



Audio Unit Plugin for sound
spatialization

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Introduction

Octogris is a multi-channel sound spatialization plugin (up to 32 sources /32 speakers). Within these limitations, the user may choose any number of loudspeakers and position them freely within the interface to match custom studio setups. Multiple pre-sets are available to alter the types of motion used for spatializing stereo and multi-channel sources.

Octogris is an Audio Unit free open-source. Download at

<http://code.google.com/p/octogris/downloads/list>.

Octogris uses the COCOA libraries as graphic interface, which are supported by most of the major applications.

Versions History

Version 1.0 – May 25 2010

Octogris first version, the sources and speakers are positioned in clockwise order by default.

Version 1.1 - May 27 2011

+Default sources and speakers new configuration by pairs.

+Reset position of parameters with *option+click*.

Version 1.2 - June 2 2011

First Joystick version.

+Joystick control of source positions

— Depends on DDHidLib.framework for joystick access

— Place the framework into /System/Library/Frameworks

Version 1.4 - May 29 2012

This version name is **OctogrisJoystick.component** (like previous version 1.2). It must be installed with **DDHidLib.framework** either you plan to use the joystick or not. This latest version is compatible with projects using previous versions.

Version 1.5 - November 13 2012

The most recent version. **64 bits** version (32 bits compatible).

This version name is **OctogrisJoystick64.component**. It must be installed with DDHidLib.framework (**System/Library/Frameworks**) either you plan to use the joystick or not. If you have a previous version of Octogris installed, you must remove it as well as DDHidLib.framework and replace them by the new 64 bits version (see Installation Notes below for more details).

The 1.5 version is perfectly compatible with already existing projects that use older versions of Octogris.

Main Functions

- Freely position all speakers. (Allows for the bypassing of standard surround formats imposed by the majority of existing sequencers.)
- The number of sources can range between 1 and 32 (input).
- The number of speakers can range between 2 and 32 (output).
- There are eight present modes of linked source motion.
- Control of the sound dispersal radius for each source.
- Speakers' attenuation control.

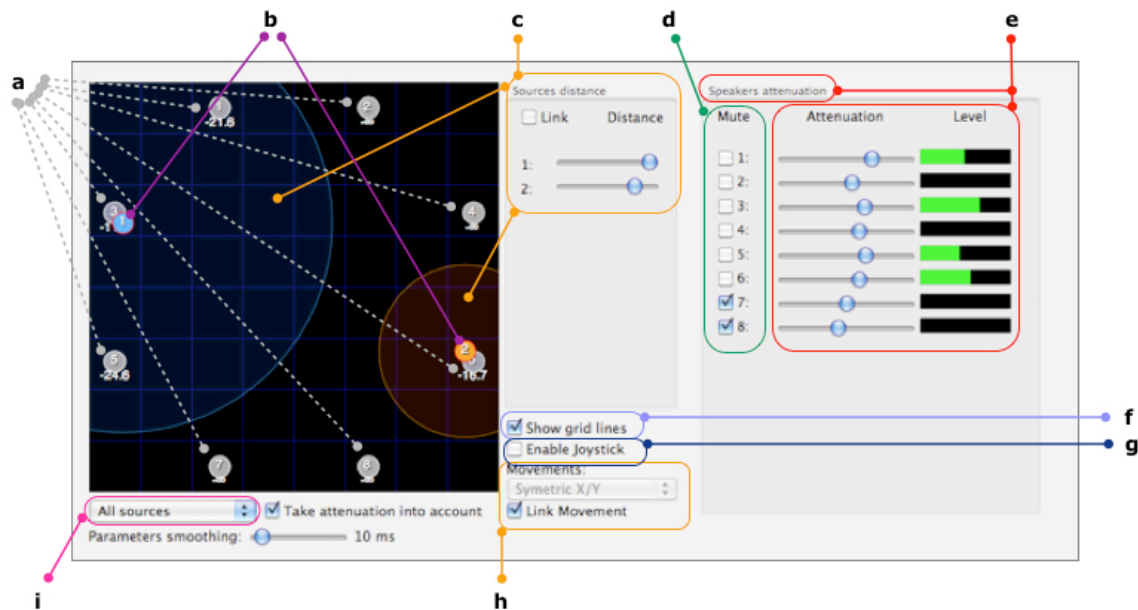


Figure 1 OCTOGRIS/parameters

Octogris2x8 - 2 inputs (IN) 8 outputs (OUT)

| | | |
|----------|-----------------------------|--|
| a | Speakers | Freely position all speakers, maximum 32 outputs ; By default the disposition is by pairs from front to rear. |
| b | Sources | The number of sources can range between 1 and 32 |
| c | Sources distance | Controls the diffusion radius of the source |
| d | Mute | Speakers mute |
| e | Speakers attenuation | Output level control of each speaker |
| f | Show grid lines | Shows grid lines on the platform |
| g | Enable joystick | Enables the joystick use for sources movement. |
| h | Movements | 8 different modes of linked movement, for stereo or multi-channel source. |
| i | Show levels | dB level of each speaker output |

(see PARAMETERS section for more details)

Installation Notes

Joystick

Whether you plan to use the joystick or not, the **DDHidLib.frameworks** must be installed in order to run *Octogris*.

— Place the framework into **/System/Library/Frameworks**

+ Joystick control of source positions

Audio Unit Info Cache

In DP and Logic, the cache about the Audio Unit plug-ins installed should be erased prior to use a new version.

— in DP, you have to delete the file Audio Unit Info Cache

DP7: ~/Library/Preferences/Digital Performer™)

DP8: ~/Library/Preferences/com.motu.MotuAudioSystem

— In Logic, you have to delete the file com.apple.audiounits.cache in:

~/Library/Caches

New Features of the version 1.4

+ Joystick Calibration

— It is necessary to move the joystick to the extremes of the movement in such a way that *Octogris* register the minimum and maximum.

— Depends on DDHidLib.framework for joystick access

— Place the framework into System/Library/Frameworks

+ Better level curve (logarithmic) for Distance

+ Dropdown menu for Level and Distance of more than 15 outputs

+ Automap™ compatibility

— Parameters names now appear correctly in Automap compatible keyboard

+ Link Movement

— The sources linked by any Movements option (except Independent of course) stay together when Source 1 is controlled by an external device (like a Novation keyboard)

+ Link Distance

— The Distance of the sources linked stay together when Distance 1 is controlled by an external device (like a Novation keyboard)

New Feature of the version 1.5

+ 64 bits

IMPORTANT: Versions 1.1, 1.2 and 1.4 are 32 bits and built for Snow Leopard (OSX10.6). The compatibility with Leopard (10.5) is not guaranteed. The version 1.4 works well with Lion (10.7). The version 1.5 is in 64 bits and works well in 10.6 and 10.7. It has been tested with:

DP7 (32 bits)

DP8 (32 bits)

DP8 (64 bits)

Logic 9 (32 bits)

Logic 9 (64 bits)

Reaper 4 (32 bits)

Reaper 4 (64 bits)

Installation Compatibility

Minimum Setup Requirements

Mac OSX 10.5 and higher (the most recent tests have been made with OSX Snow Leopard 10.6.8 and Lion 10.7.5).

Host software supporting cocoa-based Audio Units
(See Table 1 chart for software compatibility).

Installation

Paste **OctogrisJoystick64.component** in the following path:

/Library/Audio/Plug-Ins/Components

Or (if your OS is in French):

/Bibliothèque/Audio/Plug-Ins/Components

Paste the folder **DDHidLib.framework** in the following path:

/System/Library/Frameworks

Or (if your OS is in French):

/Système/Bibliothèque/Frameworks

The different *Octogris* formats appear in the Audio Unit's list of the hosting software. In certain sequencers, Audio Units are listed by manufacturer, in this case, *Octogris* can be found in the **UDM** folder.

