

GRM Tools SpaceMaster

User Manual



version 3.7

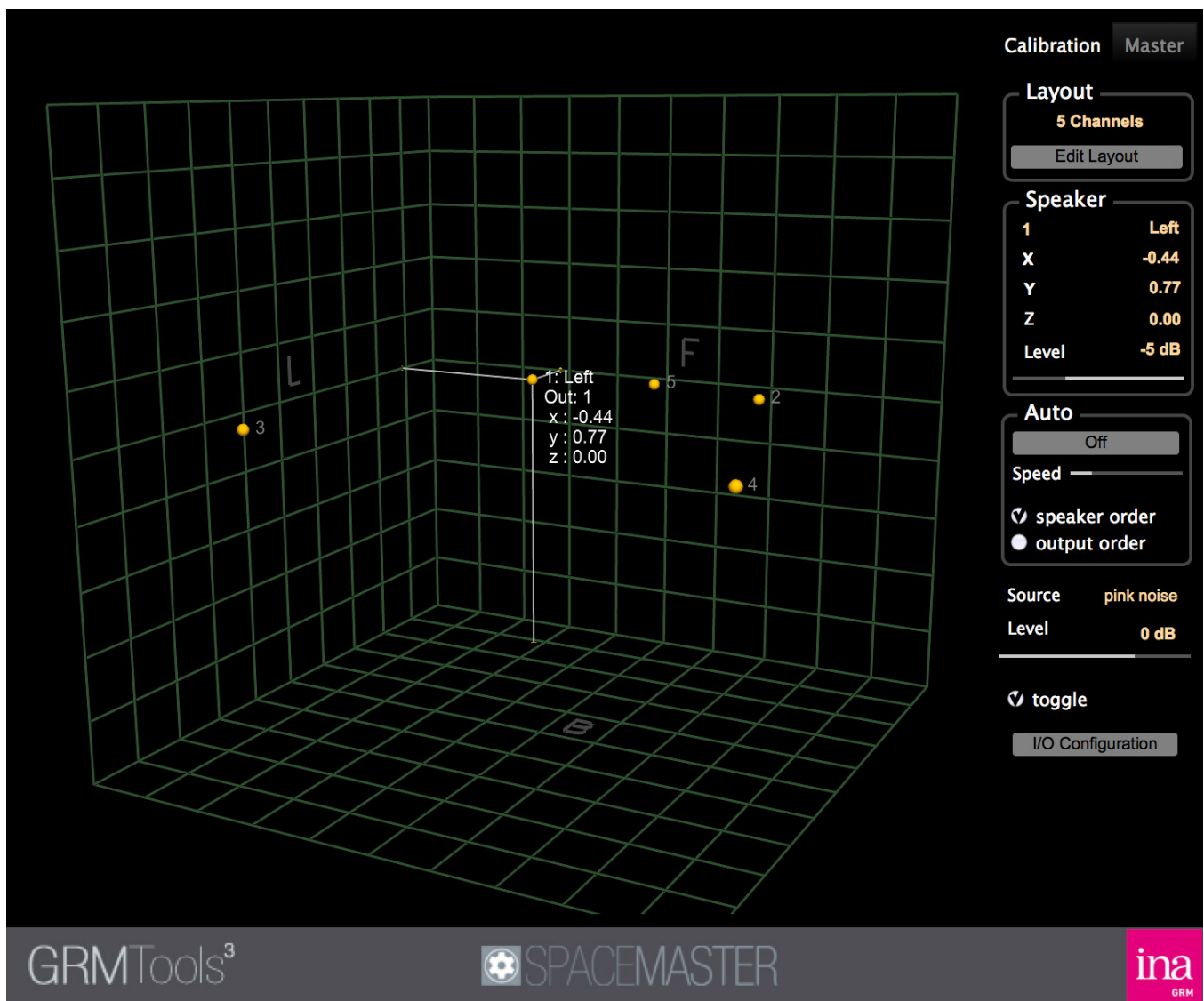


SpaceMaster

SpaceMaster enables you to identify and calibrate different multichannel output channels (from 1 to 64) and to position the input channels (eventually in different numbers) in the output space.

