AMBEO

3D AUDIO TECHNOLOGY BY SENNHEISER

AMBEO Orbit Quickstart

Version: 0.1.1 beta

If you experience any bugs or would like to give feedback, please reach out to our team at ambeo-info@sennheiser.com

What is 3D Binaural Audio?

Normal stereo audio is limited to two dimensions: only left and right inside the head of the listener. Binaural audio breaks this barrier by allowing sounds to be placed anywhere in front, behind, above, or below the listener in three dimensions, while still using only a stereo signal to carry the audio.

Technically speaking, “binaural audio” is a stereo audio signal that has been treated with the same temporal and spatial acoustic properties that, in the real world, allow us to hear sounds all around us, in three dimensions (such as interaural time difference, intensity difference, and spectral filtering of the anatomy). These acoustic properties are simulated with Head Related Transfer Function filters, or “HRTFs”, which render a virtual 3D surround experience over headphones.

What is the AMBEO Orbit?

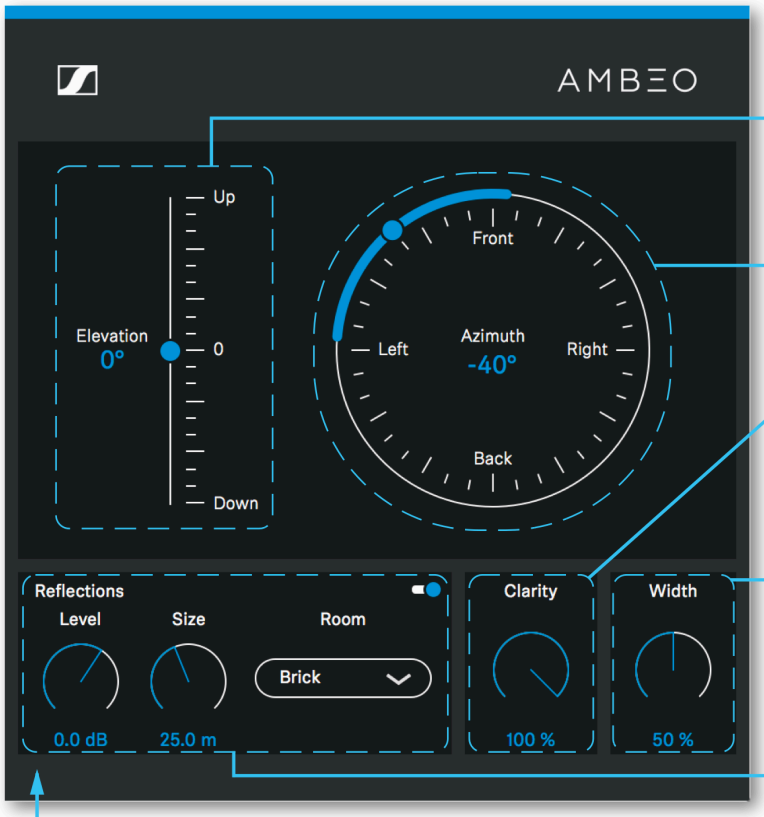
The AMBEO Orbit is a software plugin that allows the user to spatialize any “normal” mono or stereo sound in three-dimensional binaural space. It uses the highest-quality HRTF filters, meticulously measured from the famed Neumann KU100 binaural stereo microphone, for maximum fidelity, timbre quality, and localization accuracy. It also comes with a host of unique features unavailable with any other binaural panning technology today.

How to Install

The AMBEO Orbit can be used as an AAX, VST, VST3, or AU plugin for macOS and Windows. After download, simply run the *.pkg* installer on macOS, or the *.exe* installer on Windows.

How to Use

The AMBEO Orbit was designed to integrate easily with standard digital recording and mixing workflows. To begin, one can think of the plugin as a replacement of the built-in stereo pan knob. In your preferred Digital Audio Workstation, select a mono or stereo audio track, and set its built-in pan to zero, or “center”. Then create a new instance of the AMBEO Orbit as the last plugin insert for the track. The plugin can be approached in the same manner as a normal panner, only now with full three-dimensional space there are limitless creative possibilities that extend far beyond the reach of a simple stereo panner.