NOTE:

In the majority of sequencers, the multi-channel version of *Octogris* appear only when a surround track is created (see the Tutorials section to learn how to configure these tracks).

| Host Application | <i>Octogris</i> compatibility | Number of outputs |
|-----------------------|-------------------------------|-------------------|
| Digital Performer 7/8 | Yes | 12 (10.2) |
| Logic Pro 8/9 | Yes | 8 (7.1) |
| Reaper 3/4 | Yes | 64 |
| Ableton Live 8 | Yes | 8 |
| Ardour 2 | Yes | Unlimited |
| Cubase / Nuendo | No * | --- |
| Pro Tools 8 | No ** | --- |

*VST only

**RTAS only

Table 1 Compatibility Table

| AVAILABLE FORMATS | DISPOSITION |
|----------------------|-----------------------|
| 4-ch Quadraphonic | L R Lr Rr |
| 4-ch SMPTE/AES/ITU | L R C Cs |
| 5.1-ch DTS | L R Ls Rs C Lfe |
| 5.1-ch SMPTE/AES/ITU | L R C Lfe Ls Rs |
| 6-ch Hexaphonic | L R Lr Rr C Cs |
| 6.1-ch SMPTE/AES/ITU | L R C Lfe Ls Rs Cs |
| 7.1-ch SMPTE/AES/ITU | L R C Lfe Ls Rs Lc Rc |

Table 2 Surround formats

| Formats | 4-ch Quadraphonic | 4-ch SMPTE/AES/ITU | 5.1-ch DTS | 5.1-ch SMPTE/AES/ITU | 6-ch Hexaphonic | 6.1-ch SMPTE/AES/ITU | 7.1-ch SMPTE/AES/ITU | Spatial position |
|---|----------------------|-----------------------|------------|-------------------------|--------------------|-------------------------|-------------------------|----------------------------|
| Abbreviations | | | | | | | | |
| L (Left) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 30° |
| R (Right) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 330° or -30° |
| C (Center) | | 3 | 5 | 3 | 5 | 3 | 3 | 0° |
| Cs (Center surround) | | 4 | | | 6 | 7 | | 180° |
| Lfe (Low frequencies effects) | | | 6 | 4 | | 4 | 4 | Usually in center position |
| Ls (Left surround) | | | 3 | 5 | | 5 | 5 | 110° |
| Rs (Right surround) | | | 4 | 6 | | 6 | 6 | 250° or 110° |
| Lc (Left center) | | | | | | | 7 | 135° |
| Rc (Right center) | | | | | | | 8 | 225° or 135° |
| Lr (Left rear) | 3 | | | | 3 | | | 145° |
| Rr (Right rear) | 4 | | | | 4 | | | 215° or 145° |

Table 3 Matrix of surround formats

According to speakers order and their spatial position

Note: Some of the available surround formats are not supported by all sequencers, and by consequence by *Octogris*. These formats can vary from one standard to another (e.g. cinema industry, music industry, etc.).

Setup and Tutorials

Important Setup Information

For *Octogris* to function correctly, it is important to properly configure the host software that you plan on using.

The majority of sequencers use standard surround formats, which use a specific mapping for the order of the outputs and the positioning of the speakers.

Generally, it is necessary to reconfigure the routing of the outputs to obtain compatibility between the outputs of *Octogris* and the physical outputs of the audio interface.

Names and Formats

Octogris exists in number of formats. The names of the formats indicate the number of the inputs (sources) and the number of the outputs (speakers).

Examples: Octogris6X6 = 6 inputs, 6 outputs

Octogris2X8 = 2 inputs, 8 outputs

Once installed, the available formats depend on the surround configuration used in the sequencer.

| Mono | Stereo | Multichannel |
|-------------|---------------|---------------------|
| 1 x 2 | 2 x 2 | - - - |
| 1 x 4 | 2 x 4 | 4 x 4 |
| 1 x 6 | 2 x 6 | 6 x 6 |
| 1 x 8 | 2 x 8 | 8 x 8 |
| 1 x 12 | 2 x 12 | 12 x 12 |
| 1 x 32 | 2 x 32 | 32 x 32 |

Table 4 *Octogris* / Available formats

Configuration tutorials are available for the following sequencers:

Digital Performer 7, Logic Pro 9, Reaper 4 and Ableton Live 8.

A Multichannel reverberation example in Digital Performer is also available.

Configuration in Digital Performer 7/8



This tutorial explains how to configure Digital Performer 7/8 for *Octogris* to function properly.

In Digital Performer, *Octogris* is used as a plugin. It can be added as an insert on audio track, auxiliary track, or master track. *Octogris* analyses, when added as an insert, the number of the inputs and the outputs of the track used. Then, it is possible to determine the number of sources and speakers available within the spatialization interface.

Sound Card Configuration

1 – In the **setup** menu -> **Configure Audio System**, select **Configure Hardware Driver**.

2 – In the window -> **Configure Hardware Driver** (Figure 2), select the audio interface that directs the audio signal to eh speakers.

3 – Click on **OK** to confirm the assignation.

NOTE: It is essential to select an interface that has sufficient outputs. It will be impossible to continue to step 2 if your interface does not have an adequate number of outputs. It is possible to use Jack or Soundflower to simulate virtual outputs.

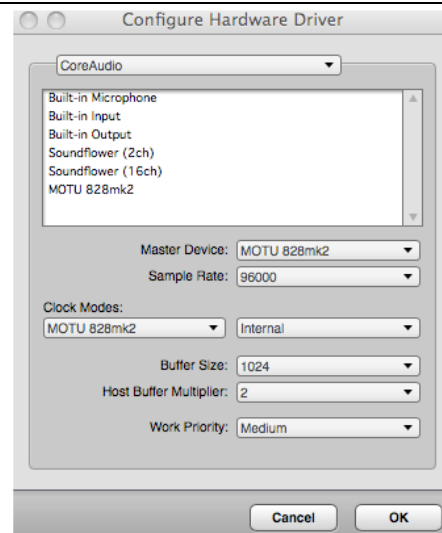


Figure 2 DP/Hardware Configurations

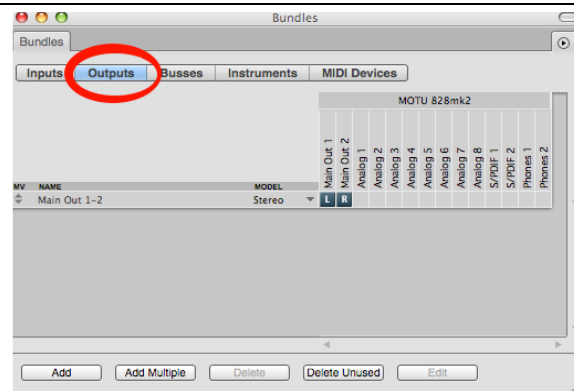
Creation of an output bundle

1 – In the **Studio** menu, select **Bundles**;
Select the **outputs** tab (Figure 3)

2 – Create a new bundle and click on **Add**.

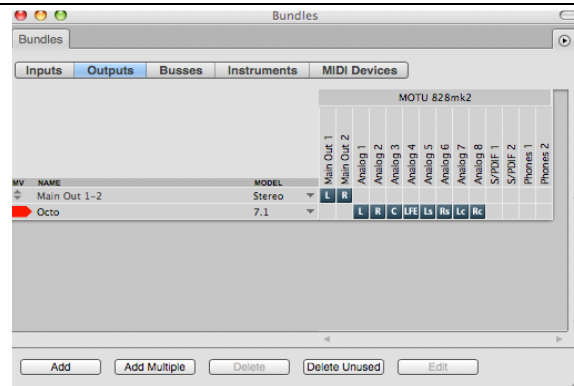
Rename the bundle so that it will be easily identifiable later on.
(option+click/double click on the name)

3 – Choose the Model that corresponds to your spatialization set-up.



| Model DP | Disposition Octogris |
|-------------|----------------------------|
| Mono | N/D |
| Stereo | Stereo |
| Quad | Quad |
| LCRS | N/D |
| 5.1 | Hexaphonic (6 speakers) |
| 6.1 | N/D |
| 7.1 | Octophonic (8 speakers) |

Table 5 DP / Outputs models



4 – Assign the multichannel signal of the bundle to the appropriate outputs of the audio interface.
To do so, simply move the squares and assign them to the correct output.
In the figure 3b, a 7.1 Bundle (called Octo) resend the signals to the Analog Outputs 1 to 8 of the sound cards.

You can then close the Bundles window.

