAD has very little or no effect at all. Once that limit is surpassed SPREAD can affect the length of both the buildup and the sustain. By raising the SHAPE value even further the buildup and the sustain remain similar while a secondary sustain shows up at a lower level than the first one: this simulates a very diffused reflection of the back wall of a hall, and it is very effective in creating a sense of size and space. This reflection mode reaches an optimal loudness at SHAPE values higher than half way though. It is important to note that none of these shape effects are clearly audible unless TIME is set short enough.

Let's focus on the TIME parameter for a moment. As a starter it's mandatory to state that TIME is calculated following the RT60 method, which means that it measures the time interval between the beginning of reverberation and when the tail reaches -60dB in level. Following this much needed clarification it's important to highlight TIME's strong logical connection with the SIZE parameter. To better explain this concept, let's make an example: if you set SIZE to a low value, roughly corresponding to a small room, and TIME to a high value, you are trying to model a totally unrealistic situation. It would be better to set a TIME parameter so as to match a given SIZE parameter, in order to obtain a more realistic solution and a better performance form the reverb. Nevertheless you CAN still have this setting on BREVERB: just don't expect that it will sound perfectly natural!

The effects class of sound does not aim to give an idea of space or to reproduce a specific hall or recording room, instead it tries to set a particular colour, and in doing so it allows you to work on your creativity. Two families of algorithm match this class of sound: plate and inverse. Each one of them is different: the first one is a plate reverb simulation inspired by vintage hardware that can faithfully recreate the thick sonic character and also the unusual effects that were typical of vintage hardware units. The second one is a completely new and creative kind of effect that take the impulse response and flips it over, giving you a brand new sound!

4. BREVERB Graphic Interface



Pict.1: BREVERB's Compact Interface

When you open BREVERB's interface (after you successfully authorized it!), you face the front panel which is made-up of several parts: each one of them has its own particular function. At first sight you'll see the In and Out level which form the sound chain, a central menu which include several fundamental commands and the solution we adopted to select algorithms and presets, plus a series of knobs that can set the parameters being shown in the boxes right above each of them. On the top left corner of the plugin you can click on the “?” button to open the manual and clock on the circular button to open the credit window.

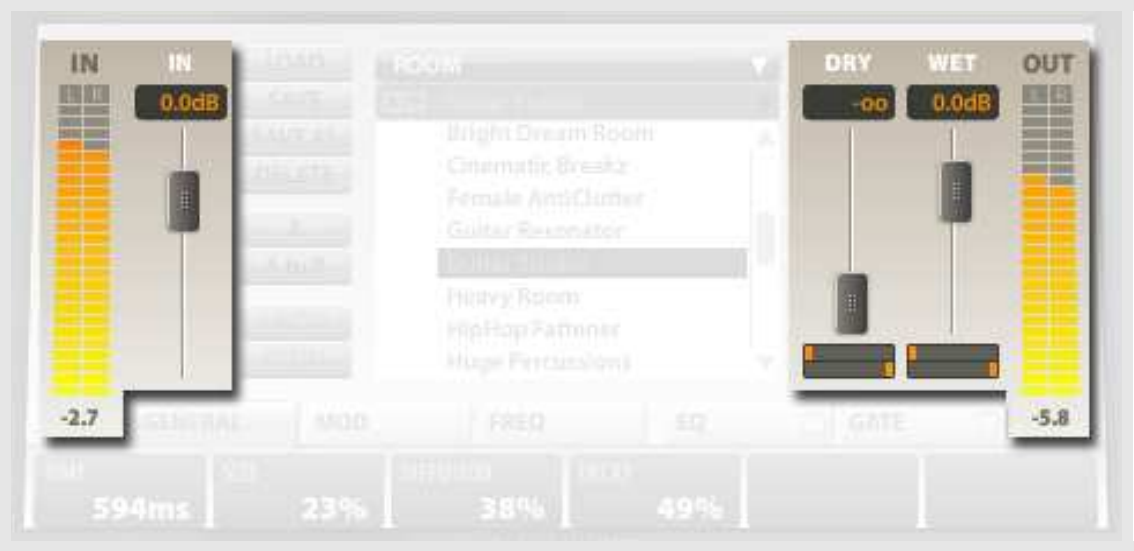
Please note that you can set every parameter's value in different ways:

