KARMA · FX

PLUGIN PACK

User's Manual

KarmaFX Synth Plugin Pack VST Version 2.2+ for Windows™.

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Contents

1. Introduction

Thank you for downloading the KarmaFX Plugin Pack!

This package contains VST (Virtual Studio Technology) real-time plugins for use in music production. The plugin pack contains all KarmaFX effect plugins in one file ready to install into your VST plugin folder, including:

- KarmaFX Filter
- KarmaFX Deelay
- KarmaFX Equalizer
- KarmaFX Reverb

The plugins should work in any VST host application on the Windows platform.

The philosophy behind the Plugin Pack is to have a collection of quality plugins that are small, simple and easy to use. Plugins that simply get the job done without too much knob tweaking and fancy GUI's that hurt your eyes. The pack includes a Filter, a Delay, an Equalizer and a Reverb.

The following section has an installation guide. The remaining pages describe how to operate the plugins in depth.

We at KarmaFX sincerely hope that you will find the plugins useful and that they will serve you well through many late, productive studio hours. The KarmaFX Plugin Pack is *donationware*, so if you find yourself using the plugins often, please consider donating a small fee (e.g. 10$ or so) to KarmaFX to support future development. Donations are accepted online at karmafx.net.
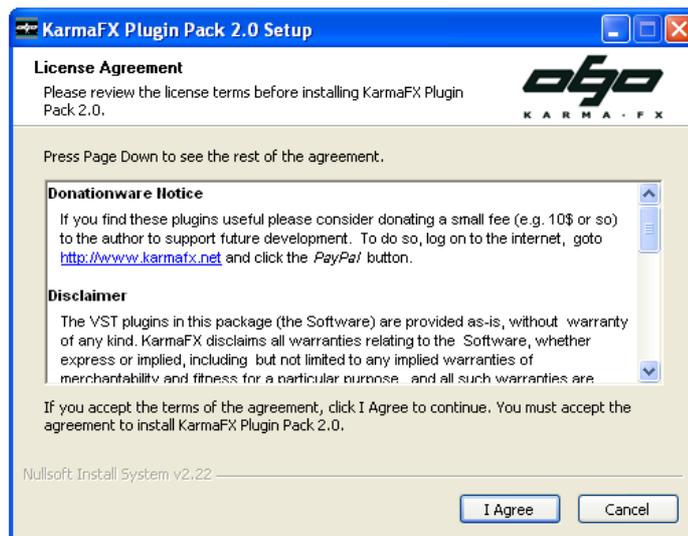
Thank you.

2. Installation

This section will show you how to install the KarmaFX Plugin Pack on your Windows PC. Make sure to close down all running sound applications before starting the installation. Then…

▶ Locate and run the `KarmaFX_Plugin_Pack_32.exe` file for 32 bit installation and `KarmaFX_Plugin_Pack_64.exe` for 64 bit installation.

▶ After reading the License Agreement, click **I Agree**. This brings up the installation selection menu:
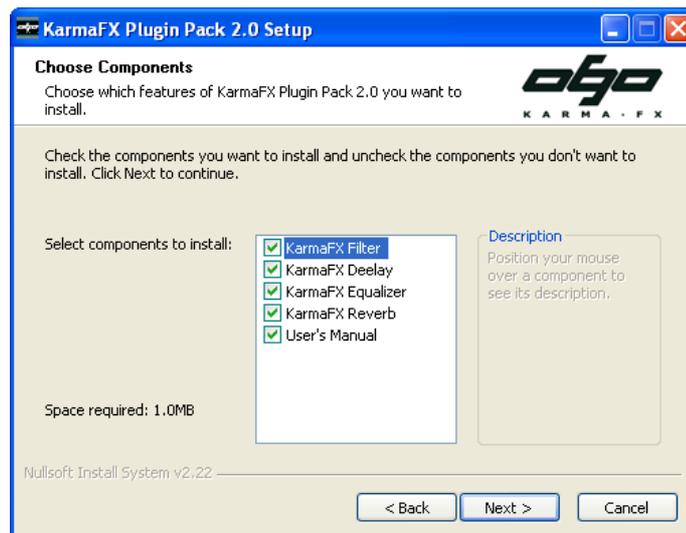
▶ Everything to be installed is checked by default, so simply click **Next** to proceed.

