

# ZYLIA 6DoF HOA Renderer for Max MSP

## Reference manual

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v1.0

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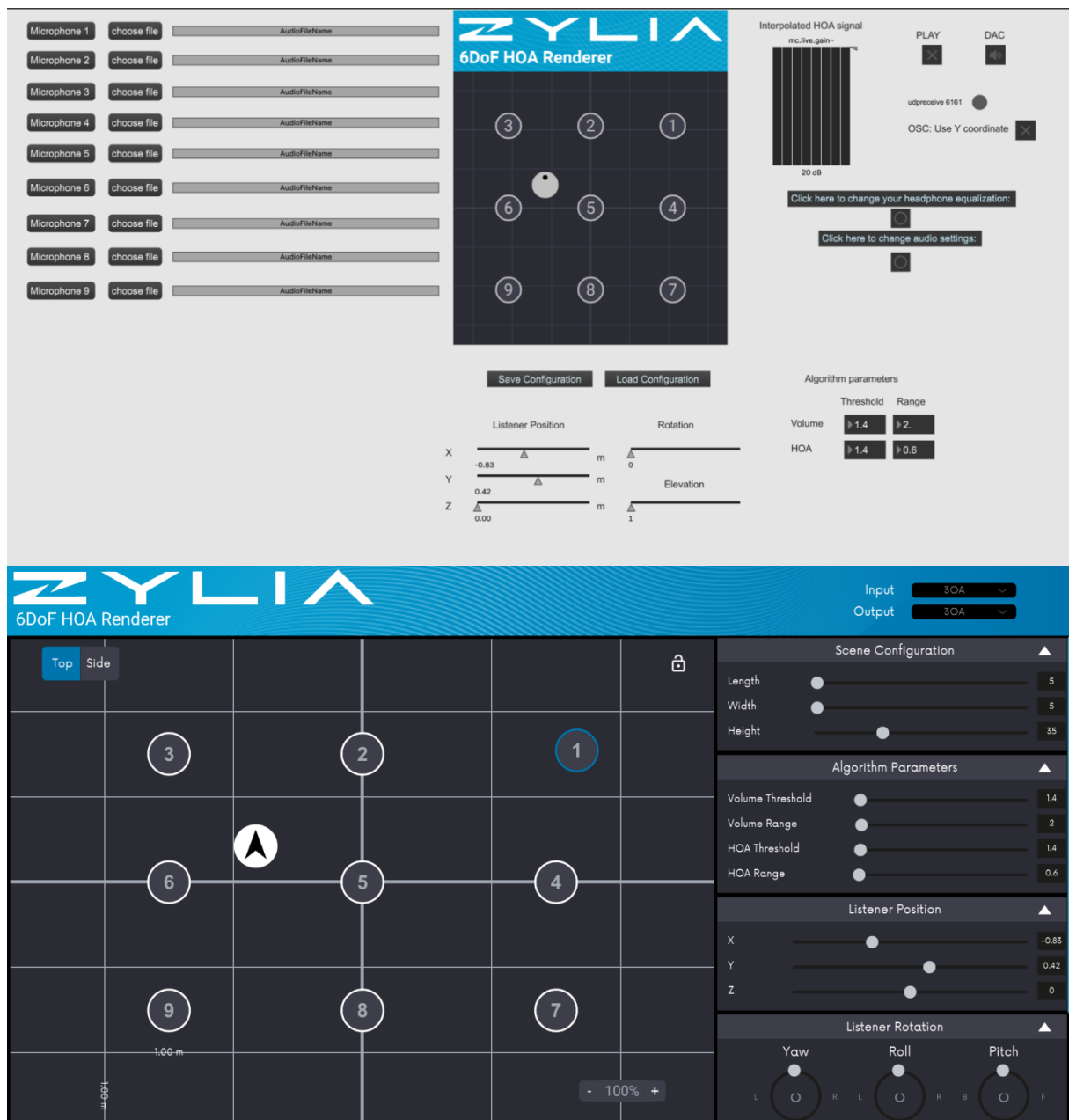
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## Overview

ZYLIA 6DoF HOA Renderer for Max MSP is a MAX/MSP plugin that allows for processing and rendering ZYLIA 6DoF Navigable Audio content. With this plugin, users can playback synchronized ambisonics files, change the listener's position and process the audio from multiple ambisonics signals.