Even though **SpaceMaster** can be used independently of other GRM Tools treatments, it is a natural complement of available treatments in the **Spaces** bundle including **Spaces**, **SpaceGrain**, **SpaceFilter** and **Space3D** that share a certain number of features.

SpaceMaster isn't protected and doesn't require any particular validation.





Installation

Mac OS X

The installer copies **SpaceMaster**'s different files in the following folders :

- AAX : Library\Application Support\Avid\Audio\Plug-Ins
- VST : Library\Audio\Plug-Ins\VST\GRM
- Audio Units : Library\Audio\Plug-Ins\Components
- Stand Alone : Applications\GRM
- Documentation : GRM Tools Documentation

To launch the installer, double-click on the **GRM_Tools_SpaceMaster.pkg** icon and follow the instructions. If you do not want to install all available architectures, select the desired components in the **Installation Type**.

PC Windows

The installer puts the different files in the following folders :

- AAX : Program Files\Common Files\Avid\Audio\Plug-Ins
- VST : GRM folder in the default VST folder (usually : Program Files\Steinberg\Plug- Ins\VST) or Program Files\VSTPlugins if the default folder is not defined.
- Stand Alone : Program Files\Ina-GRM\GRM Tools
- Documentation : My Documents\GRM Tools Documentation

To launch the installer, double-click on the **GRM Tools SpaceMaster Installer.exe** icon and follow the instructions.

How does it work ?

For best use, this treatment must be inserted at the end of the chain on a Master track.
Two working modes are available :

Calibration

Enables to identify the output channels and to apply an amplitude correction.

Master

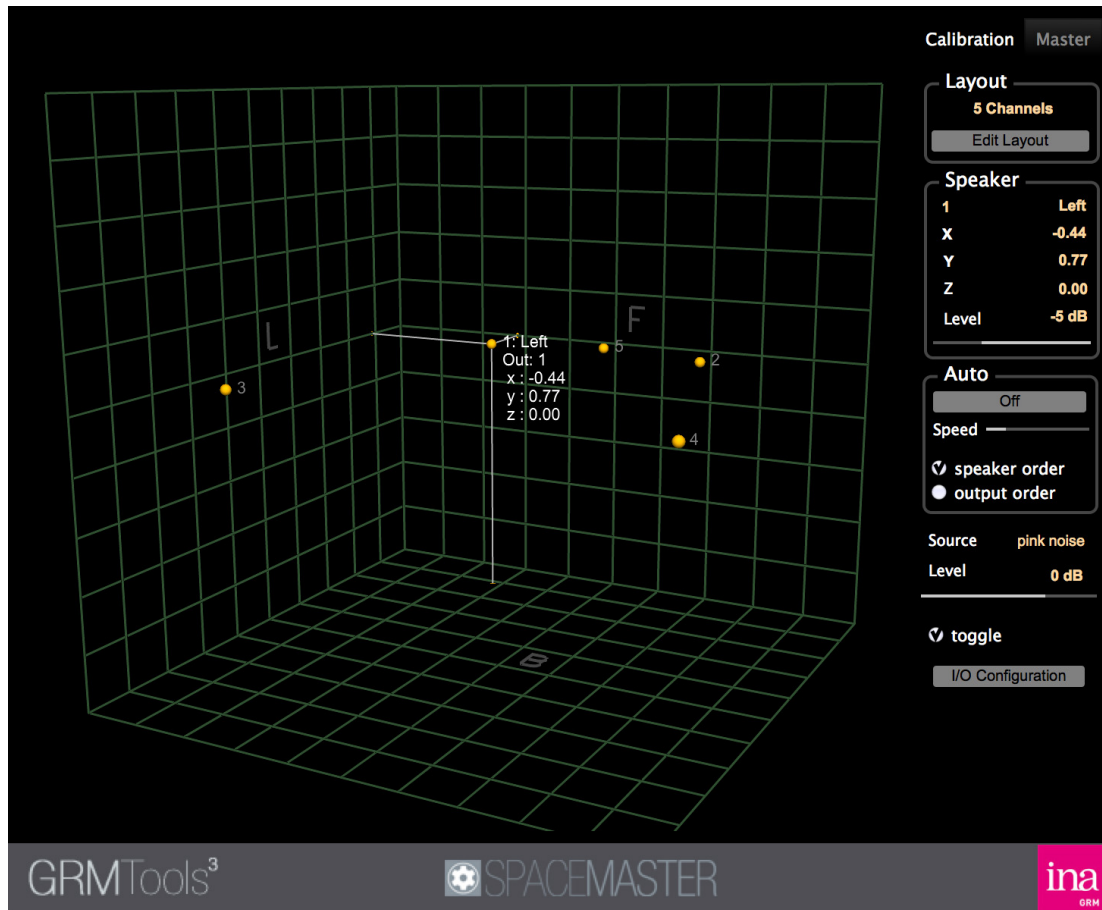
If the input configuration is the same as the output one, only the amplitude correction is applied. If the configurations are different, the input channels can be positioned statically in the output space.