- clicking on the knob or on the relative display and dragging it so as to “operate” the knob;
- clicking on the display and typing the new value on your keyboard (in order to set the “-infinity” value on the Level Fader you can type a value that is lower than -100 or else you can type the string “-oo” with two “o”).

In order to get a better control, you will see that click and dragging the mouse quicker will make parameters' changes happen faster.

The mouse sensitivity to speed changes can be set in the Preferences Panel.

4.1 The Sound Chain



Pict. 2: The sound chain

The sound chain is composed of the IN and OUT faders and meters.

The **IN meter** (located on the left of the plugin window) displays the input level for the left and right channels independently, while the **IN fader** lets you set that level. At the end of the fader there is a display showing the numerical value (measured in dB) of the input level chosen: the range span from -∞ to +12 dB. Right under the meter, there is a value showing the peak level reached by the input signal. When you open up the plugin the value shown is the lowest possible, -96dB, but as soon as an input is present, this value will change according to the input. If you want you can reset the value by clicking on it.

The **OUT section** is a little more complex: it is made up of a level meter (split into left and right channel views), two faders, one controlling the Dry Sound and the other the Wet Sound, and two split-horizontal sliders that control the pan pot. Like the input section, under the fader there are the displays showing the numerical values of the dry and wet levels: the range is the same as for the IN fader. The pan sliders are split into left (the upper slider) and right (the lower one) channels and can be operated with the mouse. Right under the OUT meter there is a peak indicator for the output level; this value can be reset by clicking on it.

4.2 The Knob Section



Pict. 3: The knob section

In the lower section of the plugin you'll find six knobs and six zones with labels and relative values associated to the knob underneath. For a complete list of parameters grouped under algorithm's type see the Appendix. This section is organized in pages in BREVERB and you can shift from a page to another with a click on its title tab. The EQ and the GATE tabs also feature a switch activating or bypassing the whole section.

EQ: the EQ section is a fully parametric two-band equalizer that lets you set, for every band, the Gain (in dB), the Frequency (in Hz) and the Q factor of the signals.
Once you've set it up, you can enable or disabled it even while you're on the General page by clicking on the led-square on the right of the EQ title tab.



Pict.4: EQ enabled and Gate disabled

GATE: the GATE section is a sophisticated switch that mutes the processed sound according to the settings of its parameters. [See the Appendix for a full descriptions of them] Just like the Master EQ, once it's set up you can switch it on or off as you like while setting other parameters.

4.3 The Fader View

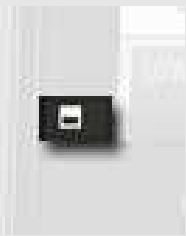


Pict. 5: The fader panel and the drag & drop assignation of parameters to the faders

On the upper right corner of the plugin, you can see three small buttons (see Pict. 6a). They control the switch between the Compact and the Fader view interface modes. Clicking on the topmost one, the Fader view interface mode is activated, which sports an expanded long-throw fader panel on the right of the main interface. Clicking on the "+" and "-" buttons, you can add and remove one additional fader at a time. You can have a maximum of 6 faders opened. Clicking again on the topmost button, you switch BREVERB back to the Basic interface view. On the lower right corner of the plugin you can find another button (see Pict. 6b) which activates and deactivated the Advanced mode showing the additional faders in the bottom of the plugin.



Pict. 6a: Right side Compact and Fader view modes switching buttons



Pict. 6b: Bottom side Compact and Fader view modes switching button

The additional faders are freely assignable and totally user-programmable by dragging-and-dropping a specific parameter on them.

