Sound Particles

Reference Manual

Jul 2025
v. 3.0.0

Welcome Note

Welcome to the world of Sound Particles 3!

What a journey… Around 2004, I realized that the most interesting visual effects I was seeing on movies used "particle systems", a computer graphics technique that generates thousands or millions of small points to simulate fire, rain, dust, smoke, fairy dust, explosions. And I thought "Wouldn't be nice if we could use the same technology but for sound, using thousands of small sounds around you to generate a much more interesting soundscape?". But that was only an idea, and time went on…

In 2012, I had finished my PhD and since no one was using particle systems in sound, as a computer nerd that I am (this face doesn't fool anyone), I decided to start creating my own particle system simulator for sound – and that was the beginning of Sound Particles. Now, many years has passed, and it's a great pleasure to see Sound Particles being used in some of the most fantastic productions in cinema, TV, games, and music.

With Sound Particles 3, we took things much further, with AI, plugin support, and many new DAW-like features to help you create fantastic things.

I really hope you enjoy using Sound Particles. And if you have any question or suggestion, don't hesitate to contact us - we REALLY love to receive feedback from our users.

Nuno Fonseca, PhD
CEO
nuno.fonseca@soundparticles.com

Table of Contents

Introduction

Thank you very much for downloading Sound Particles 3.

In this version, Sound Particles takes a step further into becoming a complete immersive audio workstation, maintaining all the great features that made it an incredible sound designing tool for the cinema industry, while embracing the new era of immersive audio in other fields such as music or video games.

With the ability to play with AI, Virtual Instruments, or use external plugins to mix, the results can be rendered and/or exported to any desired format with our virtual microphones, including Binaural, channel-based audio, High-Order Ambisonics or ADM (including Object metadata).

The integration with Space Controller app allows you to control and automate the position of each track with a mobile device, breaking the barriers of mixing immersive projects with control surfaces from the past such as faders, knobs and joysticks.

Go through this manual and get the best out of Sound Particles!
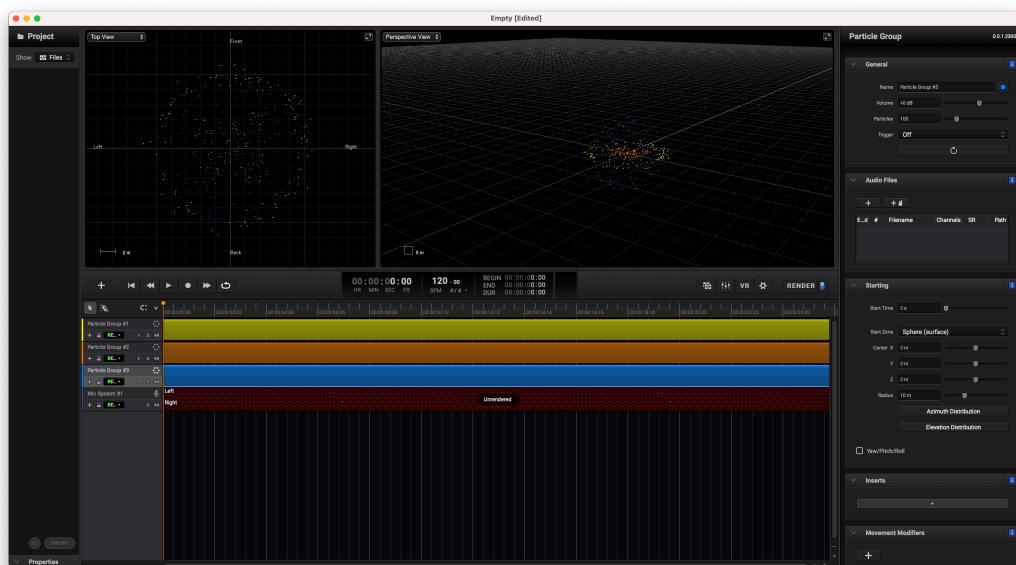
Sound Particles Overview

Welcome Screen

The first time Sound Particles is launched, a Welcome screen is presented with several options to activate and start to use the software.
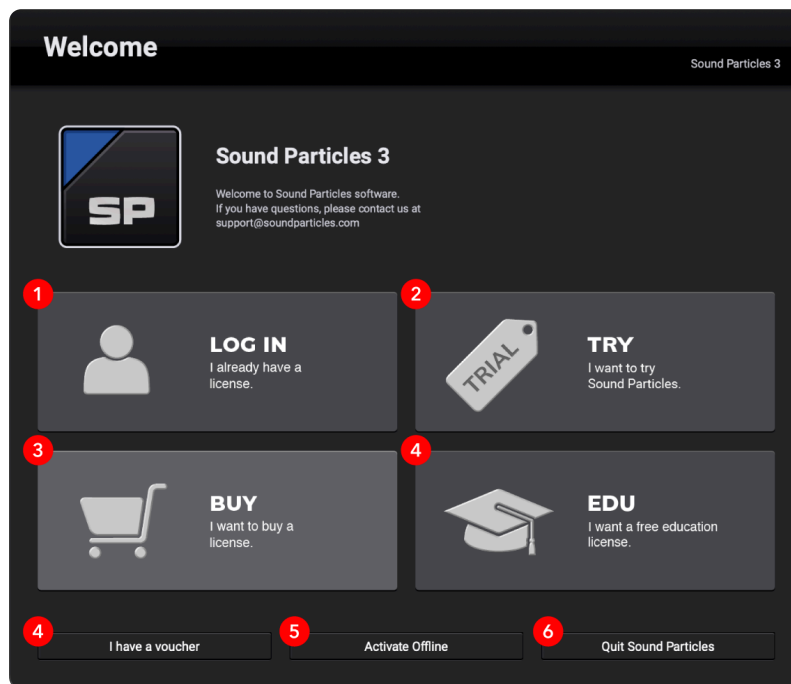
Initial Welcome Screen

1. **Log In** - Log into an existent account and have access to all of your licenses.

> Note: If you own one or more Sound Particles licenses, it will automatically create a new project with your highest tiered valid license.

2. **Try** - Initiate the Trial version of Sound Particles.

3. **Buy** - Buy a Sound Particles 3 license. You will then be required either to log in or to register, where afterwards you will be redirected to our webstore (https://my.soundparticles.com) to complete the purchase process.

> Note: By logging-in/registering on the app, you will be redirected to your browser automatically logged-in.

4. **Edu** - This will take you to the Edu registration screen, allowing you to register yourself with your educational information to be granted a full Edu license to Sound Particles 3 for 1 year.

> Note: If you are a student, tutor or staff member of any educational institution (even without classes related to audio), you can request a free Edu license that will grant you free access to the full software for 1 year. The Edu version has all the features of the Sound Particles 3 Indie license and the only limitation is that you **cannot use it for Commercial projects**.

5. **I have a voucher** - If you received a Sound Particles 3 voucher code, either from a friend, co-worker, a reseller, this option will allow you to claim any voucher you might have to your account (log in or register required).

6. **Activate Offline** - If you wish to activate a Sound Particles 3 license without logging in to your account on the app, you can do that through this screen.

7. **Quit Sound Particles** - Close the application.

Authentication Methods

If you already have a subscription you can choose to log In directly from the Welcome screen or choose to "Activate Offline" in case you don't have internet connection. Otherwise, you will have to access the "Try", "Buy", "Edu" and "I have a voucher" screens and you will need to authenticate using one of the two methods: Log In or Register.

Additionally, the log in page also lets you reset your password in case you have forget it.
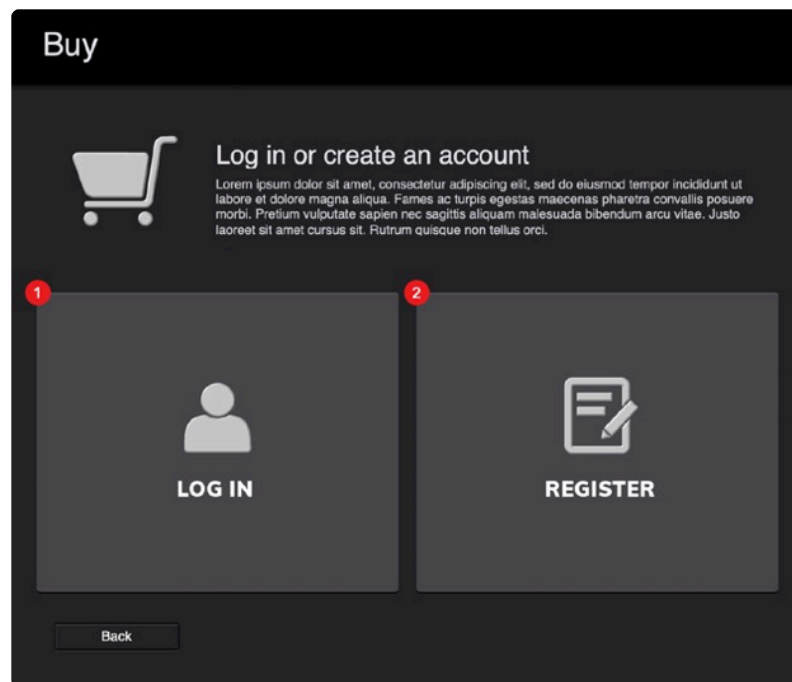
Buy Window Authentication

Note: You need an Internet connection to be able to do any of these actions.

LOG IN

The "Log In" screen can be accessed from the "Welcome" screen or by selecting one of the options "Buy", "Try", "Edu" "and "I have a voucher".

Log In Screen
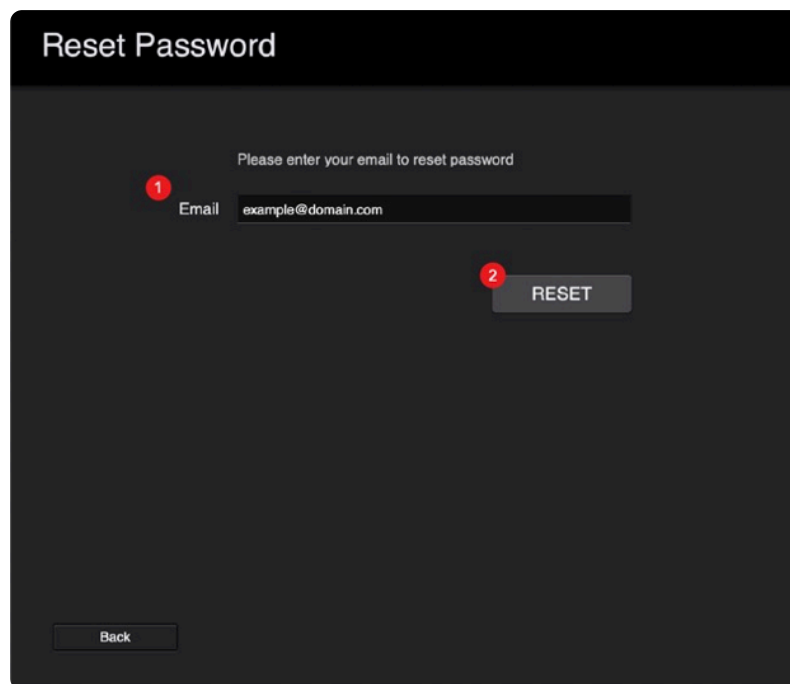
1. **Authentication Details** - The e-mail and password of your account, needed for authentication.

2. **Keep me logged in** - Keeps you logged in to your account when you close the software.

3. **Log In (button)** - Authenticates the inserted information.

> Note: If the authentication fails, an error message in red will appear, as well as a contact link to our support team. After logging in, Sound Particles will open a new project with your highest tiered valid license.

4. **Forgot Password** - Opens the password recovery screen for your account.

5. **Back** - Returns you to the previous screen.

Forgot Password

If you have forgotten your account password, you'll be redirected to a screen where you can begin the password reset process.

Reset Password Screen

1. **E-mail** - The e-mail of your account.

2. **Reset** - Sends the request after you have entered your email address.

Note: You will then receive an e-mail with instructions to reset the password.

REGISTER

If you don't have an account on our webstore, registering through the application will automatically create one for you and log you in.

Sign Up Screen

1. **Account Information** - Here you can write down your name, e-mail, password (and its confirmation) and country.

   Note: You cannot change your e-mail after registering your account.

2. **Newsletter Subscription** - Check this box if you'd like to receive newsletters from us.

   Note: You can revert this at any time.

3. **Register** - After filling out everything, this button finishes up the registration.

Try

If you'd like to try Sound Particles 3 before deciding to purchase it, simply click "Try". You'll be prompted to log in or create an account. Once you're signed in, you'll need to agree to the terms and conditions of the Trial Version.

- **Cannot be used on Commercial nor Public projects**

- Exported audio with maximum quality of **15 bits**

- Exported audio with inaudible **watermark**

- Cannot edit some of the Metadata fields
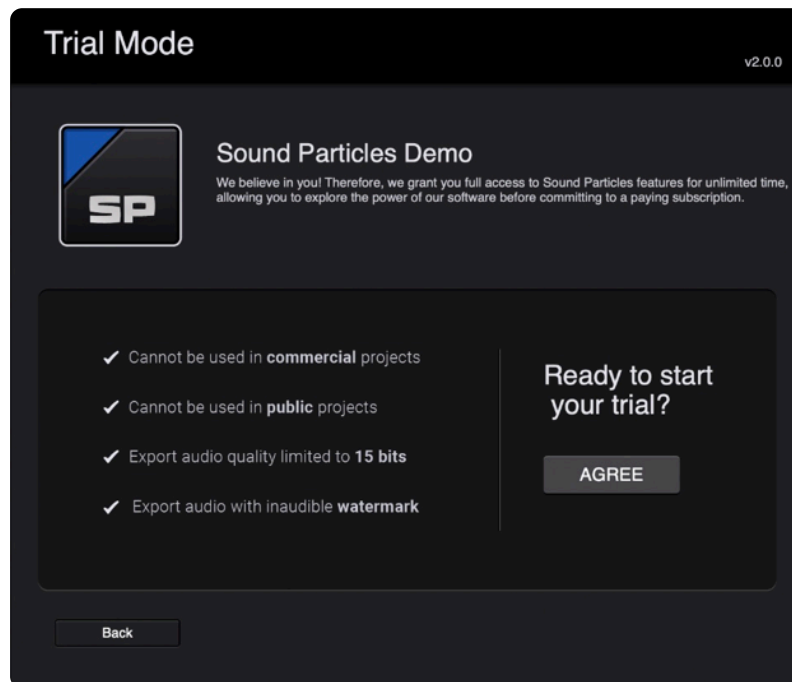
Trial Mode Agreement Window

TIP: The Trial version has ALL the features and you can try it for as long as you want.

Buy

On the home screen, after you press "Buy" and completing one of the Authentication Methods, you will see a "Buy" button (1). Clicking this button will open your client panel on our webstore in your default browser, where you can complete your license purchase.
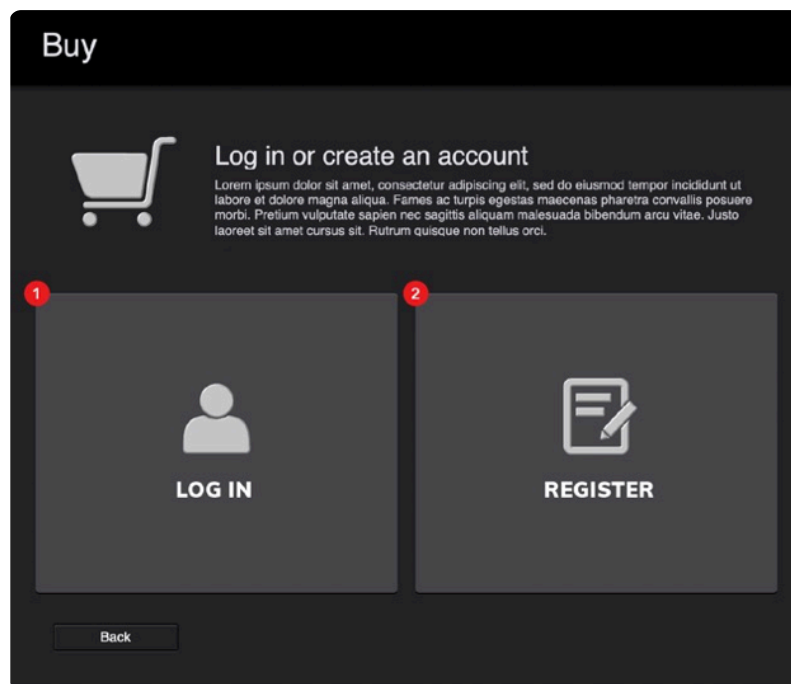
Buy Screen

After purchasing a license, when you return to Sound Particles, the 'My Account Panel' will open automatically. By refreshing this panel, your newly purchased license should appear. For more details, please refer to the Account Management section.

Edu

After submitting your request, it will be reviewed and you'll receive a reply within 3 working days. In the meantime, you can use the Trial version of the software, as explained on the screens following your registration.
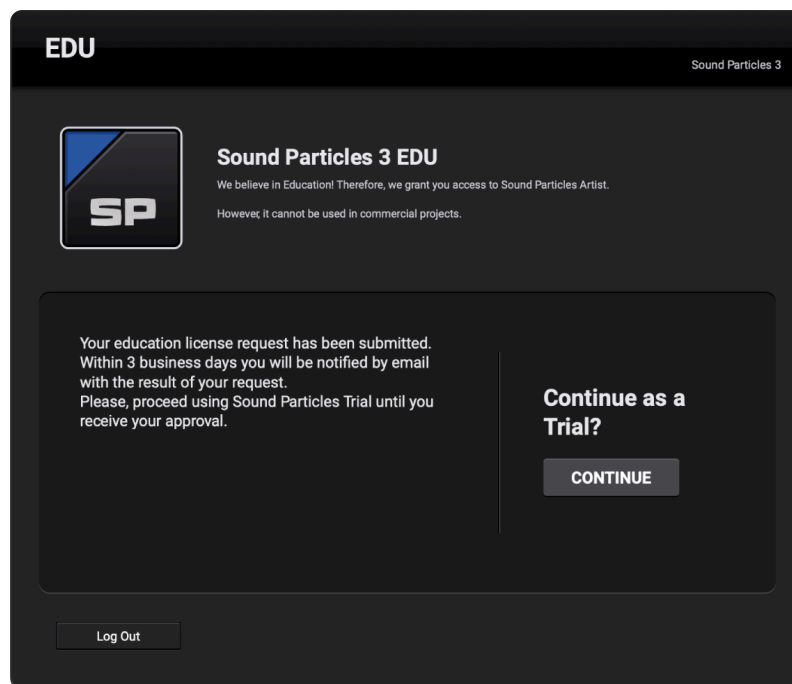
Post Academic Registration Trial Notification

If your request is accepted, the next time you enter Sound Particles, a new project will be started with "Edu: [version]" below the "SP" logo, on the "New Project" window.

I have a voucher

After selecting "I have a voucher", on the "Welcome" screen and completing one of the authentication methods, you will then be presented with a "Voucher Claim" screen, that will allow you to write down your voucher code and claim it to your logged account.
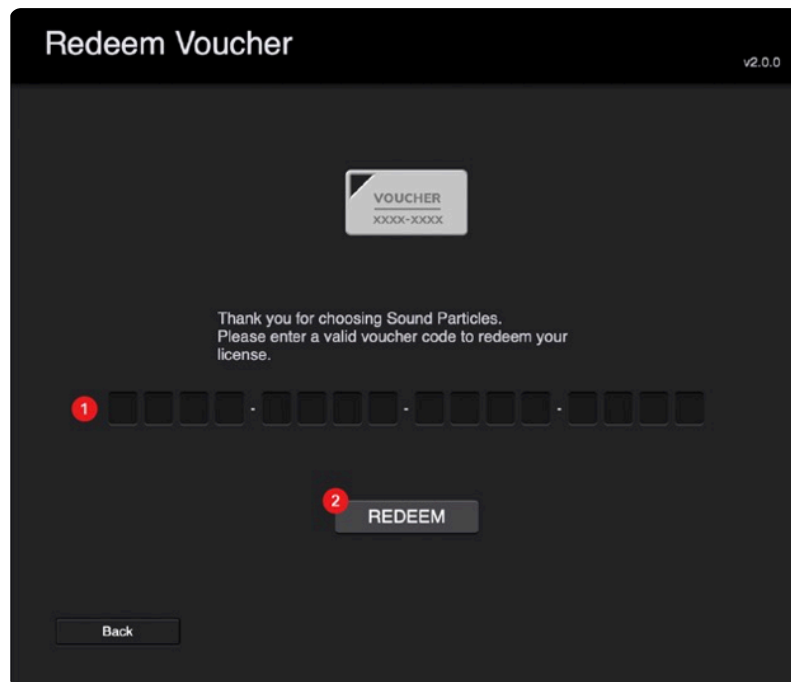
Redeem Voucher Screen

1. **Voucher Code Form** - Enter your 12-digit voucher code in this field.

2. **Redeem** - This will start the process of verifying the voucher code written down.

> Note: If the voucher code is wrong or there's another a problem, a red error message will appear and also a quick link for our support e-mail.

Offline Activation
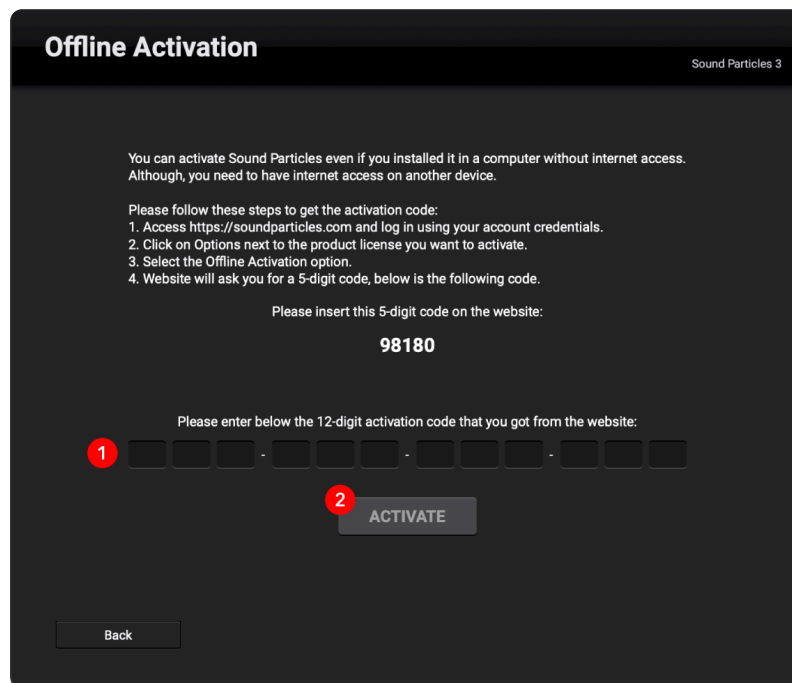
With the "Offline Activation", you can activate a local license without the need to authenticate yourself on the application, in case you don't have internet connection on your machine.

> Note: You still need to have a valid account with at least 1 license bought/assigned.

To activate offline, go to the designated screen and enter the 5-digit number displayed there into the "Offline Activation" screen. Then, you will need to visit our webstore, log in to your account, and navigate to the purchases tab on your personal area. Find your Sound Particles license, open the options menu, and select "Offline

Activation". Enter the 5-digit number from the Sound Particles screen and a 12-digit activation code will be generated, which will be needed to complete the offline activation.

Note: Both the 5-digit and 12-digit numbers are unique each time you access this screen. This means that if you enter the "Offline Activation" screen again, it will display a new 5-digit number, and that will also change the 12-digit number.

Offline Activation Screen

1. **Activation Code** - Insert the 12-digit number obtained from your client panel.
2. **Activate** - Validate the place information to proceed to the activation.

Account Management

After logging in/registering on the application, you will then be able to access your account panel that provides your subscriptions details, such as subscription type, project (if applied) and expiration date.

When logging in through "Buy" from the homepage, your account panel will open even if the browser window blocks the view.