Figure 3 a, b DP/Creation of an output bundle

Assignment of a track

Before using *Octogris*, configure the audio, auxiliary or master track to which it will be applied.

1 – Open the Mixing Board window of your project in: **Project -> Mixing Board** (Shift+M)

Locate the track to be used with Octogris. It will be in form of an audio channel strip (Figure 4).

2 – Assign the output of the track to the multi-channel bundle created earlier.

NOTE: The channel strip's panner is then modified to represent the newly selected multi-channel output format.



Figure 4 DP/Channel strip

Send level of the panner module

This step ensures that a signal is sent to all channels.

The multiphonic system of *Octogris* uses Digital Performer's 7.1 for Octophony (as it also uses 8 outputs). The same equivalences can be found in pentaphonic output (5.1) and hexaphonic output. By default, DP does not send a signal to the LFE channel (the "1"). Therefore, it is necessary to open the panning module to increase the gain of this channel.

In the **Mixing Board** window:

1 – Double-click on the button in the top left corner of the panning module. (Figure. 5 a). The panning module will open in a new window (Figure. 5 b).

2 – Check if the filter of the LFE channel is deactivated (**A**).

3 – Open the additional panel of the panning module by clicking on the arrow (**B**).

4 – Increase the send level to 0dB of the LFE channel, by using the arrow or by typing the desired number.

NOTE: This operation should be made for all tracks that use Digital Performer's panning module, whether they are audio, auxiliary or master tracks.

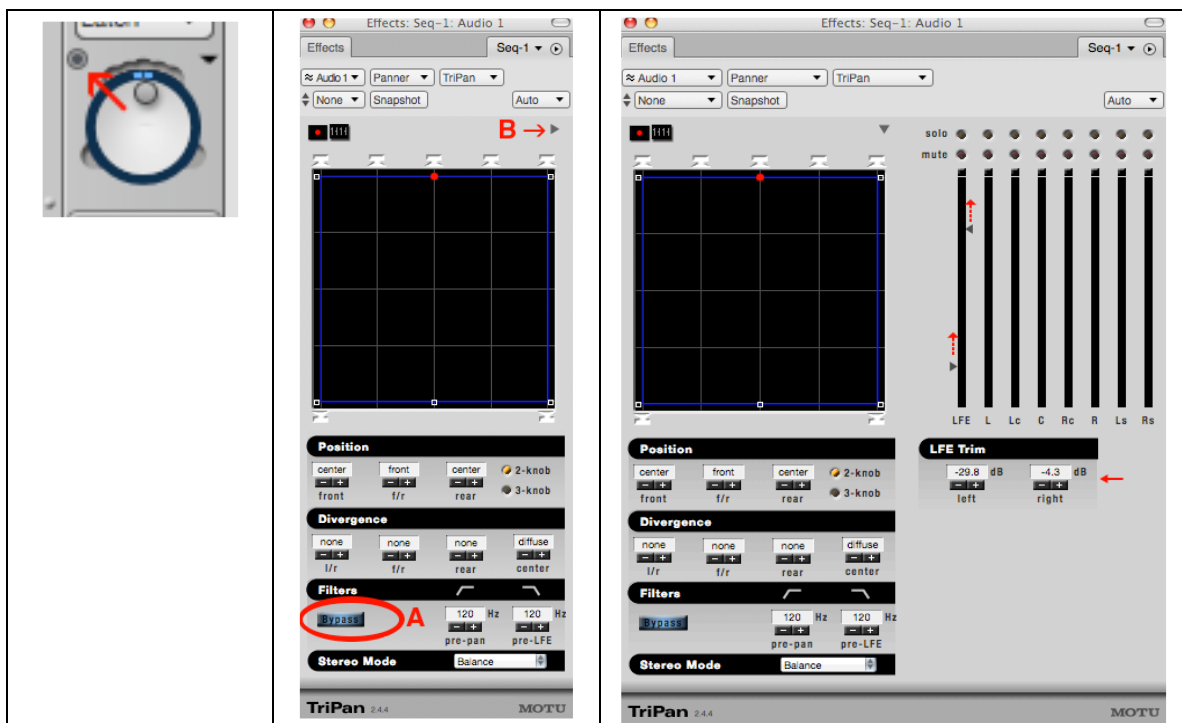


Figure 5 a, b, c DP/Panner module

Adding *Octogris* as an insert

In the **Mixing Board** window:

1 – Click and hold on the **insert** entry tab.

A drop-down menu will appear with a list of Audio Units available for the track.

2 – In the **UDM** folder, select the format of *Octogris* that you choose.

The window for *Octogris* will open. It is then possible to spatialize your sound.

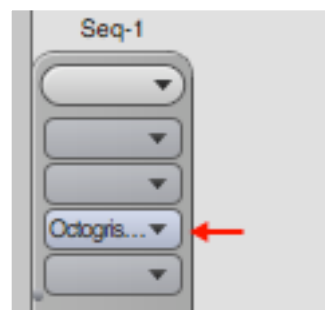


Figure 6 DP/Insert

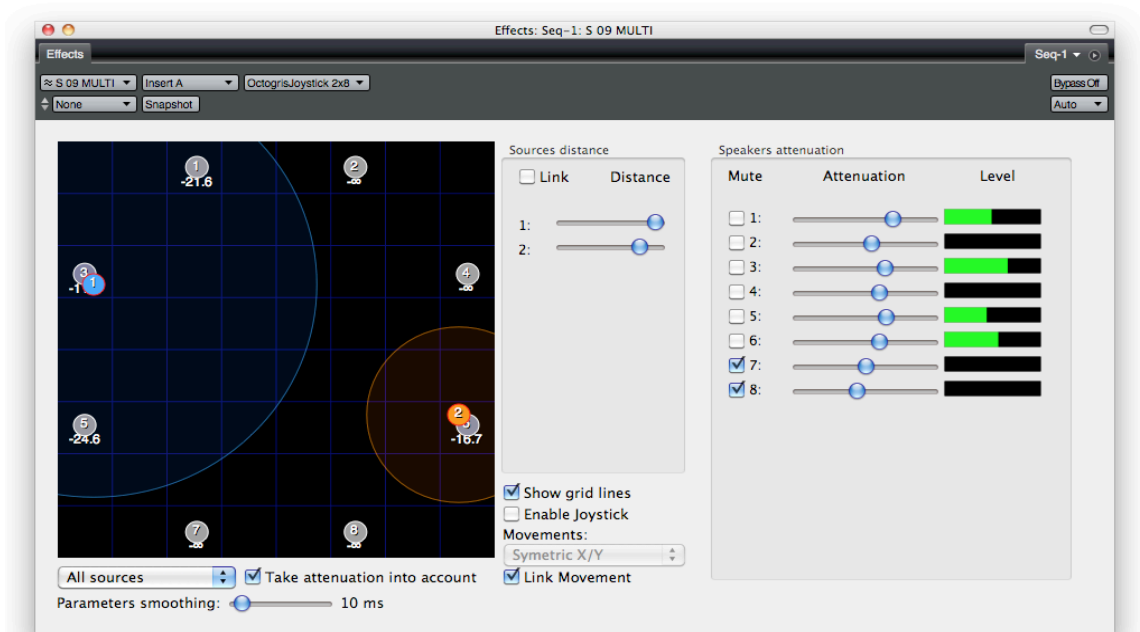


Figure 7 DP/Active Octogris window

Notes on using *Octogris* in Digital Performer

Multi-Channel Effects

For most of its multi-channel plugins, (5.1, 6.1, 7.1), Digital Performer does not effect its LFE channel. This is true for the *MasterWorks Series Collection* and the *Proverb plugin*.

Multi-Channel Reverb

When using *Proverb* and *Octogris* at the same time, it is possible to design multi-channel reverberation.

(See the tutorial Multi-channel reverberation in Digital Performer).

