Welcome to the BBE® Sonic Maximizer™ help file. Please select from the following topics:

This product is sold and supported by Cakewalk®.
For inquires or additional information, please contact Cakewalk online at:
www.cakewalk.com

Introduction

Virsonix™ is a California-based company that specializes in developing software audio applications for professional and consumer use. In conjunction with BBE Sound Inc., Virsonix is proud to introduce the Sonic Maximizer Plugin. For years professional musicians and studio engineers have known that the Sonic Maximizer is the best way to get that professional sound and extra sparkle that is so difficult to capture. Now you can access BBE processing technology within the digital domain. Virsonix has been able to recreate a software version of the Sonic Maximizer that is identical to the physical unit it terms of utility and processing. Our advanced sonic processing technology and proprietary algorithms have allowed us to create a plugin that boasts the following features:

- Realistic interface and intuitive navigation
- Real-time play meters
- Low CPU consumption
- Supports mono and stereo operation
- Supports 22kHz, 44.1 kHz, 48 kHz, and 96kHz sample rates
- Supports 16 and 24 bit processing

Back

The BBE Process

Loudspeakers have difficulty working with the electronic signals supplied by an amplifier. These difficulties cause such major phase and amplitude distortion that the sound reproduced by speaker differs significantly from the sound produced by the original source. In the past, these problems proved unsolvable and were thus relegated to a position of secondary importance in audio system design. However, phase and amplitude integrity is essential to accurate sound reproduction.

Research shows that the information which the listener translates into the recognizable characteristics of a live performance are intimately tied into complex time and amplitude relationships between the fundamental and harmonic components of a given musical note or sound. These relationships define a sound's "sound". When these complex relationships pass through a speaker, the proper order is lost. The higher frequencies are delayed. A lower frequency may reach the listener's ear first or perhaps simultaneously with that of a higher frequency. In some cases, the fundamental components may be so time-shifted that they reach the listener's ear ahead of some or all of the harmonic components. This change in the phase and amplitude relationship on the harmonic and fundamental frequencies is technically called "envelope distortion." The listener perceives this loss of sound integrity in the reproduced sound as "muddy" and "smeared." In the extreme, it can become difficult to tell the difference between musical instruments, for example, an oboe and a clarinet.

BBE Sound, Inc. conducted extensive studies of numerous speaker systems over a ten year period. With this knowledge, it became possible to identify the characteristics of an ideal speaker and to distill the corrections necessary to return the fundamental and harmonic frequency structures to their correct order. While there are differences among various speaker designs in the magnitude of their correction, the overall pattern of correction needed is remarkably consistent. The BBE Process is so unique that 42 patents have been awarded by the U.S. Patent Office.

The BBE Sonic Maximizer will deliver surprisingly good results on guitar, bass and keyboard tracks. Electric guitars have added "bite", "chunk" and improved definition. As Guitar Player magazine said, "BBE is the most cost effective improvement you can add to your rig." Acoustic guitars processed with the Sonic Maximizer have a breathtakingly natural sparkle and presence. Bassists will delight in the BBE Sonic Maximizer's ability to bring much more punch to the bottom end without muddying up the midrange. The Sonic Maximizer is also great for keyboards, with everything from the latest samples to a vintage Rhodes benefiting equally from the patented BBE process. For more information about the BBE process, please visit BBE on line at www.bbesound.com

Back

Plugin Controls
The interface of the Sonic Maximizer plugin stays true to the analog BBE units in form and functionality with a few minor exceptions to improve usability. The plugin has five controls:

BBE FUNCTION: This is a bypass button. This push-button switch allows for quick comparison between processed and unprocessed sound. When the switch is pushed in, the process is on and the indicator LED is green. When the switch is out, the process is off and the indicator LED is yellow.

THE KNOBS: There are three ways adjust the settings of the Lo contour, Process, and Output level knobs:

1. Use the mouse to left click on the desired value and the knob will jump to this location.

2. Position the cursor on a knob, left click and hold down the mouse button. The cursor will disappear and you can move the mouse UP or DOWN to make precision adjustments.

3. You can also right click on the knob to input a numerical value with the keyboard.

LO CONTOUR: This regulates the amount of phase corrected bass frequencies.

PROCESS: This regulates the amount of phase corrected treble frequencies.

OUTPUT LEVEL: This control is unique to the plugin version of the Sonic Maximizer. It does not appear on the hardware unit. It is simply available to allow the user to adjust the output level of the processed signal. The knob is needed to allow the user to reduce the signal to avoid clipping in high-signal level situations.

LED DISPLAY: The LED display is used to indicate the output signal level of the BBE Sonic Maximizer (i.e. output level of the processed signal.) Each number on the front panel corresponds to the output signal level, measured in decibels. Example: The "0" indicates a 0dBFs signal level, "-6" refers to -6dBFs, and so on. Once an input signal level has been established, increasing the BBE PROCESS and LO CONTOUR will increase the output signal and cause more LEDs to illuminate. The Clip LED monitors the output signal level. The Clip LED will illuminate when the signal is greater than 0dBFs.

Both LEDs will function when a stereo file is used, while only the left channel will function with mono files.

Back

Plugin Usage and Info

The BBE Sonic Maximizer plugin is designed to be used as an ‘‘insert’’ type effect and should be configured into the effects chain in series with the signal path the same way a graphic equalizer or limiter would be connected. In other words, the entire signal should pass through the plugin. Setting up the BBE Sonic Maximizer as an echo send or ‘‘AUX’’ device like a digital reverb is not recommended, as the processed effect is not fully realized when summed with the original source audio.

The plugin can be used as an effect on individual tracks or applied overall during mixdown. The BBE process dramatically improves the clarity and intelligibility of vocals and musical instruments in a track insert situation. As a global effect, the BBE Process will add more depth, detail and punch over the entire mix. When using in conjunction with an equalizer, the Sonic Maximizer should be added after the equalizer in the signal chain. In the event that the equalizer is being used for drastic tone alteration, then insert the Sonic Maximizer before the equalizer in the signal chain. Placement either before or after an equalizer should have no negative effect on its processing ability, however most users find they prefer more modest use of their equalizers once the BBE Sonic Maximizer has been added to their sound systems.

Several presets have been provided to get you started using the Sonic Maximizer, however, there is no ‘‘right’’ way to it. Simply adjust the settings to determine what sounds right to you. We believe that you can never have enough Sonic Maximizing! Please consult the documentation of you host application for information about saving your own presets.

The Sonic Maximizer does not generate new harmonic material, as many other type audio enhancers do. Rather, it corrects the phase shift and distortion that happens naturally when the sound is reproduced by the speakers. Because the BBE process is unique, you can use the plugin with other sonic enhancer products you may have.

Even though the plugin was calibrated with several different Sonic Maximizer units, there may be a discrepancy between the levels of an actual BBE unit and the levels of the plugin. Such variations are normal because of the slight differences that exist in the potentiometers and analog nature of the Sonic Maximizer.

The plugin LEDs will provide an accurate visual representation of what is happening with the processed signal in most software applications. However, with some applications, or when preview mode is used, the LED levels may not correspond because the applications route audio signals through the plugin before sending the actual result out to the sound card. The meters on the Sonic Maximizer react to the signal that is currently being processed, not the signal that is coming out of the sound card. This works fine in real-time processing situations, because the sound is sent out the sound card immediately after processing. However, when an application buffers up large amounts of audio, and there is latency before it sends the results out the sound card (e.g. for an offline preview), the meters will react out of synch from what is heard. This is not a defect in the design of the Sonic Maximizer plugin, but rather how host

applications handle the processing of the data.

Back