You can access your "Account Management" screen any time you need, going to **Sound Particles** > **Manage Account**, through the "Menu Bar" on a project window.
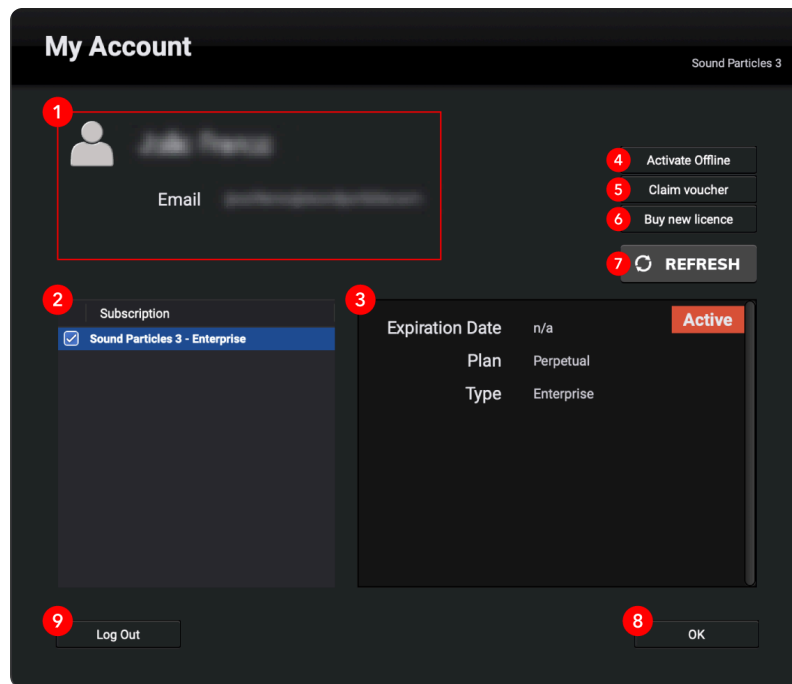
User Account Panel

1. **Account Information** - Your account information, such as name and e-mail.
2. **Subscriptions** - Your acquired subscriptions. Here, you can also select which subscription you want activated and to use.
3. **Subscription Information** - Information regarding the selected subscription, such as its expiration date, plan, type, and if it's active or expired/invalid.
4. **Request an Edu license** – Activating this option automatically signs your account for an Edu license on our database. (Only visible if your account does not have an Edu license).
5. **Activate Offline** – Opens the "Offline Activation" screen, allowing you to activate one of your licenses without being connected to the Internet (you will need to have Internet access on another device).
6. **Claim Voucher**– Opens the Claim Voucher screen, allowing you to redeem a voucher of a product not yet activated on your account (if valid).
7. **Buy a new license** – Opens my.soundparticles.com on your account homepage on your Internet browser.
8. **Refresh (button)** - A refresh button to allow any new/updated licenses to appear after refreshing the list.
9. **OK** - Opens a new project with Sound Particles running the active license.
10. **Logoff** - Logs off of the account and returns you to the home page of the Welcome screen.
11. **License Type** - Here you can see what license you are working on.
    a) Enterprise - Unlimited Particles; Unlimited Mic Channels; Batch Processing; ADM (Beds+Objects); CGI Import.

b) Professional - Up to 10.000 Particles; Unlimited Mic Channels; Batch Processing.

c) Artist - Up to 100 Particles; Up to 6 Mic Channels.

d) Trial - The trial is limited to 30 days. The Audio Export is not available.

> **d.1.** There are Educational (EDU) versions for all Licence Types. Educational versions have a 50% discount. Artist EDU is free. This licenses are only for academics.

Invalid License

If you are logged into an account with an expired or invalid license, a warning screen will appear informing you of the issue and offering three options to resolve it.
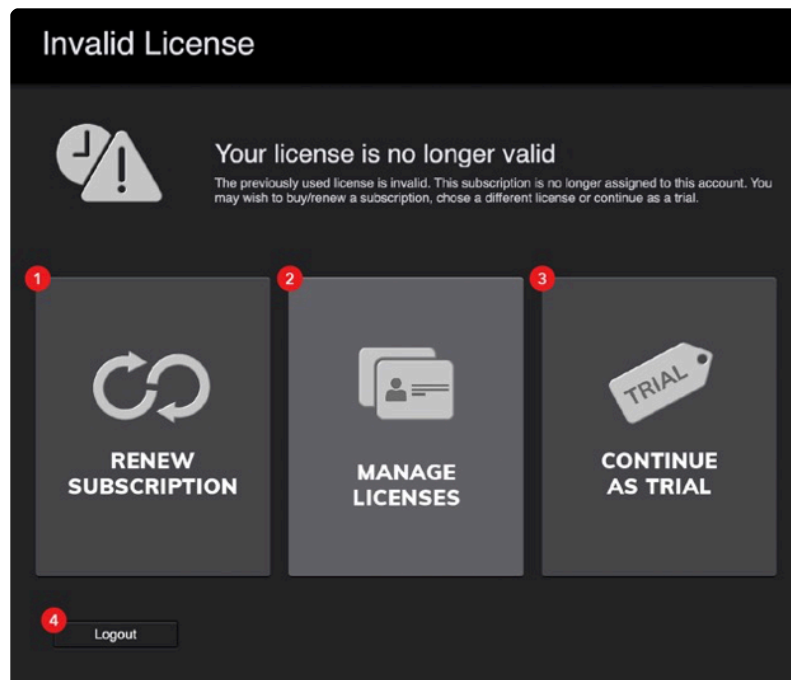
Invalid License Screen

1. **Renew Subscription** - This will open your default browser and will take to your "Manage Licenses" screen.
2. **Manage Licenses** - Open the "My Account" screen on the app.
3. **Continue as Trial** - Continue using Sound Particles as a Trial (to see the rules of usage on Commercial and Public projects see the Try section).
4. **Log out** - Log out of the account and return to the "Welcome" screen.

New Project

When opening Sound Particles after choosing a valid license, a project window will appear displaying the "New Project" panel, offering numerous templates (with descriptions and audio comparisons between the original and templated samples), to help you start a project based on your needs in a quick and easy way. There is also the option to select any microphone format you want for your project, alongside with other utilities.
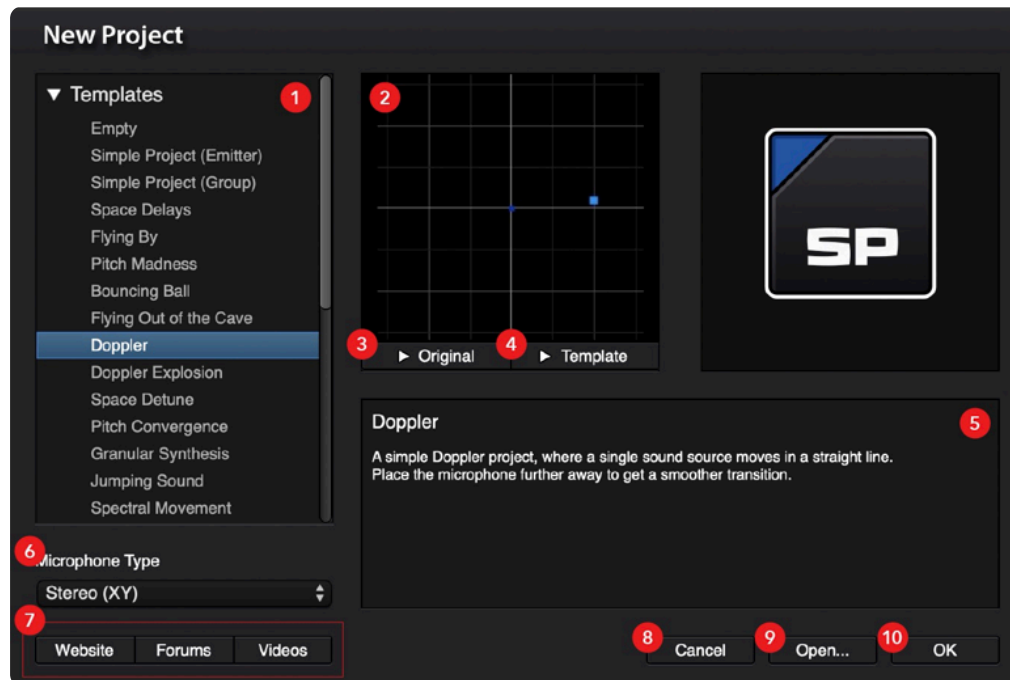
New Project Window

1. **Templates** - The list of available default Templates, which contain different project settings that you can both previews visually (2) and also compare between the original (3) and altered (4) audio samples of that selected Template.

> TIP: If you want to start from scratch, select the "Empty" template.

2. **Template Viewfinder** - This viewfinder shows you a video preview of how the selected template scene looks like.

   Note: The video preview will synchronize when you playback the Template sample (4).

3. **Original Audio Sample** - The original, unaltered audio sample of the selected template. Press the button to listen to it.

4. **Template Audio Sample** - The audio sample resulted from rendering the selected template with the original audio sample (3).

5. **Template Description** - A small description of the template.

6. **Microphone Type** - A pop-up button that allows you to select a microphone that you may want to start your project with (between Mono, Stereo, Multichannel, Ambisonics and Binaural).

   TIP: For more insight about the microphones, see the Microphones chapter.

7. **Website/Forums/Videos** - Buttons that allow you to access useful links about the software, such as our website, our forums and our video tutorials.

8. **Cancel** - Cancel the creation of the project.

9. **Open**... - Open a previously saved project file.

10. **OK** - Open the selected template.

Project Window

The Project Window is the most important part of your workflow. It is where you will find all the tools that will help you in creating your scene, shaping it to your needs and also allowing you to access other innovative tools to expand your workflow and project previewing, such as the VR.

The Project Window is divided into 6 sections:
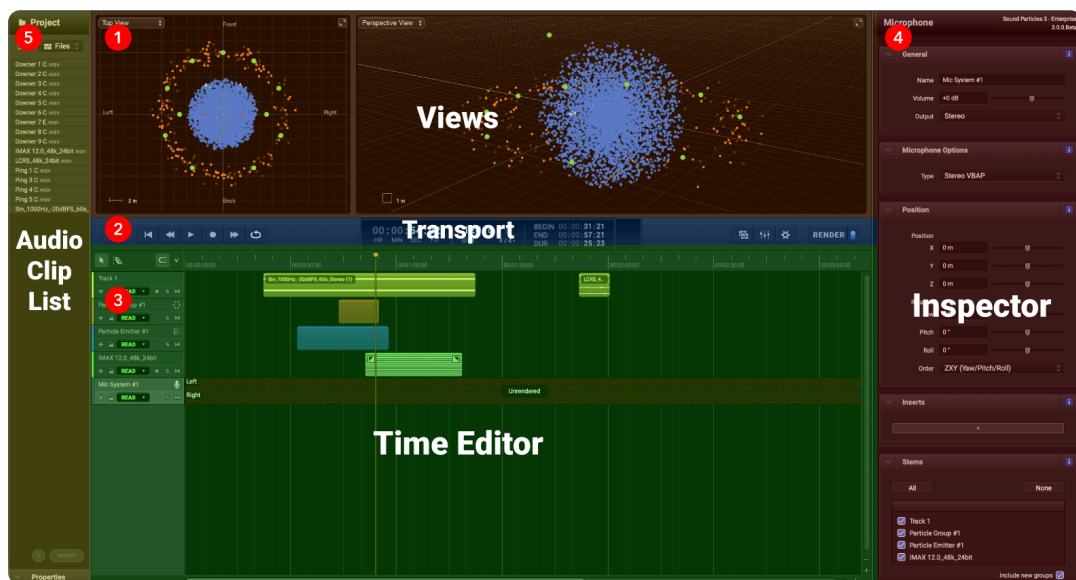
Project Window

1. **Views** - Here you can observe and edit your scene and its objects through various perspectives. Can be used as a Dual or Single View.
2. **Transport** - You can add tracks to the scene, control the playback, watch the current time and special modes status (VR, Binaural, Space Controller), access utility menus and choose how to render the scene.
3. **Time Editor** - You can sort, move and control your created tracks (particles/audio tracks, MIDI Tracks, microphones and video tracks). You can also Mute/Solo each track, and also manually create automation tracks for compatible tracks.
4. **Inspector** - You will edit/add parameters of selected objects or navigate through the project settings.
5. **Audio Clip List** - You will have access to all the audio files and clips used in your project, allowing to edit and playing them.

Views

This area let's you see the visual representation of the particles in your project allowing to move the center position of the particle tracks and audio clips. By default, you will have a dual view (with two panels) that have a popup menu on top where you can choose to have a single view and select the type of view of each panel.

On this version of Sound Particles you still have the 4 types of view (3D Views, Video View, 360º View and VR View) but you can also choose to center your views on the center of the virtual space or on the center of a specific microphone, using the Point of View submenu.
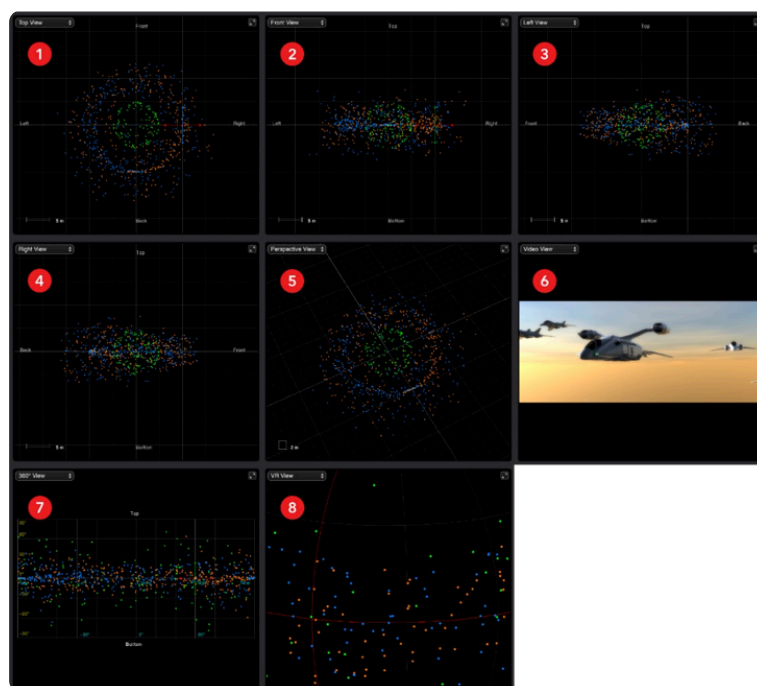
Views

1. **3D View** - Offers 5 options to explore the 3D space from different perspectives.

   a) **Top View** - Placed above the scene.

   b) **Front View** - Parallel with the Left-Right directions, with Top-Bottom in front of it.

   c) **Left View** - Placed 90º to the left of the horizontal plane, having the Front at the left and the Back at the right.

   d) **Right View** - Placed 90º to the right of the horizontal plane, having the Back at the left and the Front at the right.

e) **Perspective View** - Gives you a full 3D perspective of the scene, allowing you to move, rotate and zoom in and out on it.

> TIP: See how to move and control the 3D Views on <u>Views Navigation</u> section.

2. **Video View** - If you import a video reference to Sound Particles, you can watch it on this view, without the particles above it.

3. **360º View** - Offers a 360º horizontal and 180º vertical perspective of the scene, allowing you to work with particles on top of videos, both for standard or full 360º videos (for more information see the <u>Video</u> chapter).

4. **VR View** - This view allows you to see your scene from a 360º camera perspective, with the particles surrounding as constructed on the scene.

5. **Point of View** - Access a submenu that allows to center each type of view on a specific microphone.

3D VIEWS
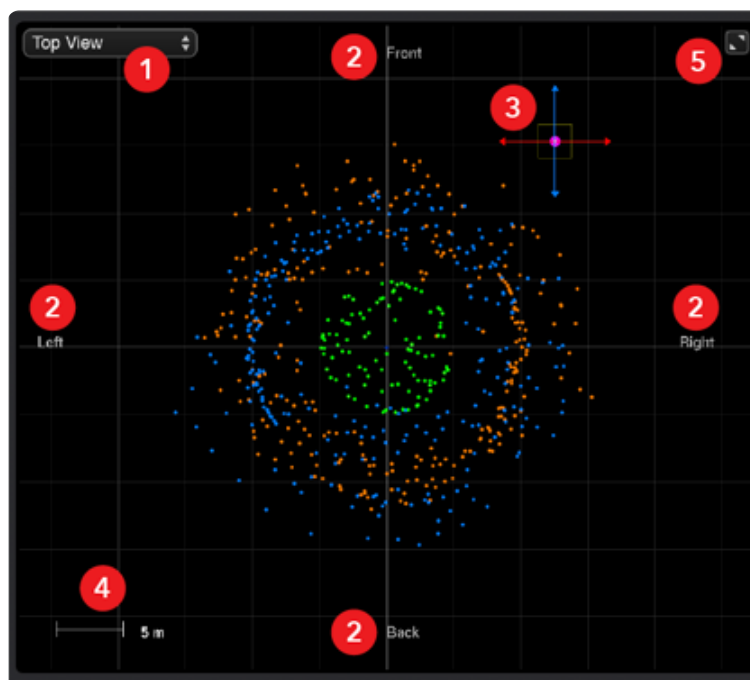
3D View - Top VIew example

1. **View Selection** - Select the perspective to view the particles in space.

2. **Directions** - These labels show what direction is represented on each axis.
3. **3D Manipulator** - Right-clicking on the view and selecting Translate will display this icon, that allows you to move the selected object around more easily in the direction of each axis, just by pressing & dragging it on the View.
4. **Scale** - Display a comparison figure to show how much the 3D View grid squares have in size.
5. **Maximize** - This button maximizes the View to full-screen, keeping only the Transport visible.

VIDEO VIEW

The "Video View" allows you to watch the imported video reference without any particles or other element on top of it, giving you a clear view.

Video View

360º VIEW

In this view, you have unique elements regarding the 360ºh/180ºv workflow, such as:
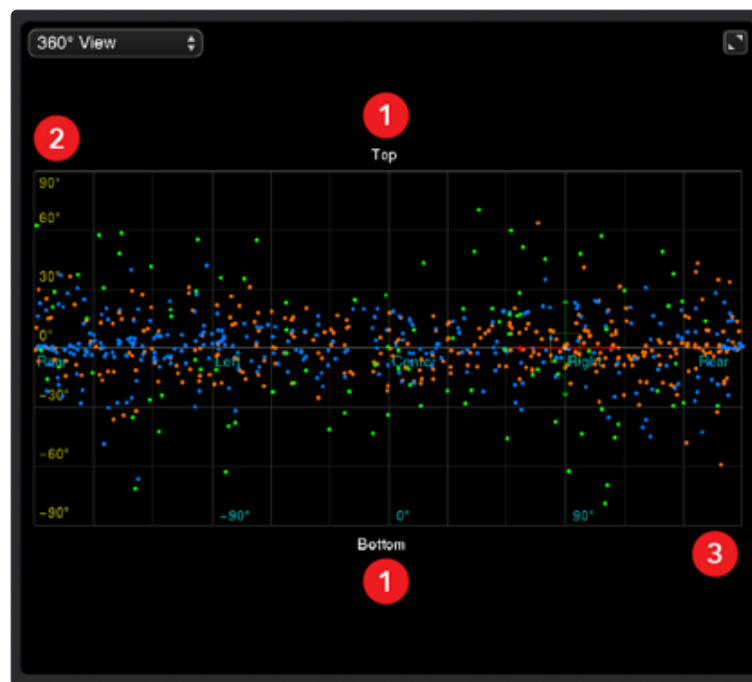
360º View

1. **Top/Bottom** - Indication of where the top (+90º) and bottom (-90º) of the view are.
2. **Vertical angles** - Angular sub-divisions of the vertical axis (-90º - 90º).
3. **Horizontal angles** - Angular sub-divisions of the horizontal axis (-180º to 180º).

VR VIEW

On the VR view, you can playback and visualize your whole scene within a 360º camera, allowing you to move around and watch its playback in real-time.
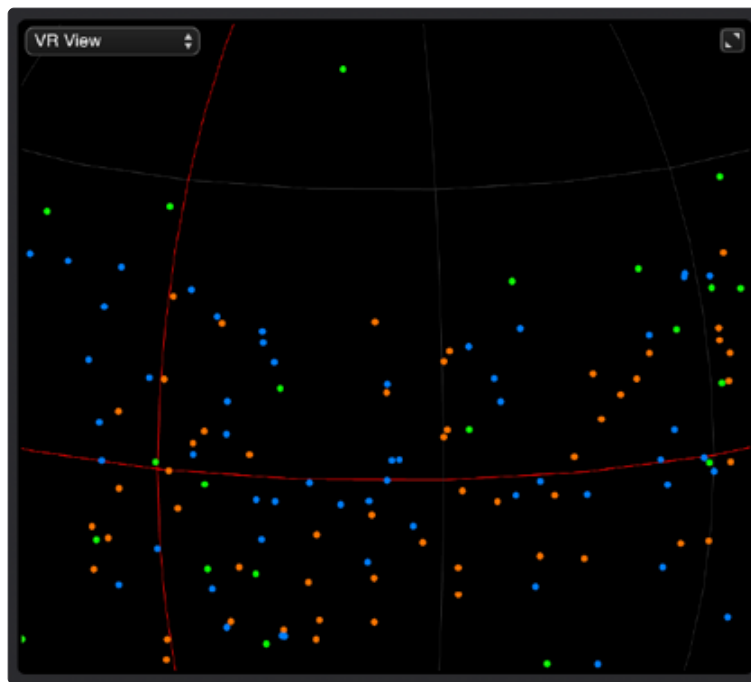
VR View

By then activating the Binaural mode (see the Binaural section), you can simulate a head tracking experience as the audio of the scene will adjust to your orientation and as you move around with the camera.

Also, if you import a 360º video reference, you can watch and look around that same video in full 360º (for more information regarding the full use of the VR tools of Sound Particles see the VR chapter)

TIP: The red vertical curve, as shown on the image, represents the center of the view. You can also use the VR "Home" button to reset it.

Transport

The "Transport" bar allows the access to different controls and settings for your project. The available elements are:
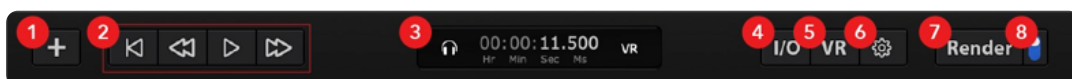
Transport Bar

TIP: You can disable this view by clicking Cmd / Ctrl + Shift + T or deactivating it through the Menu Bar (View > Transport).

1. **Add:** This button allows you to add different types of tracks to your scene, such as:

   a) **Audio Track:** Add an Audio Track to the scene (see Audio Tracks).

   Note: Each audio track allows you to add multiple audio clips in different channel formats.

   b) **MIDI Track:** Add a MIDI track to the scene (see MIDI Tracks)

   c) **Particle Group:** Add a Particle Group to the scene (see Particle Groups).

   d) **Particle Emitter:** Add a Particle Emitter to the scene (see Particle Emitters).

   e) **Microphone:** Add a Microphone to the scene (see Microphones).

   Note: The default mic is "Stereo".

   f) **Video Reference:** Add a Video track to the scene (see Video).

2. **Playback Controller:** These buttons allow you to control the playback of your scene:

   a) **From Start:** Places the playhead at the beginning (00:00:00:00) of the Time Editor.

   b) **Rewind 10 seconds:** Places the playhead 10 seconds before its current position.

   c) **Play/Pause:** Starts/pauses the scene's playback.

   TIP: If you have "Unrendered" microphones, and have the Auto-Render "On", this will render and playback audio in real-time (see Topic 8).

      d) Record: Enables the recording mode. When enabled, pressing play will record all the armed tracks.

      e) Forward 10 seconds: Places the playin-head 10 seconds ahead its current position.

      f) Loop: It will loop between the limits of the selection during the playback.

3. **Space Controller:** Informs if a Space Controller app is connected to Sound Particles.