▶ Now select the VST-folder where your host application's VST-plugins are placed. The installation program will try to autodetect the folder. In Steinberg Cubase this is normally something like:

```
C:\Program Files\Steinberg\VstPlugins
```

In other hosts this path will most likely be something else, and in some cases you can even choose it yourself (like in Ableton Live). Please refer to your host application to get the exact folder path.

Click **Next** and the plugins will install into that folder.
Afterwards, click **Close** to end the installation program.

▶Start you host application. The host will usually scan for new plugins on start-up. If this does not happen, make sure to re-scan for VST-plugins. The plugins should appear in a KarmaFX folder under VST-effects.

That's it! You are all set.

2.1 System Requirements

The plugins should function in a VST 2.3+ compatible host application running on a machine with the following minimum system requirements:

- Microsoft Windows 98, XP, 2000, 7, 10 or later
- Pentium II-class CPU or equivalent (>=1GHz preferred)
- SVGA card giving a resolution of at least 800x600.
- 64 MB of RAM
- 5 MB of free disk space
- Sound card with low latency (ASIO preferred)
- Mouse

3. KarmaFX Filter

On/Off (Bypass) switches

Two pole filter section

Main display – updated whenever a parameter is edited.

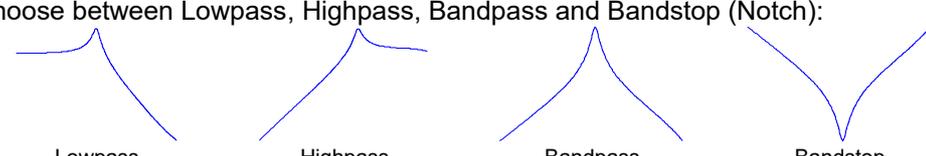One pole filter section

Two pole multimode LED indicator.

KarmaFX Filter is a simple filter plugin containing two separate filter sections:

- A Two-Pole Multimode filter with 12dB roll-off and trivial control of Cutoff, Resonance (Q) and Saturation Drive. Cutoff is the frequency in Hertz where the filter will start to attenuate and Resonance sets the boost near the cutoff point. The selectable multimode types are: Lowpass, Highpass, Bandpass and Bandstop (Notch).

- Two One-Pole filters with 6dB roll-off each, one for Lowpass filtering and one for Highpass filtering.

Each of the two filter sections can be turned off (bypassed) independently.

Filter series
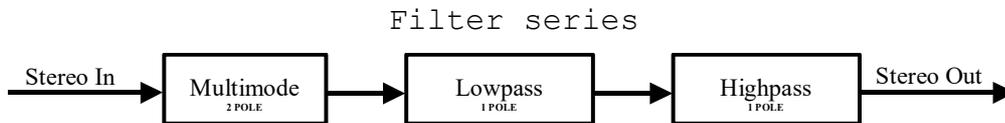
Parameters	
CUTOFF	**Cutoff Frequency** Selects the cutoff point for two-pole multimode filter.
RESO	**Resonance** Selects the amount of boost to apply at the cutoff point.
DRIVE	**Saturation Drive** Sets the amount of overdrive to apply to the filter's internal distortion.
MODE	**Multimode Mode** Choose between Lowpass, Highpass, Bandpass and Bandstop (Notch): Lowpass Highpass Bandpass Bandstop
LOWPASS	**Lowpass** Sets the cutoff frequency for the one-pole lowpass filter.
HIGHPASS	**Highpass** Sets the cutoff frequency for the one-pole highpass filter.
TWO POLE	**Two-Pole** Enable or disable Two pole filter. Enabled when LED is lit.
ONE POLE	**One-Pole** Enable or disable One pole filter. Enabled when LED is lit.

4. KarmaFX Deelay

Delay section

Main display – updated whenever a parameter is edited.

Filter section: Lowpass, Highpass filter Resonance filter settings.

Switch links left and right channel delay settings.

Switch turns filter section on or off.