Mapping any parameter to a knob is very easy. Just right click (or Ctrl+click) on any parameter knob or name on any of the plugin pages and drag and drop the parameter on the chosen fader.

This solution will make your most sought-after parameters at immediate disposal for modifications. The mapping is saved with the preset or you can make your own preset mapping for each algorithm (in the Preferences Panel).

4.4 The Central Menu and its Commands

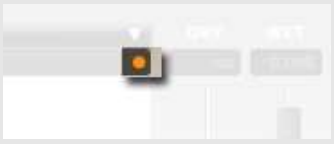


Pict. 7: The Central Menu

The central area of the plugin is the home to the main menus and buttons. In the section at the right of this area you will find the algorithm selector and the presets menu, while in the section at the left is where you will operate the buttons controlling the Load, Save, Save As, Delete, A/B, A->B/B->A, Undo and Redo functions.

The algorithm selector: clicking on the combo selector in the upper position lets you choose among the two algorithms at your disposal in BreverbPE. Clicking on any of the two will activate the default settings for the selected algorithm if you never loaded that algorithm before for that preset. BreverbPE's preset structure holds all parameters for all algorithms; this is helpful if you need to recall settings from another algorithm you were working on at any time or if you happen to mistakenly switch algorithm.

The preset list: beneath the algorithm selector, there's a box featuring the name of the loaded preset, a tiny round button to the right of it and a list of folders for the presets. Two small arrows in the left part of the box lets you to change the selected preset up and down in the list; this is useful when you want to scan the sound of different presets. The list can be scrolled up and down with the scroll bar or with the mouse-wheel and features folders named after the algorithms which hold the relative algorithm's presets. The folders are marked by a small triangle pointing to the right: clicking on it gives you access to the folder's content, which will be shown right under its name. Clicking a second time on the triangle (now pointing downward) makes the folder view collapse. Double-clicking a preset name or selecting it and hitting the “Load” button will load it. The small round button alongside the “loaded preset” field is merely and indicator advising you the the loaded presets was changed since it was loaded thus requiring a save command if you wish to have it updated in the preset list.



Pict. 8:
the modified- preset indicator

Command buttons: on the left of the preset menus you can see several buttons that refer to the plugin's file and editing management:

Load – having selected a preset in the preset menu on its right, click on this button to load that preset. The same action can be obtained with a double click on the preset name in the preset menu.

Save – after having tweaked something on a preset, click this button to save the changes. If you created a new preset starting from the default settings you get when opening the plugin, then clicking this button will trigger the same function as the “Save As” button.

Save As – if you want to save a modified preset with another name, then this button is for you.

Delete – as the name suggest, clicking this button has the effect of deleting the preset selected in the preset menu on its right (IMPORTANT!: not the loaded preset).

A/**B** – this is a dual state button; it can be used to store and manage two different settings that you may want to compare. For example, after setting up the plugin in order to obtain a specific result, you might want to experiment with a different setting while keeping the one you've just been working on. Clicking on the “A” button will turn the button to show a “B” activating the relative settings. You then tweak the settings in order to find the alternative result. Once you've done with the “B” settings, clicking on the “B” button switches between the “A” and “B” states and settings letting you quickly compare the two sounds.

A to B/B to A – this is another dual-state button serving as a 'helper' for the A/B one. Clicking on it while in the “A” state of the plugin of the above mentioned button will copy the “A” settings to “B”. The opposite happens when “B” is active. This is the solution if you need to slightly tweak an already rather-good preset and to make comparisons in your mix with the former settings.

Undo and **Redo** – these two buttons control the undo-history letting you revert back or forward to a previous plugin parameter change you might have made.

