

## **Vengeance Mastering Suite – Stereo Bundle**

*Manual version: 1.0, June 2011*

Dear customer

Thank you for purchasing the plug-in bundle “Vengeance Mastering Suite – Stereo Bundle” (VMSSB for short). This collection includes the large all-in-one “stereo bundle” plus individual plug-ins “Shifter”, “Expander”, “MS Splitter”, “Midi Transmitter” and “Analyzer”.

Mastering has many facets, and one of the most important is manipulating aspects of the stereo image. The mastering engineer’s toolbox normally includes a so-called “MS Matrix” which is used to split the signal into its mono and stereo components so that they can be processed separately. For instance, you can emphasize high-frequency in the mono bus only, or only compress the stereo part of the signal. VMSSB offers a comprehensive selection of such processing tools built into a single large plug-in with an easy-to-use graphic interface, plenty of visual feedback and many useful and practice-oriented presets.

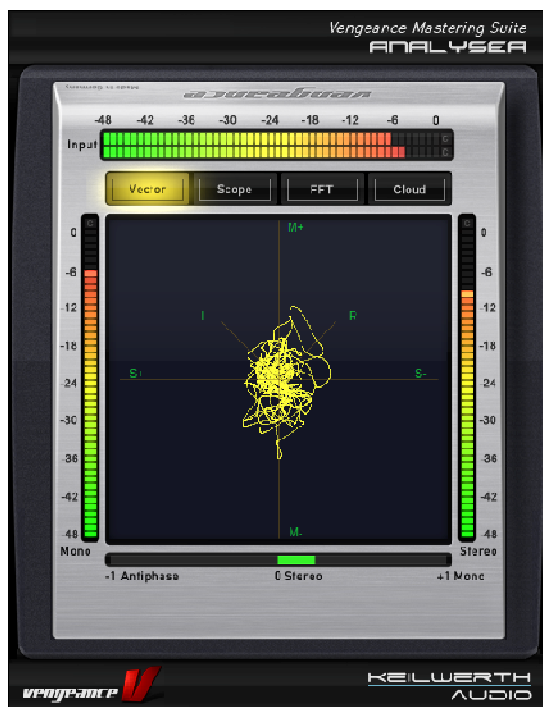
VMSSB is not only perfectly equipped for mastering duties: individual tracks such as drum loops, synth leads, bass lines or vocals can also benefit significantly from such ‘surgical’ stereo processing, after which they exhibit the kind of spatial depth only heard in expensive US-productions – until now. Another application is the creation of stereo components for mono material. You can use the VMS Shifter or VMS Expander to create artificial stereo signals. The Shifter works in the frequency domain, while the Expander works with delays. In both cases you will receive great results, furthermore the output is 100% mono-compatible! (In this context “mono compatible” means that, after processing, the signal can be calculated back down to mono without compromising the source material in the slightest, no matter how much artificial stereo you have added.) The creation of artificial stereo signals is therefore suitable whenever you only have access to a mono signal – use it on e.g. single-mic recordings of backing vocals, non-doubled guitar tracks etc.. Even raw waveforms such as square or sawtooth bass lines can be brought right to the front using the M2S (mono 2 stereo) plug-ins. Without causing cancellation or other problems at the bottom end!

You can also work experimentally/creatively with VMSSB: the plug-in includes an envelope which can be synchronized to song tempo or controlled via MIDI messages, and can be used for modulating many of the parameters in VMSSB. For instance, you could use a percussive envelope to accentuate the stereo field of each snare hit within a drum loop. Or every offbeat hi-hat, or a sidechain-like rise in stereo field... But don’t worry: once again VMSSB gives you plenty of inspiring presets to get you started.

Finally, we’d like to mention the design of VMSSB’s user interface. Colored arrows illustrate the current state of signal flow. This ensures that you always have an overview of the signal paths, which processor the audio signal is passing through at that time. A stereo correlation meter, a stereo vectorscope as well as several FFTs complete the graphics package. This kind of visual feedback is especially important if the acoustics in your studio could not be called absolutely perfect! Please follow the explanations in this manual carefully so you can learn how to read all the information that VMSSB shows you, and interpret it correctly.