KarmaFX Deelay is a tempo controlled stereo delay. It features two independent delay lines, so the delay time can be set separately for the left and right channel. Each channel has a coarse delay parameter that sets the delay time in quarter beats (0-16 beats/4) and a fine delay parameter that adjusts the delay steplessly within a quarter beat (1 beat/4). Up to 4 seconds of delay time is allowed per channel at 96kHz (8s at 48kHz).
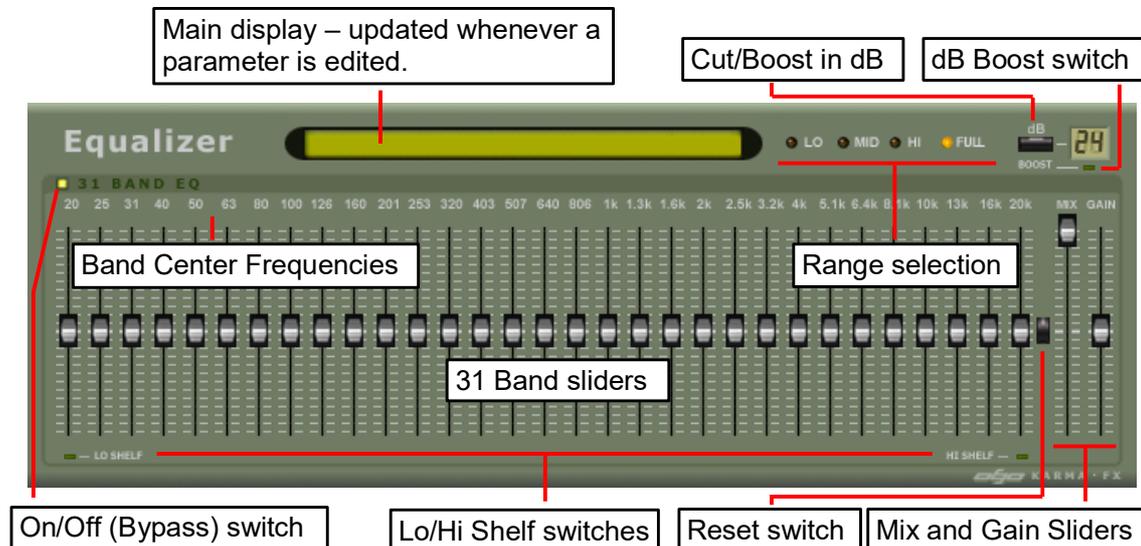
How much of the delayed signal that is sent back into the delay is controlled by the feedback parameter. Optionally, the feedback signal can be low/high pass-filtered and a peaking resonance filter can be used to resonance-boost a specific frequency area. To avoid drifting overflow the plugin features a feedback DC blocking filter (-3dB at 30Hz).

A level parameter controls the volume of the first delay tap for both channels. A built-in adjustable cross delay feedback mixer makes it possible to achieve the popular stereo effect known as "ping pong", where a part of the feedback from the left channel is sent to the right channels input and vice versa.

Sync to host tempo is by default done automatically, but a tempo parameter can also be used to force sync to a specific number of beats per minute (60-200 BPM). Finally, how much of the dry signal (input signal) and how much of the wet signal (delayed signal) that is output is controlled using dry and wet parameters.

Parameters	
LEFT	**Delay Left** Sets the left channel's delay in beats (0-16/4), snapping to one fourth of a beat.
RIGHT	**Delay Right** Sets the right channel's delay in beats (0-16/4), snapping to one fourth of a beat.
FINE L	**Fine Left** Finetunes left channel delay steplessly up or down one fourth of a beat (1/4 beat).
FINE R	**Fine Right** Finetunes right channel delay steplessly up or down one fourth of a beat (1/4 beat).
DRY	**Dry** Sets the Dry amount, i.e., how much of the original signal to mix with the output.
WET	**Wet** Sets the Wet amount, i.e., how much of the delayed signal to mix with the output.
FEEDBACK	**Feedback** Sets the amount of feedback, i.e., how much of the already delayed signal to send back into the delay.
TEMPO	**Tempo (BPM)** Sets the beat sync tempo, from 60 to 200 BPM. When turned far left (default), the host's current tempo will be used.
PINGPONG	**Ping Pong** Feedback can work in two modes: Either the signal is sent back to the sample channel (i.e., left to left and right to right) or alternatively to the other channel (i.e., left to right and right to left). When the channel delays are offset the latter can give an interesting "ping pong" effect between the left and right speaker. This knob controls how much ping pong you want. Turned full left means no ping pong. Turned full right means full ping pong, and centered means 50% of both.
LEVEL	**Tap Level** Controls the volume of the input signal to feed to the delay.
LOWPASS	**Lowpass** Lowpass cutoff knob for filtering the feedback. Turned full right all frequencies pass.
HIGHPASS	**Highpass** Highpass cutoff knob for filtering the feedback. Turned full left all frequencies pass.
Q-FREQ	**Q-Freq** Selects frequency in Hz for Resonance (Q) boost.
RESO	**Resonance** Sets the boost to apply to the Resonance frequency above. When turned full left no boost is applied.
ON	**Filter ON/OFF** Turns the entire feedback filter section on or off.