Configuration in Logic Pro 9

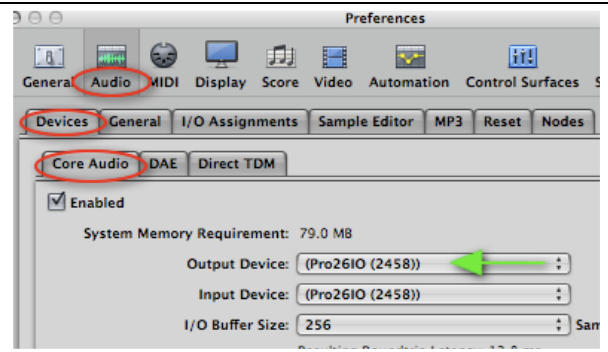


This tutorial explains how to configure Logic 9 to work with *Octogris* plugin. In this example, we use an instance of *Octogris*' stereo to octophonic format (2x8) on a 7.1 track.

Audio Interface

Select the right audio interface in the menu:

Preference -> Audio -> Devices -> Core Audio



Surround format selection of tracks

Logic offers many surround formats. During the creation of a new project, it is necessary to configure the format that will be used when creating multi-channel tracks.

1 – In the **Settings** menu, select the **Audio** function. The Setting window will open.

2 –In the **Audio** menu -> **Surround Format**, select the format 7.1 (3/4.1)

Close the Settings window.

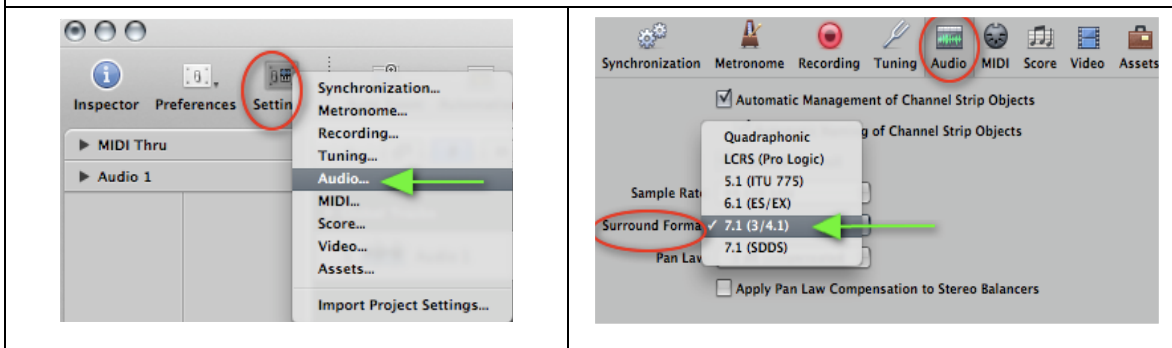
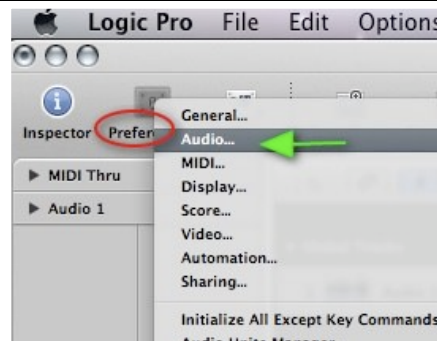


Figure 8 a, b, c LOGIC/Audio Interface and Surround configuration

Configuration of Logic's Outputs

In order to match the numbering of the *Octogris* speakers system with the outputs of your interface, Logic's outputs must be properly configured.

1 – In the **Preference** menu, select **Audio**.



The Preference window will open.

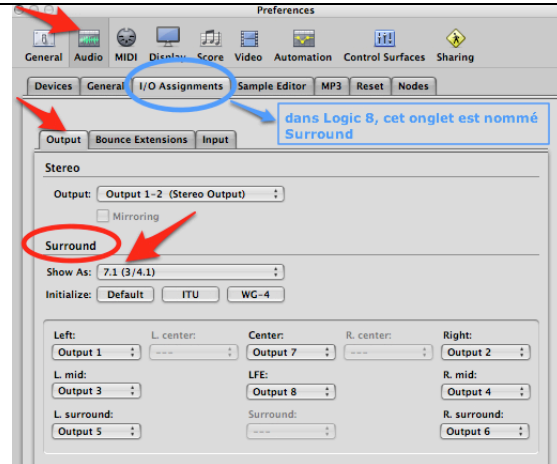
2 – Click on the **I/O Assignments** (Surround in Logic 8).

3 – Click on the **Output** tab.

4 – In the **Show as** menu, select the 7.1 (3/4.1) format.

5 – Configure the section **Output Assignment** in the following way:

| | |
|--------------------|----------|
| Left | Output 1 |
| L. mid | Output 3 |
| L. surround | Output 5 |
| Center | Output 7 |
| LFE | Output 8 |
| Right | Output 2 |
| R. mid | Output 4 |
| R. surround | Output 6 |



NOTE: The outputs of *Octogris* are organized in ascending order (1+2, 3+4, 5+6, 7+8 from front to rear). Depending on the chosen surround format, correlation to the outputs of *Octogris* will vary. See the table of surround formats.

Figure 9 a, b LOGIC/Output configuration

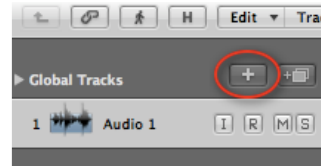
Creation of surround tracks

To use the multi-channel formats of *Octogris*, a surround track must be created. This step of the tutorial should be repeated for each track on which you wish to use *Octogris*.

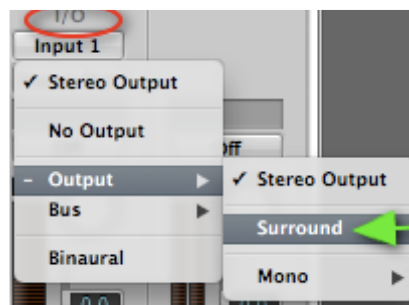
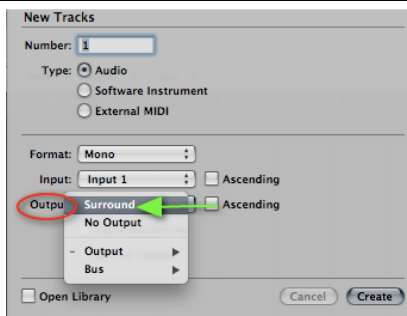
1 -In the Arrangements window, click on **+** (add tracks).

The new track window will open.

2 - Open the **Output** menu and select **Surround**.



This step can also be applied to pre-existing tracks. In the **I/O** section, select **Output** and then **Surround** in its drop-down menu.



NOTE: If step 1 of the tutorial has been completed, the created surround tracks will keep to the previously selected format (in this case, 7.1).

Figure 10 a, b, c LOGIC/Surround track creation

Notes about Logic's surround configuration

Once the surround output is selected, By default, Logic will distribute the stereo signal in all outputs except the LFE.



Octogris controls over the outputs, if the mapping between the audio interface and the sequencer is coherent.

In some surround configurations, it is necessary to change the default settings in Logic and possibly to change the speakers positions in *Octogris* to maintain coherence.

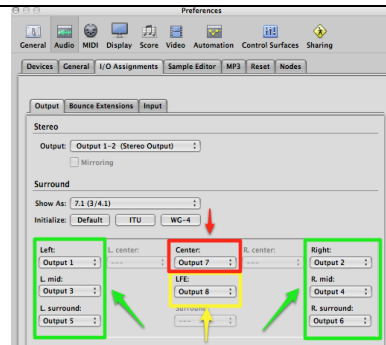


Figure 11 a, b, c LOGIC/ Surround output

Adding *Octogris* as an insert.

1 – Click on an insert tab in a surround track on which you wish to use *Octogris*.

2 – Select the appropriate version of *Octogris*.

In Logic, *Octogris* appears in the Audio-Units section under the UDM heading.



NOTE: Depending on the chosen format (mono, stereo or surround), only the corresponding versions of *Octogris* will appear in the list of available Audio Units (1x8 for a mono track, 2x8 for a stereo track, 8x8 for a surround track).

Once the appropriate format is selected, the *Octogris* interface will appear.