Référence

Calibration

Switching to **Calibration** mode is done by clicking on the **Calibration** tab at the top right of the window.



Main window

Displays the positions of the output channels in a 3D view.

View control

The different input channels are visualized in a three dimensional space. The display of this view can be modified by mouse movements associated with modifier keys :

- [Alt]+mouse moves the view horizontally and vertically
- [Alt]+[Shift] approaches or moves the view further
- [Alt]+scroll wheel approaches or moves the view further
- [Ctrl]+mouse makes the cube turn around it's center
- [Ctrl]+[Shift] gives an effect of Dolly-Zoom
- [Ctrl]+scroll wheel gives an effect of Dolly-Zoom



Contextual menu

a right click can make the contextual menu appear :



Display Infos displays only the information of the selected channel

Display All Infos displays information regarding all channels. The ones regarding the selected channels are displayed in white, the others in grey.

Display Box displays the box containing the game space.

Fade out applies a gradual darkening of the view depending on the distance.

Projection on planes displays the perpendiculares of each plan **L**, **F** and **B** oh the selected channel

Top view top view of the box.

Front view front view of the box.

3D view 3D view of the box.

To select a channel, move the mouse without clicking on the yellow ball representing it. By clicking on it, a test signal depending on the **Source** and **Toggle** parameters (see further) will be sent to this channel to identify it.

Layout

Menu enabling the choice of a layout amongst the 32 available, and its allocation to the layout of the speakers. Only layouts with a number of channels that is equal or lower than the number of output channels actually available can be selected. The configurations can be edited by using the **Edit Layouts** button.