While highly customizable in Max MSP, the plugin is also available for Wwise, allowing developers to use ZYLIA Navigable Audio technology in various game engines.



## Installation

1) Install Max MSP

<https://cycling74.com/>

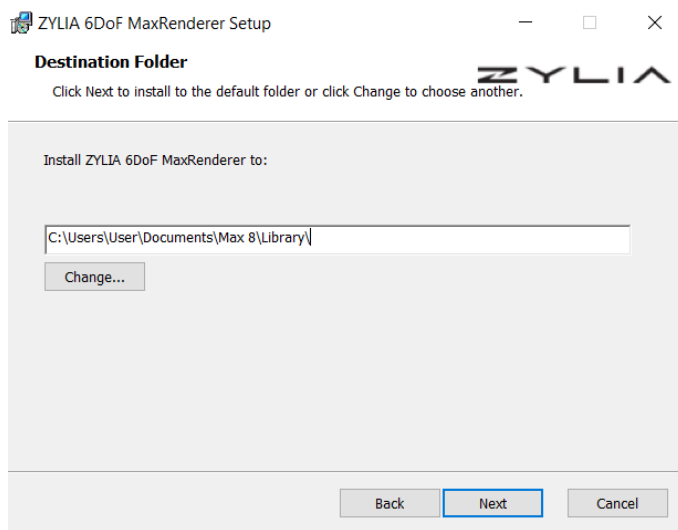
2) Download and install ZYLIA 6DoF HOA MaxRenderer from the provided link

Windows Installation:

Run zylia6dof-maxrenderer Setup

Recommended to install at default location:

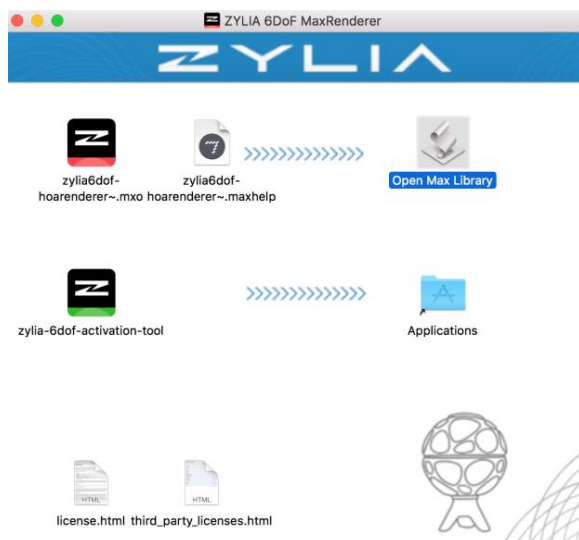
C:\Users\User\Documents\Max 8\Library\



MacOS Installation:

Drag zylia6dof hoa renderer and zylia6dof hoarenderer.max help to Max library folder

Drag zylia 6dof activation tool to the applications folder



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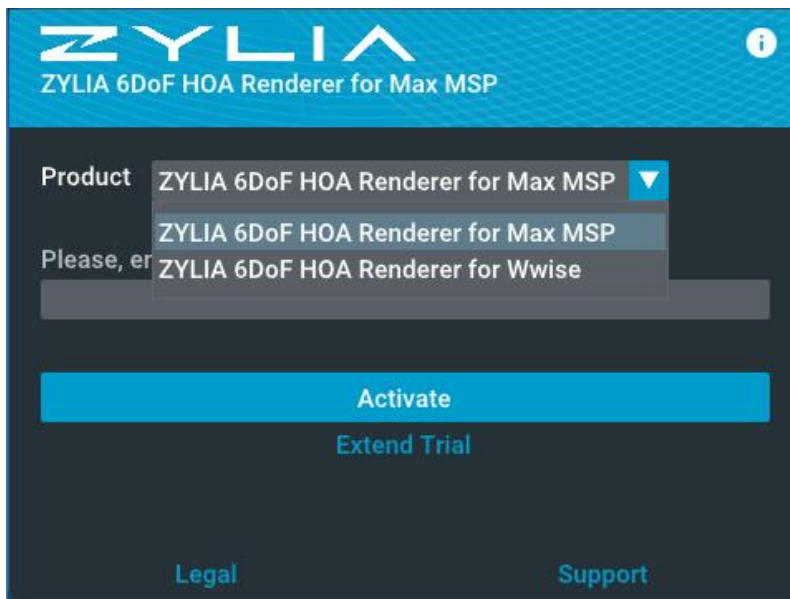
## Activation