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5. KarmaFX Equalizer

Main display – updated whenever a parameter is edited.

Cut/Boost in dB

dB Boost switch

Band Center Frequencies

Range selection

31 Band sliders

On/Off (Bypass) switch

Lo/Hi Shelf switches

Reset switch

Mix and Gain Sliders

KarmaFX Equalizer is a low latency, 31 band, simulated analog graphic equalizer, capable of gentle (±6dB) to extreme (±96dB) cut and boost settings. The affected frequency range can be set to Full (20Hz-20kHz), Low (20Hz-500Hz), Mid (500Hz-5kHz) or High (5-20kHz).
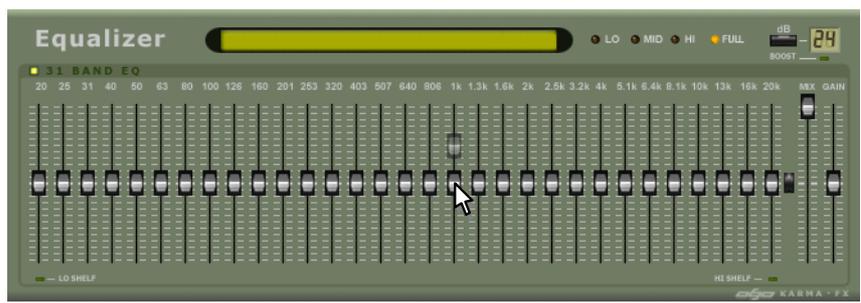
Internally the desired frequency response is achieved by running the signal through a series of peaking EQ filters, carefully designed from analog prototypes, and with fixed center frequencies ranging from 20Hz to 20kHz. The filters feature a fully symmetrical (reciprocal) response, and special attention has been paid to the high frequency area to get an as accurate simulated analog response as possible. As a result of this, the phase response is non linear.
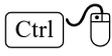
A Reset button is provided that quickly resets the EQ sliders for easier editing. A mix slider controls the mix ratio between the non-EQ'ed and the EQ'ed signal. A Gain slider can also be used to lower or lift the overall volume (±12dB) of output.

A Boost button is provided to optionally lift the dB range from the default (6/12/24dB) to the extreme (36/48/96dB). Finally, Low and high shelving filters can optionally be enabled for the low and highest bands respectively. Low shelving has the effect that all frequencies below the lowest band-frequency will be kept at the selected dB level. Similarly High shelving sets the dB level of all frequencies above the highest band-frequency.

Parameters	
31 BAND EQ	**EQ ON/OFF** Enable or disable (bypass) the EQ. Enabled when LED is lit.
[BAND SLIDERS]	**EQ Band 1 to 31** Sliders adjust the boost or cut for a frequency range around the center frequencies. Turning a slider all the way up boosts by the number of dB chosen by the dB switch and is displayed in the upper right corner. Turning it all the way down cuts (attenuates) by the same number of dB.
LOD,MID, HI,FULL	**Range Selection** Select between Low (20Hz-500Hz), Mid (500Hz-5kHz), High (5kHz-22kHz) and Full frequency ranges (20Hz-22kHz), frequency ranges, i.e., where the band frequencies start/stop. The Center Frequencies shown above the sliders are updated when this parameter is changed.
DB	**6/12/24 dB or 36/48/96 dB** Set Boost/Cut amount in dB. Choose between EQ of 6dB, 12dB, 24dB (gentle to hard), and 36dB, 48dB, 96dB (harsh to extreme) when dB Boost is enabled.
BOOST	**dB Boost** Switches between low dB range (OFF), 6/12/24dB and high dB range (ON), 36/48/96dB.
MIX	**Mix** Sets how much of the EQ'ed signal you wish to hear by adjusting the mix ratio between the unfiltered and the filtered signal.
GAIN	**Gain** Increases or reduces the overall volume of the output ($\pm$12dB). This is sometimes necessary when cutting or boosting a lot.
LO SHELF	**Lo Shelf** Enables or disables shelving for the lowest band. When on, all frequencies below the lowest band-frequency will be kept at the selected dB level. When off, the lowest band filter has a standard peaking EQ response.
HI SHELF	**Hi Shelf** Enables or disables shelving for the highest band. When on, all frequencies above the highest band-frequency will be kept at the selected dB level. When off, the highest band filter has a standard peaking EQ response.