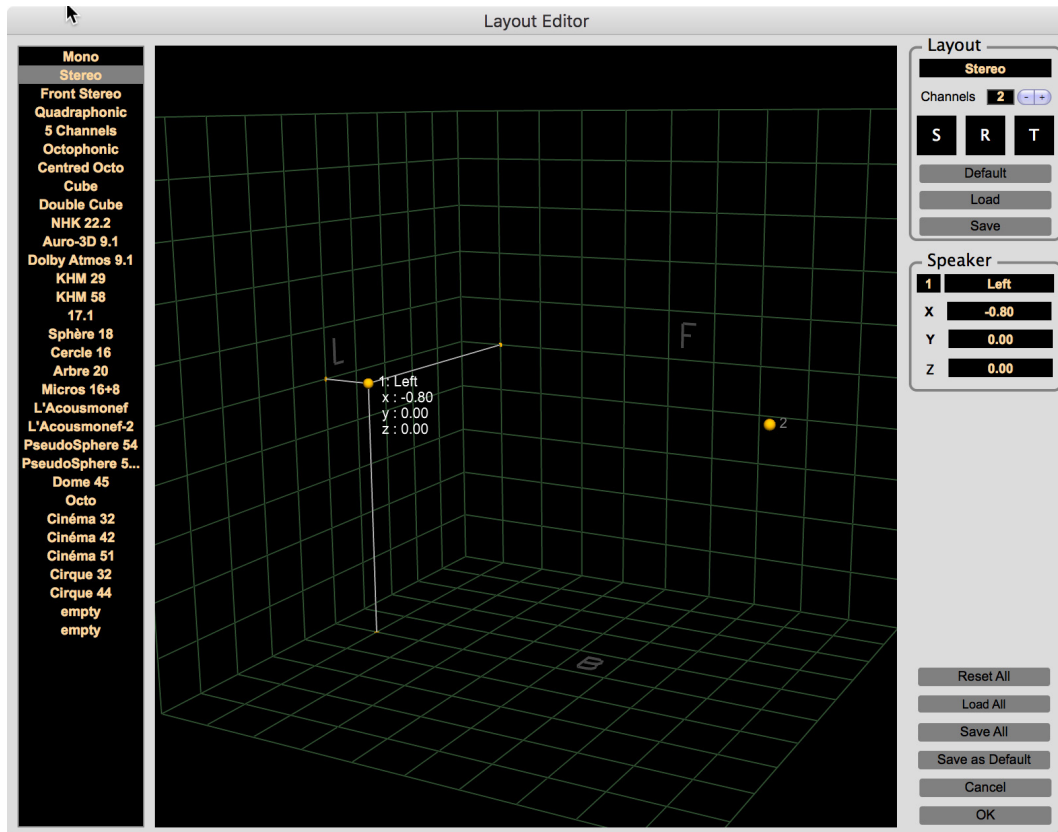
Edit Layouts

Opens the Configuration Manager

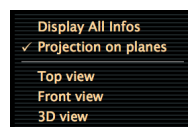
The left hand column lists the 32 possible layouts.

- Clicking on a name displays the layout in the central window, and its name and characteristics in the **Layout** frame in the top right hand corner.
- Click+drag is used to move an item in the list
- Shift+Click+drag copies the start item into the end item.
- The copy/paste is available with a right clic opening the contextual menu

The central window displays the selected layout.



A right click on this window makes the contextual menu appear, letting more or less information as well as the selection of 3 point of views getting displayed.



Displacements of the point of view are done by [Alt]+mouse, and the rotations by [Ctrl]+mouse. [Alt]+scroll ou [Ctrl]+[Shift] controls the distance of the point of view, and [Ctrl]+scroll ou [Ctrl]+[Shift] the Dolly Zoom effect as indicated in the paragraph **View Control**.

A channel is selected when the mouse is close tio the yellow ball representing it. It's number, name and coordinates are then displayed in the **Speaker** frame at the right of the window. A click in the central window will enable a modification of its coordinates :

- lateral movement :left-to-right axis.
- longitudinal movement : back-to-front axis.
- longitudinal movement + right button : bottom-to-top axis.
- longitudinal movement + [Shift] : bottom-to-top axis

The « M » key slightly magnets the movement on the grid mesh.

The **Layout** frame on the right allows you to :