**ZYLIA 6DoF HOA Renderer for Max MSP** requires activation in order to be fully functional in Max MSP application.

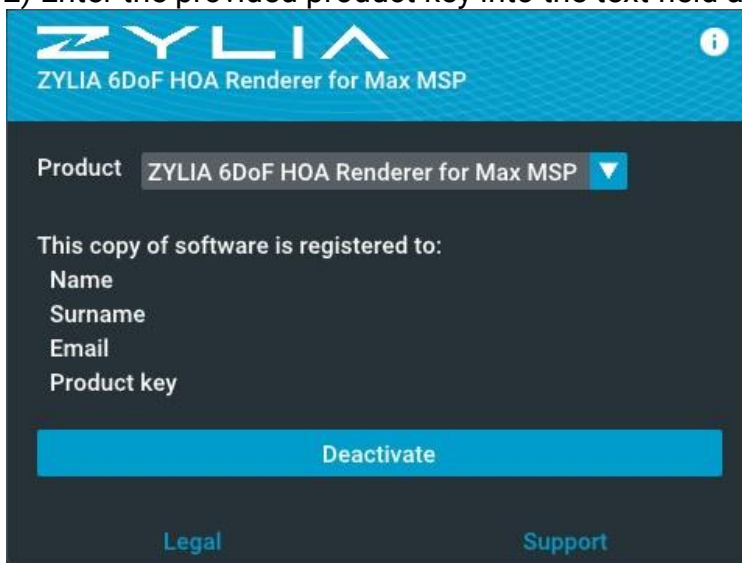
1) Open ZYLIA 6DoF HOA Renderer Activation Tool.

If necessary, allow the application through Security & Privacy settings in MacOS or through Windows Defender.

On the Product selection, select ZYLIA 6DoF HOA Renderer for MAX MSP or Wwise. Each product requires a different Product Key.



2) Enter the provided product key into the text field and click "Activate" button



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## Usage

Before using ZYLIA 6DoF HOA Renderer for Max MSP, you should have ready several synchronized 3<sup>rd</sup> Order ambisonics audio files.

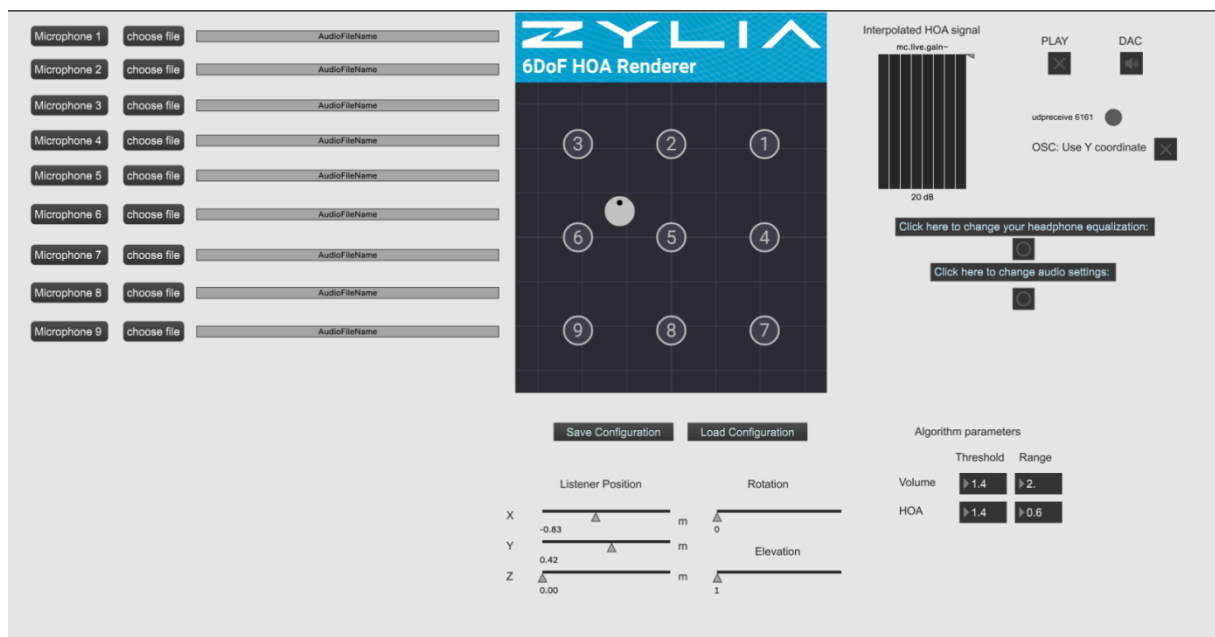
Please refer to ZYLIA 6DoF VR/AR Set Recording manual for recording and synchronizing multiple ambisonic files.