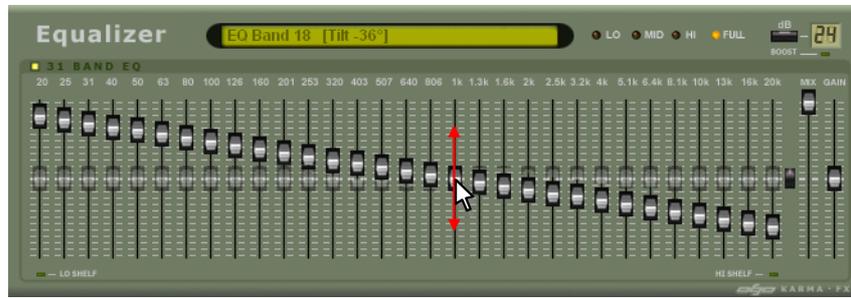| Shortcut #1: Reset Slider to Center Position	
[Ctrl] 🖱	**Hold Ctrl Key and Left Click Mouse** Resets a slider to its center position (0dB). This is the default behavior for all VST parameters, but it is especially useful for the band sliders.

Shortcut #2: Offset Drag Sliders
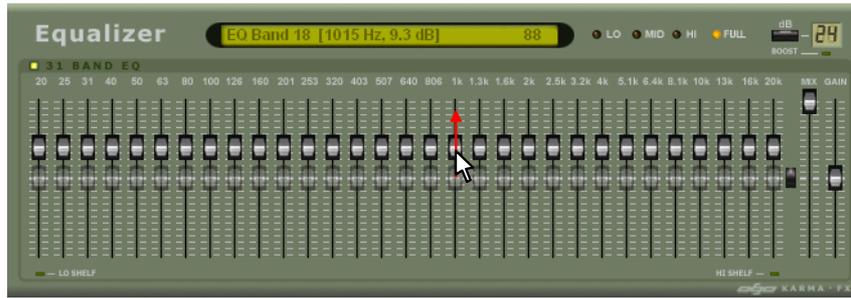
	Hold Alt Key while Dragging Slider
Alt 🖱️	Offsets the band positions of all sliders by the same number of dB*.

Shortcut #3: Tilt Band Edges

	Hold Alt + Shift Key while Dragging Top or Bottom Slider
Alt ⇧ 🖱️	Tilts all band positions by interpolating between the lowest and highest bands*.

Shortcut #4: Tilt Around Middle Bands

	Hold Alt + Shift and Drag Slider Up/Down
Alt ⇧ 🖱️	Tilts all bands around the selected slider*.

Shortcut #5: Move but Reset Slider to Old position on release
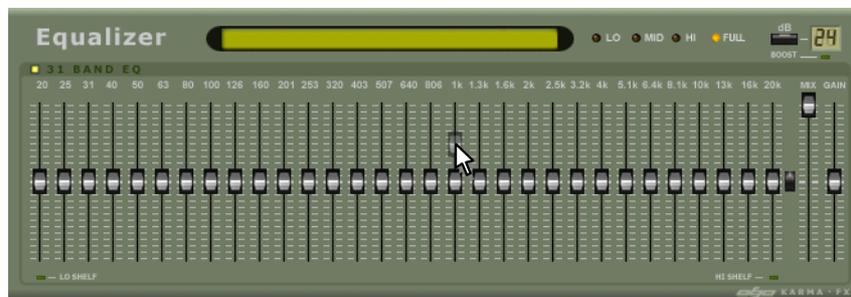
|	**Right Click/Drag Mouse**
🖱️	Moves a slider, but immediately reverts it to its old position on mouse release.