- edit the name of the configuration



- **change** the number of channels. The direct edition of the numerical field initialises the position of the speakers in the default layout. Pressing the + or - button either adds a speaker in the centre or deletes the speaker without modifying the position of the other speakers.
- **apply** the default layout, depending on the number of channels
- **import** and **export** layouts in XML files. The file format is as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<Speakers name="5 Channels">
  <S x="-0.5" y="0.77" z="-0.26" weight="0" name="Left"/>
  <S x="0.43" y="0.77" z="0" weight="0" name="Right"/>
  <S x="-0.8" y="-0.4" z="0" weight="0" name="Left Surround"/>
  <S x="-0.6" y="-0.3" z="0.21" weight="0" name="Right Surround"/>
  <S x="0" y="0.88" z="0" weight="0" name="Center"/>
</Speakers>
```

The **name** attribute indicates the name of the layout as it will appear in the list, and the attributes **x**, **y** and **z** are the coordinates of the channels between -1 and 1. The number of channels is equal to the number of **S** items.

The three keys **S**, **R** and **T** allow the application of global transformations to all the channels :

- **S** : scaling relative to the center of gravity of the channels. Scaling can be limited to one dimension by pressing a key: **W** for width, **H** for height, and **D** for depth.
- **R** : rotation around the center of gravity
- **T** : horizontal et vertical translations with [Shift]

For **R** et **T**, if the [Shift] key is pressed during the mouse click, the rotations and translations will be limited to only one axis.

The **Speaker** frame on the right is used to:

- **select** a speaker by its number
- **edit** its name (Left in the example shown)
- **modify** its position using Cartesian coordinates (X, Y and Z)

Reset All

Resets the layout list to default layouts.

The following “empty” are reset in frontal stereo.

Load All

Load a set of 32 layouts previously saved.

Save All

Save a set of 32 layouts

Save as Default

Save the set of 32 currents layouts as new default layouts.



The default layouts **defaultLayout.ala** et **defaultUserLayout.ala** are stored in the following folders :

Mac : /Library/Application Support/GRM/SpacesData

PC : \Program Files\Common File\GRM\SpacesData

Speaker

Gives information of the selected speaker in the main window.

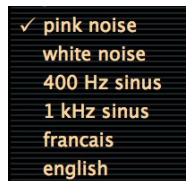
The **Level** potentiometer enables to apply an amplitude correction of ± 12 dB.

Auto

If the **Auto** parameter is **On**, the signal defined by **Source** will be automatically sent to each channel in the order of the channels (**speaker order**) or in the order of the outputs (**output order**) (see **I/O Configuration**). The speed of this scan depends on the **Speed** parameter.