Here's wishing you many hours of fun with your new plug-in!

Your Vengeance-Sound Team



overview of the "Stereo Bundle Plug-in"

Let's start at the beginning...

#### Installing the copy-protection:

First of all, you will need a Steinberg Key (also known as Syncrosoft / eLicenser dongle) plugged into a spare USB port on your computer. The dongle serves as a license i.e. copy-protection for your software. If you don't already own such a dongle, you can order one online (they are not expensive) from one of several sources, e.g. here:

[http://www.thomann.de/de/steinberg\\_key.htm](http://www.thomann.de/de/steinberg_key.htm)

You will also need the configuration software 'License Control Center' (LCC):

[www.elicenser.net](http://www.elicenser.net)

Please ensure that you have downloaded and installed the latest LCC version. Immediately after ordering VMSSB, you will receive an e-mail containing your license information. All you have to do then is to activate your license using LCC (note: you must be connected to the Internet)

#### Installation (PC):

Start the file "VMSSB.exe" and install the plug-in into your standard "PlugIns" folder. Follow any further on-screen instructions. The plug-In should be available the next time you start your sequencer / host application.

#### Installation (Mac):

Unpack the file "VMS Stereo Bundle Installer.zip", then start "VMS Stereo Bundle Installer.pkg". Follow any further on-screen instructions.

The standard installation path for the VST version is: ~/Library/Audio/Plug-Ins/VST

The standard installation path for the VST3 version is: ~/Library/Audio/Plug-Ins/VST3

The standard installation path for the AU version is: ~/Library/Audio/Plug-Ins/Components

The standard installation path for the RTAS version is: ~/Library/Application Support/digidesign/Plug-Ins

After installation, please check that the VMS Stereo Bundle files really do appear in that location. The plugin should be available the next time you start your host application.

## Vengeance Mastering Suite – Stereo Bundle – an Overview of Functions

### The Signal Path:

Signal processing starts at the input control, located at the top of the window in the center. As you can see, two arrows diverge to the left and right. These represent the MS (Mono/Stereo) separation. The blue arrow to the left is the mono portion of your signal, the yellow arrow to the right is the stereo component. These two signal paths are called “busses”. The blue mono bus carries on to the left, reaching a volume control used for adjusting the mono level. Even further to the left, the signal reaches the “Frequency Splitter”.

The signal is split once more, but this time into two frequency bands. All frequencies *below* the current split frequency remain on the blue mono bus, which leads to the “Mono EQ” (selectable in the display). This lets you apply equalization to the mono signal only i.e. separately from the stereo component. The signal then passes to the left of everything else, finally reaching the output stage – the “bus terminus”! Here, the signal is sent through a limiter to prevent clipping (this can be switched off if you prefer).



All frequencies *above* the current split frequency are diverted downwards into the two M2S (mono to stereo) signal processors. This new signal path is color-coded purple. The first signal processor is the “frequency shifter”, the details of which are explained later in this manual.



Directly afterwards, the signal reaches the second signal processor: the “Expander”.

Next, it passes through a Mix control, which is common to



both signal processors. At this point, you have the opportunity to audition the signal (with solo / mute function).

You now have the choice of where to route the signal next. If you send it to the left, the signal is fed into the mono bus, and from there to the output. Or you can send the signal to the top-right, thereby feeding it back through the stereo signal path again. So let's take a look at that stereo signal path:

The yellow arrow starts at the input level and leads to the right. This path contains the natural stereo information in your signal (stereo component only – no mono!)

First, it passes through another volume control (the level of the stereo portion). Please note that you can also audition the signal at this point (solo / mute). The next station is the "Width" control, with which you can narrow the stereo width of the signal from its usual maximum (100%).

Next stop is the EQ, where you can equalize the stereo component of the signal only. The EQ switch "MS2Bus" lets you optionally EQ an M2S signal (purple) separately if it has been routed here.



Now both signals (yellow natural stereo and perhaps purple artificial "M2S" stereo) are fed into the compressor. You can use the compressor to change the dynamic range of the signal e.g. to make it appear to be louder, with a more compact stereo image.