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* By default, moving of the slider will stop when any of the sliders reaches an edge. To override this behavior also hold the **Ctrl** key.

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6. KarmaFX Reverb

Mixing and Panning section: Dry, Wet, Mix, Pan and Mix-Mode selection.

Reverb section: Decay, Eearly (reflection), Predelay, and Diffusion.

Sync, Mod(ulation) and Type selection switches.

Main display – Shows the currently selected reverb type; or parameter - settings whenever a parameter is edited.

Filter and feedback section: Lowpass, Highpass, Damping and Feedback

Mix Mode selection

KarmaFX Reverb is a digital stereo reverb featuring 10 different reverb algorithms. It adds reverberation to the incoming signal, giving the impression of sound being played inside a room or other confined space.

Typically, the impulse response of a confined space is built up of three elements: First there is a short delay before any signal returns. This is because sound travels relatively slow, and this *predelay* corresponds to how long it takes for the first part of the signal to bounce back from the first wall or obstacle it hits. Second, the first part of the audible reverb is a number of sparse, but quick echoes referred to as *early reflections*. These reflections sound somewhat similar to a tapped delay line and appear due to sound that bounces directly off walls and back to the listener's ear. Third and finally, comes the *reverb tail* which stems from sound that is reflected and allowed to bounce many times between walls, changing the time and frequency characteristics of the sound considerably. See the figure below.
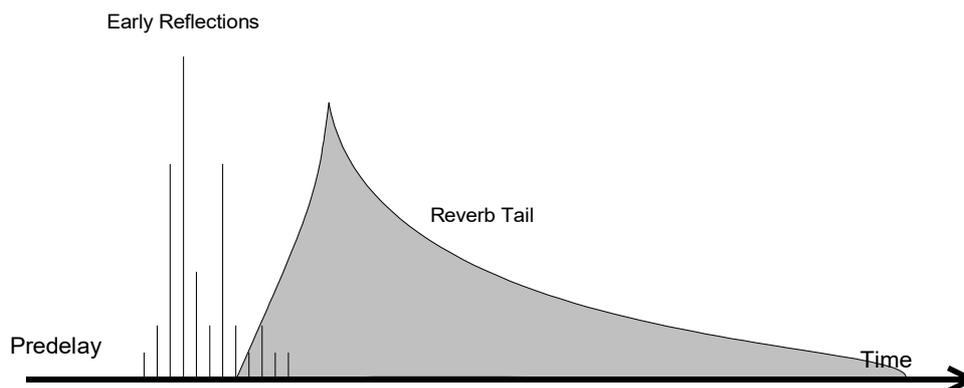
The plugin allows up to 500 ms predelay with adjustable and optionally synced feedback, and is capable of simulating reverb tails of up to 10 seconds (decay time). The desired volume level of the early reflections is controlled using the *Early* parameter. To sound realistic, the early reflections used in the reverb have been modeled from real stereo impulse responses.

For changing reverb tail characteristics, lowpass and highpass filters (-12dB/oct) with adjustable frequency are provided as well as damping adjustment of the internal (comb) filtering used to simulate the reverb tail.

A diffusion parameter is provided for increasing/decreasing spaciousness, i.e., control if the reverb tail should sound sparse (minimum diffusion) or dense (maximum diffusion). An optional modulation mode, adds slow and gentle pitch variation (chorus effect) to the reverb tail to make it sound softer.

The Dry and Wet parameters control how much of the dry signal (the input signal) and the wet signal (the reverb signal) that is output. A pan parameter places the resulting reverb output in the stereo image.

Internally the plugin features two reverb modules (Verb A and Verb B) that each take a mono signal and output a stereo reverb signal. They are utilized differently depending on which of the three available running modes (**Mono**, **Stereo** or **Dual**) that is used and are controlled using the Mix knob.
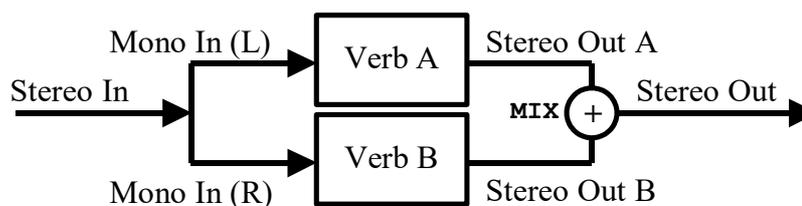
In **Mono mode**, only Verb A is used which means that the incoming stereo signal is mixed into mono before feeding it into the reverb. The mix knob is inactive in this mode.