Preferences Panel

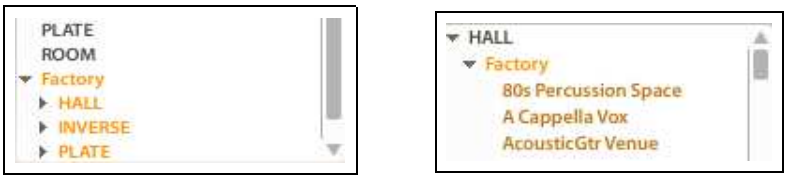


Pict. 9: The Preferences Panel

Clicking on the square button in the upper left corner of BREVERB as shown in Picture 6, will dim the main display and show the Preferences Panel in its place. Let's its features:

Set master controls at preset loading: when unselected, loading a specific preset will not have an effect on the current settings of the Master Control section (Dry, Wet, pan, etc.). When selected, loading a preset will also load the said Master Control section. This preference lets you operate BreverbPE in two different ways: in the 'old-fashioned' way where levels and panpots are always the same when switching preset and the 'alternative' way which lets you save and load presets with specific levels and panpots (IE. a stereo input reverb with a mono output panpotted all the way to the right).

Show factory preset: this preference controls where the Factory preset will be shown in the preset menu. When the “With user presets” checkbox is selected, the Factory presets will be shown together with the User presets. When the “In a separate folder” checkbox is selected, the Factory presets will be shown in a separate folder. This preference lets you choose the preferred way of browsing the presets: either all Factory or all User presets at once, or both of them together.



Pict. 10: “In a separate folder” is selected on the left, “With user presets” on the right

Sensitivity: it controls the sensitivity of the mouse when used to operate a knob or a fader. When set to a value different from 0, the faster you move the mouse, the faster the parameter will change.

Save slider associations: when active, once you've set up the parameters to be controlled by the long faders in Fader View mode, these settings will be remembered by BREVERB. When you open up the plugin, it checkes if the feature is set and if it isn't it will load the

default association. Restore Default Associations will revert the faders back to their initial association settings.

5. Parameters

In order to use all the functionality of BREVERB, we warmly recommend to read this chapter and learn all of its features. Among the parameters there is a group of them that is common to every algorithm: we will describe them just once at the beginning. They are grouped into two different families of parameters, one of which is also characterized by an enable/disable switch at the right corner of the title tab.

5.1 – The Master section

In Level: (dB) Determines the global input level of the plugin; its action is prior to the input level meter.

Dry Level: (dB) Determines the level of the direct unprocessed sound; it is typically set to –∞ when the reverb is used on an auxiliary bus. When used in an insert, gradually lowering this parameter can give the idea of a more distant sound.

Wet Level: (dB) Determines the amount of the reverberation in the output stage.

Dry L Pan: Sets the pan position of the left input channel fed into the final mix.

Dry R Pan: Sets the pan position of the right input channel fed into the final mix. In combination with the previous parameter, it can be used to control the stereo width of the dry signal. For example, the Dry can be made mono by setting both these two parameters to the mid position; the stereo image can be inverted by setting the Dry L Pan to right and the Dry R Pan to left.

Wet L Pan: Sets the pan position of the left reverberated channel fed into the final mix.

Wet R Pan: Sets the pan position of the right reverberated channel fed into the final mix. In combination with the previous parameter, it can be used to control the stereo width of the reverb. For example, the Wet channel can be made mono by setting both these two parameters to the mid position, or the reverb stereo image can be inverted by setting the Wet L Pan to the far right and the Wet R Pan to the far left.

5.2 - The EQ section

This section features a fully parametric two-band equalizer. It lets you set the Gain, Frequency and Q factor of each band, letting you shape your sound as you like. Clicking on the square-led located in the right corner of the title-tab switched the EQ on and off; this is an useful feature to compare the effect with and without the EQ.

P1 Gain: (dB) sets the Gain for band 1.

P1 Freq: (Hz) sets the center frequency for band 1.

P1 Q: (1/Oct) Normally, it sets the width of the bell-shaped curve for band 1, but at its extreme settings will turn it into something completely different. In fact, setting this parameter to its minimum value (CCW) will transform the EQ into a Second Order Low Shelf, while turning the parameter to its maximum value (CW) will transform the EQ into a High-Pass Filter with a 12db/oct slope (the P1 Gain parameter will not have any effect in this case).