The final processor is, like in the blue mono bus, the optional limiter. The signal then arrives at its "bus terminus": the main output.

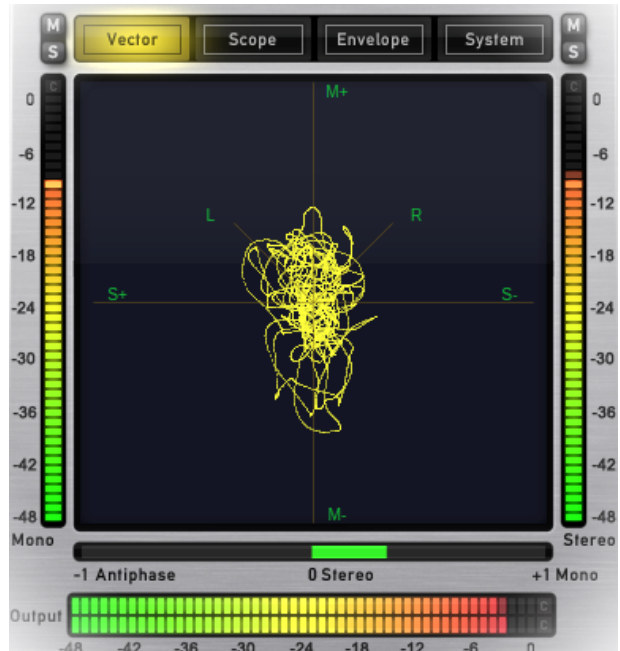




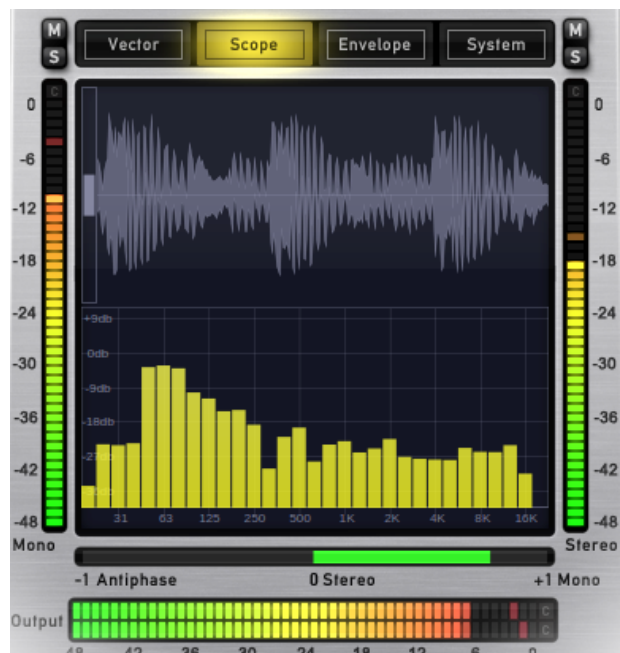
### The Main Display:

The central main display has 4 sub-pages:

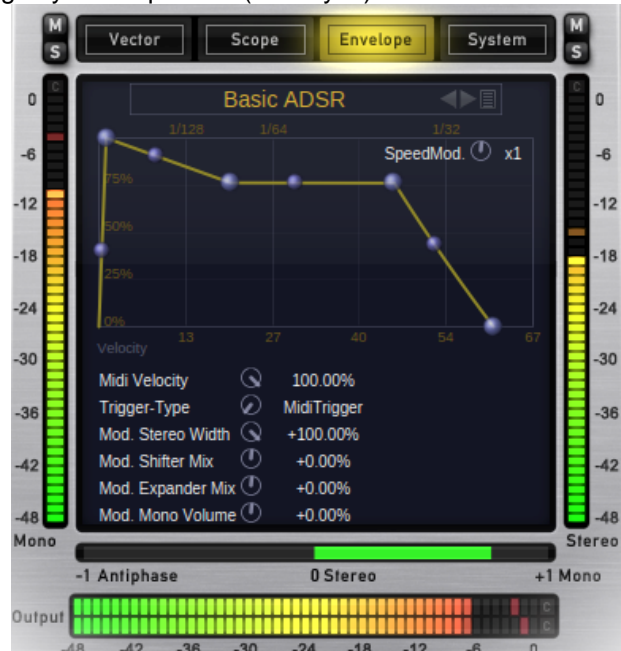
**Vector:** This is the standard view. A stereo vectorscope shows the stereo separation of the signal in realtime. Mono portions appear as vertical lines, stereo portions appear as horizontal deflections from the center. The sum of both signals can therefore appear as a 2-dimensional shape. For club/dance music, the vectorscope should mostly show a vertical form, as the volume of the mono kick drum dominates. Of course during breaks or when used for individual tracks, there's no reason why horizontal shapes shouldn't appear. You have the best stereo image when the vectorscope displays mostly circular forms. Beware of too many horizontal lines, as this means anti-phase signals (which are not mono-compatible).



