





USER MANUAL

v1.16.1

Please read this manual carefully before using the software.

Using headphones requires responsible listening!

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Quick Start Guide

Install and authorize your new plugin:

Double-click the .pkg (Mac) or .exe (Win) file

Follow the installation instructions.

Open the plugin in your DAW of choice, enter your license code and click on
ACTIVATE.

For more information, please visit: <http://www.dear-reality.com/>

System requirements and supported platforms

Supported sample rates: 44.1, 48, 88.2, 96, 176.4 and 192 kHz.

Supported buffer sizes: 128, 256, 512 and 1024

For latest System requirements & Supported Platforms, please check the product page on
our website.



Table of contents

1	Introduction	5
2	Virtual Mix Room	6
3	dearVR MIX-SE	8
3.1	Activation	9
3.2	Input.....	9
3.3	Control Room	10
3.4	Output.....	12
3.5	Spatial Headphone Compensation.....	13
3.6	Bypass	14
3.7	Performance	14
3.8	Settings	15
4	Headphone Models	16
5	Head Tracking	18
5.1	Basics	18
5.2	Step by step guide for the Supperware Headtracker.....	19
6	Troubleshooting.....	21
7	Contact.....	22



1 Introduction

Congratulations! Together with your new pair of Sennheiser headphones comes your personal reference-grade mix room: The dearVR MIX-SE plugin.

Relying on Dear Reality's outstanding binaural headphone technology, dearVR MIX-SE combines the analytic advantages of headphone listening, such as high detail resolution, and good spatial representation, with the perception of mixing in a perfectly matched control room.

Place yourself in the sweet spot of your ultimate mixing environment. dearVR MIX-SE turns your professional studio headphones into a world class stereo mix room with carefully designed acoustics, all through advanced spatial audio technology. Gain confidence and create better mixes by easily monitoring your session across multiple adjustable reference rooms and other common environments, such as a car. The advanced Spatial Headphone Compensation technology allows you to mix with unmatched accuracy by adapting the virtual mixing environment to your beloved headphones.

Have fun with dearVR MIX-SE!



2 Virtual Mix Room

It is no secret that creating a great mix is much easier within a perfect control room. We probably all experienced the feeling when a final mix does not translate to other systems as expected. With dearVR MIX-SE, you now access your own virtual mix room over headphones.

While developing dearVR MIX-SE, our aim was to create a reference-grade "virtual mix room" for all sorts of audio productions and genres. For a long time, the audio industry has been defining the characteristics of control rooms, even though the "perfect" mix room de-facto does not exist. Everyone has a slightly differently view, and that's fine.

However, there are certain characteristics that define a reference mix room:

- a certain reverb time
- a defined spatial geometry
- no reflections that color the sound
- a very diffuse reverb tail

When modeling a virtual mix room, you could measure the parameters of "legendary" mix rooms and transfer them to a software plugin afterwards. But what real benefit would you have working in this captured studio control room? You probably never worked in one and maybe never will... and even if you did... perhaps you don't like the mix room's acoustic characteristics?

That's why we took a different approach for dearVR MIX-SE. If THE perfect mix room doesn't exist, but we know the characteristics of a good reference room, why don't we leave it up to you to customize YOUR perfect mix room?

We believe that a good sounding control room is a very subjective thing and should therefore be flexible within certain limits. It becomes a perfect control room for you when



you feel comfortable with the room's characteristics and perception and feel "at home" in it or in other words, when the room seems plausible to you.

The adjustable parameters include the main properties that influence the sound image in a real room, and which are neglected in conventional stereo headphone playback:

- the size of the room
- the distance between the loudspeaker and the listener
- the characteristics of the control room

We deliberately programmed all parameters into just two sliders - Ambience and Focus, which are easy to understand and can be adjusted within a range of 0 to 100 for AMBIENCE and a range of -100 to 100 for FOCUS.

With dearVR MIX-SE, you benefit from steady listening conditions for recording and monitoring your sessions, even outside your studio. This allows you to take advantage of all the benefits of a real reference listening room, where a sound engineer can easily assess the quality of a specific recording. The more often you work in this particular room, the easier it becomes for you to judge how the recording would sound in a different environment.