To initiate ZYLIA 6DoF HOA Renderer for Max MSP, open MAX. You will have 2 possibilities:

a) open ZYLIA Max8 example patch (MAX – File – Open – select ZYLIA Max patch)  
The example patch can be downloaded from ZYLIA.co website.  
ZYLIA Max8 example patch quick start up guide can be found in the following chapter.

b) create your own MAX patch by adding object zylia6dof-hoarenderer~

### ZYLIA Max8 Example patch



Click on the ZYLIA 6DoF HOA Renderer window to open the plugin. The settings on the plugin will match the Max8 patch.



## Main plugin parameters description:

### 1) Microphone ID

Number of the microphone, every Ambisonic file should have a unique number.

### 2) Choose file

Click to import your synchronized 3<sup>rd</sup> Order Ambisonics file (16 channel audio file).

### 3) Microphone coordinates

Position of the microphone in meters.

The X,Y and Z correspond to the coordinates of the microphone on the virtual 3D scenario. Manually type the XYZ coordinates or move the corresponding microphone by dragging it on the User Interface.

### 4) Listener Position and Rotation

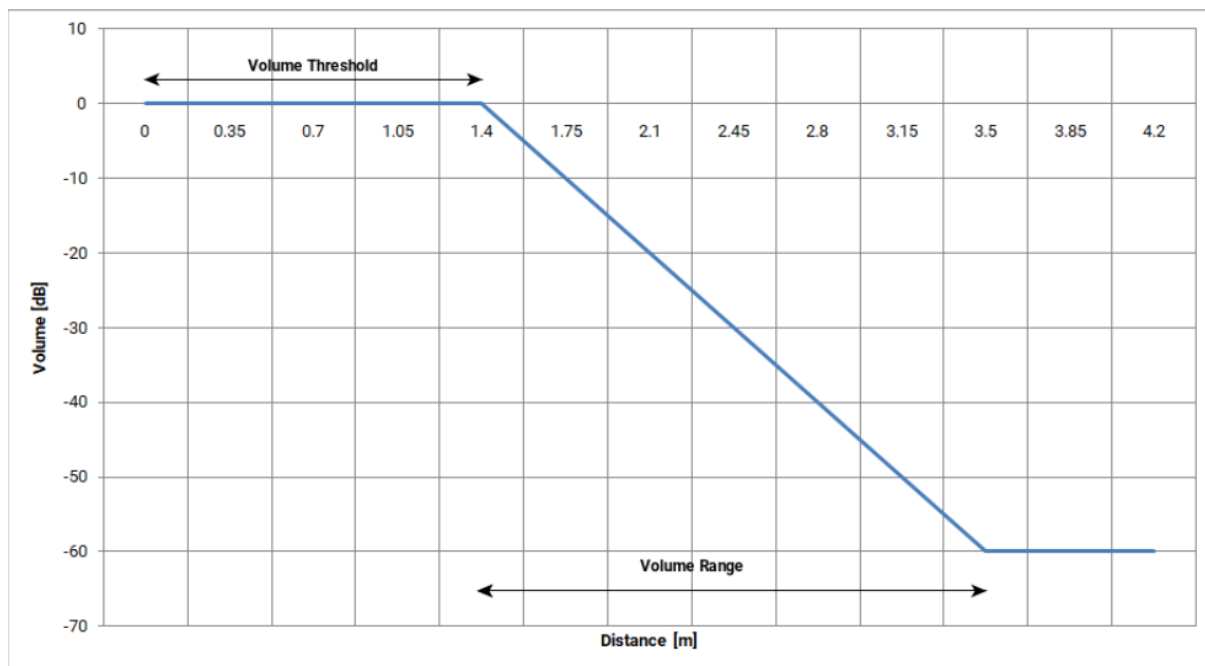
Position of the listener in meters, XYZ coordinates