4. **Audio Clip List:** Access the Audio Clip List (see the <u>Audio Clip List</u> section).

5. **Mixing Desk:** Access the I/O inspector (see the <u>Mixing Desk</u> section).

6. **Project Settings:** Access the Project Settings menu (see the <u>Project Settings</u> section).

7. **Render (Manual):** Manually render the scene (see the <u>Render (Manual)</u> chapter).

> Note: Only has an effect if there are sections unrendered. If everything is rendered, this button will have no effect.

> TIP: You can still use this button even with the Auto-Render "On".

8. **Auto-Render:** Activate/deactivate the Auto-Render mode.

> TIP: If "On", you can playback your unrendered scene/sections in real-time, allowing you to preview any part of your scene without fully and manually rendering it.

Time Editor
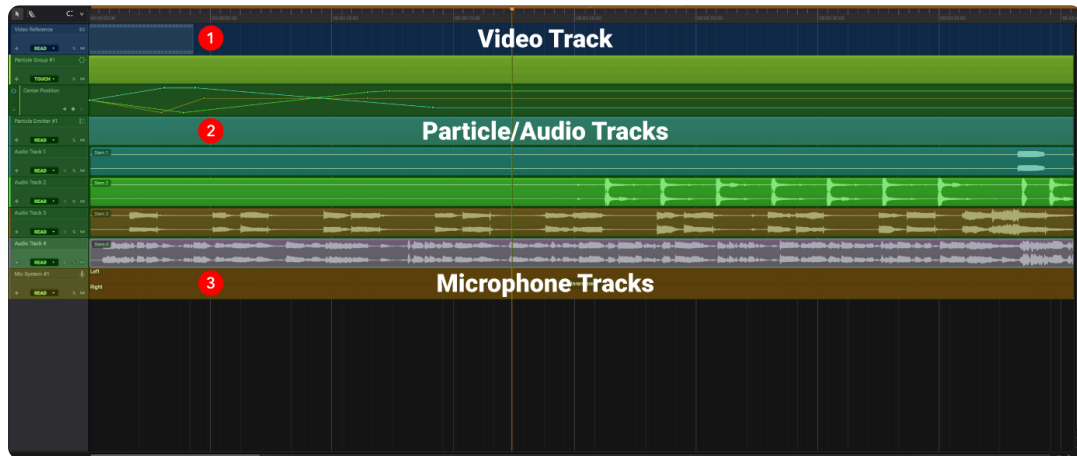
Time Editor

The "Time Editor" is where all the elements (tracks) within your scene are displayed.

To start placing items on the "Time Editor", you can simply use the "Add" button on the "Transport" bar, or use "Project -> Add" on the Menu bar (top of the project window).

With it, you can place, move and organize your items as you wish. It also serves as your gateway to access the element inspectors, by clicking over an existing track to edit its parameters and settings.

On the left end of the tracks, you are also able to SOLO or MUTE every kind of track through the "M" & "S" buttons, and also add automation (for every available parameter of that track) by clicking on the "+" button.

The "Time Editor" track order is done with the following tier:

1. Video Track (if available)

2. Particle/Audio Tracks/Midi Tracks

3. Microphone Tracks

> TIP 1: You can drag your tracks around (excluding Microphones) by pressing and holding on top of them with your mouse. This will also change the "Start Time" of the track (see the Microphones chapter).

> TIP 2: You can disable this view by clicking Cmd / Ctrl + T or deactivating it through the Menu Bar's ("View -> Time Editor").

4. Selection

All the "Time Editor" elements are highlighted below:
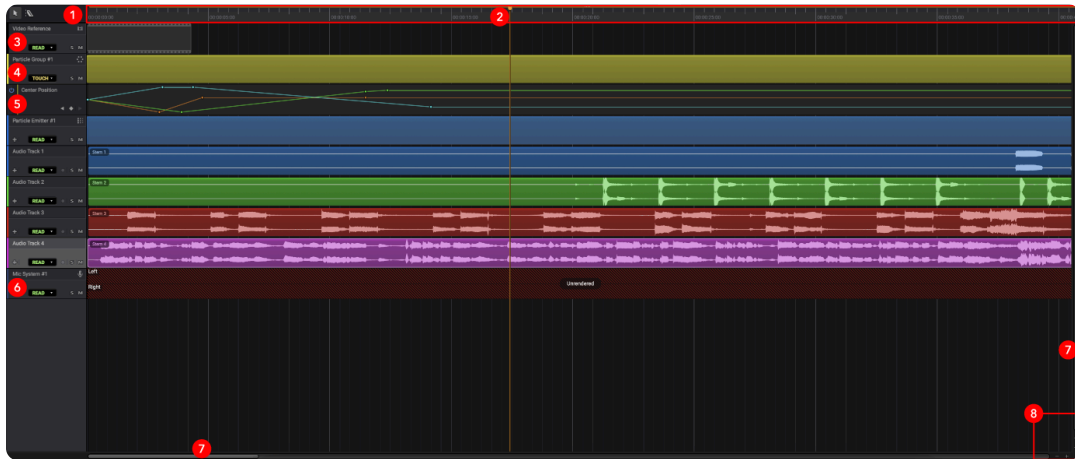
Detailed Time Editor

1. **Time Sub-Divisions:** The time sub-divisions and their corresponding value.

> TIP: Depending if you zoom in or out, the sub-divisions could range more or less Time on the same space.

2. **Playhead:** The position where the playback will start.

> TIP: By changing the position of the playhead, you can immediately see the current frame of the views according to its position.

3. **Video Track:** When you import a video reference, its corresponding track will appear always at the top of the "Time Editor".

> TIP: You can change where the video starts, either by dragging it with the mouse or changing its Time Offset on its Inspector (see the Video chapter).

4. **Particle/Audio Tracks:** By adding Particle Tracks (Groups/Emitters) or Audio Tracks, they will be placed below a video track, but above Microphone tracks.

> TIP: By opening their context menu (clicking with your Secondary Mouse Button over them), it's possible to move each track up and down between them.

5. **Automation Tracks:** When you create any automation for compatible parameters, the corresponding track will appear below the track that's being automated. On automation tracks, you can create and manipulate keyframes over time and as you desire. **On it, you have 4 buttons available:**

   a) Lock/Unlock Automation - locks/unlocks any further editing and manipulation on the Automation Track.

   b) Go to Previous Keyframe - places the playhead over its previously available keyframe.

   c) Create Keyframe - creates a keyframe if the playhead is on an empty space of the curve(s).

   d) Go to Next Keyframe - places the playhead over its next available keyframe.

> Note: This type of track does only appear if you create an Automation for a parameter.

> TIP 1: Sound Particles will automatically create a keyframe on the automation curve if you change the parameter on a time where none exist.

> TIP 2: You can control the keyframes values by either edit the automated parameters on their fields (text fields, sliders, pop-up buttons, etc.) or by dragging their 3D Manipulator.

> TIP 3: You can also create an automation track for a certain parameter by opening its "Context Menu" over the parameter on the inspector.

You can also do certain key combinations when working with keyframes, such as:

- Select Single Keyframe: Primary Mouse Button Click (on keyframe).
- Select Multiple Keyframes: Primary Mouse Button Click on empty area inside Automation track + Drag (to expand selection area).
- Create Keyframe: Double Click with Primary Mouse Button on an empty section.
- Add Keyframe to Selection: Cmd/Ctrl + Primary Mouse button click (on keyframe) or Cmd/Ctrl + Primary Mouse Button Click on empty section inside the Automation track + Drag (to expand selection area).
- Remove Keyframe from Selection: Cmd/Ctrl + Primary Mouse Button Click (on keyframe).
- Single Drag: Primary Mouse Button Click (on keyframe) + Drag.
- Multiple Drag: Shift + Primary Mouse Button Click + Drag.
- Single/Multiple Keyframe Horizontal Drag: Shift + Option + Primary Mouse Button Click + Drag (Mac); Shift + Alt + Primary Mouse Button Click + Drag (windows).
- Single/Multiple Vertical Drag: Shift + Cmd/Ctrl + Primary Mouse Button Click + Drag.

6. **Microphone Tracks:** When you create a Microphone, a corresponding track will be displayed on the "Time Editor", which also allows you to access the Microphone's Inspector (see the Microphones chapter). It will also display the waveform of any render done to your scene.

TIP 1: If the scene is unrendered, the Microphone(s) track will be displayed reddish and with a "Unrendered Label".

TIP 2: if by changing the volumes of Tracks and/or the Microphone clips the render, there will be sections in red displaying the respective clipped sections.

7. **Scroll bars:** Allows you to navigate horizontally or vertically through the "Time Editor".

Note: Depending on the levels of zoom or track length, the scroll bars may not be enabled.

8. **Zoom In/Out:** Allows you zoom-in (+) or zoom-out (-) both horizontally or vertically.

Editing Tools

<div align="center">Editing Tools</div>

1. **Select Tool:** Standard Tool used to **Trim**, **Fade in/out**, do a **Selection**, **Move Playhead**, **Move Clip**.
2. **Razor Tool:** A tool used to split or cut audio or MIDI clips at a specific point on the timeline. It allows you to divide a single clip into multiple sections for detailed editing.
3. **Snap:** Automatically aligns audio, MIDI, or automation events to a predefined timing grid when they are moved, edited, or placed on the timeline. This helps maintain precise rhythmic timing and is especially useful when working in tempo-based projects, ensuring elements stay in sync with the beat or measure.

4. **Snap Division:** Define how and when elements snap to the grid. Customize the snapping behavior— choosing the Grid Resolution, Sensibility, enabling or disabling snap for specific actions (to playhead, to clip, to major marks, to minor marks). These options provide flexible control over editing accuracy and workflow efficiency.

5. **Trim:** The process of shortening or extending the beginning or end of a clip without affecting its internal content. Trimming is used to remove silence, tighten timing, or refine transitions between clips.

<div align="center">Editing Tools</div>

6. **Fade:** A gradual increase or decrease in a clip's volume at its beginning or end. Fades are used to smooth out audio transitions and prevent abrupt starts or stops.

Editing Tools

7. **Selection:** The act of highlighting a specific portion of the timeline in order to perform actions such as looping.

Editing Tools

8. **Move Playhead:** Shifting the current playback position within the timeline to a new point. This determines where playback or recording will start when the transport controls are activated.

Editing Tools

9. **Move Clip:** The action of dragging a clip to a different position on the timeline or to a different track. Moving clips helps with arranging the timing and structure of your project.

Editing Tools

Inspector

The "Inspector" is the panel on the right side of the screen that displays information and allows you to access all the options and parameters related to a certain track / utility.

Audio Files List

Allows you to find or import audio files to Sound Particles

1. **Show:**

   a) Files - Original Audio Files imported to Sound Particles.
   b) Clips - Clips used on Sound Particles Tracks.
   c) Clips + Files - Original Audio Files imported to Sound Particles and the respective Clips used on Sound Particles Tracks.

2. **List:** List of all available Files/Clips.

3. **Search:** Open textfield to search for specific File/Clip.

4. **Import:** Clicking opens the Import Audio Files panel.
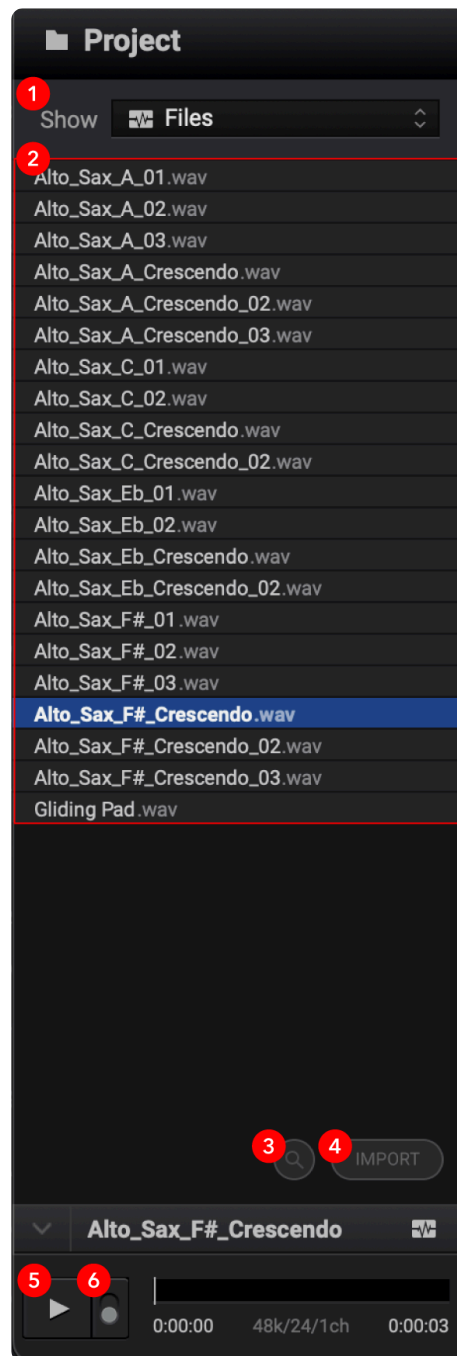
Audio Files List
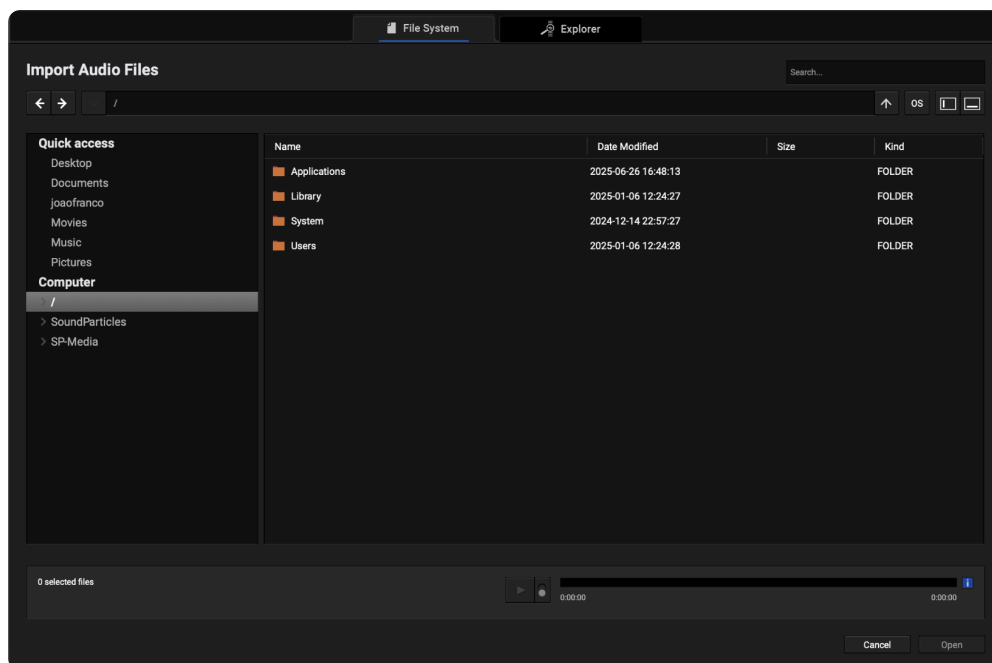
Detailed Import

a) File System - Shows the files on your machine.

b) Explorer - Opens Explorer (Sound Particles software) where the Local and Cloud files are displayed as well as the Audio Editor that allows to do changes on the audio before importing it to Sound Particles.

> NOTE: Access to Cloud files is available only if you have an Explorer subscription.

5. Play: Play the selected audio file or clip.

6. Autoplay: Automatically plays the audio file or clip when it is selected.

Tracks

On this version of Sound Particles you can use the following types of tracks:

- Particle Groups
- Particle Emitters
- Audio Tracks
- MIDI Tracks
- Video Reference Track

Each track has the following buttons
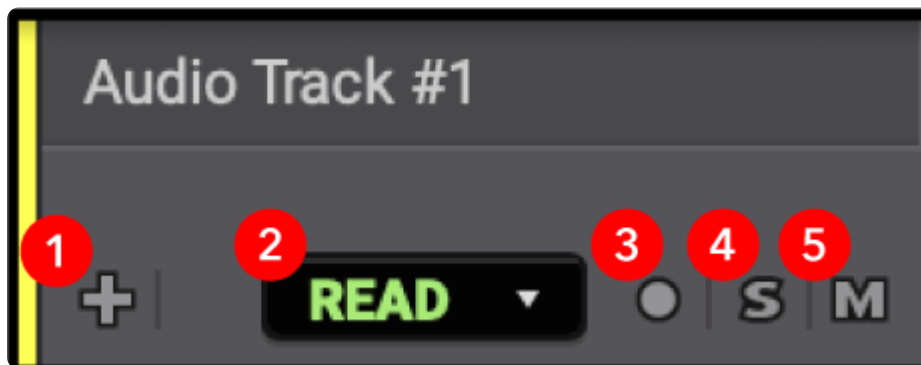
track options

1. **+:** Add Automation lane. Allows to create an automation lane for each automatable parameter of the respective track. You can automate Volume, Position or third party plugins parameters.

2. **Automation Mode:** Select the track automation mode

   a) Off - Automation will not be written nor read
   b) Read - plays back existing automation data. Any automation that has been previously recorded or written will be followed during playback. The system doesn't allow you to edit the automation in this mode, but simply follows the automation data that has been stored.
   c) Touch - automation is only written while the fader/parameter is being adjusted. As soon as you start moving a control (e.g., a volume fader or a plugin knob), the DAW will record that movement into the automation lane. When you release the control, it returns to the previously recorded automation data.

38

      d) Latch - starts recording automation as soon as you begin adjusting a control, and it continues to write automation even after you stop moving the fader or knob, until you stop playback or deactivate the automation mode. The difference from Touch is that the automation will not return to the previously recorded value once you release the control—it "latches" onto the new value.

      e) Write - overwrites all existing automation data as soon as you begin adjusting any control, and it will continue to overwrite the automation until you stop playback or switch modes. The new automation is written to the track, replacing any previous data.

3. **Record:** Applies to Audio Tracks and Midi Tracks only.

4. **Solo:** Isolates the track, making it the only one that can be heard during playback. All other tracks are temporarily silenced, but the soloed track continues to play.

5. **Mute:** Temporarily silences the track, preventing it from being heard during playback.

Particle Groups

A "Particle Group" creates stationary particles in the scene by default, with all particles in each group generated simultaneously.
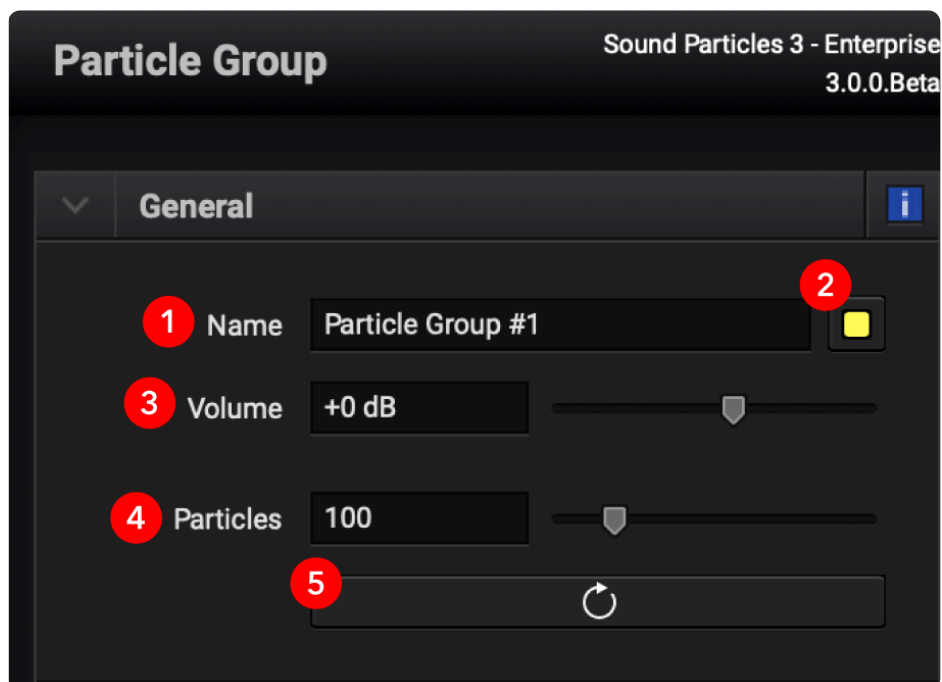
Particle Group

GENERAL

1. **Name:** a brief description to identify this group.

2. **Color (button):** the color of the particles (used only for visualization - doesn't affect the sound).

3. **Volume:** the volume (audio gain) of the sound created by these particles (can be automated).

4. **Particles:** the total number of particles of this group.

5. **Recreate (button):** creates a new set of particles.

> Note: Since particles are randomly created (within the user specified constraints), the same settings can be applied to a new set of particles to generate different output results. Each time the user presses the "Recreate" button, a different set of particles is created, which will generate a slightly different result. From a practical point-of-view, this acts as a new "recording take", allowing you to generate a slightly different output result.

AUDIO FILES

You can add one or more audio files to your Particle Group/Emitter. Each particle will randomly select one of the available files.

Audio Files

1. **Import:** Clicking opens the "Import Audio Files" panel.

Detailed Import

    a) File System - Shows the files on your machine.

b) Explorer - Opens Explorer (Sound Particles software) where the Local and Cloud files are displayed as well as the Audio Editor that allows to do changes on the audio before importing it to Sound Particles.

> NOTE: Access to Cloud files is available only if you have an Explorer subscription.

2. **Trash:** Remove the audio file from the available audio files. Don't worry, this will NOT remove the audio file from your computer.

3. **Table:** Table displaying the available audio files (streams) that will be played by the particles, presenting their enabled/disabled state, filename, the used channel, original sample rate and full path.

> TIP: You can **enable** or **disable** your imported audio files to allow to try different results using different combinations between the imported files.

> Note: When you enable/disable an audio file, you will have to **re-render** the scene's microphone(s).

4. **Audio Player:** As you select a file within the table, an audio player control will appear, allowing you to listen its audio content.

> Note: This control uses the audio output defined in the settings of the **I/O**.

POSITION

1. **Start Time:** Define the starting position on the timeline.

2. **Start Zone:** Define the starting position based on one of the following shapes:

    a) Point
    b) Line
    c) Circle (line)
    d) Circle (inside)
    e) Rectangle

f) Triangle

g) Sphere (surface)

h) Sphere (inside)

i) Cylinder (inside)

j) Cylinder (surface)

k) Box

l) Torus

3. **Shapes Parameters:**

   a) **Point**

      a.1. Position - Define the position of the Point in the 3D space (XYZ). This can also be obtained by moving the handlers on the 3D views.

   b) **Circle (line), Circle (inside), Sphere (surface), Sphere (inside), Cylinder (inside), Cylinder (surface) and Torus**

      b.1. Center Position - Define the Center position of the Particle track in the 3D space (XYZ). This can also be obtained by moving the handlers on the 3D views.

      b.2. Radius - Define the Radius of the Particle track.

      b.3. Height - Available on Cylinders, define the Height of the Cylinder.

      b.4. Main Radius - Available on Torus, define the Main Radius of the Torus.

      b.5. Section Radius - Available on Torus, define the Section Radius of the Torus.

      b.6. Rotation - Rotate the entire Particle track (Yaw, Pitch, Roll).

   c) **Line and Triangle**

      c.1. Position A - Define the position of the Position A in the 3D space (XYZ). This can also be obtained by moving the handlers on the 3D views.

      c.2. Position B - Define the position of the Position B in the 3D space (XYZ). This can also be obtained by moving the handlers on the 3D views.

      c.3. Position C - Available on triangle, define the position of the Position A in the 3D space (XYZ). This can also be obtained by moving the handlers on the 3D views.

      c.4. Rotation - Rotate the entire Particle track (Yaw, Pitch, Roll).

   d) **Rectangle and Box**

      d.1. Center Position - Define the Center position of the Particle track in the 3D space (XYZ). This can also be obtained by moving the handlers on the 3D views.

d.2. Width - Define the Width of the Particle track.