But this different environment doesn't just need to stay in your imagination as dearVR MIX-SE lets you easily change your listening environment with just a few clicks, so you can be sure that your "living room" mix will still sound great in a small car!

Our aim is to ensure that you do what you do best when setting up your personal control room: Trust your ears!

Simply experiment with the room parameters of your virtual control room. As soon as you feel that your setup sounds realistic and pleasant, you've done it! You have created your own personal reference control room that you can now take with you wherever you go.



3 dearVR MIX-SE

Being inserted in the master bus of your DAW, dearVR MIX-SE enables you to monitor your mix in a reference grade mixing room on your headphones. The plugin is divided into two main areas. On top, you find a comprehensive visualization of your virtual mix room. The control panel below contains three modules providing you with direct access to all important parameters:

1. Input
2. Control Room
3. Output



Illustration 3.1 - Plugin Overview



3.1 Activation

Before you can use the plugin, you need to activate it.

Upon opening the plugin, you will see the plugin asking for a license key. Simply enter your license key and click on "ACTIVATE".

If you want to activate a full working 14 days trial license, you can simply click "START TRIAL" in the activation dialogue.

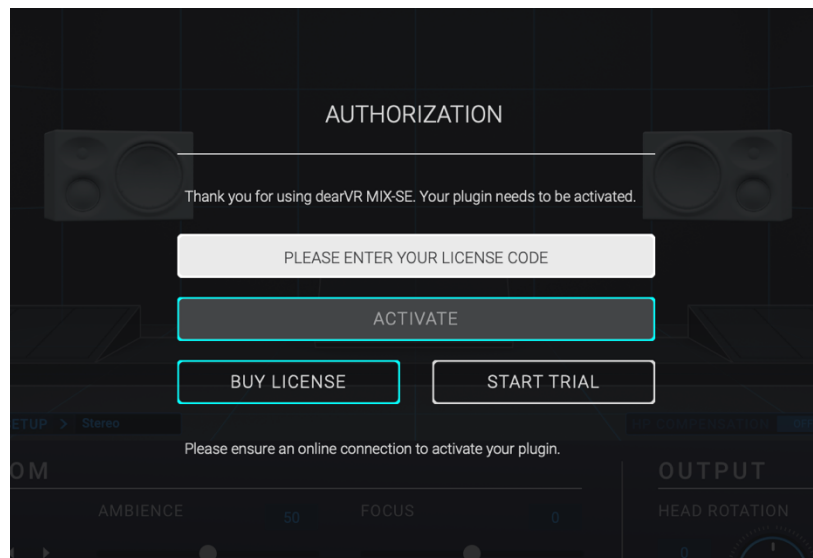


Illustration 3.2 - Activation menu

3.2 Input

dearVR MIX-SE lets you choose between 4 speaker setups – two mono setups and two stereo setups. Simply select the speaker setup that fits your recording in the input module. The "Stereo" option corresponds to the standard speaker setup, in which the listener and the speakers form an equilateral triangle. You can also choose a wider angle of 45° azimuth for



a larger stereo width by selecting "Stereo Wide". "Mono Input" takes the first channel as the input, while "Mono Summed" takes both input channels and adds them together.



Illustration 3.3 - Input Section

3.3 Control Room

Using Dear Reality’s outstanding virtual acoustics headphone technology, dearVR MIX-SE combines the analytic advantages of headphone listening with the perception of mixing in a perfectly matched mix room. dearVR MIX-SE comes with three mix room characteristics which can be selected in the SCENE menu.

Type	Description
Mix Room A	Our perfectly tuned Mix Room A: No flutter echoes or discrete reflections, well-absorbed short room response.
Mix Room B	Our perfectly tuned Mix Room B: No flutter echoes or discrete reflections, well-absorbed short room response, slightly broader than Mix Room A.
Analytic Position	Direct sound of headphones with the realistic crosstalk of speakers and early reflections.

dearVR MIX-SE lets you easily adapt the virtual mix rooms to your taste using the "AMBIENCE" and the "FOCUS" sliders. Use the "AMBIENCE" slider to set the amount of diffusion, and therefore the vividness of the virtual mix room. "FOCUS" changes the amount of binaural impression. You can find your individual balance between overall coloration and localization, based on the patented Clarity algorithm by Sennheiser AMBEO.



