



BINAURAL MIXING
ENTER THE WORLD OF
SPATIAL AUDIO



USER MANUAL

v1.0.2

Please read this manual carefully before using the software.

Using headphones requires responsible listening!

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Quick Start Guide

Installation:

The dearVR MICRO plugin can be used as an AAX, VST3, or AU plugin in your favorite DAW.

After download, simply run the installer for macOS or Windows.

- Execute the installer (*.exe* on Windows or *.dmg* on MacOS)
- Start up your favorite DAW.
- Put dearVR MICRO on the tracks you want to binauralize.
- Supported sample rates: 44.1, 48, 88.2, 96, 176.4, 192kHz



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1 Introduction

Thank you for using the dearVR MICRO plugin and welcome to world of immersive audio. With Dear Reality's 3D audio technology, you are able to design astonishing music mixes for headphones and to create deep auditory worlds and sound design within your DAW.

This manual will help you understand the dearVR MICRO Plugin and how to use it in your projects.

Important Note:

dearVR MICRO uses binaural 3D audio technology for headphones. Any kind or brand will do, but you have to use a headphone for the plugin to work properly. Please check that your left and right earpieces are properly placed and let's get started...

Have fun!

1.1 About binaural 3D audio

Binaural 3D audio is a technology that simulates the human spatial hearing via headphones. If you listen to common stereo audio with headphones, the perception of all sound sources is located inside your head - between your left and your right ear. Binaural audio breaks this barrier! With binaural audio you get the sound outside of your head where it belongs. A sound appears to emanate from a specific point - anywhere within a full 360° three-dimensional sphere.

This gives you the ability to position a sound object all around the listener - behind, in front of, to the right or to the left of and even below or above.

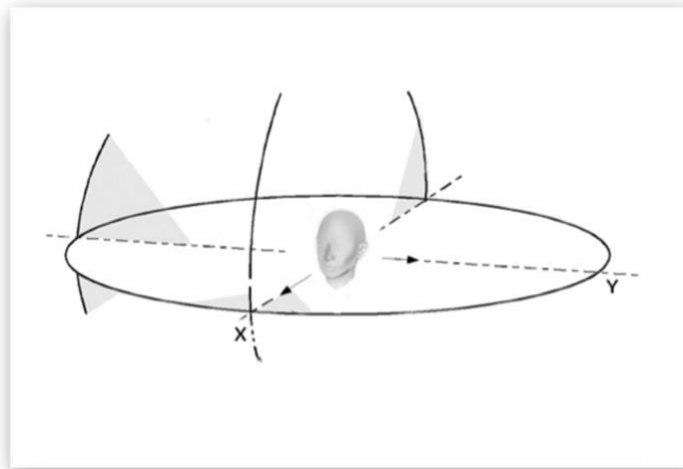


Illustration 1.1 - Full 360-degree 3D audio sphere

The quality of a 3D audio rendering process depends on many factors - primarily the shape of our body, our head and our ears. That's why a mix with 3D audio can sound different to different people. Our uniqueness as human beings is actually a limitation for practical 3D audio technology.

Another typical problem that occurs with binaural 3D audio is the front-back confusion. Our natural hearing uses small micro-movements of our head to optimize the localisation of a sound source. The head tracking technology, which is part of virtual reality devices, offers a solution to this problem.

Binaural 3D audio is not made for listening via stereo speakers. Although in general the playback is possible, you will have to face strong colorations of the sound depending on your playback system. The reason for this is crosstalk, meaning a large portion of the left speaker signal will also go to the right ear of the listener. Similarly, a large portion of the right speaker signal will go to the left ear of the listener. With headphones this is different: both the left and the right channel signal reaches its respective ear.



2 dearVR MICRO



dearVR MICRO was designed to integrate easily with any standard DAW and mixing workflows. To begin, one can think of the plugin as a replacement of the built-in stereo pan knob. In your 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 dearVR MICRO 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.



The dearVR MICRO plugin is made up of two processing units:

1. Position
2. Reflections

The signal flow starts in the positioning module and continues in the Reflections unit, if it is turned on.

2.1 Position module

The position module is responsible for placing the source in 3D space. You can place the source with azimuth and elevation coordinates.





1 – Azimuth	Value in degree for the sound object's rotation around the listener.
2 – Elevation	Value in degree for the sound object's height in three-dimensional space.
3 – Width	For stereo input, the width knob controls the distance between the left and right channel. Not available for mono input.
4 – Focus	HRTF filters must alter the frequency response of a signal to impart the 3D spatial information which colors the original sound. The Focus knob lets you adjust between the original timbre (0% - PAN) and the 3D externalization of the sound (100% - HRTF).
5 – HRTF	Select the set of HRTFs you want to use for binauralization



2.2 Reflections module

This section controls the acoustics of a surrounding virtual shoebox-shaped room. The ON/OFF switch in the upper-right corner enables or disables the room reflections.

With “Level” you control the gain of the reflections, the “Size” knob controls the length, in meters, of the room.

Finally, the “Room” dropdown menu let you select the material of the walls, ceiling, and floor.

Listen, how different materials alter the reflection timbre and overall room sound.



1 – Reflections on/off	Turns the reflections module on and off.
2 – Level	Adjusts the gain of the reflections.
3 – Size	Adjusts the size of the simulated room (10-50m). Bigger size results in later reflections.
4 - Room	Gives different options for room materials (Drapes, Curtains, Brick, Drywall, Glass) which lead to different absorptions of frequencies.



3 Changelog

v1.0.1:

- Minor bugfixes

v1.0.2:

- Maintenance update
- Minor bugfixes



4 Contact

Support

Please let us know if there are any questions concerning the dearVR Plugin.

If you need further assistance, please send an email to:

support@dear-reality.com

For the latest news concerning dearVR please visit our website at:

www.dear-reality.com



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Caution

Using headphones requires responsible listening. Damage to hearing occurs when listen to loud sounds with headphones over time.

- Set the volume control of your computer to a minimum when connecting your headphones.
- Set the volume in a quiet environment and select the lowest volume at which you can hear adequately.
- Do not turn the volume control to high, as this can cause permanent hearing damage.
- Be aware that you can adapt to higher volume settings over time, not realizing that the higher volume may be harmful to your hearing.

Dear Reality GmbH will in any event not be liable for any damage to hearing caused by loud sounds.

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