4. Depth - Define the Depth of the Particle track.

5. Height - Available on Box, define the Height of the Particle track.

6. Rotation - Rotate the entire Particle track (Yaw, Pitch, Roll).

MOVEMENT MODIFIERS

Movement Modifiers

You can learn more about it on the Movement Modifiers section.

AUDIO MODIFIERS

Audio Modifiers

You can learn more about it on the Audio Modifiers section.

Particle Emitters

A "Particle Emitter" is a particle object that creates particles over a given period of time.
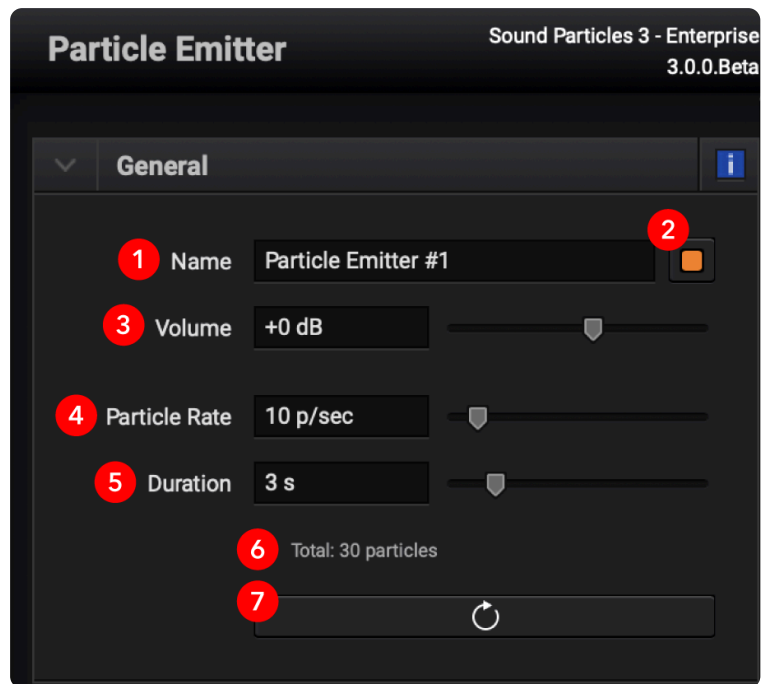
Particle Emitter

GENERAL

1. **Name:** A brief description to identify this group.

2. **Color (button):** The color of the particles (used only for visualization - doesn't affect the sound).

3. **Volume:** The volume (audio gain) of the sound created by these particles (can be automated).

4. **Particle rate:** How many particles, per second, do you want to create? (can be automated).

5. **Duration:** How long should the emitter continue to create new particles? This value does not affect the sound duration of each particle. The parameter is applied to the created particles.

6. **Total:** A label with the total number of particles (total = rate * duration).

7. **Recreate (button):** Creates a new alternate set of particles.

> Note: Since particles are randomly created (within the user specified constraints), the same settings can be applied to a new set of particles to generate different output results. Each time the user presses the "Recreate" button, a different set of particles is created, which will generate a slightly different result. From a practical point-of-view, this acts as a new "recording take", allowing you to generate a slightly different output result.

AUDIO FILES

You can add one or more audio files to your particle Group/Emitter. Each particle will randomly select one of the available files.

Audio Files

1. **Import:** Clicking opens the Import Audio Files panel.

Detailed Import

a) File System - Shows the files on your machine.

b) Explorer - Opens Explorer (Sound Particles software) where the Local and Cloud files are displayed as well as the Audio Editor that allows to do changes on the audio before importing it to Sound Particles.

> NOTE: Access to Cloud files is available only if you have an Explorer subscription.

2. **Trash:** Remove the audio file from the available audio files. Don't worry, this will NOT remove the audio file from your computer.

3. **Table:** Table displaying the available audio files (streams) that will be played by the particles, presenting their enabled/disabled state, filename, the used channel, original sample rate and full path.

> TIP: You can **enable** or **disable** your imported audio files to allow to try different results using different combinations between the imported files.

Note: When you enable/disable an audio file, you will have to **re-render** the scene's microphone(s).

4. **Audio Player:** As you select a file within the table, an audio player control will appear, allowing you to listen its audio content.

Note: This control uses the audio output defined in the settings of the **I/O**.

POSITION

1. **Start Time:** Define the starting position on the timeline.

2. **Start Zone:** Define the starting position based on one of the following shapes:

   a) Point
   b) Line
   c) Circle (line)
   d) Circle (inside)
   e) Rectangle
   f) Triangle
   g) Sphere (surface)
   h) Sphere (inside)
   i) Cylinder (inside)
   j) Cylinder (surface)
   k) Box
   l) Torus

3. **Shapes Parameters:**

   a) Point

   a.1. Position - Define the position of the Point in the 3D space (XYZ). This can also be obtained by moving the handlers on the 3D views.

   b) Circle (line), Circle (inside), Sphere (surface), Sphere (inside), Cylinder (inside), Cylinder (surface) and Torus

   b.1. Center Position - Define the Center position of the Particle track in the 3D space (XYZ). This can also be obtained by moving the handlers on the 3D views.
   b.2. Radius - Define the Radius of the Particle track.

b.3. Height - Available on Cylinders, define the Height of the Cylinder.

b.4. Main Radius - Available on Torus, define the Main Radius of the Torus.

b.5. Section Radius - Available on Torus, define the Section Radius of the Torus.

b.6. Rotation - Rotate the entire Particle track (Yaw, Pitch, Roll).

c) Line and Triangle

c.1. Position A - Define the position of the Position A in the 3D space (XYZ). This can also be obtained by moving the handlers on the 3D views.

c.2. Position B - Define the position of the Position B in the 3D space (XYZ). This can also be obtained by moving the handlers on the 3D views.

c.3. Position C - Available on triangle, define the position of the Position A in the 3D space (XYZ). This can also be obtained by moving the handlers on the 3D views.

c.4. Rotation - Rotate the entire Particle track (Yaw, Pitch, Roll).

d) Rectangle and Box

d.1. Center Position - Define the Center position of the Particle track in the 3D space (XYZ). This can also be obtained by moving the handlers on the 3D views.

d.2. Width - Define the Width of the Particle track.

4. Depth - Define the Depth of the Particle track.

5. Height - Available on Box, define the Height of the Particle track.

6. Rotation - Rotate the entire Particle track (Yaw, Pitch, Roll).

MOVEMENT MODIFIERS

Movement Modifiers

You can learn more about it on the Movement Modifiers section.

AUDIO MODIFIERS

Audio Modifiers

You can learn more about it on the Audio Modifiers section.

Audio Tracks

Audio Tracks can be used when you want to position sound from an audio file at a specific position, audio tracks support mono, stereo, 5.1, 7.1, or Ambisonics audio files, creating a single particle for each channel. In the case of Ambisonics files, an array of particles is created, capable of generating the exact same soundfield as the original audio file.
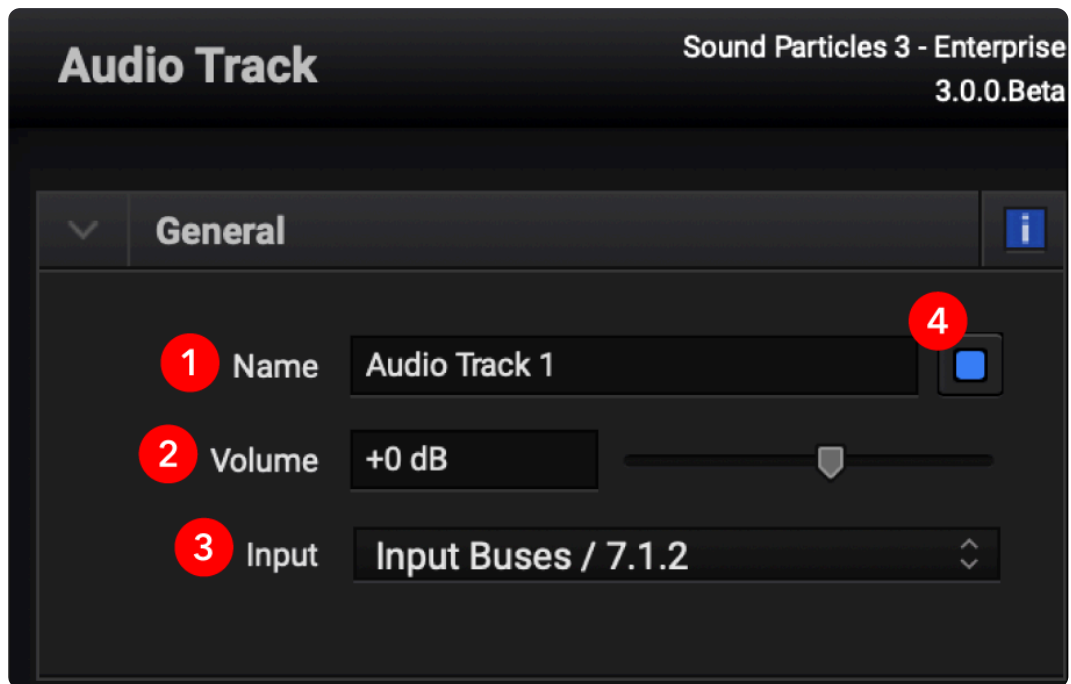
Audio Track

GENERAL

1. **Name:** a brief description to identify this group.
2. **Volume:** the volume (audio gain) of the sound created by these particles (can be automated).
3. **Input:** Select the input for audio recording.
4. **Color (button):** the color of the particles (used only for visualization - doesn't affect the sound).

AUDIO FILES

For Audio Tracks, you can add all the audio files you need using any format.

1. **+:** Clicking opens the Import Audio Files panel.
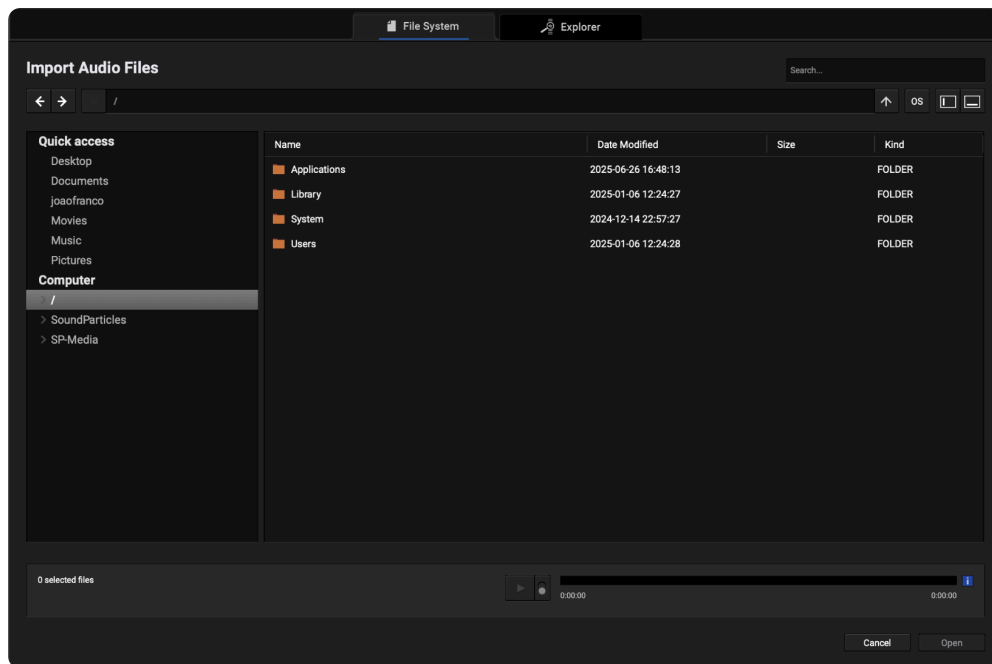
Detailed Import

a) **File System** - Shows the files on your machine.

b) **Explorer** - Opens Explorer (Sound Particles software) where the Local and Cloud files are displayed as well as the Audio Editor that allows to do changes on the audio before importing it to Sound Particles.

   NOTE: Access to Cloud files is available only if you have an Explorer subscription. 2. **Drag and Drop:** Audio Files can be added to an audio track by dragging it from your system and dropping it on a specific audio track. 3. **Record:** Record on an Audio Track.

AUDIO EDITING

Depending on where your mouse interacts with the audio clips on the timeline, it will trigger different actions.

1. **Trim:** Approaching the edge of an audio clip will trigger the trim tool. Trim refers to the ability to remove parts from the beginning or from the end of an audio clip.
2. **Select:** Clicking on a clip will select it.
3. **Move:** Clicking and dragging a clip allows to change its position on the timeline as well as the audio track this clip will play on.
4. **Split:** Selecting the Split tool allows to split a clip by clicking on it.
5. **Duplicate:** Creates a copy of the selected track.

6. **Fade:** Approaching the top corner of audio clips will trigger the fade tool, allowing to fade in/out the selected clip.

7. **Context Menu:** Right click on a clip to open the context menu.

   a) Cut - Removes a selected audio clip from its current location and temporarily stores it in a clipboard. It can then be pasted to a different location.

   b) Copy - Duplicates a selected audio clip and places the copy in the clipboard, leaving the original in its current location. It can then be pasted to a different location.

   c) Paste - Inserts the audio clip on a new location.

   d) Mute Track - Isolates the track, making it the only one that can be heard during playback. All other tracks are temporarily silenced, but the soloed track continues to play.

   e) Solo Track - Temporarily silences the track, preventing it from being heard during playback.

   f) Rename Clip - Allows to change the name of the clip.

   g) Interpret as - Allows to change the multichannel format of the clip, based on the number of channels.

   h) Merge Clips - If multiple clips are selected this action will transform them all into one clip only.

   i) Duplicate Track - Copy an existing track. This duplicated track retains the same content, settings, and effects as the original track but is placed as a new, independent track in the session.

   j) Move Up - Move the track up a slot.

   k) Move Down - Move the track down a slot.

   l) Delete Track - Remove the selected track from the project.

   m) Delete Clip - Remove the selected clip from the timeline.

   n) Split - Will do a split on the playhead position

   o) Arrow Tool - Switches to the Arrow tool allowing to do Trims, Selection, Moves, Splits, Duplicates and Fades

   p) Razor Tool - Switches to the Razor Tool

   q) Apply Track Preset - Transforms the selected track based on the selected preset. Audio files will be retained on the track.

   r) Save as Track Preset - Save the track configurations into a new user track preset.

   s) Edit Audio Clip - Open the selected clip on the [Audio Editor](#).

   t) Export Clip - Allows to export the selected audio clip with all the changes made.

   u) Automation Mode - Select the track automation mode.

   u.1. Off - Automation will not be written nor read.

   u.2. Read - plays back existing automation data. Any automation that has been previously recorded or written will be followed during playback. The system doesn't allow you to edit the automation in

this mode, but simply follows the automation data that has been stored.

u.3. Touch - automation is only written while the fader/parameter is being adjusted. As soon as you start moving a control (e.g., a volume fader or a plugin knob), the DAW will record that movement into the automation lane. When you release the control, it returns to the previously recorded automation data.

u.4. Latch - starts recording automation as soon as you begin adjusting a control, and it continues to write automation even after you stop moving the fader or knob, until you stop playback or deactivate the automation mode. The difference from Touch is that the automation will not return to the previously recorded value once you release the control—it "latches" onto the new value.

u.5. Write - overwrites all existing automation data as soon as you begin adjusting any control, and it will continue to overwrite the automation until you stop playback or switch modes. The new automation is written to the track, replacing any previous data.

CLIP
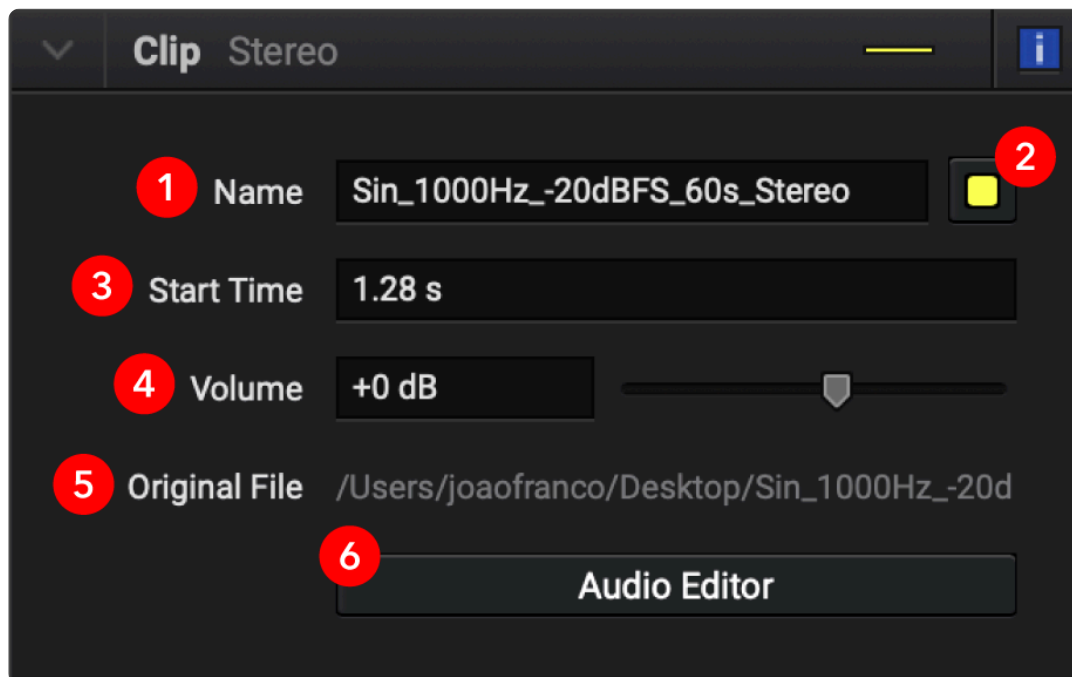
Clip

1. **Name:** Name of the clip.
2. **Color**: The color of the clip. Doesn't affect the color of the track.
3. **Start Time:** Position of the clip on the timeline.
4. **Volume:** Output gain of the clip.

5. **Original File:** Original File path.
6. **Audio Editor:** Open clip on the Audio Editor.

POSITION

1. **Position:** For Mono clips, define the position of the Mono clip on the 3D Space. This can also be obtained by moving the handler on the 3D views.
2. **Radius:** The distance that goes from the Center Point to the Sound Sources.
3. **Stereo Width:** For Stereo clips, defines the angle that separates the Left and Right channels.
4. **Center Position:** Define the origin of Stereo, Multichannel and Ambisonics clips. This can also be obtained by moving the handler on the 3D views.
5. **Rotation:** Rotate the Sound Sources around the Center Position (Yaw, Pitch, Roll).

MOVEMENT MODIFIERS

Movement Modifiers

You can learn more about it on the Movement Modifiers section.
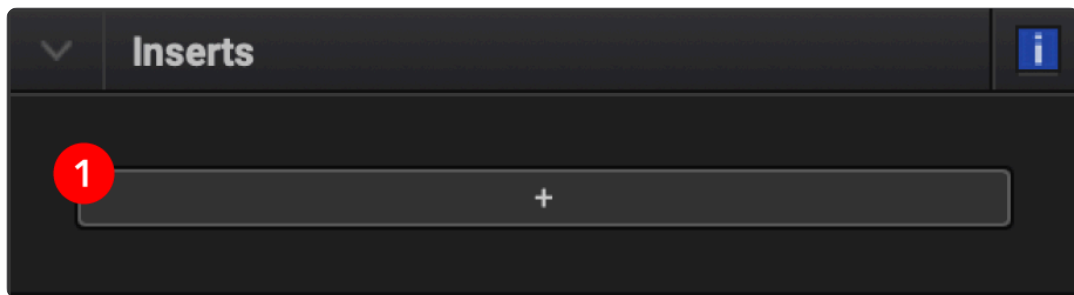
INSERTS

Inserts

1. **Insert:** Add a third party plugin.
    a) Sort by Company.
    b) Sort by FX.
    c) Sort by Architecture.
        c.1. Plugins that do not support audio formats on the track, appear as greyed out and are not possible to insert.

MIDI Tracks

A type of track that records and plays back MIDI data rather than audio. MIDI (Musical Instrument Digital Interface) data consists of digital instructions that control virtual or external instruments. Unlike audio tracks, MIDI tracks don't contain actual sound recordings but rather the data that triggers sound from synthesizers, virtual instruments, or MIDI hardware.

GENERAL

1. **Name:** Name of the MIDI track.
2. **Color (button):** The color of the particles (used only for visualization - doesn't affect the sound).
3. **MIDI Input:** Select the MIDI controller for this MIDI track.
4. **MIDI Output:** Select the MIDI output for this MIDI track.
5. **Channel:** Select the MIDI channel for this MIDI track.

VIRTUAL INSTRUMENT

1. **Instrument:** Select a virtual instrument for the respective MIDI Track.
    a) All Instruments.
    b) Sort by Company.
    c) Sort by Architecture.

   2. Insert: Add a third party plugin.

      a) Sort by Company.

      b) Sort by FX.

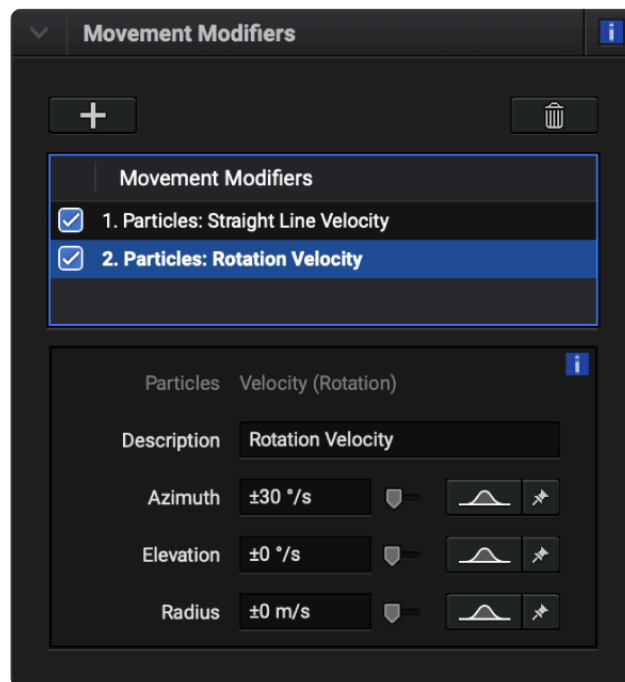   **c)** Sort by Architecture.

CLIP

1. **Name:** Name of the clip.
2. **Color**: The color of the clip. Doesn't affect the color of the track.
3. **Start Time:** Position of the clip on the timeline.

MIDI clips can also be created or imported by:

1. Double clicking on a MIDI track, creating an empty MIDI clip.
2. Record on a MIDI track.
3. Dragging a MIDI clip from your system and dropping it on a MIDI track.
4. File -> Import -> Import MIDI

Note: If the tempo and/or time signature is different from the project, importing a MIDI clip will trigger a pop-up message. **Cancel** will not import the MIDI clip. **Keep** will maintain the project tempo and time signature as it was. **Update** will update the tempo and time signature based on the MIDI clip.

POSITION

1. **Position:** For Mono clips, define the position of the Mono clip on the 3D Space. This can also be obtained by moving the handler on the 3D views.
2. **Radius:** The distance that goes from the Center Point to the Sound Sources.
3. **Stereo Width:** For Stereo clips, defines the angle that separates the Left and Right channels.
4. **Center Position:** Define the origin of Stereo and Multichannel clips. This can also be obtained by moving the handler on the 3D views.
5. **Rotation:** Rotate the Sound Sources around the Center Position (Yaw, Pitch, Roll).