Illustration 3.4 - AMBIENCE and FOCUS Parameter

Moreover, dearVR MIX-SE provides you with 6 common listening environments. Does your mix pass the car test? Stop spending hours double-checking how your mix translates into common listening scenarios. Simply select the desired scenario in the "SCENES" menu.

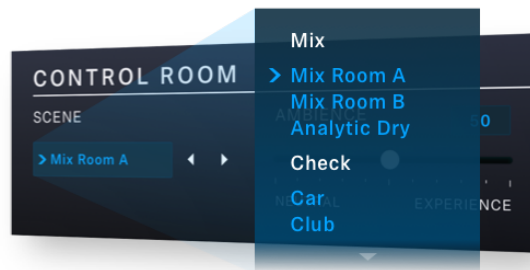


Illustration 3.5 - Overview Check Scenes

dearVR MIX-SE puts you just a few clicks away from monitoring your production in the following acoustic environments:



Type	Description
Car	How is your mix in a middle-class car with a regular sound system?
Club	Compact, acoustically well-treated, reflective club.
Home Theater	Experience your mix in a small acoustically treated home theater with lots of low-end.
Kitchen	The final check in a kitchen with a tonal low midrange reverberation.
Living Room	Stop sacrificing your living room and listen to your mix in a living room with a tonal low-midrange reverberation.
Stadium	Ready for Superbowl? Stadium with discrete early reflections and longer low-end reverberation

3.4 Output

Head rotation is a crucial factor when it comes to localizing sounds in the three-dimensional space. Therefore, dearVR MIX-SE provides you with the possibility to simulate your head rotation in the virtual mix room, supporting you with judging your mix precisely and accurately. You can also use the headtracking information sent out from dearVR SPATIAL CONNECT, if it is connected to your session.

Control the overall output volume of dearVR MIX-SE using the master gain. Because of the plugin structure, the different speaker setups use different gain compensation values to ensure distortion free summation. Note, that you should pay attention to your levels, so no clipping is introduced in your plugin chain!

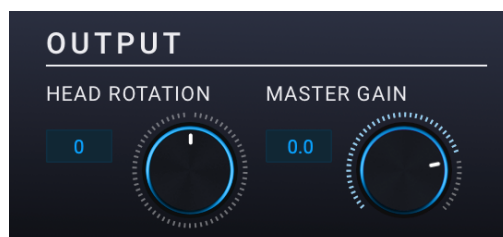


Illustration 3.6 - Output Module



3.5 Spatial Headphone Compensation

Binaural audio works best with a linear frequency response. Since there is no ideal headphone with a perfectly linear frequency response, we have built a tool to compensate the deviations of common Sennheiser and Neumann headphone models. The Spatial Headphone Compensation (SHC) module equalizes the signal in correspondence to your headphone model to cancel out any non-linearities and thereby enhances the binaural experience.

You can activate the headphone compensation by clicking the "On/off" button on top of the Output module. Click on the icon to open the context menu. From the drop-down menu you can choose between many different headphone models of Sennheiser, Neumann and many more.

You can adjust the low- and the high-end to your personal taste with the shelving filters. Use the "Gain Trim" to adjust the input level. When turning the HPC the default gain of the high shelving filter will be at -1.5dB. Please feel free to adjust all parameters based on your personal hearing preferences and your reference speaker setup.

You can choose between two filter type modes for our SHC model data, by clicking on "Lin" for linear-phase (more delay, no phase shift) or "Min" for minimum-phase (low latency but phase shifting introduced).

You can find a list of all supported headphone models in Section 4 of this manual.

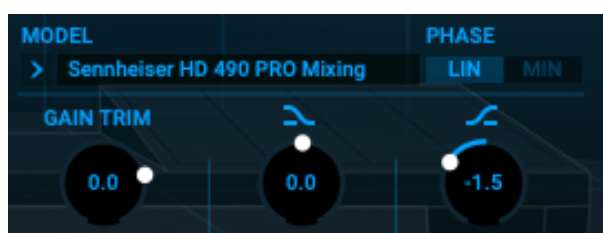


Illustration 3.7 - HPC module



3.6 Bypass

Comparison is key for a good mix. Of course, you want to check your mix also without our idealized mix rooms, just like the end user will listen to it. But a simple bypass of the plugin will also introduce level differences. This is, why we implemented a bypass feature into dearVR MIX-SE. It bypasses all plugin processing so you can listen to the original mono or stereo file again. For any level differences you might experience, you can click on the “Bypass” field to open a small window, where you can adjust a gain to match the level. This feature works only in mono and stereo since any multichannel format needs binauralization to be played over headphones.