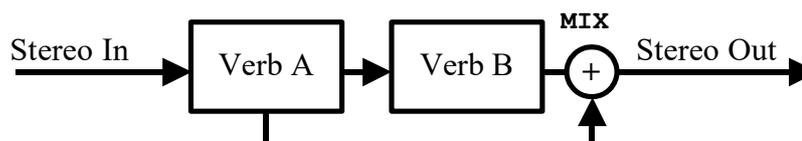Mono Mode

Stereo In → [Verb A] → Stereo Out
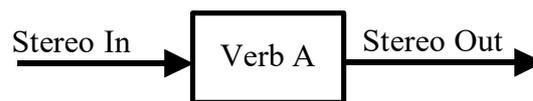
In **Stereo mode**, the left input is sent to Verb A and the right channel to Verb B. The resulting 2x2 stereo channels are then mixed to a stereo signal according to the mix knob.

Stereo Mode

Stereo In → Mono In (L) → [Verb A] → Stereo Out A → MIX (+) → Stereo Out
          → Mono In (R) → [Verb B] → Stereo Out B

In **Dual mode**, Verb A and B and placed in series (cascade), where the stereo output from both modules is mixed according to the mix knob.

Dual Mode

Stereo In → [Verb A] → [Verb B] → MIX (+) → Stereo Out

Parameters	
DECAY	**Decay** (ms) Controls how fast the reverb tail dies out (fades) from 0 to 10 seconds.
EARLY	**Early** (dB) Sets the level in dB of the early reflections. These are very short spaced out echoes that appear immediately after the predelay, but before the reverb tail.
PREDELAY	**Predelay** (ms) Sets the predelay: The time delay before the reverb kicks in (0 to 500ms).
DIFFUSION	**Diffusion** Controls the virtual size of simulated room from small, with few and fast wall-to-wall reflections, to large, with many diffusely spaced out reflections.
DRY	**Dry** (dB) Sets the Dry amount, i.e., how much of the original signal to mix with the output.
WET	**Wet** (dB) Sets the Wet amount, i.e., how much of the reverb signal to mix with the output.
MIX	**Mix** Controls the mixing of the two internal reverb modules. See text for explanation. In Mono mode Mix has no effect.
PAN	**Pan** Pans the reverb signal left or right.
LOWPASS	**Lowpass** (Hz) Lowpass cutoff frequency for filtering the reverb tail. Turned full right all frequencies pass.
HIGHPASS	**Highpass** (Hz) Highpass cutoff frequency for filtering the reverb tail. Turned full left all frequencies pass.
DAMPING	**Damping** Controls the attenuation (damping) of the high frequencies in the reverb tail.
FEEDBACK	**Feedback** Sets how much of the reverb signal to feed back into the reverb.
SYNC	**Sync** When enabled the pre-delay is forced to be in multiple of eighth beats (1/8). When off the predelay is stepless (not synced).
MOD	**Modulation** Switches modulation on or off. This is very slow time varying delay modulation (chorus) that smears out the reverb, making it softer.
TYPE	**Reverb Type** Chooses the algorithm to use for reverb simulation, from simple to complex. The reverbs are named according to their sound and properties: 1: Hall 1 (standard pleasant sounding hall type reverb) 2: Hall 2 (slightly smaller hall or corridor) 3: SmallRoom (very small confined space) 4: Ambience (large open space) 5: Metal Box (small ringing space with lots of unfiltered reflections) 6: Live (live concert like space) 7: Drum Box (short but nice sounding decay, good for drums and snares) 8: Large Room (very large room with many reflections) 9: Space (huge open space and lots of modulation) 10: Big Hall (same as space but with a halls early reflection profile)
MODE	**Mode** Switches between Mono, Stereo and Dual mode. See text for explanation.