The rotation and elevation parameters affect the listener's rotation, in degrees, in the horizontal and vertical axis.

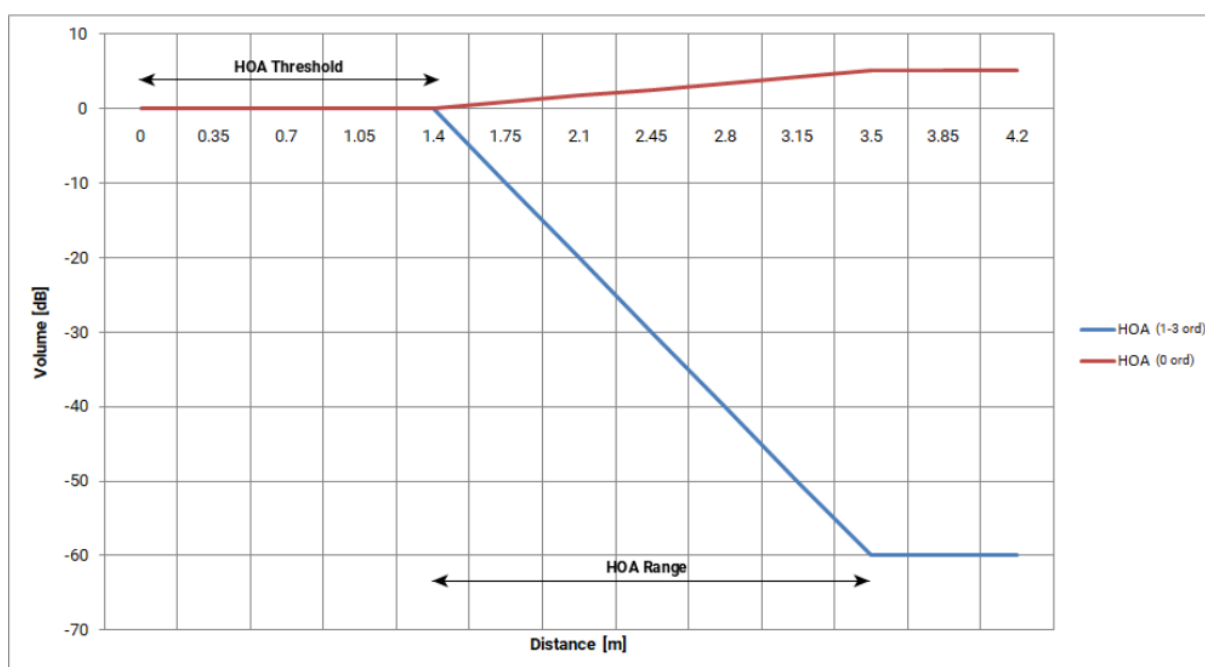
### 5) Algorithm Parameters

Volume Threshold and Volume Range:





HOA Threshold and HOA Range:



## 6) Save/ Load Configuration

Save/Load the virtual scenario created, including coordinates of the position of the Microphones and Listener settings.

7) **Play**

Playback the synchronized Ambisonic files in Binaural or Ambisonics.