P2 Gain: (dB) sets the Gain for band 2.

P2 Freq: (Hz) sets the center frequency for band 2.

P2 Q: (1/Oct) Normally, it sets the width of the bell-shaped curve for band 2, but at its extreme settings will turn it into something completely different. In fact, setting this parameter to its minimum value (CCW) will transform the EQ into a Second Order High Shelf, while turning the parameter to its maximum value (CW) will transform the EQ into a Low-Pass Filter with a 12db/oct slope (the P1 Gain parameter will not have any effect in this case).

5.3 – The Gate section

The Gate is a sophisticated switch that lets you mute the wet sound according to its parameters' settings. As all other dynamics-based effects it has a level-detection unit set to respond to the dry input level. Just like the Master EQ control, The Gate can be switched on and off by clicking on the little square led located in the upper right corner of its title tab:

Threshold: (dB) The Threshold parameter allows you to set the level limit in dB: when the level goes under this threshold, the gate is activated. An automatic “re-open” threshold is also featured; BREVERB sets it automatically after an analysis of the incoming signal content.

Attack: (Sec) The Attack parameter sets the time needed by the gate to switch from closed (active) to opened (not-active).

Release: (Sec) The Release parameter sets the time it takes for the Gate to close completely.

Hold: (Sec) The Hold parameter sets the amount of time the gate will remain opened (not-active) regardless of the input level and the threshold setting.

Shape: (Linear or Sigma) The Shape parameter allows you to shape the attenuation curve: you can choose between linear and sigma .

Slope: (%) If the Shape parameter is set to Sigma, the Slope parameter will control the exact shape of the 'S': higher values mean a steeper curve.

Note: Release and Hold can be sync'ed to the host BPM

5.4 - The Dynamic section

This section features a set of controls which allow the modulation of some of BREVERB's most important parameters via the input level.

To Level: (%) controls the degree of influence the level of the signal present at BREVERB's inputs will have on the Wet output level. Positive values will raise the Wet level when the input level raises, negative values will lower the Wet level when the input level raises (and viceversa).

To Time: (%) controls the degree of influence the level of the signal present at BREVERB's inputs will have on the Reverb Time parameter. Positive values will raise the Reverb Time when the input level raises, negative values will lower the Reverb Time when the input level raises (and viceversa).

To EQ: (%) controls the degree of influence the level of the signal present at BREVERB's inputs will have on the overall colour of BREVERB. Positive values will raise the Wet level when the input level raises, negative values will lower the Wet level when the input level raises (and viceversa). The 'To EQ' control doesn't influence any of the other 'EQ' parameters in the GUI, instead it uses a 'hidden' first order hi-shelving filter with a very soft action.

5.5 - Hall Reverb

General

Time: (Sec) TIME sets the duration of the reverberation tail. It's also influenced by the SIZE parameter.

Size: sets the rate of build-up diffusion after the initial period, which is controlled by the DIFFUSION parameter. It also acts as a master control for TIME and SPREAD. Despite its name, the apparent size of the space created is actually a combination of the settings of the SIZE, SHAPE and SPREAD controls.

Diffusion: controls the degree to which the initial echo density increases over time.

Shape: it works together with the SPREAD parameter to control the overall ambience of the reverberation created by BREVERB. It specifically determines the contour of the reverberation envelope. With SHAPE all the way down, reverberation builds explosively and decays very quickly. As SHAPE value is raised, reverberation builds up more slowly and sustains for the time set by SPREAD.

Spread: controls the duration of the initial contour of the reverberation envelope. Low SPREAD setting result in a rapid onset of reverberation at the beginning of the envelope, with little or no sustain, while higher settings spread out both the build-up and sustain.

Pre

Predelay: (Sec) sets the amount of time elapsing between the input signal and the onset of reverberation. It can be used to create a sense of distance and volume within an acoustic space.