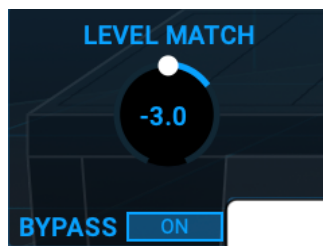


Illustration 3.8 – Bypass module

3.7 Performance

Depending on the hardware of your audio workstation, dearVR MIX-SE can cause a significant amount of CPU consumption, especially when using scenes with a long reverb. If you encounter performance issues, we recommend using higher buffer sizes to lower the CPU consumption. If you should still experience performance issues, try to use a smaller space with less reverb.



3.8 Settings

The settings menu is located on the bottom right of the plugin and you can open it by clicking the cogwheel symbol. If you want to help us to improve our products, you can activate Analytics to send us anonymous data about how you are using your plugin. You can find our Privacy policy [here](#). If you are using a trial or NFR license, you can enter the Authorization dialogue again to enter a new activation code.

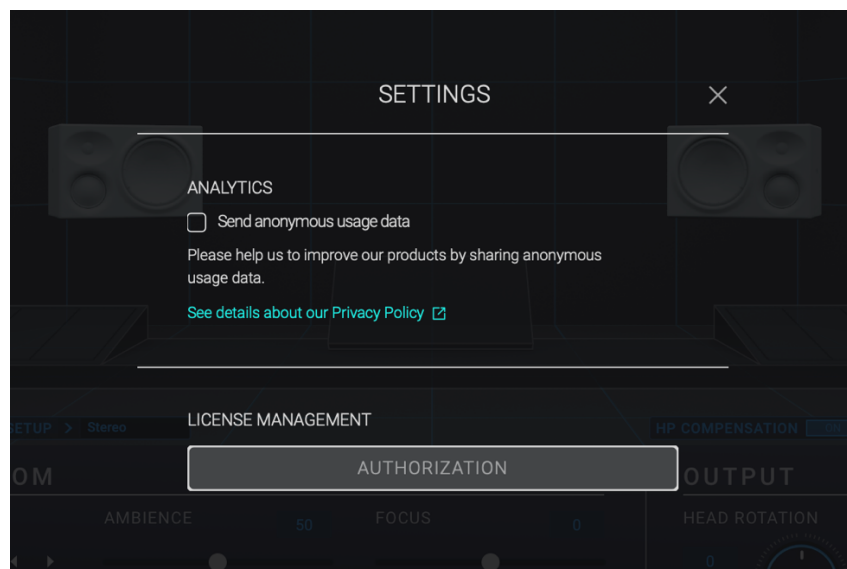


Illustration 3.9 - Settings menu



4 Headphone Models

Spatial headphone compensation is supported for the following Sennheiser and Neumann headphone models:

Headphone Models	
Sennheiser HD 800S	Sennheiser HD 490 PRO Mixing
Sennheiser HD 660S2	Sennheiser HD 400 PRO
Sennheiser HD 660S	Sennheiser HD 300 PRO
Sennheiser HD 650	Sennheiser HD 280 PRO
Sennheiser HD 600	Sennheiser HD 25
Sennheiser HD 560S	Neumann NDH 30
Sennheiser HD 490 PRO Producing	Neumann NDH 20

Illustration 4.1 – Headphone Models

Studio Headphones Package Upgrade

If you would also like to use dearVR MIX-SE with a different headphone model, you can add the optional Studio Headphones upgrade package.

It includes Headphone correction curves of the most used Studio Headphones from additional manufacturers (see detailed list below)

How to get the paid upgrade?