**Scope:** The upper area shows the waveform in realtime, below which is its FFT frequency response. Please note that you can zoom into the waveform (vertical slider to the left). The waveform view is great for recognizing relative volumes (e.g. between kick and bass line), while the FFT analysis gives you useful information about the frequency distribution in your audio signal.



Envelope: The creative/experimental modulation envelope in VMSSB. This envelope can be triggered either via the BPM setting in your sequencer (host sync) or from received MIDI notes. Use the extra VSTi “VMS MIDI Transmitter” to route MIDI data into VMSSB. Alternatively, most sequencers offer a method or two of routing MIDI data directly into VST effects, including VMSSB. The envelope is a standard ADSR type, like in most synthesizers. The larger handles in the graphic window can be grabbed with the mouse and moved around – the smaller handles are used for adjusting curvatures. By the way: at the very top you will find a small browser with which you can load preset envelope shapes.



“MIDI Velocity”: Lets you specify how the envelope reacts to the velocity data of incoming MIDI notes. The envelope is velocity sensitive i.e. if you only play a note half as strongly as maximum, the envelope will be scaled to only half of its maximum height, its effect is less. If you set “MIDI Velocity” to 0%, the velocity data in your MIDI notes become irrelevant: every MIDI note received will trigger the envelope at maximum strength.

“Trigger Type”: Lets you switch between MIDI note triggering and the internal “Host Sync”. Host Sync always triggers the envelope at the selected rhythm (1/4, 1/8 etc.), and adopts the current song tempo of your sequencer. Please note: When you switch to “Host Sync” mode, the “MIDI Velocity” becomes “Host Trigger Strgth”, but the principle remains the same.

“Speed Mod”: In the upper righthand corner of the envelope display is the Speed Modifier. This can be used to play back the envelope faster or more slowly. The value “1” is standard. A value of “2” will double the rate of the envelope, and a value of “0.5” will halve it.

Here are the individual routing options for the envelope:

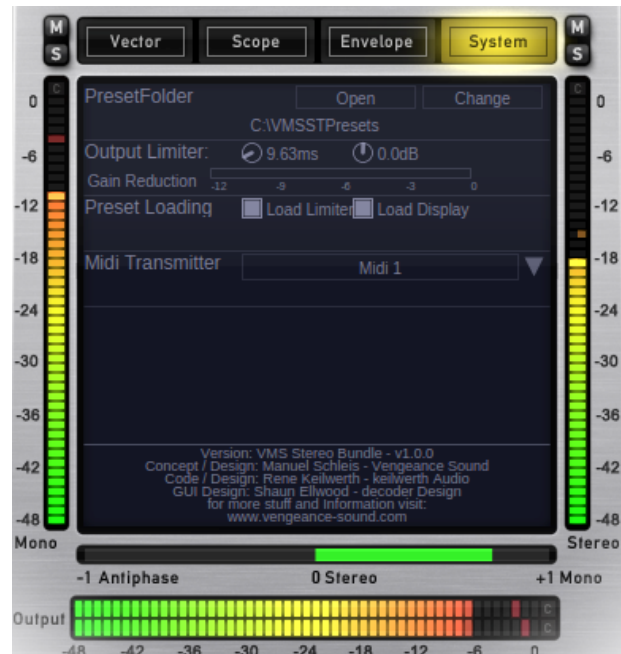
„Mod. Stereo Width“: The envelope boosts/attenuates the volume of the natural stereo signal