MOVEMENT MODIFIERS
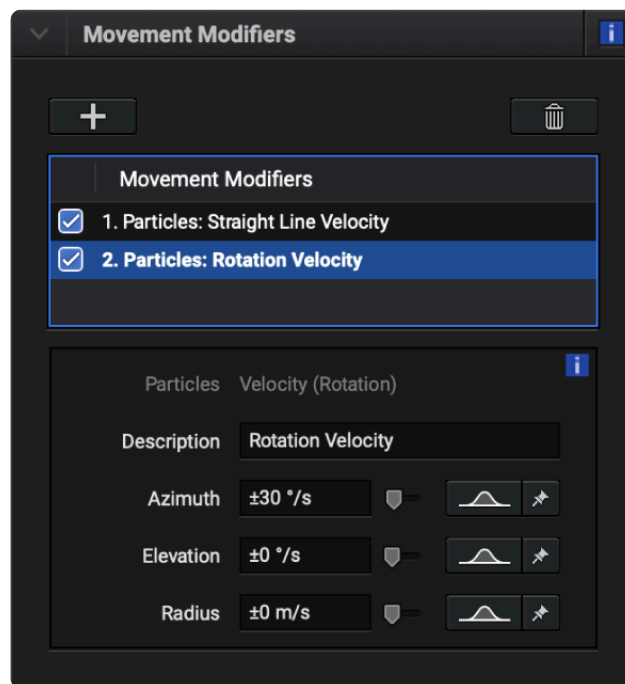
Movement Modifiers

You can learn more about it on the Movement Modifiers section.
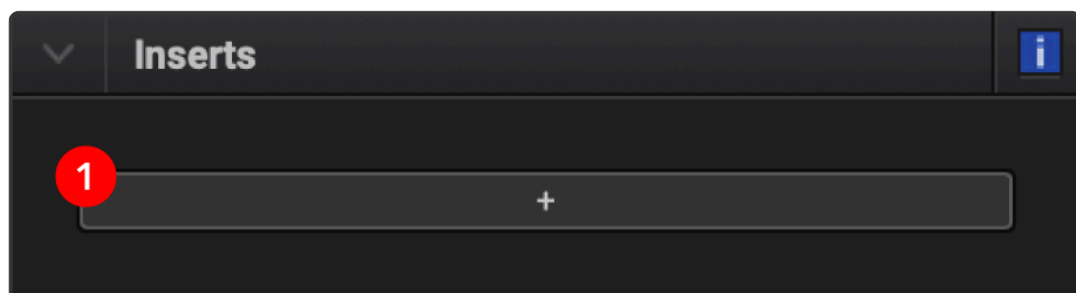
INSERTS

Inserts

1. **Insert:** Add a third party plugin.
   - **a)** Sort by Company
   - **b)** Sort by FX
   - **c)** Sort by Architecture

Microphones

The virtual microphones of Sound Particles allow you to capture the surrounding events surrounding them on the 3D scene. Various types of microphones are available.
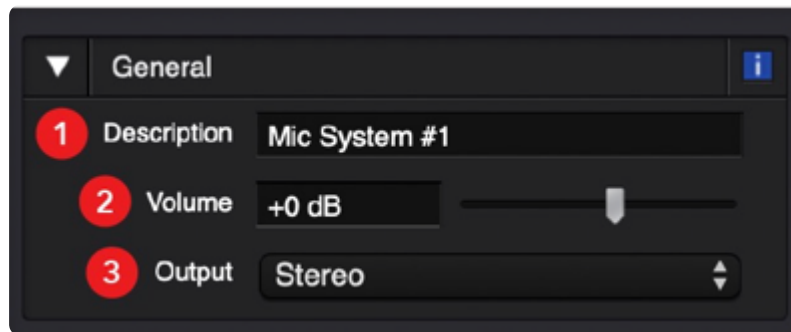
Microphone General Panel

1. **Description:** a short description of this microphone.

2. **Volume:** the volume of the render of the microphone.

   Note: the applied Volume change will affect the volume of the exported render file.

3. **Output:** the output type of the microphone.

   Possible values:

   a) **Mono:** for single microphones.
   b) **Stereo:** for stereo pairs and arrays.
   c) **Multichannel:** for complex multichannel setups (5.1, etc).
   d) **Ambisonics:** up to 6th order Ambisonics.
   e) **Binaural:** for a simulation of immersive experience on your headphones.

MICROPHONE OPTIONS

Mono
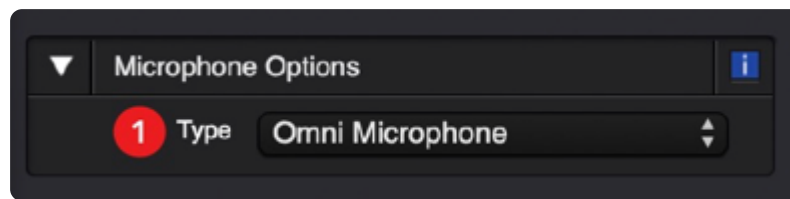
Microphone options for Mono

For a mono microphone, you can choose the type (1) of microphone:

- **Omnidirectional**
- **Figure-of-eight**
- **Cardioid**
- **Hypercardioid**

Stereo
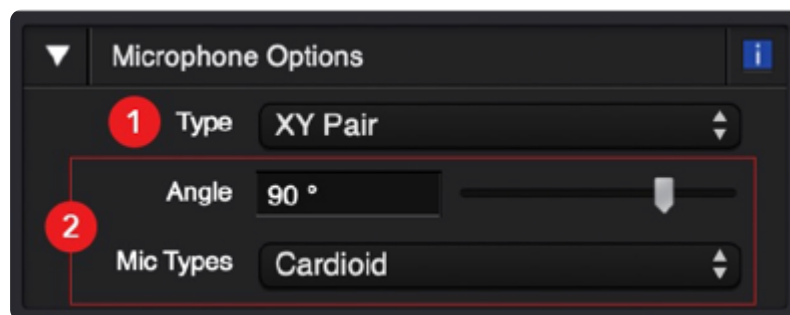
Microphone Options of a Stereo

For a stereo pair/array, several types (1) are available, each one with its own set of parameters (2):

- **Mid/Side pair**

  - *Mid/Side*

  - *Left/Right*

- **XY pair**

  - *Angle*
  - *Type*

- **Blumlein pair**

- **AB pair**

- o *Distance between microphones*
- o *Types*

- **ORTF pair**

  - o *Distance between microphones*
  - o *Angle*
  - o *Types*

- **Decca Tree**

  - o *Front distance* (distance between the front mic and the line of the side mics)
  - o *Width* (distance between left and right mic)
  - o *Angle* (between left/right mics)
  - o *Output format (left/right; center/left/right)*
  - o *Type*
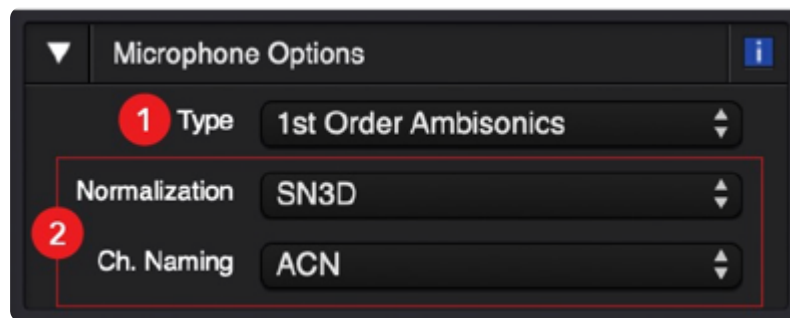
Ambisonics

Microphone options for Ambisonics

For an Ambisonics microphone, you may choose its type (1) and edit its parameters (2):

- **Soundfield Microphone (A format)**

  - o Type of microphone capsules
    - o Cardioid
    - o Hypercardioid
    - o Subcardioid
  - o *Distance*

- **1st order Ambisonics**

- **2nd order Ambisonics**

- **3rd order Ambisonics**

- **4th order Ambisonics**

- **5th order Ambisonics**

- **6th order Ambisonics**

> Note: For the regular Ambisonics, you can specificy: the normalization method (N3D, SN3D, maxN, FuMa) and the naming/order convention (ACN, FuMa, SID). For Ambisonics of 4th order or above, only ACN naming/ordering are available. The default values are SN3D normalization and ACN naming.

Multichannel
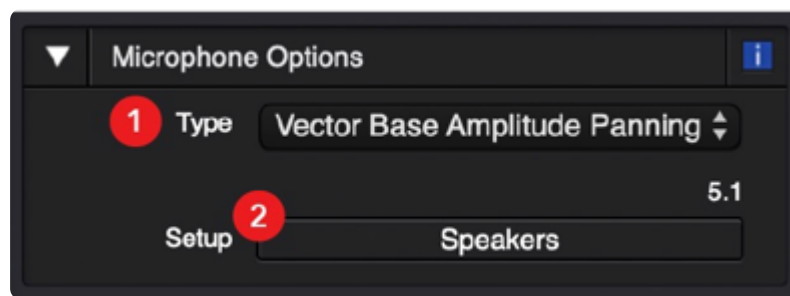
Microphone Options for Multichannel

For multichannel, the system uses "Vector Base Amplitude Panning (VBAP)", which is capable of complex setups.

> Note: The "Speakers" button (2) allows you to enter a speaker setup dialog, where you can choose one of the available speaker templates or create your own speaker setup.

Speaker Setup

On the Speaker Setup panel, you can use the default or create your own custom setup of speakers, allowing you to define the number of main speakers, LFE channels and their properties, such as position and angle of capture.
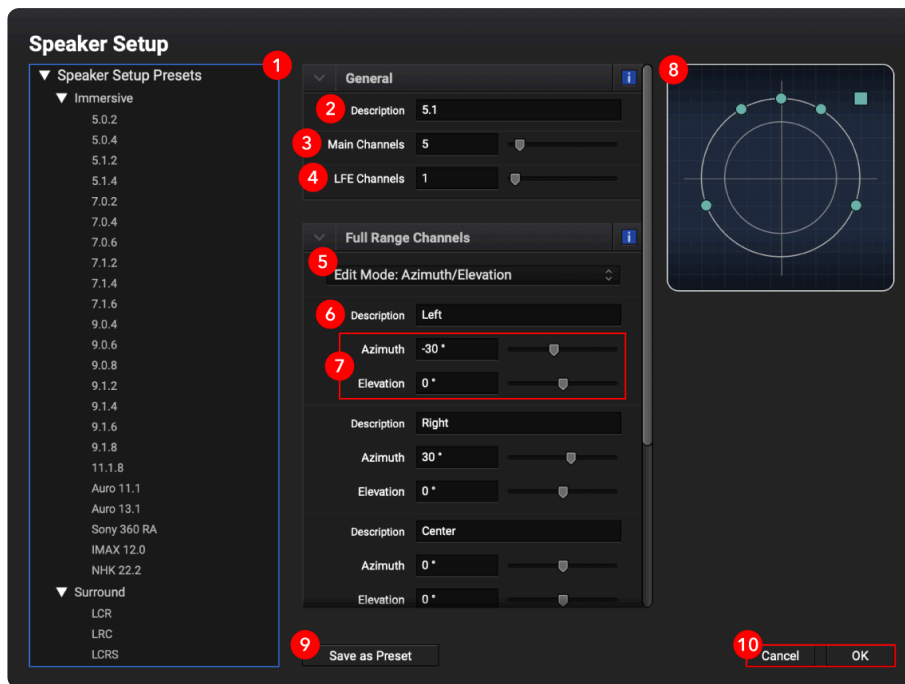
Multichannel Setup Panel

1. **Speaker Presets:** Here you can find both the default and the user created setups.

2. **Description:** A short description for this speaker setup.

3. **Main Channels:** The number of full range channels (number of outputs, excluding LFE/Sub-woofers).

4. **LFE Channels:** The number of LFE/Sub-woofer Channels.

5. **Edit Mode:** You may edit speakers using 3 possible modes:

   a) Azimuth
   b) Azimuth/Elevation
   c) XYZ

6. **[Speaker] Description:** A short description for the speaker.

   Note: Positive values to the left and negative values to the right.

7. **Azimuth/Elevation/XYZ:** In this area, you can edit the different parameters referred on step 5:

> **a)** Azimuth - The azimuth of the speaker, i.e., the angle between the speaker and the front position, considering the horizontal plane (positive values to the left and negative values to the right.).
>
> **b)** Elevation - The elevation of the speaker, i.e., the angle between the speaker and the horizontal plane (positive values above; negative values below).
>
> **c)** XYZ - The XYZ coordinates of the speaker, considering a central position at (0,0,0).

8. **Speakers Display:** Provides a visual representation of the output signal sent to the speakers.

9. **Save Preset:** Store the current settings so they can be quickly recalled later.

10. **Cancel/OK:** Discard or apply the changes confirming the action.

MICROPHONE POSITION

The location and direction of the virtual microphone:
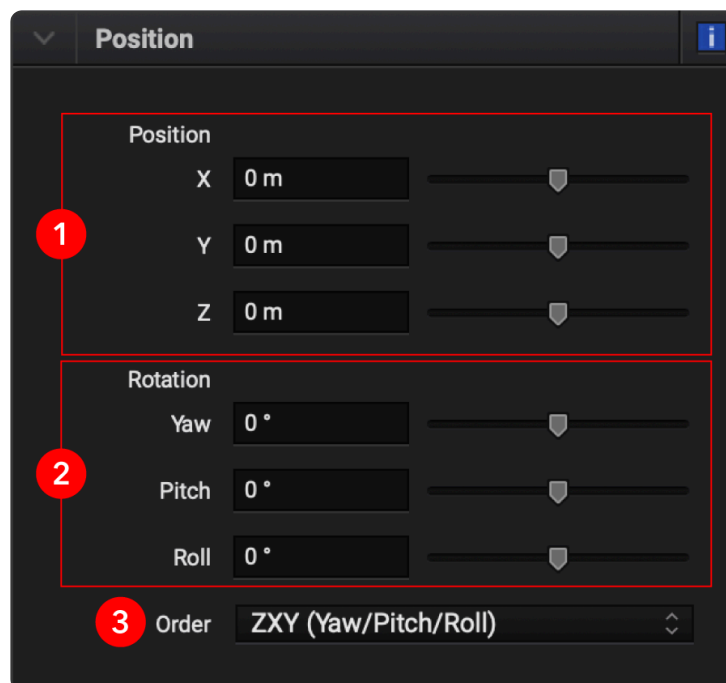
Microphone Position Panel

1. **X (Azimuth), Y (Elevation), Z (Distance):** location of the microphone.

2. **Rotation:** Change the direction of the microphone:

> **a) Yaw** - rotation over the z axis (left/right).
>
> **b) Pitch** - rotation over the x axis (up/down).

66

          c) Roll - rotation over the y axis (spin in its own axis).

3. **Order:** Change the rotation order of your microphone between:

        a) XYZ (Pitch/Yaw/Roll)

        b) YZX (Yaw/Roll/Pitch)

        c) ZXY (Roll/Pitch/Yaw)

        d) XZY (Pitch/Roll/Yaw)

        e) YXZ (Yaw/Pitch/Roll)

        f) ZYX (Roll/Yaw/Pitch)

INSERTS
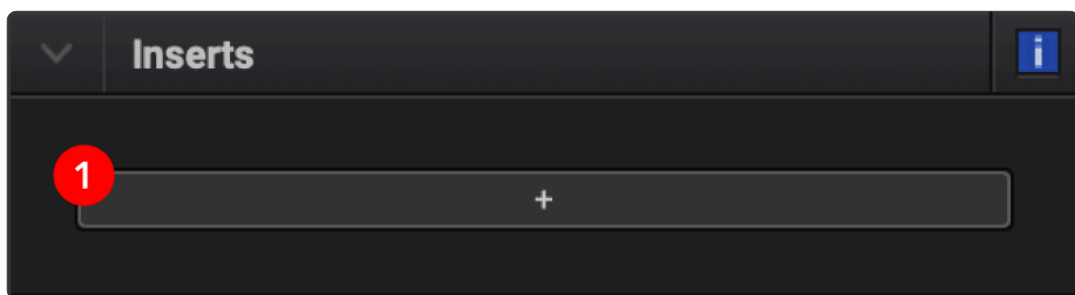
Inserts

1. **Insert:** Add a third party plugin.

        a) Sort by Company

        b) Sort by FX

        c) Sort by Architecture

STEMS

This feature allows you to create stems, indicating if the microphone should capture every particle group or only some groups (using other microphones to capture the remaining groups/sources).
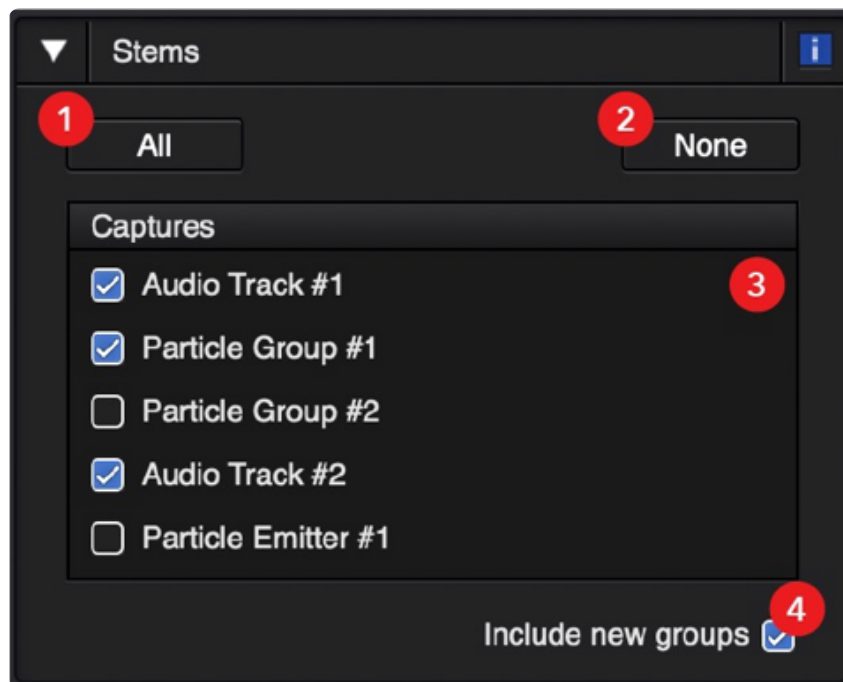
Stems Panel

1. **All:** Press this button to activate all groups (capturing the sound of everything).

2. **None:** Press this button to deactivate all groups (the microphone will not capture any groups/sources).

> TIP: This button acts as a quick shortcut to disable all groups before you activate the few desired groups.

> Note: Having a microphone with all groups disabled will be useless, since it will not capture anything. Pressing this button will also deactivate the "Include new groups" checkbox.

3. **Groups:** a list of all existing particle groups is presented, allowing you to enable/disable the groups that you want to capture with the current microphone.

4. **Include new groups:** this checkbox gives information about the desired behavior if a new group is added latter on (should it be also captured by the microphone or not?).

Movement Modifiers

Movement can be obtained by adding movement modifiers or by using automation with the **Starting** settings ("Starting" panel).
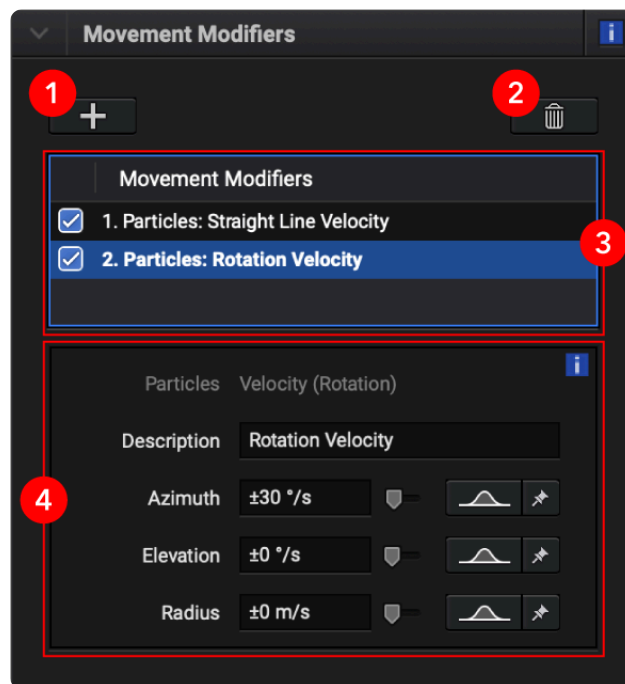
Movement Modifiers Tagged

1. **+:** Add a new movement modifier.

> Note: You may add as many movement modifiers as you want, including several modifiers of the same type.

2. **Trash:** Remove the movement modifier.

> Note: This button is only visible when a movement modifier is selected on the list.

3. **List:** A list with all movement modifiers currently applied to the particles.

> TIP 1: Select one of the modifiers to see/edit its information. You can **enable** or **disable** the modifiers to try different combinations or to easily disable a modifier from being applied to the respective object.

> Note: Each line has the following syntax: "(Particles/Emitter): (Movement Description)". The "Particles" word indicates that the movement is applied to the particles. If using a particle emitter, the "Emitter" word can also be used, to distinguish if the movement is applied to the particles or to the emitter. By enabling or disabling modifiers, you will have to re-render the scene's microphone(s).

4. **Edit Panel:** Where you can see and edit all parameters of a movement modifier.

> Note: This panel is only visible when a movement modifier is selected on the list.

I. Movement Modifier - Velocity (Straight Line)

This will apply movement to the particles, making them to move on a straight line.
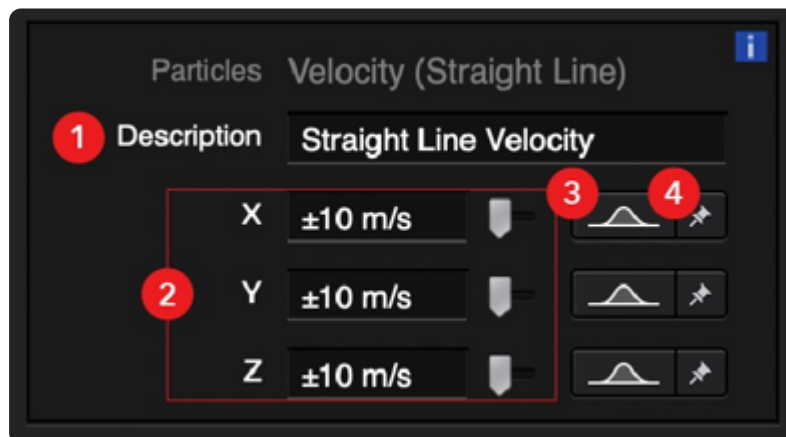
Velocity (Straight Line) Modifier Panel

1. **Description:** a brief description to identify this group.

2. **X/Y/Z:** The velocity within each axis (x, y or z). The x axis corresponds to the left-right direction, the y axis corresponds to the front-back direction, and the z axis corresponds to the up-down direction.

3. **Random Settings Button:** This button allows you to change the random settings of the modifier. By default, the movement modifier will randomly create a velocity value for each particle, with a uniform distribution. You may use these settings to control different velocity distributions.

   Note: A purple border on this button indicates that a custom random setting was chosen by the user.

4. **Pin Button:** This button allows you to force this value to all particles. Instead of generating random velocities to each particle (within the range you have specified), this will force the same velocity to all particles.

Example 1: Moving all particles to the left at 1m/s: x=1m/s (pin), y=0, z=0.

Example 2: Moving either to left or right, but each particle with a different velocity (maximum velocity of 1m/s): x=1m/s, y=0, z=0.

Example 3: Moving to any direction, with each particle with a different velocity (maximum velocity of 1 m/s): x=1m/s, y=1m/s, z=1m/s, "range from [-v, v]".