Source

Menu allowing the choose the test signal :



In the last two options a voice counts the channels from 1 to maximum 64 in English or French..

Level

Amplitude of the test signal.

Toggle

If **Toggle** is not selected, the test signal is sent as long as the mouse is pressed.

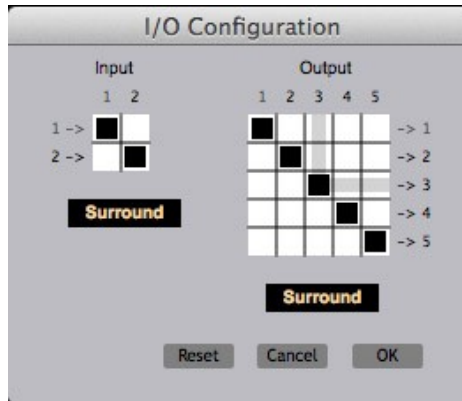
At it's release the signal is stopped.

If **Toggle** is selected, a first clic starts the test signal, the release of the mouse has no effect, and a second click stops the signal.

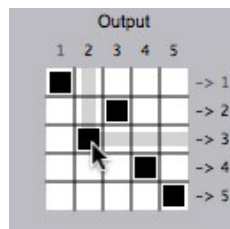
This second mode is recommended for the calibration of the output amplitudes (**Level** parameter of the **Speaker** frame)

I/O configuration

In most cases, the distribution of the I/O channels are done automatically. To modify this distribution click on the **I/O configuration** button :

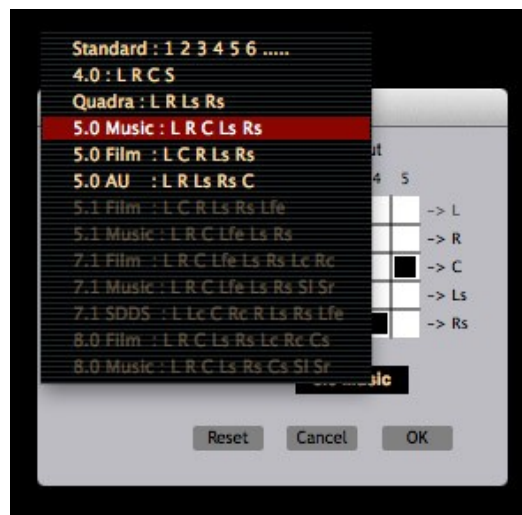


In this example, the processing is configured as a stereo input and output on 5 channels. The sequencer track channels (n-> or -> n) correspond to the rows of the matrices. The input and output channels of the processing correspond to the columns of the matrices. To direct a process output channel to a channel of the output track (or an input track channel to a process input channel), click in the corresponding box of the matrix.



In this example, the speaker 2 of the processing input track is routed towards the channel 3 of the output track.

To help identify the channels, the surround menus under the two matrixes offer the most standard configurations :



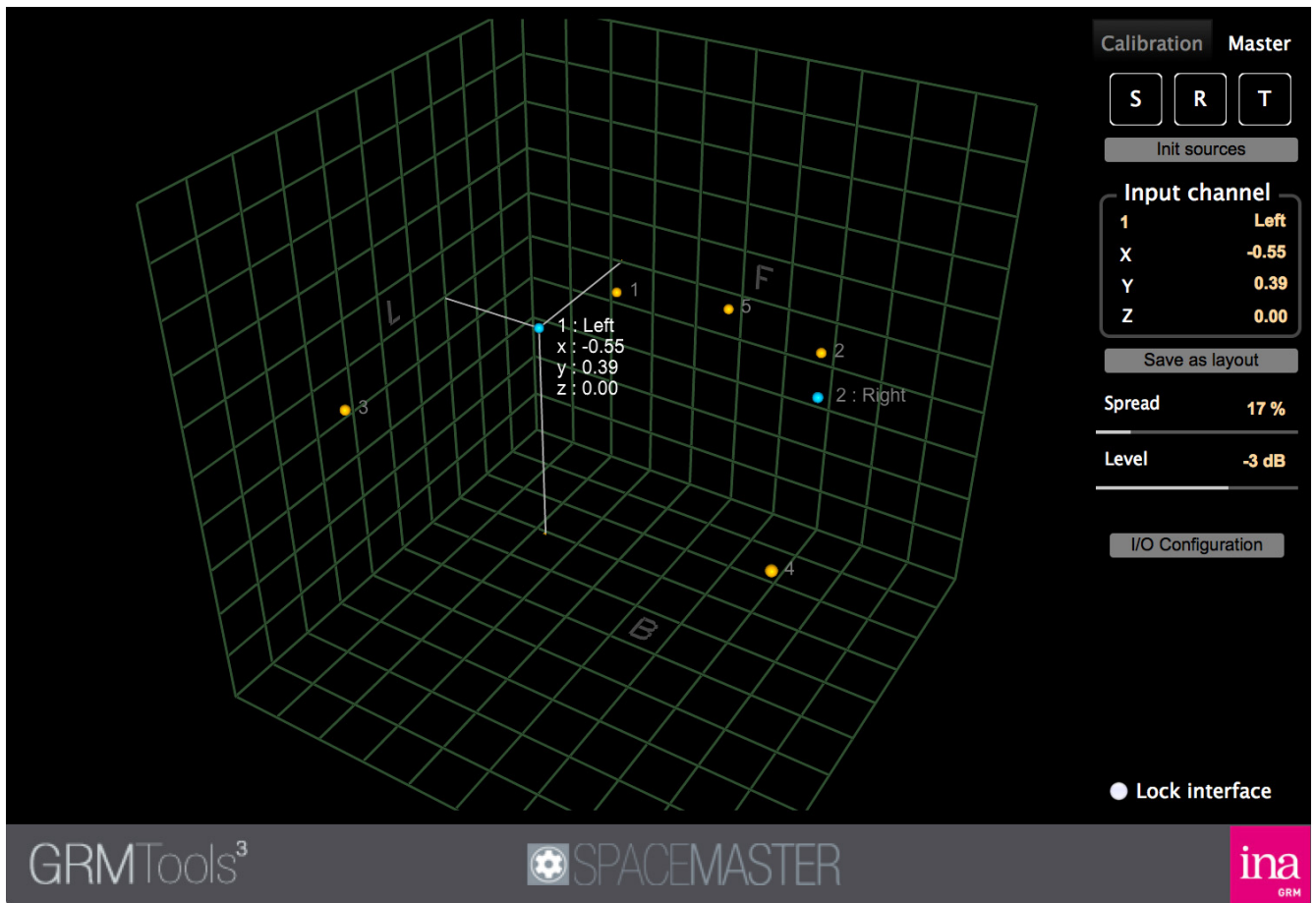
Only the configurations compatible with the number of channels can be selected. The numbers of the track channels are then replaced by their standardized names (L, R, Ls, etc ...) and the configuration of the matrix is done automatically. Careful : the names of the channels and the configurations are not stored. It's just an aid to the définition of matrices.

It is possible to manage up to 64 inputs and 64 outputs .



Master

Switching to **Master** mode is done by clicking on the **Master** tab at the top right of the window.



This mode allows to adapt the input configuration (stereo in the example above) to the output configuration (5 channels in the example)

Main window

Displays in a 3D view the output channels positions (in yellow) as well as the input channels (in blue) if their configuration is different (see **Init sources**). A right click makes the following contextual menu appear :

- ✓ Display Infos
- Display All Infos
- ✓ Display Input Levels
- ✓ Display Output Levels
- ✓ Display Box
- Fade out
- ✓ Projection on planes
- Top view
- Front view
- 3D view