„Mod. Shifter Mix“: The envelope boosts/attenuates the volume of the M2S frequency shifter

„Mod. Expander Mix“: The envelope boosts/attenuates the volume of the M2S expander

„Mod. Mono Volume“: The envelope boosts/attenuates the volume of the mono signal

**System:** Like in all the other Vengeance plug-ins, here is the page for system settings. “Preset Folder” lets you specify where VMSSB’s preset library is located on your hard-drive. The status of this information is displayed at the bottom. You can also select this directory in your operating system using the “Open” button. The next item is the output limiter. This is switched on or off via a button *below* the main display (bottom center of the main display). However, you can adjust a few more setting right here in the system page, e.g. Release or Post Gain.



“Preset Loading” gives you some extra global control: If “Load Limiter” is switched off, the system will ignore the status of the limiter as stored in each preset – you can keep the limiter on or off globally, whichever presets you load. Similarly, “Load Display” lets you specify whether, upon loading a preset, all 3 displays in VMSSB should switch to how they appeared at the time the preset was stored, or whether they should retain the current view.

**Input VU:** This is the VU meter for the signal *before* it has been processed in VMSSB – in effect the output level of your source audio. Please make sure there is no clipping whatsoever here (watch the red “c”)! If the “c” lights up quite often, this is a sure sign that your input level is too high: use the “Input gain” control to lower the volume a bit. In general, it is best to make a habit of keeping the VU at around -6db so that the plug-in has enough headroom to work. Any significant difference between input and output levels can be compensated for by adjusting the “Output Gain”.

**Output VU:** This is the VU meter for the signal *after* it has been processed in VMSSB, i.e. what you can hear. Please try to avoid permanent clipping here as well. The Limiter can help somewhat, but it is generally better to turn down the “Output Gain” control until the clipping indicator only flickers every now and again.

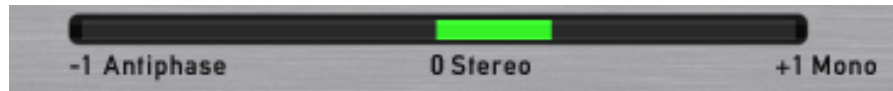
**Mono VU:** This VU meter is located to the left of the main display. It only shows the level of the mono portion of the signal. Note that you can audition the mono signal at this point using the Mute / Solo switch.

**Stereo VU:** This VU meter is located to the right of the main display. It only shows the level of the stereo portion of the signal. Note that you can audition the stereo signal at this point using the Mute / Solo switch.



### Stereo Correlation Meter:

This display is something special, it is one of the most important visual



aids in VMSSB. The VU is divided into 3 zones: left half (red), center (white) and right half (green). If the level is at the far right (green), this means that the signal is 100% mono. If it is exactly in the center (white), this means 100% stereo. If the position is far left (red), this signifies 100% anti-phase – which is not mono-compatible (played in mono-systems, the two channels add up to silence!)

By its very nature, club music usually stays in the green area (because the mono bass drum dominates). However, the optimum stereo is in the white area, and the red area should always be avoided. Of course individual tracks such as vocals etc. can move into the red area now and again. This kind of signal is best if it remains close to the center, for the widest possible room effect.

### The Signal Processors (and Individual Plug-ins):

The M2S Frequency Shifter: This processor works with comb-EQs, with different values in the left and right channels so that mono material can be converted into



stereo. Particularly impressive when applied to individual tracks such as bass lines, guitar or vocals. Extreme settings can be used for experimental 'alien' sounds reminiscent of resonant phaser or formant filter effects. The graphic display shows the snake-like frequency response. Two handles can be grabbed and moved to change the positions and strengths of the start and end points. Below the display are 3 controls:

“Order”: The number of filter bands

„Width“: The width of filter bands

„Mix“: The strength of the effect

Please note that the M2S Frequency Shifter only affects frequencies within the signal that lie *above* the current Split Frequency. Deeper bass frequencies can be left unprocessed, as this part of the spectrum shouldn't be stereo anyway.