II. Movement Modifier - Acceleration (Straight Line)

This will apply a straight-line movement to the particles, but instead of a constant velocity, acceleration will gradually add velocity to the particles.
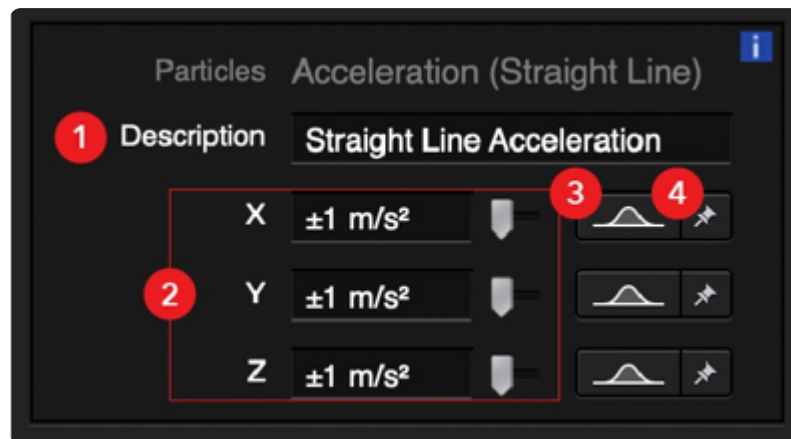
Acceleration (Straight Line) Modifier Panel

1. **Description:** A short description for this movement.

2. **X/Y/Z:** The velocity within each axis (x, y or z). The X axis represents left-right direction, the Y axis represents front-back direction, and the Z axis represents up-down direction.

3. **Random Settings Button:** This button allows you to change the random settings of the modifier. By default, the movement modifier will randomly create a velocity value for each particle, with a uniform distribution. You may use these settings to control different velocity distributions.

> Note: A purple border on this button indicates that a custom random setting was chosen by the user.

4. **Pin Button:** This button allows you to force this value to all particles. Instead of generating random velocities to each particle (within the range you have specified), this will force the same velocity to all particles.

III. Movement Modifier - Velocity (Rotation)

This will apply a rotation movement to the particles, making them to move on circles around the origin (0, 0, 0).
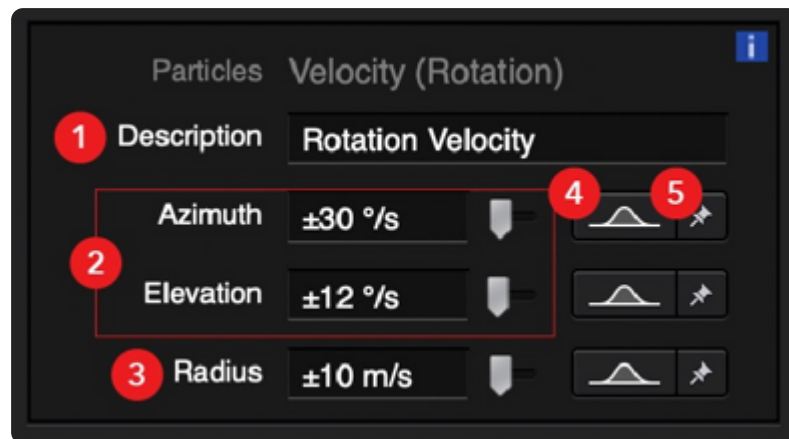
Velocity (Rotation) Modifier Panel

1. **Description:** A short description for this movement.

2. **Azimuth/Elevation:** The velocity of rotation – azimuth velocity to control the rotation at the horizontal plane, the elevation velocity to control the vertical movement.

3. **Radius:** The velocity measured as the distance from the origin.

> TIP: If you want the particles to maintain the same distance to the origin (circle movement), enter 0. If you want particles to move in circles moving away (increasing the radius of their circle), enter a positive value. To approximate, enter a negative value.

4. **Random Settings Button:** This button allows you to change the random settings of the modifier. By default, the movement modifier will randomly create a velocity value for each particle, with a uniform distribution. You may use these settings to control different velocity distributions.

   Note: A purple border on this button indicates that a custom random setting was chosen by the user.

5. **Pin Button:** This button allows you to force this value to all particles. Instead of generating random velocities to each particle (within the range you have specified), this will force the same velocity to all particles.

> Example 1: Moving in circles, all with the same direction and the same velocity: az.=60°/s (pin), el.=0, rad.=0.

> Example 2: Moving in circles, different directions and velocities: az.=60°/s, el.=0, rad.=0.

IV. Movement Modifier - Acceleration (Rotation)

This applies rotational movement to the particles, causing them to move in circles around the origin (0, 0, 0). Rather than moving at a constant velocity, acceleration gradually increases their speed.
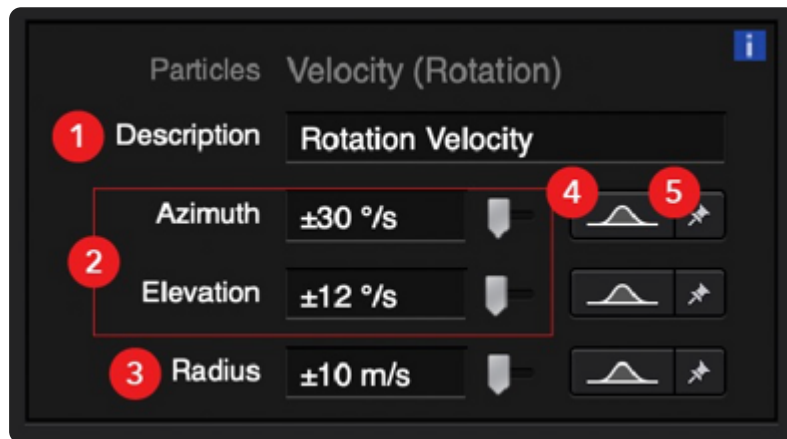
Acceleration (Rotation) Modifier Panel

1. **Description:** A short description for this movement.

2. **Azimuth/Elevation:** This will apply a rotation movement to the particles, making them to move on circles around the origin (0, 0, 0). Instead of a constant velocity, acceleration will gradually add velocity to the particles.

3. **Radius:** The velocity measured as the distance from the origin.

> TIP: If you want the particles to maintain the same distance to the origin (circle movement), enter 0. If you want the particles to move away enter a positive value and to approximate, enter a negative value.

4. **Random Settings Button:** This button allows you to change the random settings of the modifier. By default, the movement modifier will randomly create a velocity value for each particle, with a uniform distribution. You may use these settings to control different velocity distributions.

> Note: A purple border on this button indicates that a custom random setting was chosen by the user.

5. **Pin Button:** This button allows you to force this value to all particles. Instead of generating random velocities to each particle (within the range you have specified), this will force the same velocity to all particles.

Audio Modifiers

To add some audio diversity, you can apply audio modifiers that make each particle sound slightly different from the others. (e.g. random frequency response, random gains, etc.).
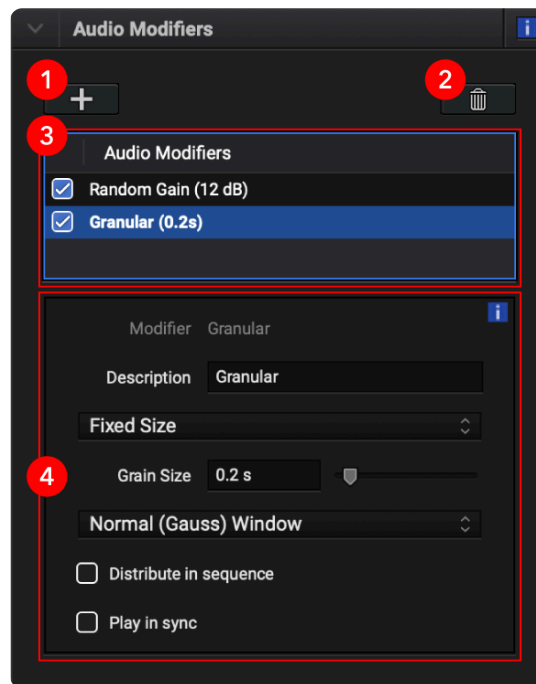
Audio Modifiers Tagged

1. **+:** Add a new audio modifier.

2. **Trash:** Remove the audio modifier.

> Note: This button is only visible when an audio modifier is selected on the list.

3. **List:** A list with all audio modifiers currently applied to the particles.

TIP: Select one of the modifiers to see/edit its information. You can **enable** or **disable** the modifiers to try different combinations or to easily disable a modifier from being applied to the respective object.

Note: By enabling or disabling modifiers, you will have to re-render the scene's microphone(s).

4. **Edit Panel:** Where you can see and edit all parameters of an audio modifier.

Note: This panel is only visible when an audio modifier is selected on the list.

I. Audio Modifier - Random Gain

This audio modifier will apply a random gain to each particle.

Note: Without this audio modifier, all particles emit their sound with the same intensity ("volume").

TIP: By adding this modifier, you get more diversity related with sound intensity.
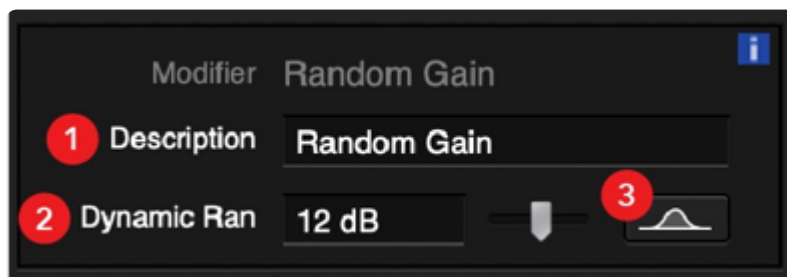
Random Gain Modifier Panel

1. **Description:** A short description for this audio modifier.

2. **Dynamic Range:** The dynamic range of the random gains.

> TIP: For instance, by specifying a dynamic range of 20 dB, each particle will receive a random gain that ranges from -20 to 0 dB of attenuation. This value is represented between parentheses on the "Audio Modifiers" list.

3. **Random Settings Button:** This button allows you to change the random settings of the modifier.

> TIP: By default, each particle will have a random gain with an uniform distribution. You may use these settings to control different distributions (for instance, if you want most particles to have mid-range values).

> Note: A purple border on this button indicates that a custom random setting was chosen by the user.

II. Audio Modifier - Random Delay

This audio modifier will apply a random filter to each particle.

> Note: Without this audio modifier, all particles start to play their sound at the same time.

> TIP: By adding this modifier, each particle will have an initial random delay.

Random Delay Modifier Panel

1. **Description:** A short description for this audio modifier.

2. **Max. Delay:** The maximum delay time.

> TIP: For instance, by specifying a maximum delay of 2 seconds, each particle will have a random delay that ranges from 0 to 2 seconds.

3. **Random Settings Button:** This button allows you to change the random settings of the modifier.

> TIP: By default, each particle will have a random delay with a uniform distribution. You may use these settings to control different distributions (for instance, if you want most particles to have mid-range values).

> Note: A purple border on this button indicates that a custom random setting was chosen by the user.

III. Audio Modifier - EQ - Random EQ

This audio modifier will apply a random EQ to each particle, which result in a random frequency response.
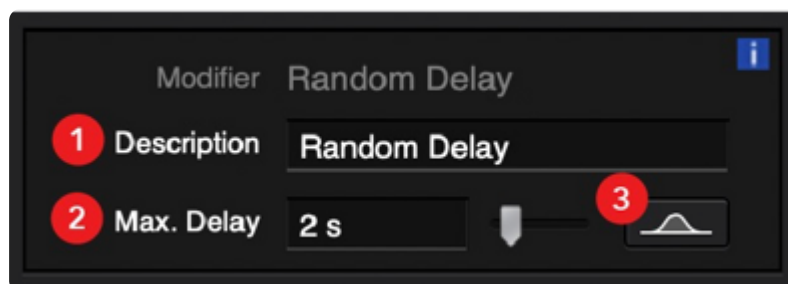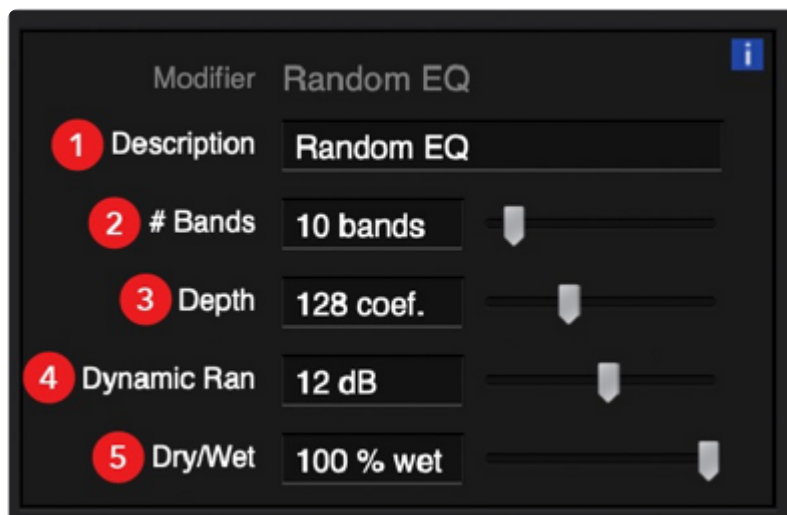

Random EQ Modifier Panel

1.
  Description: A short description for this audio modifier.

2. **# of Bands:** The number of bands.

> TIP: For instance, if you specify 10 bands, the original audio stream will be split in 10 frequency bands, with each particle reproducing one of the available bands.

3. **Depth:** The depth of the filter.

> Note: Since the system uses a FIR filter, this value corresponds to the number of coefficients of the filter. A higher number creates more complex filters with higher separation between bands, but will increase the complexity of the render process.

> TIP: Low complexity filters will have around 20 coefficients, medium complexity filters will have around 100 coefficients, and high complex filters will have around 500 coefficients.

4. **Dynamic Range:** The maximum variation in each EQ band.

5. **Dry/Wet:** The impact of the defined random band.

> TIP: The higher its value, the more impact it has, and vice-versa.

IV. Audio Modifier - EQ - Random Filters

This audio modifier will apply a random filter to each particle, which result in a random frequency response.

Random Filters (EQ) Modifier Panel

1. **Description:** A short description for this audio modifier.

2. **Depth:** The depth of the filter.

> Note: Since the system uses a FIR filter, this value concerns the number of coefficients of the filter. A higher number creates more complex filters with higher impact and higher slopes, but will increase the complexity of the render process.

> TIP: Low complexity filters will have around 20 coefficients, medium complexity filters will have around 100 coefficients, high complex filters will have around 500 coefficients.

3. **Dry/Wet:** The impact of the defined random filter.

> TIP: If you choose "100%", it will play the filtered audio in its entirety, and "0%" will cancel the filter and will only play the original sample. In-between values will render a mix result between the filtered and the original audio sample.

V. Audio Modifier - EQ - Random Bands

This audio modifier will apply a random filter to each particle, which result in a random frequency response.
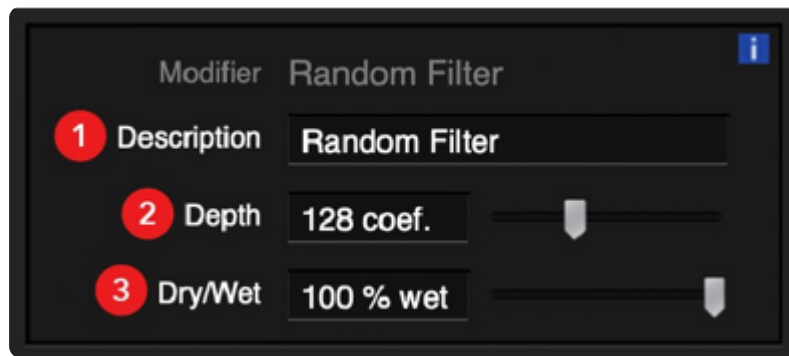
Random Bands (EQ) Modifier Panel

1. **Description:** A short description for this audio modifier.

2. **# of Bands:** The number of bands.

> TIP: For instance, if you specify 10 bands, the original audio stream will be split in 10 frequency bands, with each particle reproducing one of the available bands.

3. **Depth:** The depth of the filter.

> Note: Since the system uses a FIR (Finite Impulse Response) filter, this value concerns the number of coefficients of the filter. A higher number creates more complex filters with higher separation between bands, but will increase the complexity of the render process.

> TIP: Low complexity filters will have around 20 coefficients, medium complexity filters will have around 100 coefficients, and high complex filters will have around 500 coefficients.
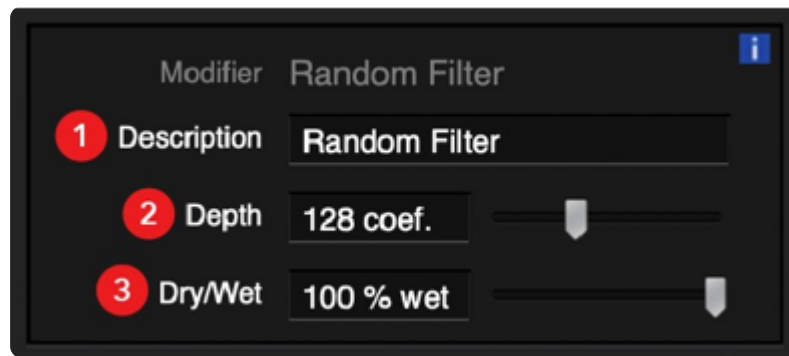
4. **Dry/Wet:** The impact of the defined random band.

> TIP: If you choose "100%", it will play the filtered audio in its entirety, and "0%" will cancel the filter and will only play the original sample. In-between values will render a mix result between the filtered and the original audio sample.

5. **Distribute in Sequence:** To obtain a better distribution, this feature will distribute the available bands in sequence.

> Note: If checked (blue light), the system will distribute bands in sequence – the first particle will get the first band, the second particle will get the second band, and so on. If unchecked (black), each particle will get a random band, which could result in some bands being reproduced by much more particles than others.

VI. Audio Modifier - Granular Synthesis

This audio modifier allows you to use granular synthesis. Each particle will only reproduce a small fragment (grain) of the audio file, instead of the entire audio file.
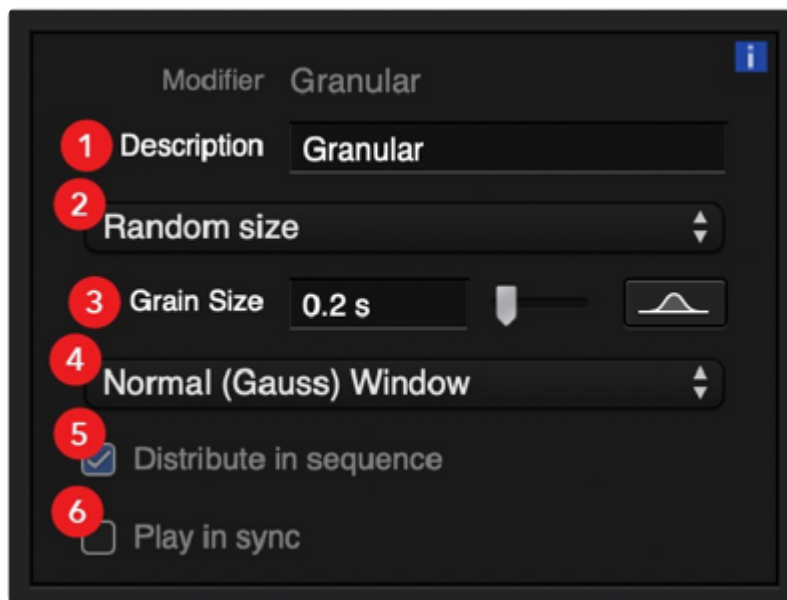
Granular Synthesis Modifier Panel

1. **Description:** A short description for this audio modifier.

2. **Size:** This pop-up button allows you to choose from:

   a) "Fixed size" - all particles will have the same grain duration.
   b) "Random size"- each particle will have a random duration.

3. **Grain Size:** The duration of each grain.

Note: If a "Random size" is selected, this value represents the maximum grain size. By default, each particle will have a random grain with a uniform distribution. You may use these settings to control different distributions (for instance, if you want most particles to have mid-range values). A purple border on this button indicates that a custom random setting was chosen by the user.

4. **Window:** Several windows are supported, to smooth the attack and the release part of each grain:

   a) Rectangle window (instant attack/release)
   b) Normal (Gauss) window
   c) Hann window
   d) Triangle window
   e) Tukey window

5. **Distribute in Sequence:** Instead of random grains, the "Distribute in Sequence" feature will start to distribute the available grains in sequence.

Note: If checked (blue light), the system will distribute grains in sequence – the first particle will get the first grain, the second particle will get the second grain, and so on. If unchecked (black), each particle will get a random grain.

6. **Play in sync:** This feature will add an additional delay to each particle, equal to the start time of its grain. This creates a jumping effect, almost like an audio stream that is jumping from particle to particle.

VII. Audio Modifier - Random Time/Pitch

This audio modifier will change the speed of the audio stream, changing both time and pitch (varispeed).

Random Time/Pitch Modifier Panel

1. **Description:** A short description for this audio modifier.

2. **Time:** The interval of the possible time changes to the audio sample

> Note: This parameter is affected by the Pitch parameter below.

> TIP: A value higher than 100% will **speed up** audio and **increase pitch**. A value lower than 100% will **slow down** audio and **decrease pitch**.

3. **Pitch:** The range of the pitch variation.

> Note: By changing this parameter, the speed parameter will also change accordingly.

> TIP: This range is, by default, symmetric, meaning that, e.g., "12 semitones" means that the pitch will range between -12 and +12 decibels.

4. **Random Settings Button:** This button allows you to change the random settings of the modifier.

Note: By default, each particle will have a random time/pitch value with a uniform distribution. A purple border on this button indicates that a custom random setting was chosen by the user.

TIP: You may use these settings to control different distributions (for instance, if you want most particles to have mid-range values).

Preferences

On "Preferences", you can find mainly Graphical User Interface (GUI) and User Experience (UX) related settings, including units of measurement, views and particles sizes, window colo, resizing memory, and more. Preferences for your render processes are also available.

Render

Preferences regarding the render process.

> Note: This will be the first window you will see when you open "Preferences" for the first time. Common items that appear throughout the preferences will be referenced later.
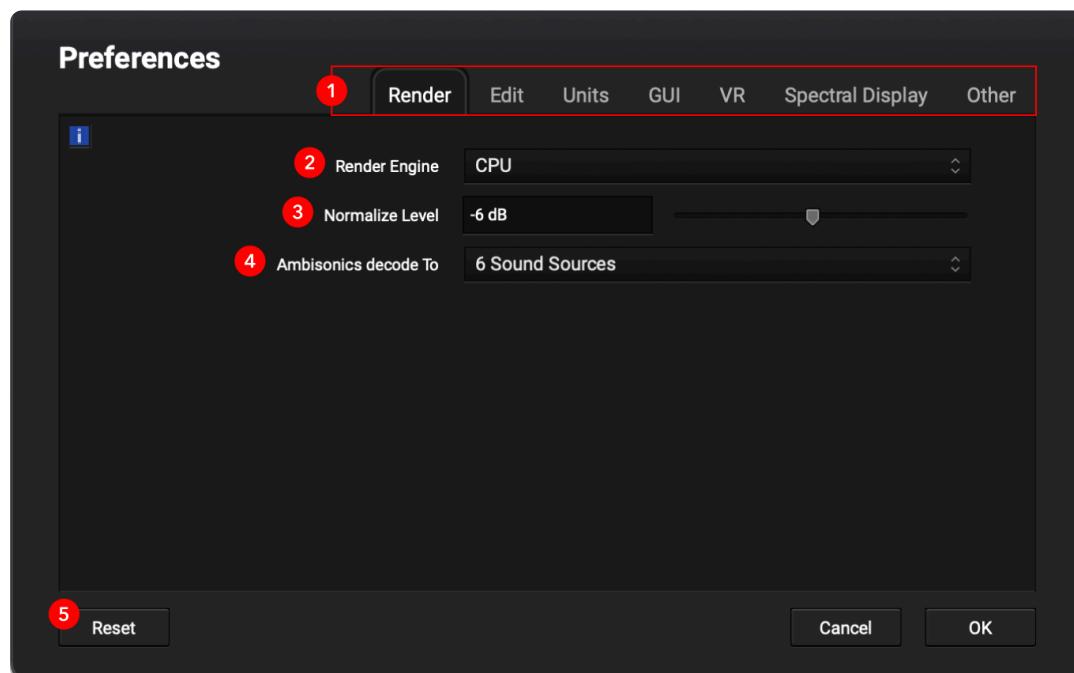
Render Preferences

1. **Navigation Panel:** Navigate through the different "Preferences" categories.