Regen L: (%) controls the amount of left channel input signal which is recirculated into the predelay delay line. This parameter can be used to obtain a longer reverberation time with a more echoing tone.

Regen R: (%) same as Regen L but referred to the right channel.

Motion: sets the speed of modulation of the delay lines.

Depth: sets the amount of modulation of the delay lines in the reverb; together with the Motion parameter, it can be used to make the reverb tail sound more dynamic, unpredictable, rich and remove any eventual resonance or metallic ringing. Motion and Depth should be used carefully on solo instruments like pianos, woodwinds or saxophones to avoid chorusing effects. They can be used more with aggressive settings on percussive tones, guitars and mixes.

Note: Predelay can be sync'ed to the Host BPM.

Frequency

The parameters in this section control the colour of the reverberation tail and its duration for different bands of frequencies. In particular, it is possible to set the reverberation time of the low and high frequencies as a multiplier of the master reverberation time.

Low: Sets the reverberation time of the low frequencies relative to the master reverberation time. It is expressed as a time multiplier. For example, setting Low to 1.8x means that the reverberation time of the low frequencies is 1.8 times longer than the master reverberation time.

Low Freq: (Hz) It is the crossover frequency which defines the low frequencies.

High: Sets the reverberation time of the high frequencies relative to the master reverberation time. It is expressed as a time multiplier. For example, setting High to 0.6x means that the reverberation time of the high frequencies is 0.6 times shorter than the master reverberation time.

High Freq: (Hz) It is the crossover frequency which defines the high frequencies.

Damping: real environments tend to attenuate the high frequencies due to the damping factors of the materials the walls are made of or of the objects in the room which mostly absorb high frequencies. The Damping parameter controls the amount of this absorption and can be used to simulate different types of hall padding.

Low Cut: (Hz) It sets the cut-off frequency under which the tone is not reverberated. It can be used to avoid rumbling in the low frequencies depending on the source material.

5.6 - Room Reverb

General

Time: (Sec) TIME sets the duration of the reverberation tail. It's also influenced by the SIZE parameter.

Size: sets the apparent size of the acoustic space being emulated by the algorithm. Values from minimum to half way up are typical when simulating the ambience of a recording studio.

Diffusion: controls the degree to which the initial echo density increases over time.

Decay: balances between the late reverberation and the early reflections. When the Decay is at minimum only the early reflections are present; when increasing it the late reverberation is gradually added.

Mod

Predelay: (Sec) sets the amount of time elapsing between the input signal and the onset of reverberation. It can be used to create a sense of distance and volume within an acoustic space.

Motion: sets the speed of modulation of the delay lines.

Depth: sets the amount of modulation of the delay lines in the reverb; together with the Motion parameter, it can be used for making a reverb sound more dynamic, rich and to remove any eventual resonance or metallic ringing. Motion and Depth should be used carefully on solo instruments like pianos, woodwinds or saxophones to avoid chorusing effects. They can be used more with aggressive settings on percussive tones, guitars and mixes.

Note: Predelay can be sync'ed to the Host BPM.

Frequency

Low: (Hz) sets the frequency under which the reverberation is attenuated.

High: (Hz) sets the frequency over which the reverberation is attenuated. Low and High parameters can be used to tweak the frequency response of a room.

Damping: real environments tend to attenuate the high frequencies due to the damping factors of the materials the walls are made of or of the objects in the room which mostly absorb high frequencies. The Damping parameter controls the amount of this absorption and can be used to simulate different types of room padding.

5.7 - Plate Reverb

General

Time: (Sec) TIME sets the duration of the reverberation tail. It's also influenced by the SIZE parameter.

Size: sets the apparent size of the plate emulated by the algorithm.

Diffusion: it controls the degree to which the initial echo density increases over time.

Shape: it determines the contour of the reverberation envelope. With SHAPE all the way down, reverberation builds explosively and decays very quickly. As SHAPE is raised, reverberation builds up more gradually and sustains longer.