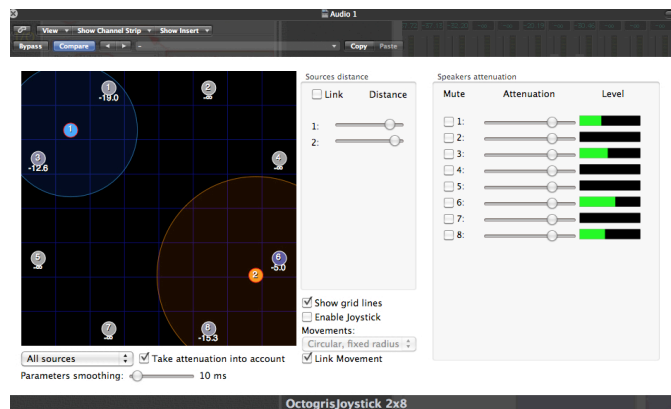


Figure 12 a, b, c LOGIC/ *Octogris* Insert

Configuration in Reaper 4

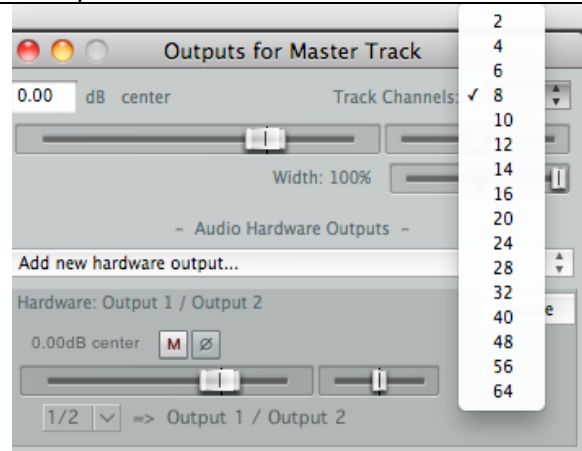


This tutorial explains how to configure Reaper 4 to work with *Octogris* plugin.

Configuration of the Master Track

1 – Open the mixer and click on the **Track Send** section of the **Master Track**. The window **Outputs for Master Track** will open.

2 – Under the **Track Channel** option, select the number of outputs you desire (4 for quadraphonic system, 8 for octophonic system, etc.).



3 – In the Audio Hardware Output section, the default configuration must be changed to the desired number of channels

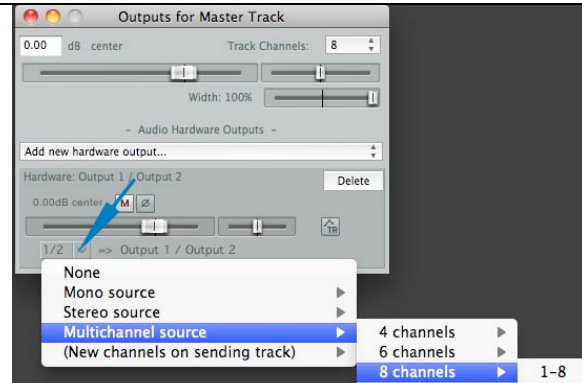


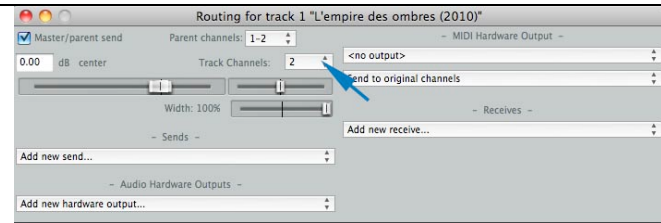
Figure 13 a, b REAPER/ Master track configuration

Configuration of a multi-channel track

1 – Open the Mixer and click on the **Track Send** section of the track you wish to use with *Octogris*.

The **Routing** window of the track opens

2- In the section **Track Channels** select the number of outputs that you want to use for the track. (8 for octophonic for instance, etc.)

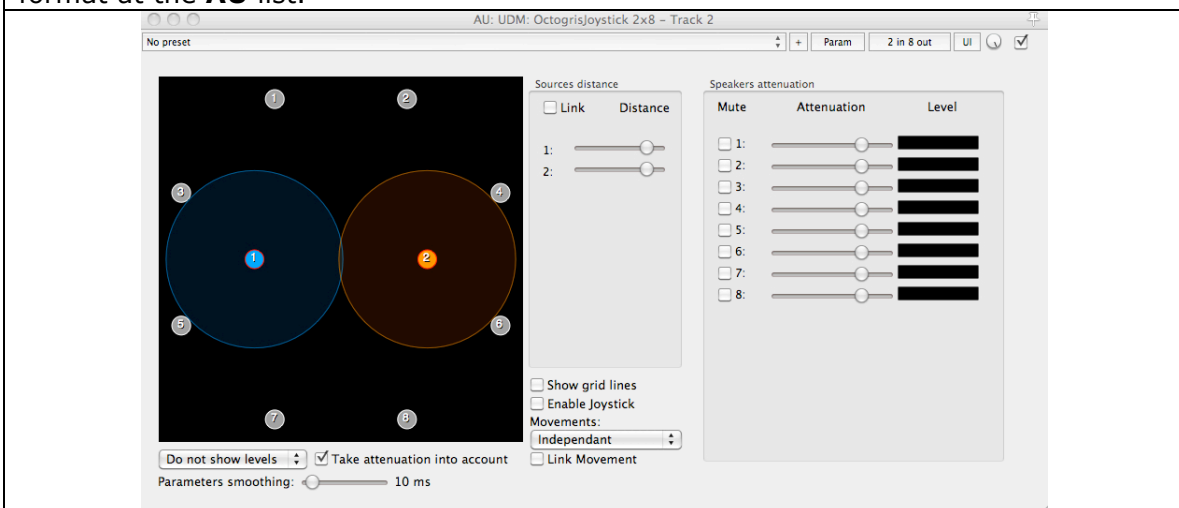


NOTE: You should repeat this step for each multi-channel track you wish to use.

Figure 14 REAPER/Multi-channel track

Adding *Octogris* as an insert

1 – Click on the track **fx** icon or at any **insert** tab, and select the desired *Octogris* format at the **AU** list.



Reaper gives you access to all installed *Octogris* formats. Be sure to insert the format that corresponds to the number of voices both on the audio and master track.

Figure 15 REAPER/Octogris Insert

Configuration in Ableton Live 8



This tutorial explains how to configure Live 8, which does not have a multichannel setup, to allow *Octogris* to spatialise a mono and/or stereo sources.

Output Configuration

1-In Preferences -> Audio, choose the audio interface of your studio.

2-Select Output Config (output configuration).

3-Enable the desired outputs. Each output pair can be used as a stereo or double mono output. It is important to choose an interface with sufficient outputs.

NOTE : It is possible to simulate virtual outputs by using *Jack OSX* or *Soundflower*, like the following example, where the *Octogris*' maximum limit of 32 outputs was used.