2. **Rendering Engine:** Currently, only the CPU can be used for rendering audio. In the future, other devices could be added (GPU, DSP, etc.).

3. **Normalize Level:** Sound Particles requires a very high dynamic range, since it could be used for capturing the sound of a near explosion or a faraway whisper. As such, a normalization process is implemented on the end of the render process.

> Note: This value defines the maximum peak value of the final result.

4. **Ambisonics decode To**: Defines how many sound sources will be created to decode Ambisonics audio files (6, 18, 66, 162 or 642).

5. **Reset:** resets ALL the preferences, including the ones not visible on the current panel.

Edit

1. **Default Fade Curve:** Define the default fade in/out curve (Linear, S-Curve (sin), Logarithmic (A), Logarithmic (B), Logarithmic (C), Exponential (A), Exponential (B), Exponential (C), Sin, Fader).

Units

You may select your preferred units of measurement, which will be used consistently to display all values.

> TIP: Nevertheless, all other units are still valid when entering values, as long you specify the unit itself (e.g. "2 km"; "10ft").

Units Settings

1. **Time:** Unit used to specify time. The available units are:

   a) Second (s)

   b) Millisecond (ms)

   > Note: The default value is "Second".

2. **Length:** Unit used to specify length (distances, positions, etc.). The available units are:

   a) Meter (m)
   b) Millimeter (mm)
   c) Kilometer (km)
   d) Inch (in)
   e) Foot (ft)
   f) Yard (yd)
   g) Mile (mi)

   > Note: The default value is "Meter".

3. **Angle:** Unit used to specify angles. The available units are:

   a) Degree (°)
   b) Radian (rad)
   c) Pi radian (π rad)
   d) Rotation (rot) *

*One rotation equals to 360°, i.e., a full turn.

> Note: The default value is "Degree".

4. **Velocity:** Unit used to specify velocity. The available units are:

   a) Meter/second (m/s)
   b) Kilometer/hour (km/h)
   c) Inch/second (in/s)
   d) Foot/second (ft/s)
   e) Yard/second (yd/s)
   f) Mile/Hour (mi/h)

> Note: The default value is "Meter/Second".

5. **Angular Velocity:** Unit used to specify angular velocity. The available units are:

   a) Degree/second (°/s)
   b) Degree/hour (°/h)
   c) Radian/second (rad/s)
   d) Radian/hour (rad/h)
   e) Pi radian/second (π rad/s)
   f) Pi radian/hour (π rad/h)
   g) Hertz (Hz) *
   h) Rotation/second (rot/s) *
   i) Rotation/minute (rpm)

*Both "Hertz" and "Rotation/second" correspond to the same numeric values. The difference it's only a matter of unit.

> Note: The default value is "Degree/Second".

6. **Acceleration:** Unit used to specify acceleration. The available units are:

   a) Meter/second^2 (m/s^2)
   b) G (G)
   c) Foot/second^2 (ft/s^2)

Note: The default value is "Meter/Second2".

7. **Angular Acceleration:** Unit used to specify angular acceleration. The available units are:

     a) Degree/second^2 (°/s^2)
     b) Radian/second^2 (rad/s^2)
     c) Pi radian/second^2 (π rad/s^2)

Note: The default value is "Degree/second^2".

GUI

Here, you can modify your preferences regarding the Graphical User Interface (GUI).

Note: None of these settings have impact on the audio.
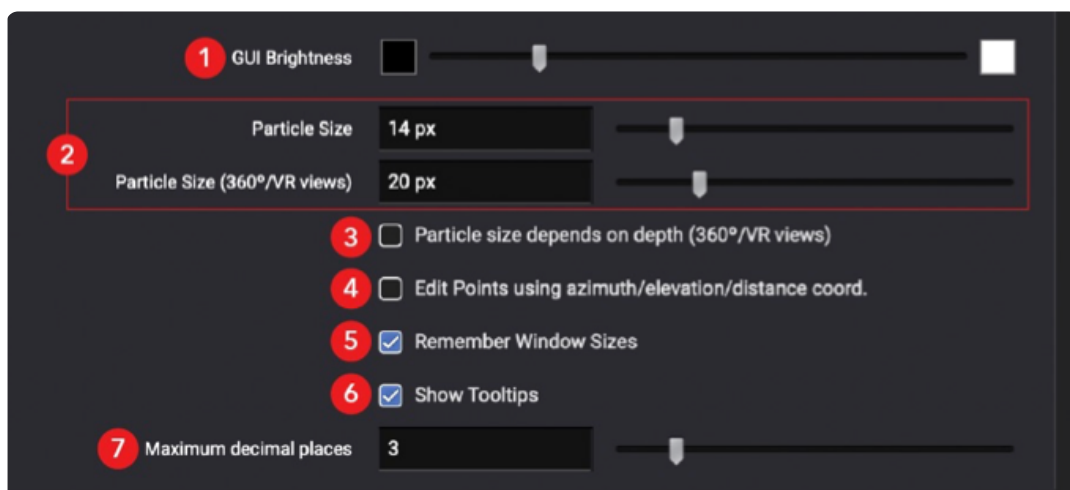
GUI

1. **GUI Brightness:** You can use this slider to control the brightness of the Graphical User Interface, making it darker or lighter.

2. **3D View - Particle Size:** The size, in pixels, of each particle within the 3D views.

TIP: You can specify a different value for the 360º/VR views.

Note 1: Greatly increasing the size of particles may affect their shape depending on the machine specifications and operating system.

Note 2: The default value is 1px; 2px for 360ª/VR.

3. **3D View - Particle size depends on depth:** In the 360º/VR views, enable this option to adjust particle size based on depth for a more accurate spatial representation.

TIP: When enabled, the visual size of each particle will depend on the distance to the origin (depth) - closer particles will be bigger, and distant particles will be smaller.

Note: The default value is disabled.

4. **Edit Points using azimuth/elevation/distance coord:** By default, you specify points using a XYZ coordinate system (left/right, front/back, top/down). By activating this checkbox, you use spherical coordinates instead: Azimuth, Elevation and Distance.

TIP: Azimuth represents the angle on the horizontal plane; Elevation represents the angle on the vertical plane; Distance represents the distance between the point and the origin (0,0,0).

Note: The default value is disabled.

5. **Remember Window Sizes:** By enabling the "Remember Window Sizes", each time you resize a window, Sound Particles will remember the new window size and apply it when you create new projects, allowing the windows of the new projects to use a similar size.

> Note: The default value is enabled.

6. **Show Tooltips:** When enabled, tooltips will appear shortly after you hover your mouse over certain visual elements (buttons, text fields, checkboxes, etc.), providing a brief description of their functions.

> Note: The default value is enabled.

7. **Maximum decimal places:** Allows you to select how many decimal places are to be visible on decimal numbers.

> Note: this will not affect the precision of inputted values with more decimal places than the ones defined on this parameter, only rounding them up to the corresponding maximum visible decimal places.

Spectral Display

1. **Window Type:** Window type used to compute spectrum waveforms (Rect, Normal, Hann, Triangle or Tukey).

2. **Window Size:** Window Size used to compute spectrum waveforms (64, 128, 256, 512, 1024, 2048, 4096, 8192 or 16384).

3. **Dynamic Range:** Range of values used to represent the spectrum waveforms.

Other

1. **Show Control Room on Mixer:** Toggle Control Room visibility on Mixer.
2. **Metronome Gain:** Define the metronome gain.
3. **Recording Pre-Roll:** Toggle Recording Pre-Roll. Pre-Roll will make the metronome start playing 2 bars before the recording starts.

Hardware

Input/Output Manager is a tool or interface that handles the routing and management of audio input and output devices, such as microphones, audio interfaces, or speakers. It allows you to configure which physical or virtual devices are used for recording (inputs) and playback (outputs).

1. **Device Name:** Input Device Name . Output Device Name . Sample Rate
2. **Preset:** A saved configuration for the I/O Manager.
   a) Last Configuration - Reverts the state of the I/O Manager to the last configuration.
   b) Create new preset - Save the preset configuration.
   c) Remove current preset - Remove the current preset configuration.
   d) Import configuration - Import a configuration from your system.
   e) Export configuration - Export the configuration to your system.
3. **Save:** Save the preset configuration.

Audio Hardware

This panel maps the output of the virtual microphone with the outputs of your audio interface.
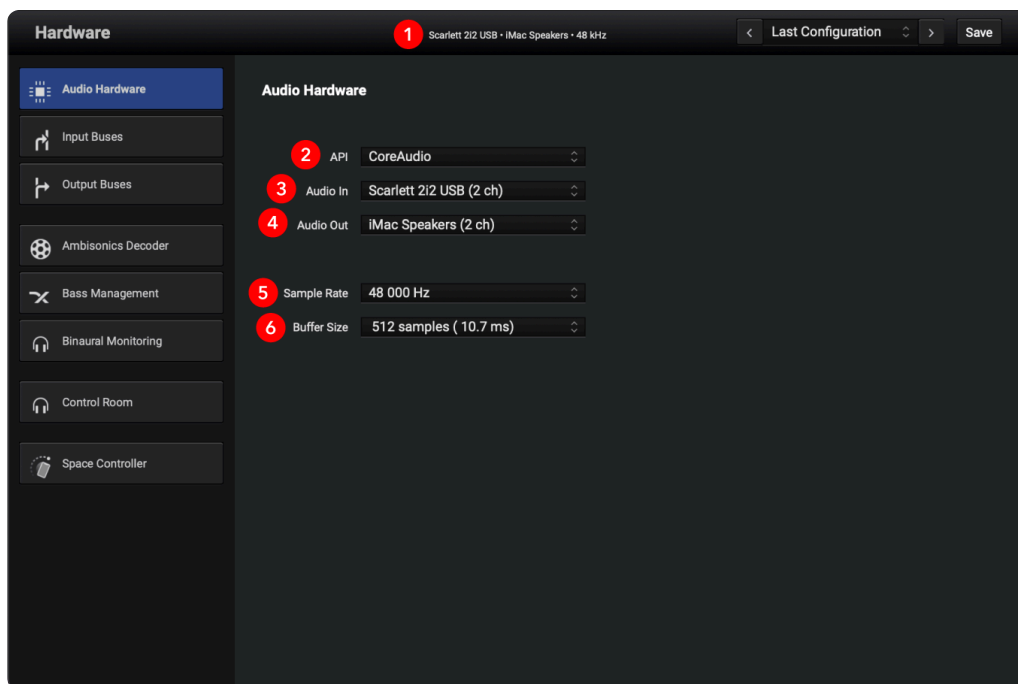
Audio Hardware Panel

1. **Device name:** This small label reminds you what is the current selected audio device.

> TIP: You may choose a different audio interface on the "**I/O**" menu.

2. **API:** a list of the available audio APIs/engines of your computer.

3. **Audio In:** Select the Input Device.

> TIP: You can choose the interface that you want to use with your projects.

> Note: If you have an Avid interface, make sure Pro Tools is closed before launching Sound Particles.

4. **Audio Out:** Select the Output Device.

TIP: You can choose the interface that you want to use with your projects.

Note: If you have an Avid interface, make sure Pro Tools is closed before launching Sound Particles.

5. Sample Rate: Select the Sample Rate.

Note: The audio interface may use a sample rate that is different from the sample rate of your project. If that is the case, Sound Particles will automatically resample the output audio streams before sending them to the outputs.

6. Buffer Size: Select the Buffer Size.

Note: The higher the block size, the lower the risk of getting audio glitches or similar issues. The only downside is that higher block sizes will had a higher latency, shown in milliseconds (but which is not an issue with Sound Particles, since it doesn't not process input hardware audio).

Input Buses
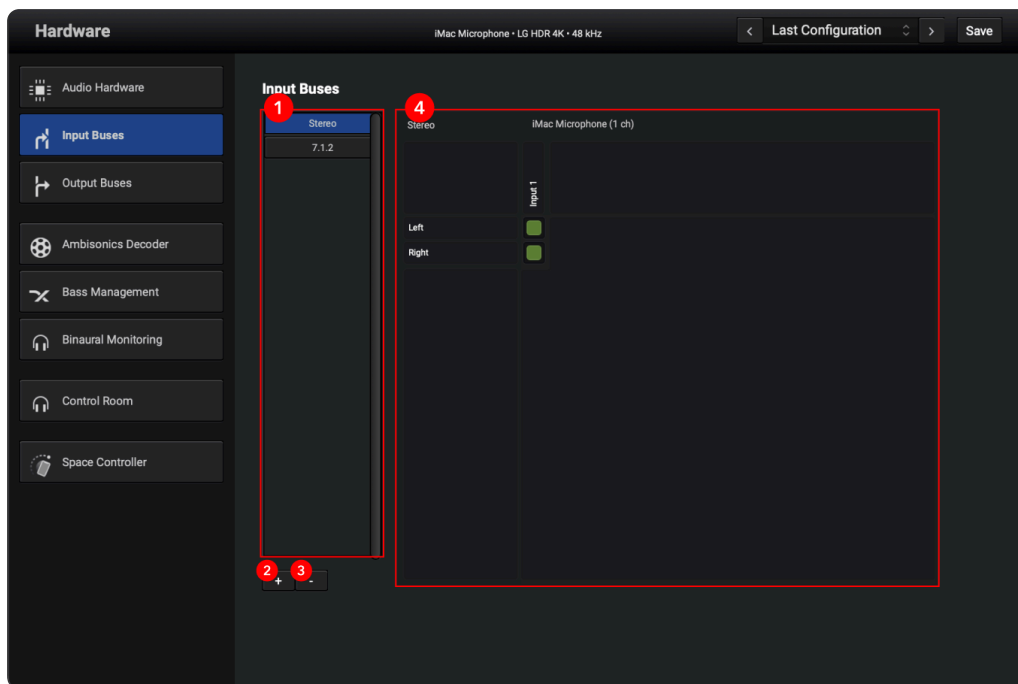
Input Buses Panel

1. **Input Bus:** Select the Input Bus.
2. **Add:** Add a new Input Bus.
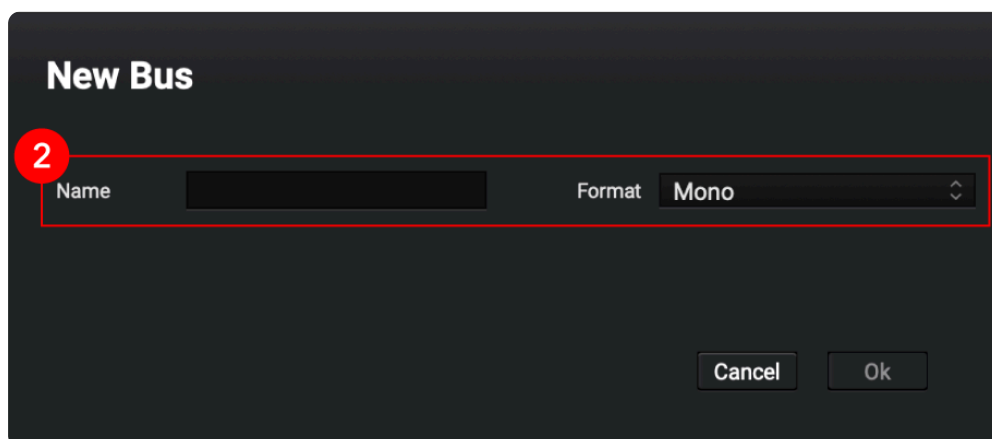
Add input bus

      a) Name - Name the new Input Bus.

      b) Format - Select the format for the new Input Bus.

3. **Remove:** Delete the selected Input Bus.
4. **Matrix:** Define the channel order of the Input Bus.

Output Buses
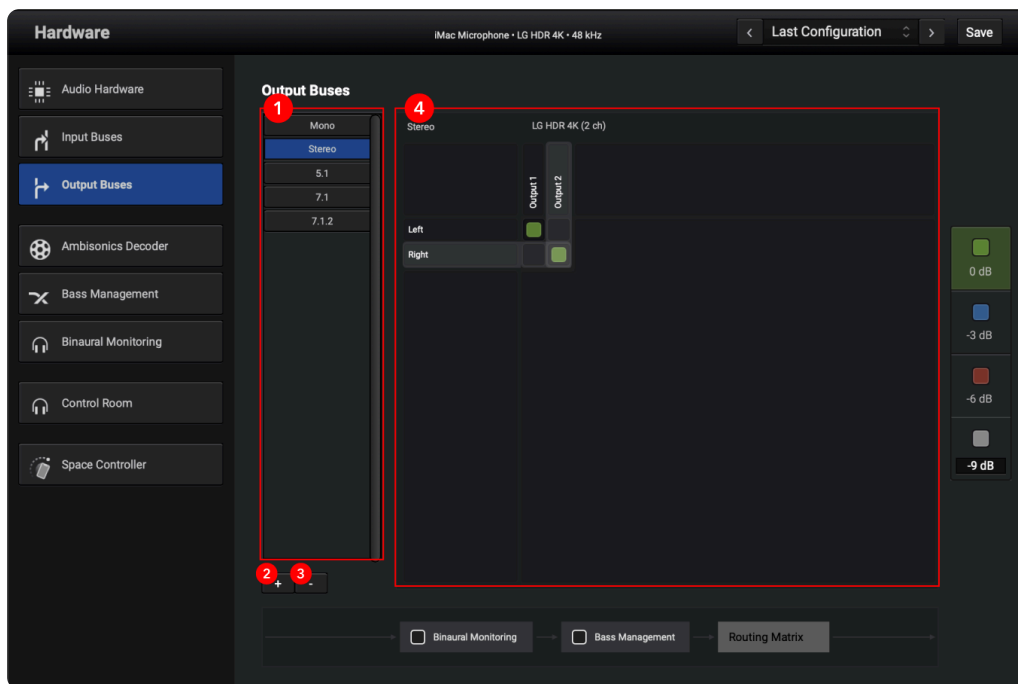
Output Buses Panel

1. **Input Bus:** Select the Output Bus.
2. **Add:** Add a new Output Bus.
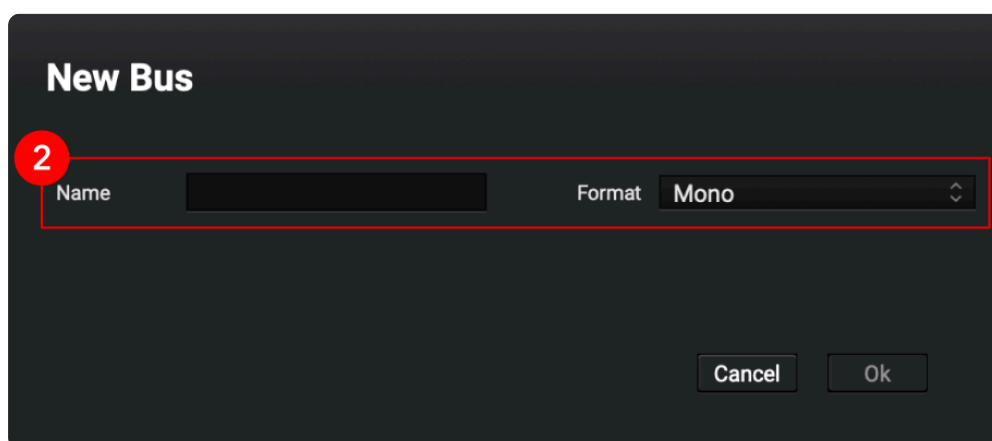
Add output bus

      a) Name - Name the new Output Bus.

      b) Format - Select the format for the new Output Bus.

3. **Remove:** Delete the selected Output Bus.
4. **Matrix:** Define the channel order of the Output Bus.

Ambisonics Decoder

1. **Output Format:** Select the output format for the ambisonics decoder.

Bass Management
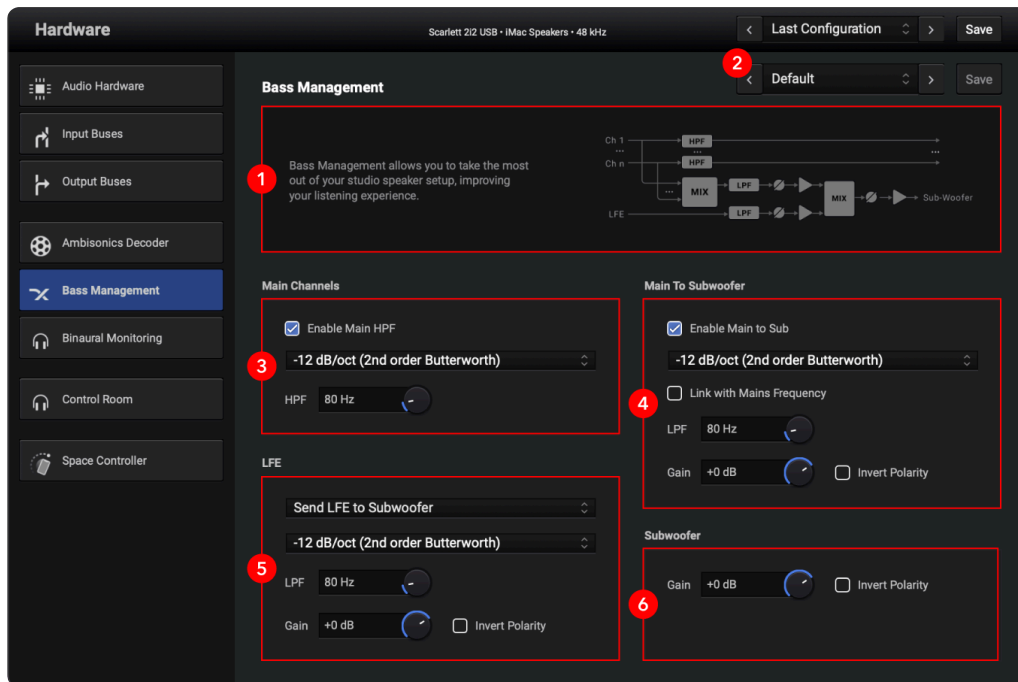
Bass Management Panel

1. **Bass Management:** Refers to the process of controlling the low-frequency sounds. It involves directing bass signals to appropriate speakers, channels, or processing units to ensure that the low-end sounds are balanced, clear, and not overwhelming.
2. **Preset:** A saved configuration for the Bass Management.
   - **a)** Last Configuration - Reverts the state of the I/O Manager to the last configuration.
   - **b)** Create new preset - Save the preset configuration.
   - **c)** Remove current preset - Remove the current preset configuration.
   - **d)** Import configuration - Import a configuration from your system.
   - **e)** Export configuration - Export the configuration to your system.

3. **Main Channels:** Enable and define the behavior of the High Pass Filter (HPF) to the main channels.

      a) Enable Main HPF - Toggle to enable the high pass filter for the main channels.

      b) Filter Types - Define the filter type and order: Butterworth (1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th order) or Linkwitz-Riley (2nd, 4th, 6th or 8th order).

      c) HPF - Set the cutoff frequency for the high pass filter.

4. **Main to Subwoofer:** Enable and define the behavior of the Low Pass Filter of the main to the subwoofer.

      a) Enable Main to Sub - Toggle to enable the low pass filter for the subwoofer.

      b) Filter Types - Define the filter type and order: Butterworth (1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th order) or Linkwitz-Riley (2nd, 4th, 6th or 8th order).

      c) Link with Mains Frequency - Toggle to have the same cutoff frequency of the High Pass Filter on the main Channels.

      d) LPF - Set the cutoff frequency for the low pass filter.

      e) Gain - Set the gain of the main to subwoofer.

      f) Invert Polarity - Enable to invert the polarity, reversing the phase of an audio signal, essentially flipping the positive and negative parts of the waveform.

