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VST Ambiophonic Transcoder

Download the **Windows VST-Plugin** (version 1.0 - 22/05/2010 - 188kB) [SH-Ambiophonics.zip](#) or the **MAC OS Audio Unit (AU) & VST** (version 1.0 - 29/08/2010 - 586kB): [TranscoderMAC.zip](#)

For the reason that the plug-in development uses the JAVA framework you need to have an installed JAVA Runtime Environment.

If you don't have the JRE (JAVA Runtime Environment) installed then you'll get it here: <http://www.java.com/download/manual.jsp>

Plug-in Installation:

Windows VST:

Just unzip the dedicated ZIP-File and copy the plug-in folder into your VST plug-in directory.

Apple Mac OS Audio Units and VSTs:

- 1.) Unzip the dedicated ZIP-File
- 2.) Copy Transcoder.vst to ~/Library/Audio/Plug-Ins/VST
- 3.) Copy Transcoder.component to ~/Library/Audio/Plug-Ins/Components

Important: To use the Audio Units you need to copy the *.vst as well.

The Principles of Ambiophonics*:

- 1.) Ambiophonics uses RACE* (Recursive Ambiophonic Crosstalk Elimination) to enable binaural listening
- 2.) The Speakers are positioned with a separation angle smaller than 20° (called Ambiodipol) instead of 60° used in stereo. No worries, in contrast to stereo, the sound stage goes far beyond the boundaries set by the speakers (up to 120°).

Reference:

- RACE is a free algorithm made available by the Ambiophonics Institute (<http://www.ambiophonics.org>)
- Ambiophonics has been invented by the Ambiophonics Institute

Key advantages in comparison to stereo by playing the same material from CD, LPs or your computer:

- 1.) Elimination of Comb filtering effects and pinna direction finding errors
- 2.) By having the speakers close together reflections by walls and the bass mode response of the room are much easier to control
- 3.) The center presence is very stable and therefore always easy to locate

Listening Experience:

The sound stage gets a strong deepness, height and wideness which creates a real three dimensional listening experience.

Locating a single sound source within the original stereo image is much easier with Ambiophonics. You're able to pinpoint each instrument in all three dimensions!

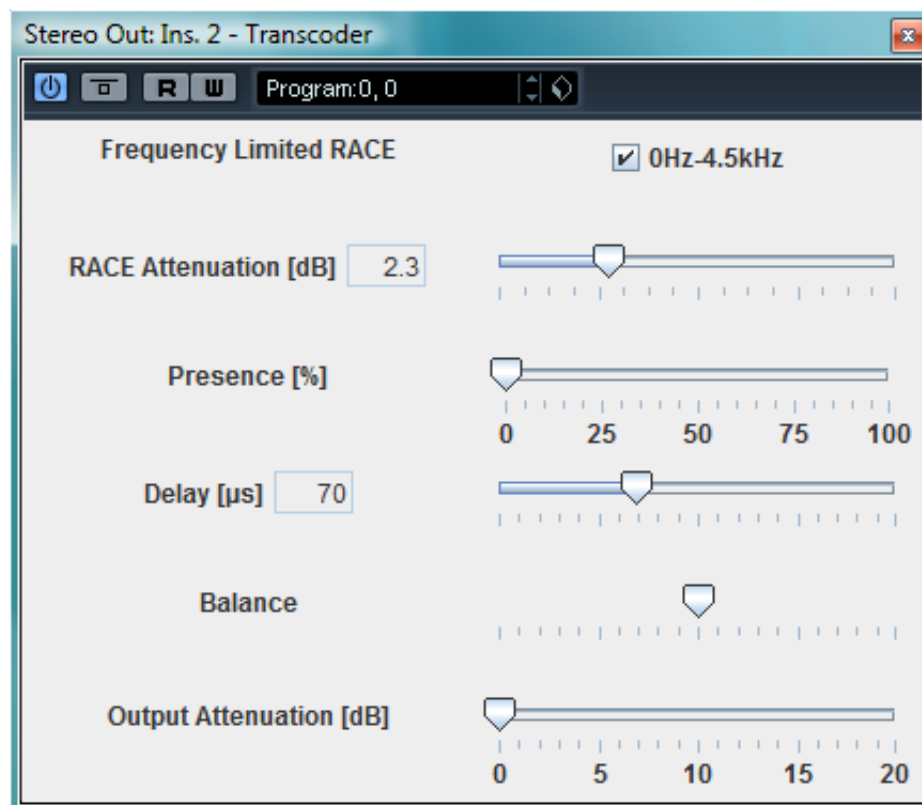
To achieve optimal cross talk cancellation Ambiophonics has a sweet spot (similar to stereo) along the median line where the sound stage has its best representation.

Which records sound best?

In contrast to the standard stereo setup where spatially rich recordings that contain binaural cues with inter-aural time differences (ITD) loose their deepness, Ambiophonic plays back a much richer sound stage.

Many productions mix monaural microphones or direct sources between channels to create phantom images limited to inter-aural level differences (ILD), but even those recordings do get a wider and more precise sound stage with Ambiophonics.

The Ambiophonic Transcoder VST Plug-In

**Frequency Limited RACE:**

As default RACE works on a limited frequency range of 0Hz-4.5kHz by keeping all other frequencies untouched. Deselection of the checkbox activates Recursive Ambiophonic Crosstalk Elimination for all frequencies between 0Hz and 20kHz.

Recursive Ambiophonic Crosstalk Elimination Attenuation [dB]:

Increasing the attenuation value reduces the cross talk elimination which results in a smaller sound stage.

Presence [%]:

A higher presence value reduces the crosstalk elimination of "equiphase/similar amplitude" signals to emphasize center sounds like vocals.

Delay [micro seconds]:

The delay defines the time offset for the cross talk cancellation wavefront to make sure that the signal arrives the ear at the right point in time. The amount depends on speaker separation and listening distance. It is a good starting point to go for a speaker separation angle of 20° and a delay of around 70µs. Please keep in mind that the delay is a discrete value which changes in steps of "1/sampling frequency" (e.g 22.7µs for 44.1kHz or 10.4µs for 96kHz). The slider allows all values but the program chooses the nearest possible delay value.

Balance:

Just changing the balance of the audio signal.

Output Attenuation [dB]:

The Ambiophonics algorithm increases the amplitude under certain circumstances which makes it necessary to attenuate the output signal.

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Please contact [me \(Stephan Hotto\)](mailto:me@stephan-hotto.de) if there is a wish for a commercial implementation.