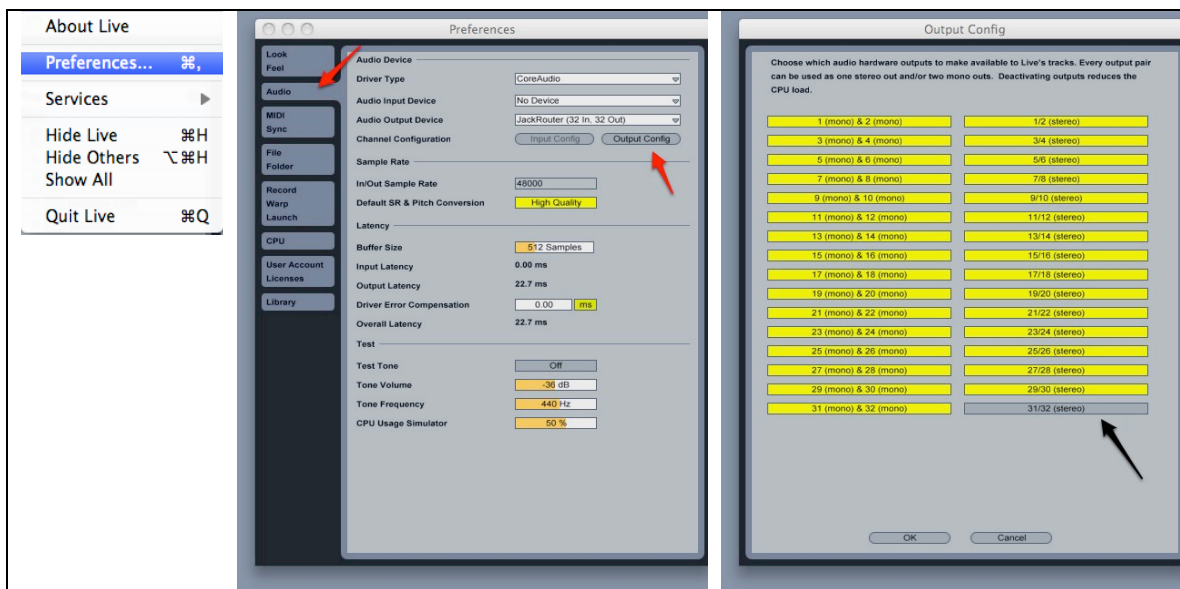


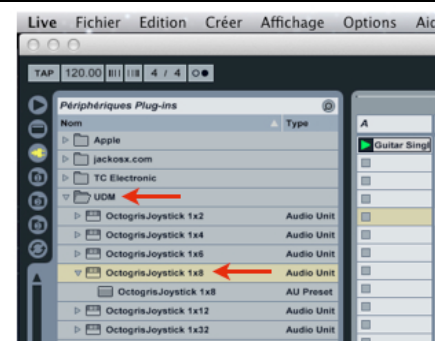
Figure 16 a, b, c LIVE/Output configuration

Audio track configuration

1- From the possible audio attributions at the track that contains the mono or stereo file, choose **Sends Only** in order to direct the signal towards several outputs.

2- Choose the right *Octogris* format which is placed at-Plugins->Audio Units->UDM.

3- Additional audio tracks should be created – one additional track for each output couple (for example, 2 extra tracks for quadraphony, 4 extra tracks for octophony, etc.)



4- Configure the *In/Out Section* of the additional audio tracks in the following order (the example demonstrated here, uses the *Octogris 1x8* format with a total of 4 additional tracks):

a) Audio From

- *Input Type*: choose the track that contains the audio file;
- *Input Channel*: choose *Octogris'* corresponding outputs.
NOTE : The outputs 1 and 2 are not available: choose **Post FX**.

b) Monitor

- *Monitoring*: select **In** to allow the additional tracks to receive the main track.

c) Audio To

- *Output Type*: select **Ext Out** to send the signal towards real or virtual outputs;
- *Output Channel*: Specify the matching output pair.

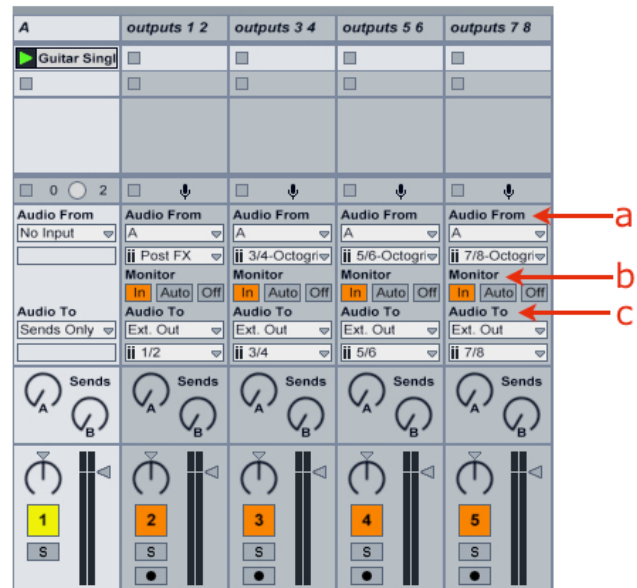


Figure 17 a, b, c LIVE/Audio track configuration

Octogris' Usage

Adding *Octogris* as an Insert allows to spatialise a mono and/or stereo sources. The different parameters can be automated like most of the plug-ins used with Ableton Live :

- show or hide the original plug-in panel in a floating window;
- while in Configure Mode, you can customize the available plug-in parameters in Live's panel. (Add a parameter by clicking on it in the plug-in's graphic interface.)

NOTES :

- all the parameters can be available in Live's panel, with the exception of the *Enable Joystick* button; this fact does not interfere with the use of this function;

- the *Distance* parameter, that controls the radiation of a source, displays opposed values between *Octogris*' graphic interface and Live's panel. (The corresponding minimum and maximum numbers are inversed but there is no effect on the audio result. *Octogris*' display is the valid one);

- also the Y axe display is inversed between *Octogris*' graphic interface and Live's panel; therefore we suggest the usage of *Octogris*' interface for a better movement fluency; furthermore, *Octogris*' interface is recommended with the use of stereo files, where X and Y coordinates cannot be controlled separately with the Live Panel.

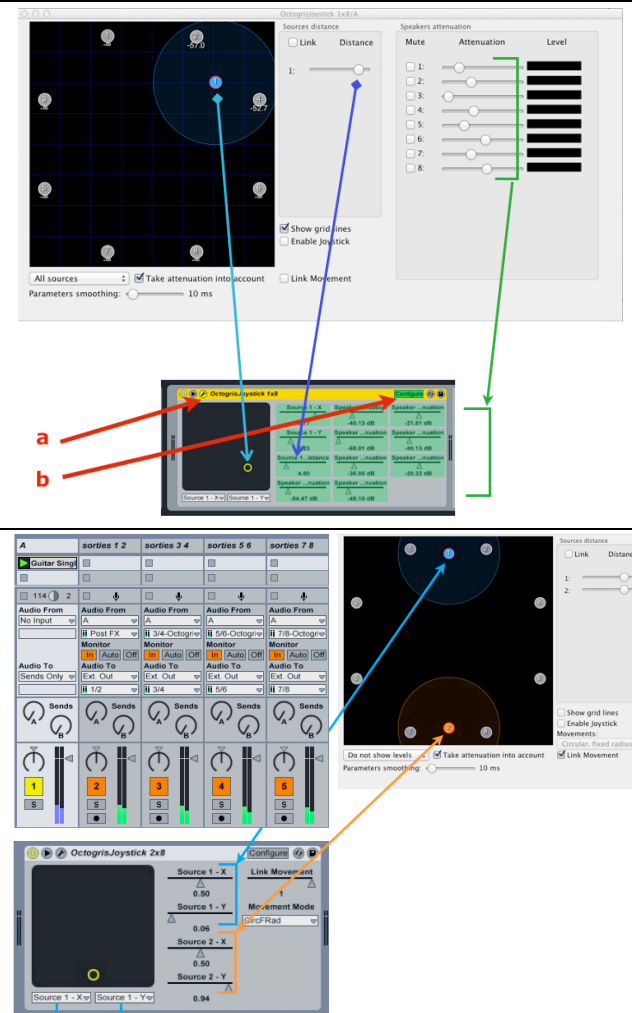


Figure 18 a, b LIVE/Octogris usage

Thanks to Jeff Cloke.

Multichannel Reverberation in Digital Performer 7



When using *Proverb* and *Octogris* simultaneously, it is possible to design multi-channel reverberation. The following example allows you to simulate a reverberant space with an octophonic system. This model can also be used with other surround systems.

The operations described below must be followed by the previous steps in DP, the outputs mapping and the creation of a specific bundle for the desired format.

Digital Performer configuration

1 – Create an audio, auxiliary or master track in the desired format. Assign the appropriate multi-channel bundle to the track's output. By default, DP sends signal to the channels L, R, C and LFE (1, 2, 3, and 4 in the chosen configuration).

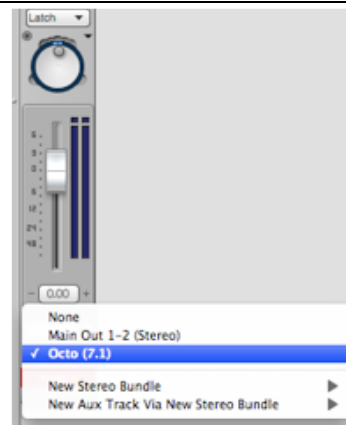


Figure 19 DP/Track configuration

2 – On this track, open the plugin *ProVerb* as an insert (stereo to 7.1). Note: In the 7.1 format, the *ProVerb* plugin sends only a reverberant signal to the L, R, Ls and Rs (1,2,5, and 8) channels. In the other outputs there is no signal.