The M2S Expander:

This processor also creates a stereo signal from a mono source. However, this works with delayed copies of the original signal.

Different delay times for left and right channels creates a stereo space. Nevertheless, there are no phase cancellations, the signal always remains 100% mono-compatible. This processor is very suitable for complete mix-downs as well as bass lines, synths and vocals.



“Time”: This controls the overall amount of shift for the artificially delayed tracks. If you set values too high here, you can differentiate individual delays, so we recommend keeping to values below 10ms for complete mixes. This is not so critical when applied to individual tracks.

“Color”: Determines the tonal coloration of the stereo component. Negative values tend to make the sound warmer, while higher values make it clearer / higher.

“Mix”: The strength of the effect

Please note that the M2S Expander only affects frequencies within the signal that lie *above* the current Split Frequency. Deeper bass frequencies can be left unprocessed, as this part of the spectrum shouldn't be stereo anyway.

The Compressor:

The stereo bus also contains a classic compressor, which can be used to maximize the density of the stereo component – your track will have more presence and appear richer/fuller.

Threshold:

In compressors, the Threshold parameter controls the level at which the compression starts to do its work. If you set a very low threshold, even very quiet signals will be compressed. If you set a very high threshold i.e. only a little below the current signal level, only transient peaks that manage to exceed the high threshold will be compressed. As a useful visual aid, VMSSB includes a red arrow attached to the threshold slider. This arrow extends into the level display



so that you can see immediately how much of the signal remains below the threshold (unprocessed) and how much is above it (compressed).

#### Gain Reduction:

Gain reduction is directly dependent upon the current Threshold and Ratio (see below) settings. The Gain Reduction ("GR" for short) shows how many Decibels the compressor has reduced the volume. This means, for instance, that a signal 12dB above the current threshold has precisely 6dB gain reduction when Ratio is set to 1:2. At 1:infinity, the gain reduction would be the whole 12dB!

#### Ratio:

As already mentioned, the Ratio parameter controls the relative amount of compression. 1:8 means that levels above the current threshold will be reduced by a factor of 8. At the ratio of 1:1 there is no change at all, the signal passes through unprocessed. The image here shows the compression response i.e. how it depends on Threshold and Ratio.

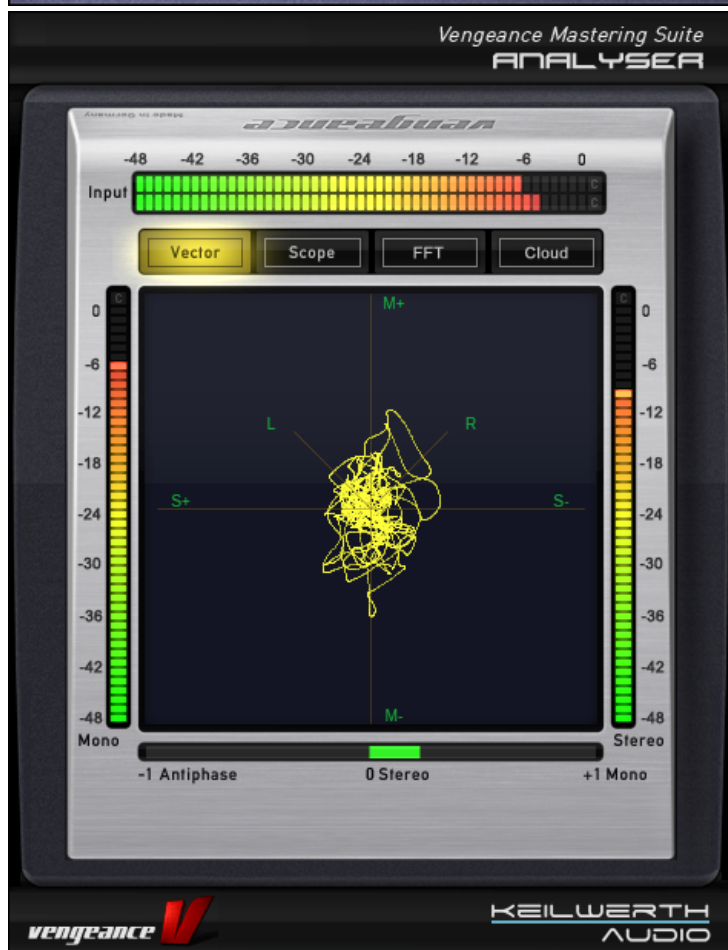
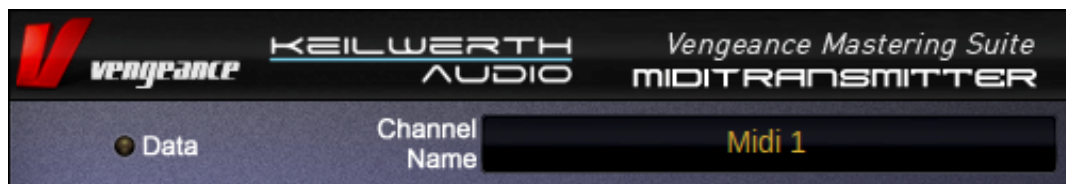
#### Attack / Release:

The Attack and Release parameters determine the response of the compression "envelope". This is triggered whenever the signal level reaches the current Threshold value i.e the Attack stage starts. An Attack of 0 (zero) means that the compressor attenuates the signal immediately. An Attack of 5ms means that the compressor ramps up over a period of 5ms before reaching full attenuation. Such values can be used to accentuate transient peaks in the audio material, e.g. the snap of a snare or the pluck of a string.

Similarly (but in the opposite direction), the Release parameter determines how long it takes for the compression to settle back up to the original level. Short Release times mean more loudness, but also more unwanted artifacts such as flutter, pumping or even distortion. Release times should be set carefully, because they can significantly affect the compressed sound.

#### Gain:

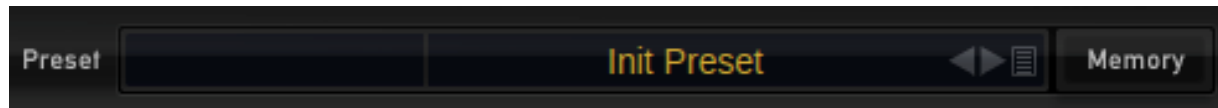
This parameter controls the volume *after* compression. In effect the output level of the compressor.



#### Individual Plug-ins:

The VMSSB bundle also includes individual components as separate plug-ins. You can use these to construct your own mastering chain of effects, especially because the “VMS MS Splitter” can be used to divide signals into their natural mono and stereo portions. Using individual plug-ins can also save CPU resources, for instance if you only want to expand the sound of a mono synthesizer using the “M2S Expander”, without the need for the rest of the signal path in VMSSB. We also recommend using the “VMS Analyzer” as the last element in your mastering chain.

### The Preset Browser:



The large text field displays the name of the currently selected preset. To change it, double click on the name.

To the right is a pair of arrows that you can use to scroll backwards or forwards through presets.

On the far right is the preset browser menu where you can manage all your presets. Functions include Save, Load, Delete and Rename, as well as direct selection of a specific preset. An 'Init Preset' is also available here, a suitably neutral template as a starting point for your own creations.

Note: If you ever need to find (on your hard drive) the folder where presets are stored, for instance if you want to make backups or send a few of them to your friends, look for the path to this folder in the System Page of the main display.

### Tips and New Features via update:

Tip: All controls in the plug-in window can be fine-tuned via right-click / move. Clicking on any control with the center mouse button resets the control to its default value.

Tip: Please rightclick on different areas, for example the EQ or the FFT to get additional options.

We plan to continuously extend and improve “Vengeance Mastering Suite – Stereo Bundle” via regular updates. As soon as new functions have been tried, tested and delivered, they will appear in this section.



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