Motion: sets the speed of modulation of the delay lines. It can be used for for making a reverb sound more dynamic, rich and remove any eventual resonance or metallic ringing.

Pre

Predelay: (Sec) sets the amount of time elapsing between the input signal and the onset of reverberation. It can be used to create a sense of distance and volume within an acoustic space.

Motion: sets the speed of modulation of the delay lines.

Regen: (%) controls the amount of input signal which is recirculated into the predelay delay line. This parameter can be used to obtain a longer reverberation time with a more echoing tone.

Note: Predelay can be sync'ed to the Host BPM.

Frequency

Low: Sets the reverberation time of the low frequencies relative to the master reverberation time. It is expressed as a time multiplier. For example, setting Low to 1.8x means that the reverberation time of the low frequencies if 1.8 times longer than the master reverberation time.

Low Freq: (Hz) sets the crossover frequency which defines the low frequencies.

High: Sets the reverberation time of the high frequencies relative to the master reverberation time. It is expressed as a time multiplier. For example, setting High to 0.6x means that the reverberation time of the high frequencies if 0.6 times shorter than the master reverberation time.

High Freq: (Hz) sets the crossover frequency which defines the high frequencies.

Damping: depending on the age and material of the plate in the reverb unit the tail will be gradually attenuated in the high frequencies. The Damping parameter controls the amount of this attenuation and can be used to simulate different kinds of plates.

5.8 - Inverse Reverb

General

Time: (Sec) sets the duration of the reverberation. This time, added to the Predelay time, is the time that elapses from the direct sound to the end of the reverberation process.

Diffusion: controls the degree to which the initial echo density increases over time.

Predelay: (Sec) sets the amount of time elapsing between the input signal and the onset of reverberation.

Motion: sets the speed of modulation of the delay lines.

Depth: sets the amount of modulation of the delay lines in the reverb; together with the Motion parameter, it can be used to make the reverb sound more dynamic, unpredicatable, rich and remove any eventual resonance or metallic ringing.

Note: Predelay can be sync'ed to the Host BPM.

Frequency

Low: (Hz) sets the frequency under which the reverberation is attenuated.

High: (Hz) sets the frequency over which the reverberation is attenuated. Low and High parameters can be used to tweak the frequency response of the reverb.

5.9 - MIDI Implementation

Some of the BREVERB's parameters can be controlled by an external MIDI source. For example, you can use an hardware MIDI controller to operate BREVERB's sliders and tweak its main parameters in real time or to record parameters' automation in a friendlier way.

The In Level, Dry Level, Wet Level and the six faders of the Fader View mode are all MIDI controllable. By chancing the parameters association of the sliders you'll be able to control every single parameter of BREVERB (up to a maximum of 9 at the same time)!

The MIDI association is described in the following table:

CC number	BREVERB parameter
30	In Level
31	Dry Level
32	First Slider
33	Second Slider
34	Third Slider
35	Fourth Slider
36	Fifth Slider
37	Sixth Slider
91	Wet Level

6. Standalone mode operation

Starting BREVERB vers. 1.5.0, a Standalone mode is available. Operation is 100% identical to plugin/host, but for the settings button, which can be reached on the upper left side of the GUI. We'll look at the Audio settings menu voice.



Pict. 11: The Standalone mode Audio Settings window

Audio Device: please choose your favourite audio hardware from this list. BREVERB supports CoreAudio, ASIO and Windows standards. ASIO drivers are the best choice most of the times.

Sample Rate: (Hz) sets the desired sample rate. 44100 is warmly recommended for live usage.

Audio Buffer Size: (samples and ms) sets the amount of latency the audio hardware will have. Please set it as low as allowed by your audio hardware without causing glitches or freezes to your computer. Low latency is extremely important for live usage.

Active Midi Inputs: if available, Midi hardware connected to the computer will be shown here where can be activated. Midi control in BREVERB serves mainly for the live control of the main and fader-assigned parameters (see Section 5.9)