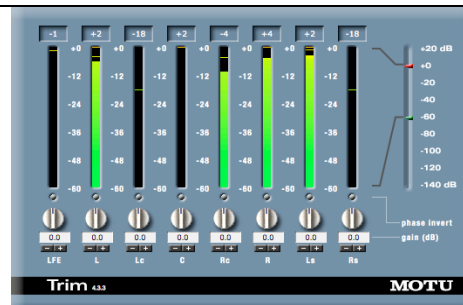
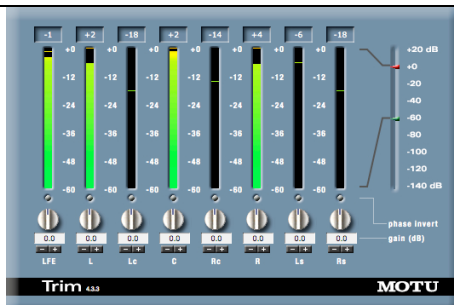


Figure 20 a, b DP/Outputs view

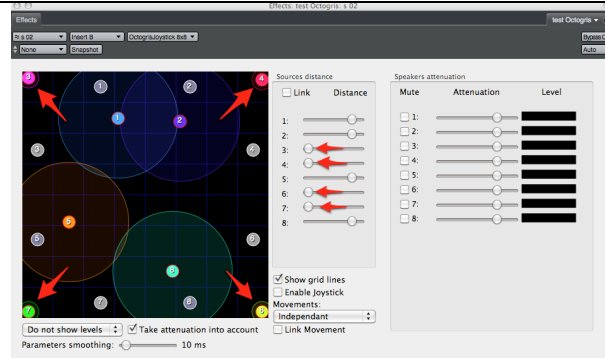
3 – Apply *Octogris* (8x8) as an insert. (By default the format is 8x8).



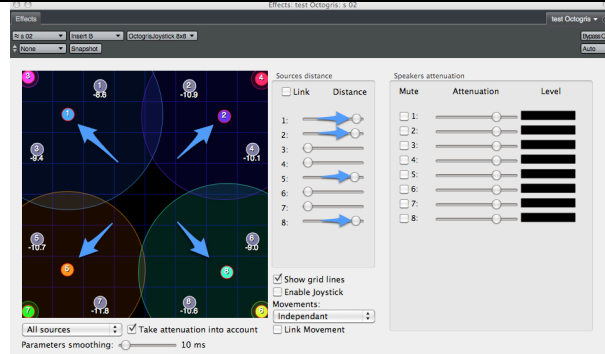
Figure 21 DP/ Octogris and ProVerb Insert

Octogris Configuration

- 1** – Using the **distance** faders in the *Octogris* window, decrease the dispersal ranges for sources 3, 4, 6, and 7 to their smallest possible range. Put these sources away from the speakers' position in the window, to have no signal.
- 2** – Arrange the sources 1,2,5 and 8 so that each source sends signal to two different speakers.



If necessary, increase the range (**Distance**) of these four sources.



In this way the reverb is sent to all 8 outputs.

Figure 22 a, b DP/Configuration of *Octogris* for multi-channel reverberation

Octogris Parameters

The different parameters in *Octogris*

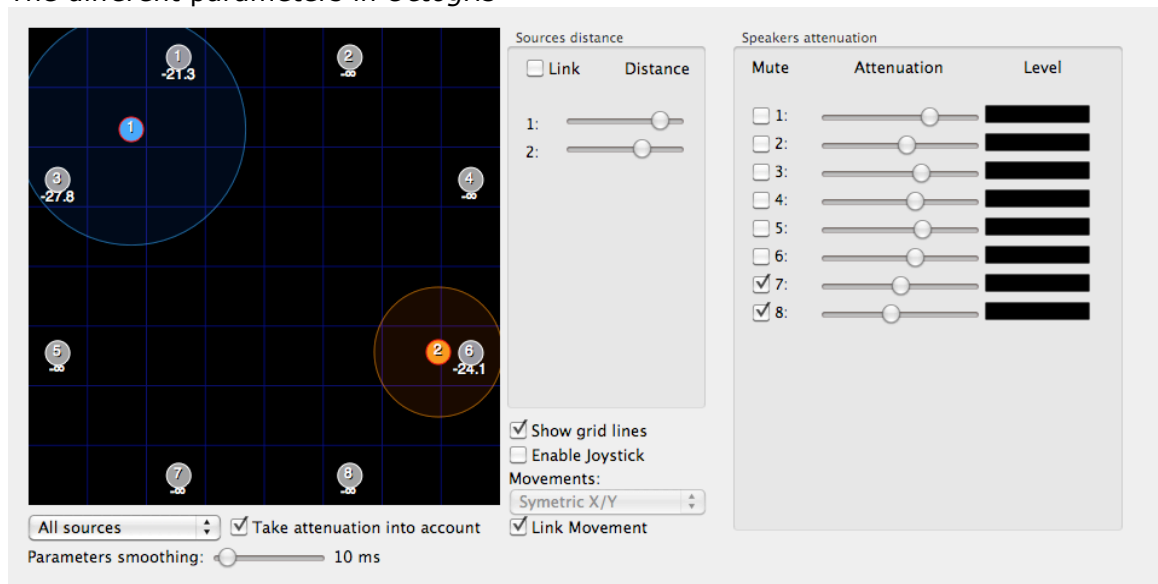


Figure 23 OCTOGRIS

| | | | |
|------------------------------------|------------------------|--|--|
| Room Sources Speakers | | Source Distance Distance Link | |
| Movements | | View | |
| Independent | All formats | Show Grid Lines | |
| Symetric X | Stereo | Show Levels | |
| Symetric Y | | Take attenuation into account | |
| Symetric X/Y | | Parameters smoothing | |
| Circular | Multiphonic | Enable Joystick | |
| Circular fixed radius | | Speakers attenuation Attenuation Mute Levels | |
| Circular fixed angle | | | |
| Circular fully fixed | | | |
| Delta lock | Stereo +Multiphonic | | |

Reset position of all parameters with **option+click**.

Room

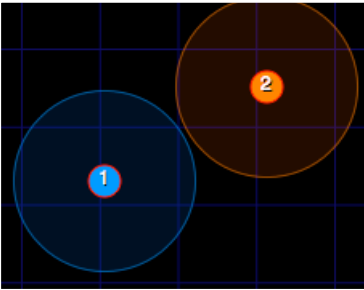
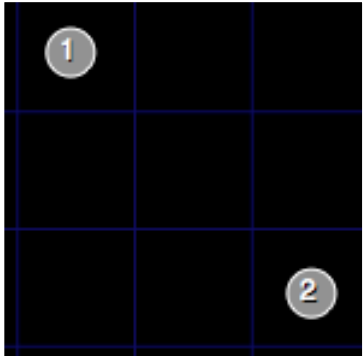
| | |
|--|---|
| <p>Sources (X/Y coordinates)</p> <p>Sound sources are represented by coloured circles. The number of sources varies according to the number of the audio channels on the track (mono, stereo, quad, etc.).</p> <p>The number on each source indicates the input channel assigned by <i>Octogris</i>.</p> |  |
| <p>Speakers (X/Y coordinates)</p> <p>Output speakers are represented by grey circles. The number of speakers varies according to the number of chosen outputs.</p> <p>The number on each speaker indicates the output channel assigned by <i>Octogris</i>.</p> <p>NOTE: If your software uses a standard surround configuration (5.1, 6.1, 7.1), It is important to configure the outputs appropriately. See the section "Setup and Tutorials" for more information.</p> |  |

Figure 24 a, b *OCTOGRIS*/Sources, Speakers

Sources distance

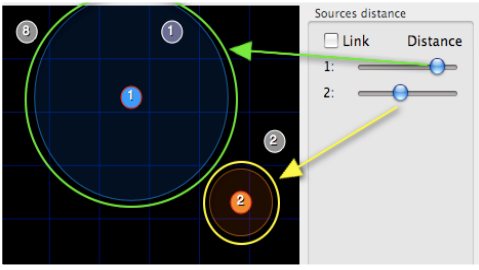
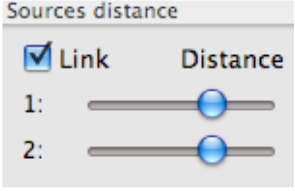
| | |
|--|--|
| <p>Distance (fader)</p> <p>The distance control allows the user to control the sound dispersal radius of a source. Represented by the translucent circle surrounding the source, the dispersal radius can be adjusted by the fader. Source with large translucent circle can play through multiple speakers simultaneously. The dB signal level sent to the speakers is proportional to its distance from the center of the source.</p> |  |
| <p>Link (on/off)</p> <p>Link all available sources' faders.</p> |  |

Figure 25 a, b *OCTOGRIS*/Distance, Link

Movements

Linked movement in eight different pre-set modes are available.