Elevation

The height of the audio source

Azimuth

The horizontal direction of the audio source

Clarity

Adjust between clarity of timbre and 3D externalization of the audio source

Width

For stereo input, the distance between audio sources. Not available for mono

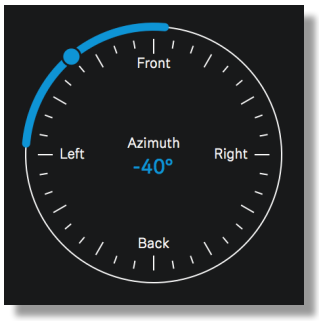
Reflections

Parameters to control room acoustics:
- Enable/disable room acoustics
- The gain level of room reflections
- The length, in meters, of the room
- The material of room surfaces

Tooltips

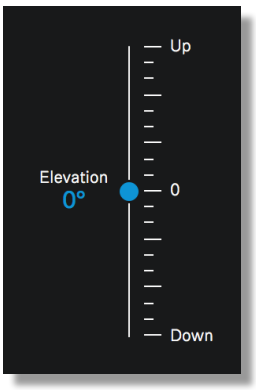
This area will display info for the parameter currently under the cursor

The AMBEO Orbit is a powerful and streamlined binaural panner that contains several unique features that are unavailable with any other plugin. It is available in all major formats, including AAX, VST, VST3, and AU, and is supported on macOS and Windows. It is controlled with the following parameters:



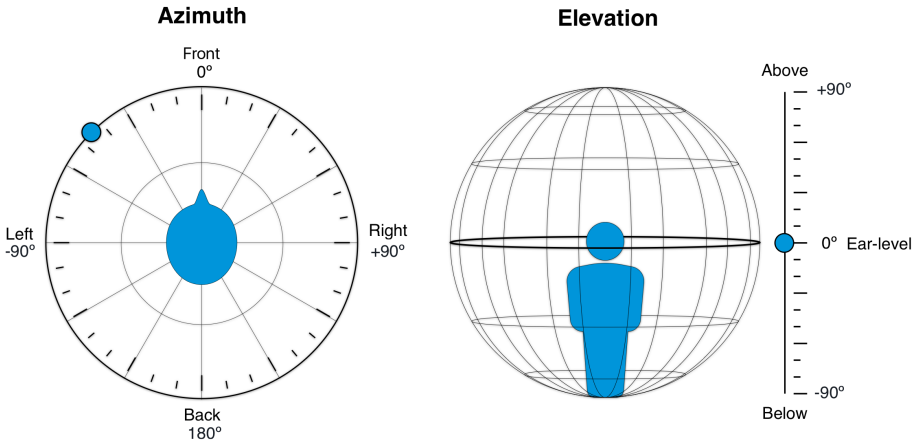
Azimuth

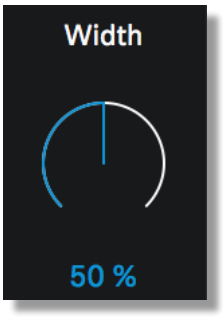
This controls the horizontal position of the source in degrees. 0º is directly ahead, 90º to your full right, -90º to your full left, and 180º directly behind you.



Elevation

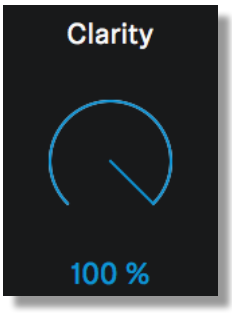
This controls the vertical position of the source in degrees. 0º is at ear-level, 90º is directly above, and -90º is directly below.





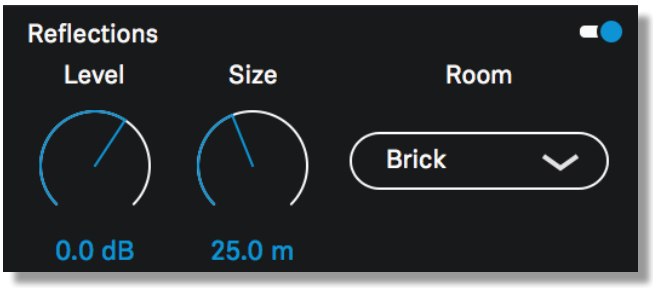
Width

When the AMBEO Orbit is given a stereo input, this controls the relative distance between the left and right channels as sources. 100% places them at a maximum distance apart, and 0% collapses them to mono. If the AMBEO Orbit is given a mono input, this control is disabled.



Clarity

Because HRTF filters must alter the frequency response of a signal to impart 3D spatial information, they ultimately color the sound of the original signal. Therefore, finding an optimal balance between the externalized 3D perception and the overall tonal preservation of a recording can be very important and useful. This parameter controls this balance, such that 0% is full 3D externalization of the source, and 100% is full “clarity” or tonal balance. Clarity can be especially useful for musical instruments like cymbals and the human voice.



Reflections

This section controls the acoustics of a surrounding virtual shoebox-shaped room. The switch in the upper-right corner enables or disables the room reflections. “Level” controls the gain of the reflections, “Size” controls the length, in meters, of the room, and “Room” controls the material of the walls, ceiling, and floor, and thus the reflection timbre.

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