8) **Interpolated HOA signal VU**

Volume unit representation of the Interpolated HOA signal in dB.

## ZYLIA Max8 example patch quick start up

After Recording and synchronization of the data recorded it is also necessary to encode the data into ambisonics format, for this, use ZYLIA Ambisonics Converter to convert each of the produced files into 16 channel, third Order Ambisonics.

With this process finished, you are now ready to render a virtual scene using ZYLIA 6DoF HOA Renderer for Max MSP:

For every microphone, start by importing your synchronized 16 channel Ambisonics files.

For more realistic results, it is important that each microphone ID and position in the virtual scenario will be the same as during the recording process.

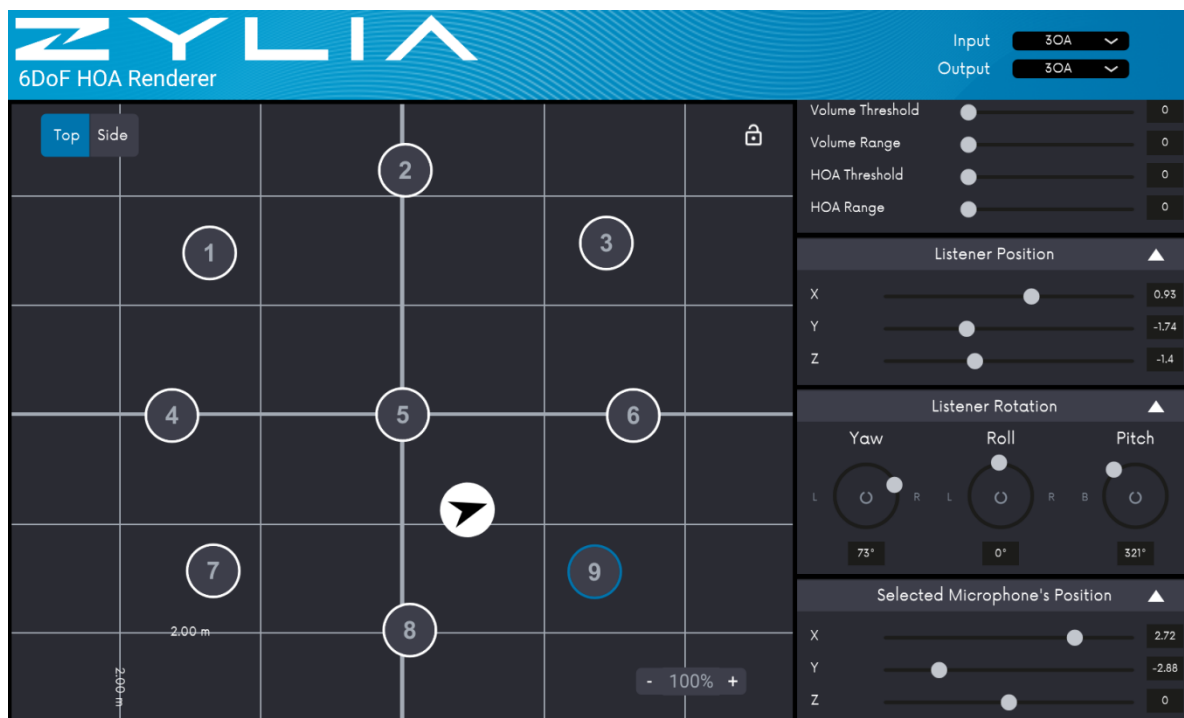
Place the microphones on the virtual scenario using the X,Y,Z coordinates or by dragging directly on the interface.

If necessary, change the scene configuration to match the distances used during the recording setup.

Place or move the listener's position, feel free to change the Yaw, Roll or Pitch.

In order to playback, make sure to set up the output device in Max MSP Audio Settings.

Pressing Play will play the processed audio from multiple ambisonics signals, the output signal may be binaural or up to third order ambisonics.



## Support

In case of any technical problems please check our online support center at [www.zylia.co/support](http://www.zylia.co/support).

If you have any questions regarding ZYLIA 6DoF HOA Renderer for Max MSP and its configuration, please contact **support@zylia.pl**.

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