Note: The sources, when **Link Movement** is enabled, will move in the chosen pre-set while moving one of the sources. The movement is linked with an external controller. With the use of an external controller other than the mouse and the joystick, the movement is controlled by source no. 1 only.

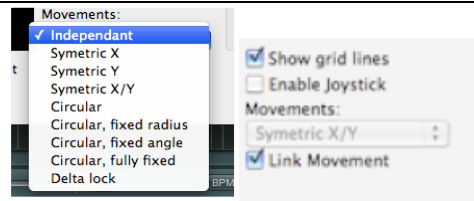


Figure 26 OCTOGRIS/Movements

| | | |
|---|--|--------------------------------------|
| <p>1) Independent:</p> <p>The default mode. Each source can be moved separately, independently of the other sources.</p> | | <p>Stereo + Multi-channel</p> |
| <p>2) Symetric X:</p> <p>This mode activates symmetrical movement between two sources along the x-axis.</p> | | <p>Stereo</p> |
| <p>3) Symetric Y:</p> <p>This mode activates symmetrical movement between two sources along the Y-axis.</p> | | <p>Stereo</p> |
| <p>4) Symetric X/Y:</p> <p>This mode activates symmetrical movement between two sources along the X and Y - axis.</p> | | <p>Stereo</p> |

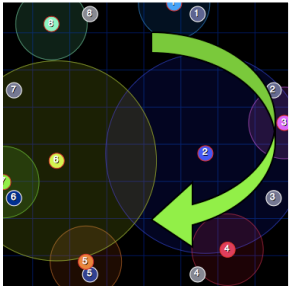
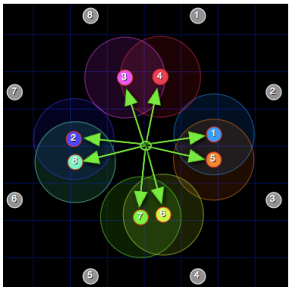
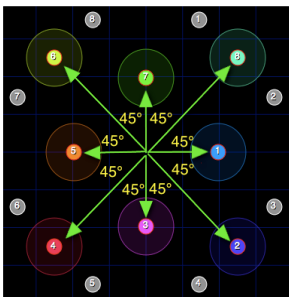
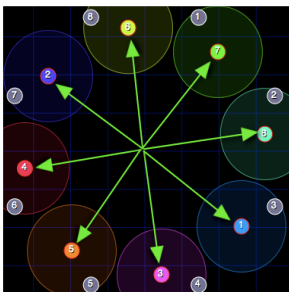
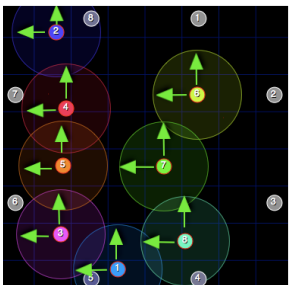
| | | |
|--|--|------------------------------|
| <p>5) Circular:</p> <p>This mode activates linked circular movement. The angles and the radiuses between sources are not fixed when the sources positioned independently ahead.</p> |  | <p>Multi-channel*</p> |
| <p>6) Circular, fixed radius:</p> <p>This mode activates linked circular movement. The relative radius distance between each source and the center is identical. The angles between sources are <u>not</u> fixed when positioned independently.</p> |  | <p>Multi-channel</p> |
| <p>7) Circular, fixed angle:</p> <p>This mode activates linked circular movement. The relative distance angle between sources is fixed.</p> <p>In the illustrated example, the angle between each of the sources is fixed to 45°.</p> |  | <p>Multi-channel</p> |
| <p>8) Circular, fully fixed:</p> <p>This mode activates linked circular movement. The angles and the radiuses between sources are fully linked. The relative angles distances and the relative distances from the center of all sources are fixed.</p> |  | <p>Multi-channel</p> |
| <p>9) Delta Lock:</p> <p>This mode fixes the chosen relative position from one source to another, without any circular rotation.</p> |  | <p>Multi-channel</p> |

Figure 27 a – i OCTOGRIS/Movement modes

* **Note:** In Stereo files, there is no difference between **Symetric X/Y** Movement and all the **Circular** movements.

View

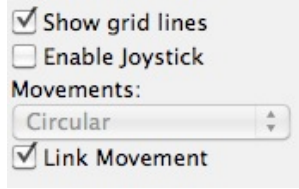
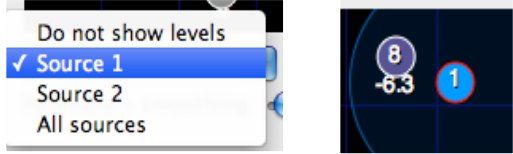
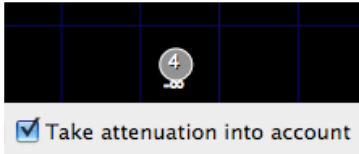
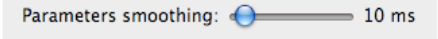
| | |
|--|--|
| <p>Show grid lines (on/off) Activate the grid display.</p> <p>Enable Joystick (on/off) Enables the use of a joystick for the movement of the sources.</p> <p>Link Movement* Links the movement of the sources at the chosen pre-set Movement.</p> |  |
| <p>Show levels (on/off) Activates the display of the output level (in dB) of the speakers.</p> |  |
| <p>Take attenuation into account (on/off) (Only if Show levels is active) Post-fader display/Pre-fader display. When selected, the levels displayed (for the speakers), correspond to the post-fader levels. When not selected, the levels displayed do not reflect fader adjustments (pre-fader).</p> |  |
| <p>Parameters smoothing Sets a smoothing time ramp for the parameters. This feature helps to prevent audio clicks when a sound reaches a speaker. In most cases, the default value (10 ms) is sufficient.</p> |  |

Figure 28 a – e OCTOGRIS/View

* Automation reading may be stopped when the Link Movement button is still active. To remediate this, simply uncheck it during playback.

Speakers attenuation

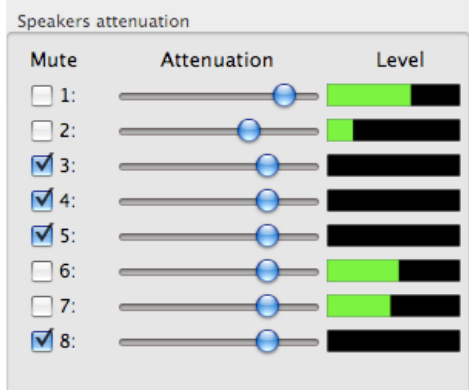
| | |
|--|--|
| <p>Attenuation (fader) Control level faders for each speaker. (-70dB to +20dB)</p> <p>Mute (on/off) Selecting these boxes mutes the corresponding speakers.</p> <p>Level (VU-meter) Displays the output level of each speaker. (red > 0 dB)</p> <p>Pop-up menu for more than 15 Levels and Distances</p> |  |
|--|--|

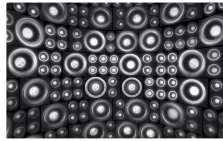
Figure 29 OCTOGRIS/Speakers attenuation

Contacts

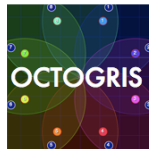
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