Login to your Dear Reality [account](#) and go to ACCOUNT. Below your dearVR MIX-SE product, you'll find the upgrade field. Please enter your license code here and click UPGRADE. You will be forwarded to a new page, where you are able to buy your Studio Headphone Package Upgrade.



After fulfilling the purchase, the license gets updated automatically and after a short period of time, you will see a message in dearVR MIX-SE. Please follow the instructions in the message overlay.

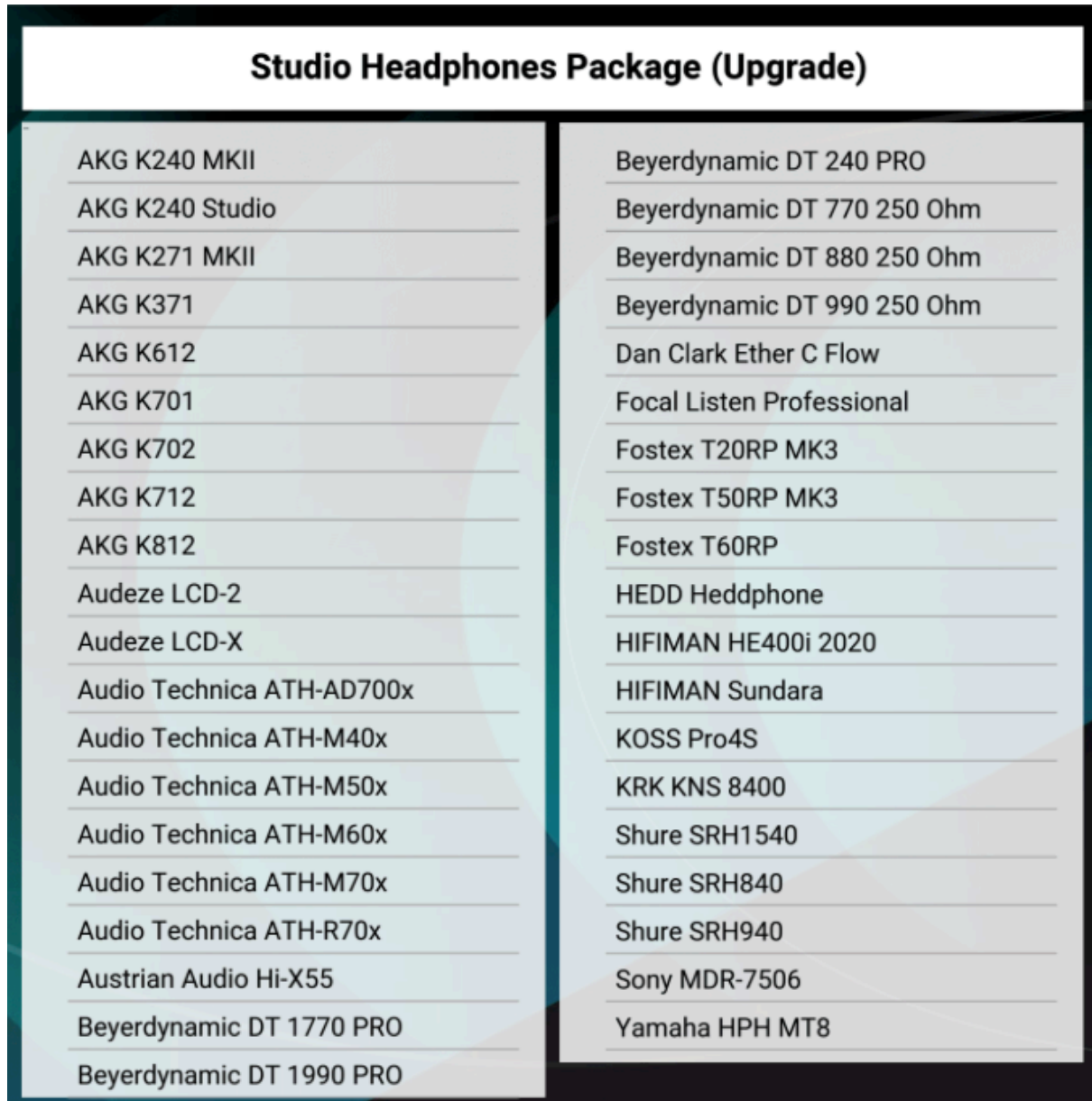


Illustration 4.2 – Studio Headphone Models



5 Head Tracking

5.1 Basics

Dear Reality products use the Open Sound Control (short OSC) protocol to communicate the position of your headphones in the form of Yaw, Pitch and Roll to our plugins. The protocol needs a sender, which is your OSC-capable headtracking device, and a receiver, which is the dearVR SPATIAL CONNECT Adapter. The Adapter can be installed together with dearVR MIX-SE. It then acts as a port to control all dearVR plugins. Thus, dearVR SPATIAL CONNECT Adapter has to run in the background, if you want to make use of the headtracking feature. Please make sure to open the adapter before your dearVR plugin. You can choose between two types of protocols in the Adapter: “OSC Headtracker” or “Spatial Connect”. Use “Spatial Connect”, if you want to connect to dearVR SPATIAL CONNECT and “OSC Headtracker”, if you want to use your third party headtracker. Follow the instructions in order to get started:

OSC Headtracker

Start dearVR SPATIAL CONNECT Adapter, set the Head Rotation Port to the port your device sends the headrotation data and choose the “OSC Headtracker” as Protocol. The logo of the SPATIAL CONNECT Adapter should state an ongoing connection, if your headtracker is sending OSC data.

Spatial Connect

Start dearVR SPATIAL CONNECT Adapter, set the Head Rotation Port to the port dearVR SPATIAL CONNECT sends the headrotation data (we recommend 7001) and choose “Spatial Connect” as Protocol. The logo of the SPATIAL CONNECT Adapter should state an ongoing



connection, if dearVR SPATIAL CONNECT is running. For more information about dearVR SPATIAL CONNECT, find the manual [here](#).

5.2 Step by step guide for the Supperware Headtracker

We recommend the supperware headtracker and its companion app “Bridgehead” that you can find [here](#). But you can also use other headtrackers as long as those support OSC.