Display Infos displays informations of the selected channel

Display All Infos displays the information of all channels. Those of the selected channels appear in white, the others in grey.

Display Box displays the box defining the play area.

Display Input Levels blue spheres centered on the input channels indicate the amplitude of each channel.

Display Output Levels yellow spheres centered on the output channels indicate the amplitude of each channel.

Fade out applies a gradual darkening of the view depending on the distance.

Projection on planes displays the perpendiculars of each plan **L**, **F** and **B** at the center of the source.

Top view top view of the box.

Front view front view of the box.

3D view 3D view of the box.

Control of input channels

To select an input channel, move the mouse without clicking on the blue ball representing it. The channel can then be moved with a mouse click. :

- lateral movement : left-to-right axis
- longitudinal movement : back-to-front axis
- longitudinal movement + right button : bottom-to-top axis
- longitudinal movement + [Shift] : bottom-to-top axis

The « **M** » key slightly magnets the movement on the grid mesh.

The three keys **S**, **R** and **T** allow the application of global transformations to all the input channels :

- **S** : scaling relative to the center of gravity of the channels. Scaling can be limited to one dimension by pressing a key: **W** for width, **H** for height, and **D** for depth.
- **R** : rotation around the center of gravity
- **T** : horizontal et vertical translations with [Shift]

For **R** et **T**, if the [Shift] key is pressed during the mouse click, the rotations and translations will be limited to only one axis.

Init sources



Allows to select the disposition of the input channels :

- **same as output** if the number of input and output channels are equal
- among the 32 available. Only the configurations with fewer channels than the number of input channels actually available are selectable.

Save as layout

Saves the input configuration in an xml file. Operation similar to **Export** in the **Configuration Manager**.

Spread

Controls the spread of the influence of output channels. At 0, there is a very little overlap between the channels, at 1 the influence is almost constant throughout the space and the overlap is maximum (check out **Spaces** documentation)

Level

General level of output. It's applied to each channel and adds to each individual level determined in the **calibration**.

Lock interface

Locks all the interface controllers. Only the view controls stay available.

Crédits

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La création et la recherche
dans le domaine du son
et des musiques électroacoustiques