1. [Download](#) and install the Bridgehead application by Supperware, if not already installed. Use “Bridgehead for Windows (64-bit)” or “Bridgehead for macOS”.
2. Install the dearVR SPATIAL CONNECT Adapter. Just re-run the dearVR MIX-SE installer and choose dearVR SPATIAL CONNECT Adapter in the custom install section.

For users with an Apple Silicon computer. If your DAW runs in Rosetta mode, please make sure to also run your dearVR SPATIAL CONNECT Adapter in Rosetta mode.

Use

1. Start Bridgehead, go to “OSC bridge settings” and choose “dearVR” as Profile.
Connect your Supperware headtracker via USB.
2. If the dearVR profile is not available yet, please update your bridgehead application or add the following to your Profiles.txt:

```
dearVR  
/ypr  
yaw,pitch,roll  
local 7001
```

3. Start dearVR SPATIAL CONNECT Adapter, set the Head Rotation Port to 7001 and choose the “OSC Headtracker” as Protocol. The logo of the SPATIAL CONNECT Adapter should state an ongoing connection, if your headtracker is sending OSC data.



4. Open your DAW of choice, insert your plugin and you are all set!
5. The greyed out "HEAD ROTATION" knob should follow your head movement. If you are looking at the center of your monitor and the value of your "HEAD ROTATION" knob is not 0, please recalibrate your Supperware headtracker.



6 Troubleshooting

dearVR MIX-SE does not appear in my DAW on Windows:

dearVR MIX-SE does not appear in DAWs, when a Visual C++ Redistributable is missing. Try to install the “Microsoft Visual C++ Redistributable for Visual Studio 2015, 2017 and 2019 Redistributable (x64)” on your machine. You can find the package here:

<https://support.microsoft.com/en-ca/help/2977003/the-latest-supported-visual-c-downloads>

Headtracking does not work even though the Spatial Connect Adapter states that it is connected:

Please make sure that the Spatial Connect Adapter is running before you open dearVR MIX-SE.



7 Changelog

v.1.15.0:

- Added additional headphone models (Beyerdynamic DT 700 PRO X, Beyerdynamic DT 900 PRO X)s

V 1.16.1:

- Minor bugfixes



8 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 listening 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 too high, as this can cause permanent hearing damage.
- Be aware that you can adapt to higher volume levels 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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