5. **LFE:** Low-Frequency Effects, refers to a dedicated channel in a surround sound or multi-channel audio setup specifically designed to handle low-frequency sounds.

      a) Send - Define if and where you want the LFE to be played (Ignore LFE, Send LFE to Subwoofer, Send LFE to Left and Right channels, Send LFE to all main channels).

      b) Filter Types - Define the filter type and order: Butterworth (1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th order) or Linkwitz-Riley (2nd, 4th, 6th or 8th order).

      c) LPF - Set the cutoff frequency for the low pass filter.

      d) Gain - Set the gain of the LFE.

      e) Invert Polarity - Enable to invert the polarity, reversing the phase of an audio signal, essentially flipping the positive and negative parts of the waveform.

6. **Subwoofer:** Loudspeaker specifically designed to reproduce low-frequency sounds.

      a) Gain - Set the gain of the subwoofer.

      b) Invert Polarity - Enable to invert the polarity, reversing the phase of an audio signal, essentially flipping the positive and negative parts of the waveform.
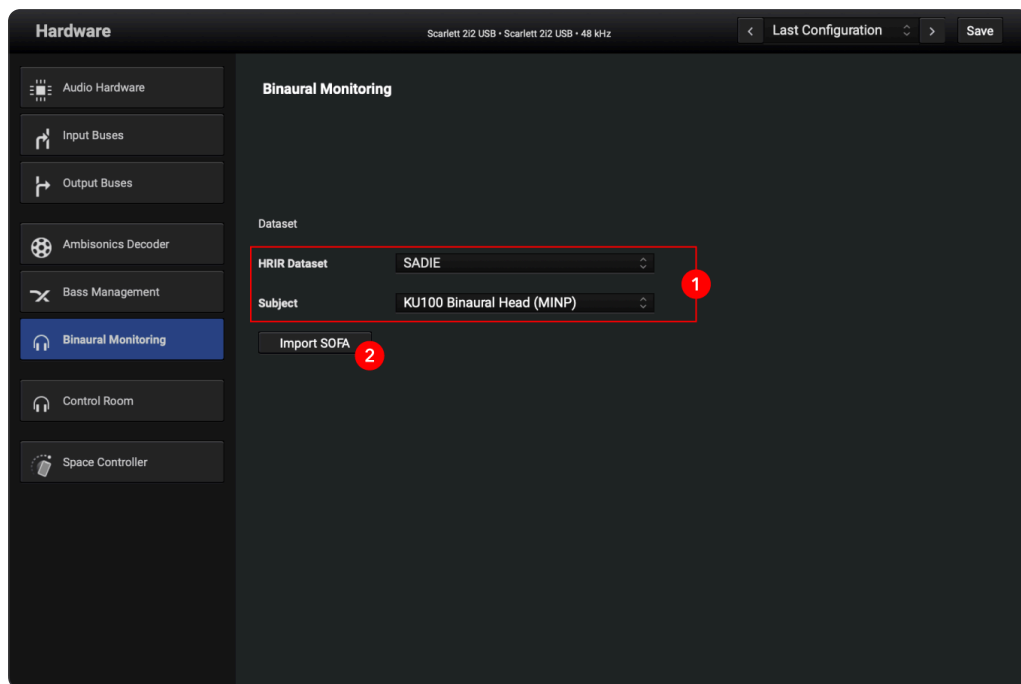
Binaural Monitoring

Binaural Monitoring Panel

If you are using headphones, you can use binaural audio to simulate 3D sound over headphones.

> Note: only effective for Ambisonics or multichannel virtual microphones.

1. **HRIR Dataset/Subject:** Sound Particles has several HRTF datasets, and each dataset includes measurements for several individuals or manikins.

> TIP: Since each person has different ears, test between different datasets and subjects, until you find the one that feels more natural to you.

2. **Import SOFA:** You can also import your own SOFA file from your system.

Control Room
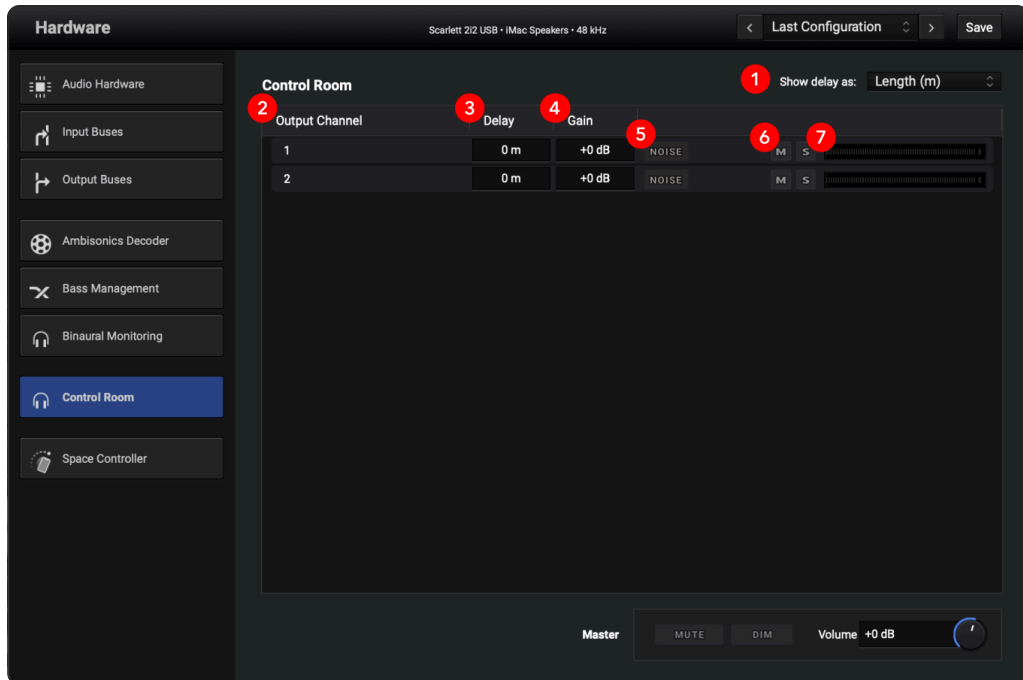
Control Room Panel

1. **Show delay as:**
   a) Length (m) - Delay is shown with a distance based on the time the sound spent travelling.
   b) Time (ms) - Delay is shown in time.
2. **Output Channel:** Displays the Output Channel name.
3. **Delay:** Allows to change the delay time between Output Channels based on distance (m).
4. **Gain:** Allows to change the gain for each Output Channel.
5. **Noise:** Send Noise to the selected Output. This can be used to Check each Output Channel for routing purposes.
6. **Mute:** Temporarily silences the track, preventing it from being heard during playback.
7. **Solo:** Isolates the track, making it the only one that can be heard during playback. All other tracks are temporarily silenced, but the soloed track continues to play.

Space Controller

1. **Bluetooth connections:** View the number of Bluetooth connections.

2. **Wifi connections:** View the number of Wifi connections.
3. **Bluetooth listening:** Toggle to make available device connections via bluetooth.
4. **Wifi listening:** Toggle to make available device connections via wifi.
5. **Port:** Textfield for the Port
6. **IP:** List of IP addresses with checkbox to toggle them
7. **Track Control:**
    a) Select Track - Space Controller will control the selected track.
    b) Track Index - Space Controller will control the track with the index correspondent to the number on the app.
8. **QR Code:** Read the QR Code to connect pair your device.

Plugin Manager

Tool that allows you to organize, manage, and load audio plugins (such as virtual instruments or effects) within Sound Particles.

TIP: Support for VST3 architecture only.
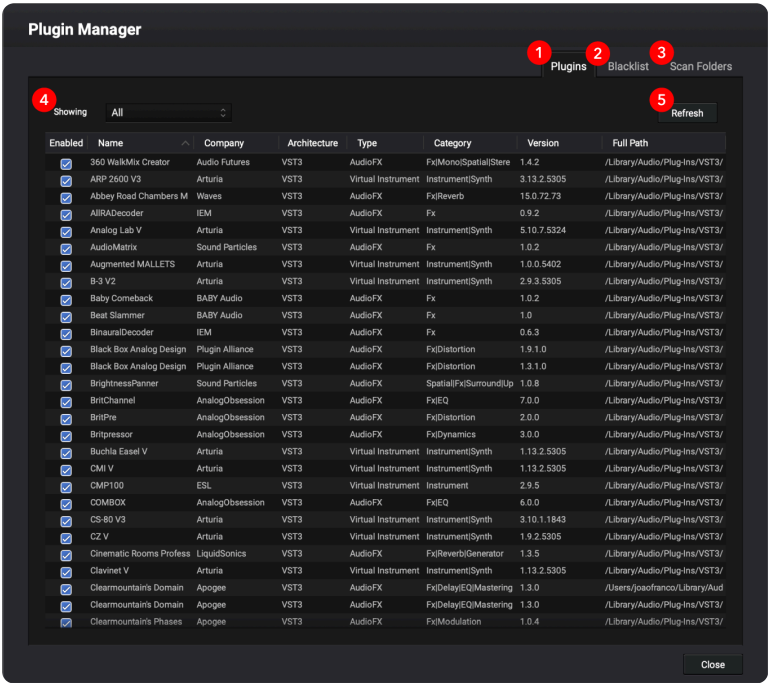
Plugin Manager
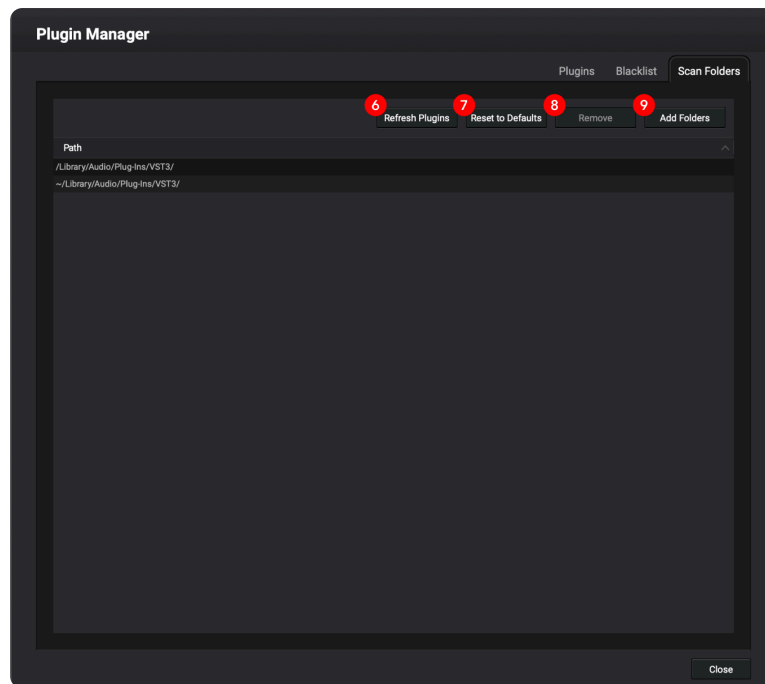
Plugin Manager

1. **Plugins:** List and information of available plugins. Information such as Name, Company, Architecture, Type, Category, Version, Folder Path.
2. **Blacklist:** Displays all the plugins that were scanned but are not available to use on SP due to possible issues on the plugin. This can be due to incompatibilities between the plugin and Sound Particles.
3. **Scan Folders:** Define the folder paths for the Plugin Manager to scan.
4. **Showing:** Select which plugins to see:
   a) **All:** Shows all Plugins (Effects and Virtual Instruments).
   b) **AudioFX:** Shows Audio Effects only (hides Virtual Instruments).
   c) **Virtual Instruments:** Shows Virtual Instruments only (hides Audio Effects).
5. **Refresh:** Refreshes the list of plugins, searching for new plugins and forgetting deleted ones.
6. **Refresh Plugins:** Click to refresh the plugin list, searching the folders added to the list.
7. **Reset to Defaults:** Reset the folders to be scan to the default paths.
8. **Remove:** Remove the selected folder from the list of folders to be scanned.
9. **Add Folders:** Add a folder to the list of folders to be scanned.

Plugin Header
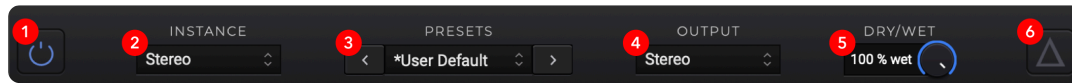
Plugin Header

1. **Bypass:** Disables the plugin's processing. The audio signal bypasses the plugin's effects, essentially sending the original, unaltered signal through without any changes.
2. **Instance:** Available on Audio Tracks, if there are more than one audio format on said track. If a plugin is inserted on an Audio Track with multiple audio formats, multiple instances of the plugin need to be created, one for each format. This function allows to select each individual plugin instance.
3. **Preset:** Saved configuration of the plugin's settings that can be recalled at any time.
    a) User Presets - List of User Presets.
    b) Factory Presets - List of Factory Presets.
    c) User Default - Select the User Default Preset.
    d) Factory Default - Select the Factory Default Preset.
    e) Save preset as... - Save the current plugin state as a preset.
    f) Save as default preset - Save the current plugin state as a User Default Preset.
    g) Import preset... - Import a Preset from your system.
    h) Delete preset - Delete the selected Preset.
4. **Output:** Available on Audio Tracks and Midi Tracks. Select the output format for the plugin, according to the plugin available formats. This allows to upmix/downmix the track.
5. **Dry/Wet:** Refers to the balance between the original, unprocessed (dry) signal and the processed (wet) signal. If the Dry/Wet control is set to 100% Wet, the output will be entirely the processed sound. If set to 100% Dry, the output will be the unprocessed, original sound. A setting in between gives a mix of both.
6. **Delta:** Function that highlights the difference between the processed (wet) signal and the original (dry) signal. It's often used to show what specific changes the plugin is making to the sound.

Mixing Desk

Virtual interface that emulates the function of a physical mixing console. It allows users to control the levels, mute, solo, arm record and automation mode of each track.

1. **Mute:** Temporarily silences the track, preventing it from being heard during playback.
2. **Solo:** Isolates the track, making it the only one that can be heard during playback. All other tracks are temporarily silenced, but the soloed track continues to play.
3. **Record:** Arm Record for the selected track(s).

4. **Automation Mode:** Select the automation mode for the selected track(s).

   a) Off - Automation will not be written nor read
   b) Read - plays back existing automation data. Any automation that has been previously recorded or written will be followed during playback. The system doesn't allow you to edit the automation in this mode, but simply follows the automation data that has been stored.
   c) Touch - automation is only written while the fader/parameter is being adjusted. As soon as you start moving a control (e.g., a volume fader or a plugin knob), the DAW will record that movement into the automation lane. When you release the control, it returns to the previously recorded automation data.
   d) Latch - starts recording automation as soon as you begin adjusting a control, and it continues to write automation even after you stop moving the fader or knob, until you stop playback or deactivate the automation mode. The difference from Touch is that the automation will not return to the previously recorded value once you release the control—it "latches" onto the new value.
   e) Write - overwrites all existing automation data as soon as you begin adjusting any control, and it will continue to overwrite the automation until you stop playback or switch modes. The new automation is written to the track, replacing any previous data.

5. **Volume:** Define the output level of the selected track(s).

6. **Child:** Expand the selected track to access each audio clip.
7. **Dim:** Reduces the volume level of the monitors.

Audio Editor

The Audio Editor allows you to manipulate and edit audio files directly within the Sound Particles project. You can trim, fade, pitch shift, add native effects as well as third party plugins to the audio, before placing it on the project timeline.

Audio Editor

1. **Playback Controller:** these buttons allow you to control the playback of your scene:

    a) Back to the start - Places the playhead at the beginning (00:00:00:00) of the Time Editor.

    b) Rewind 10 seconds - Places the playhead 10 seconds before its current position.

    c) Forward 10 seconds - Places the play-head 10 seconds ahead its current position.

    d) Skip to the end - Places the playhead at the end of the Time Editor.

    e) Reverse Play - Plays the audio in reverse. The playhead is moving backwards.

      f) Play/Pause or Play/Stop - Starts/pauses the scene's playback. Right click it to change the behavior to starts/stops. The first will restart the play from the playhead position. The second will restart the play from the last starting position.

      g) Auto Play - Automatically starts playing when the Audio Editor is opened.

      h) Loop - The playback will restart after reaching the end of its selection.

2. **Spectrogram view (FFT):** A visual representation of the spectrum of frequencies in a signal as it varies with time.

3. **Time Display:** The visual representation of the timeline used for editing audio.

4. **Convert to a different format:** Convert the audio file to a different format.

5. **Channels:** Select what channel(s) you want to use.

6. **Detune:** Detune the audio clip. Goes from -24 semitones to +24 semitones.

7. **Clip Gain:** Select the Clip gain (pre effects) from -inf to 12 dB.

8. **FX:** Apply native effects or third party plugins.

      a) Invert - Invert the polarity of audio file.

      b) Reverse - The audio clip is played backwards.

      c) Whoosh - The peak of the audio file will determine the middle of the clip. The clip will play from the beginning to the peak, and then backwards.

      d) Normalize 0dB - Adjusts the overall volume of the audio clip so that its loudest peak reaches maximum level of 0 dB.

      e) Normalize -1dB - Adjusts the overall volume of the audio clip so that its loudest peak reaches maximum level of -1 dB.

      f) Convert - to Mono, Stereo, Multichannel or Ambisonics.

9. **Out Gain:** Select the Out gain (post effects) from -inf to 12 dB.

10. **Cancel:** Cancel all actions done on this Audio Editor.

11. **Apply:** Apply all the actions done on this Audio Editor.

> TIP: The actions done in the Audio Editor are non-destructive - even after backed, you can always go back and make adjustments

Piano Roll

Graphical interface used to input, edit, and arrange MIDI notes. It displays a grid where time is shown on the horizontal axis and pitch is shown on the vertical axis. Allows you to draw or move MIDI notes (represented as colored bars) to create melodies, harmonies, and rhythms.

1. **Playback Controller:** these buttons allow you to control the playback of your scene:

    a) Back to the start - places the playhead at the beginning (00:00:00:00) of the Time Editor.

    b) Rewind 10 seconds - places the playhead 10 seconds before its current position.

    c) Play/Pause or Play/Stop - starts/pauses the scene's playback. Right click it to change the behavior to starts/stops. The first will restart the play from the playhead position. The second will restart the play from the last starting position.

    > TIP: If you have "Unrendered" microphones, and have the Auto-Render "On", this will render and playback audio in real-time (see Topic 8).

    d) Record - Enables the recording mode. When enabled, pressing play will record all the armed tracks.

    e) Forward 10 seconds - places the play-head 10 seconds ahead its current position.

2. **Mouse Tools:**

    a) Arrow - Allows to select notes. If used on the edge of a midi note(s), it will trim it.
    b) Draw Mode - Allows to create new midi notes. If click and drag it will control the midi note length.
    c) Erase Mode - Allows to erase the clicked midi note(s).

3. **MIDI In/Out:** Light indicates if there's any MIDI signal In and/or Out.

4. **Snap:** When enabled, if you move a note, it will force its limits (start and end of note) to be synched with the selected Division.

5. **Division:** Determines how the snap will work.

   a) Bar - When moving a note, it will snap to the nearest bar.
   b) Beat - When moving a note, it will snap to the nearest beat.
   c) Division - When moving a note, it will snap to the nearest division.
   d) Note - When moving a note, it will snap to the nearest note, ranges from 1/1 to 1/64 (triplets and dotted included)

6. **Quantize:** Automatically adjusts the timing of audio events or MIDI notes to align with a specific grid or rhythmic structure.

7. **Division**: Determines how the snap will work.

   a) Bar - When quantizing, it will snap all the notes to the nearest bar.
   b) Beat - When quantizing, it will snap all the notes to the nearest beat.
   c) Division - When quantizing, it will snap all the notes to the nearest division.
   d) Note - When quantizing, it will snap all the notes to the nearest note, ranges from 1/1 to 1/64 (triplets and dotted included)

8. **Playhead**: the position where the playback will start.

> TIP: By changing the position of the playhead, you can immediately see the current frame of the views according to its position.

9. **Piano Roll:** Guide to know what notes are represented by the Midi messages.

10. **Midi Notes:** Digital representations of musical notes. They contain information about which note is being played, its velocity (how hard the note is struck), and its duration (how long the note is held).

   a) Edge of the note - Hover your mouse to trim the selected note(s).
   b) Shift+drag - It will change the midi note velocity.

Render

After constructing your scene and creating all the tracks and microphone(s) you require, it's time to render it all up so that you can listen to the audio of your project.

You can render your scene in two possible ways: auto-render or manual render.

Auto-Render

With this mode enabled (see the Tansport section for instructions), you can render your scene while playing it back in real-time, allowing you to listen to the audio as the software renders.

TIP: Ideal to make quick/small changes and for simple projects (few particles), but not for highly complex scenes, as it is a heavy CPU processing component.

Render (Manual)

If you are not able to listen to your scene or it is too complex to process in real-time, you can choose to start a manual render process (see the Tansport section for instructions).

TIP: While rendering, you can listen to sections that were already rendered.

Note: You cannot edit your scene while this render is processing. This mode opens its own inspector (see below).
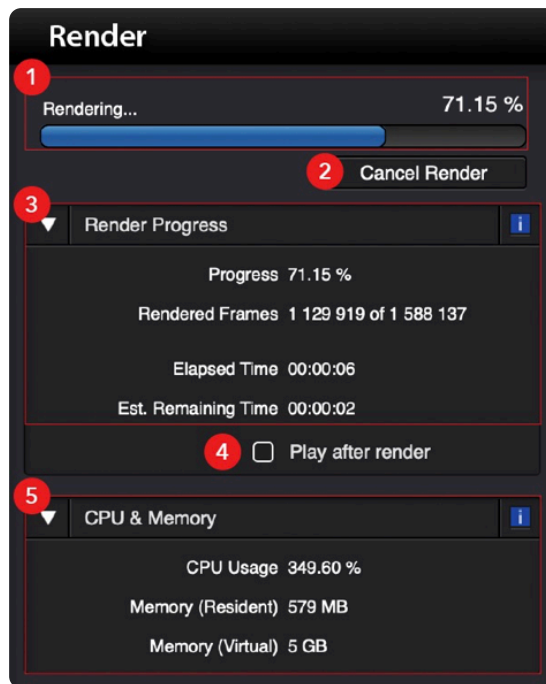
Render Inspector

1. **Render Progress (simple):** A simple illustration of the progression of the current render, with a percentage and a progress bar.

2. **Cancel Render:** Cancels the current render process.

> Note: Canceling a render does NOT erase any sections that have already been rendered, meaning they will remain listenable.

3. **Render Progress (full):** A more detailed information regarding the progress of the render. It displays:

   a) Progress - the percentage of render completion.

   b) Rendered Frames - how many frames were rendered of the total number of frames of your project.

> Note: The number of frames goes accordingly to the sample rate of your project (see the Sample Rate section), meaning that, e.g., if you have 1 million total frames with 48 kHz of sample rate, you will then have 2 million total frames with 96 kHz.

    c) Elapsed Time - how much time has passed since the render was initiated.

    d) Estimated Remaining Time - how much time it's expected for the render to finish.

4. **Play after render:** If you wish to, check this box if you want the scene audio playback to start automatically when the render finishes.

5. **CPU & Memory:** Information regarding the CPU and memory usage during the render process:

    a) CPU Usage: The percentage of total CPU resources used during rendering.

> Note: For every 100%, that means the 1 core is being additionally used (e.g: 200% = 2 cores; 400% = 4 cores; 1000% = 10 cores; etc.).

    b) Memory (Resident): The current amount of RAM being used for rendering.

    c) Memory (Virtual): The whole memory usage (RAM + Disk) being used for rendering.

Import

Import external files or data into your project for use or manipulation within Sound Particles. The available import options correspond to different file types you might want to include in your session.

1. **Import Audio**: Brings audio files (like WAV, MP3, or AIFF) into the project so you can edit, arrange, and mix them.

   a) File System - Shows the files on your machine.

   b) Explorer - Opens Explorer (Sound Particles software) where the local and cloud files are displayed as well as the audio editor, that allows to do changes on the audio before importing it to Sound Particles.

   > NOTE: Access to cloud files is available only if you have an Explorer subscription.

2. **Import ADM**: ADM stands for **Audio Definition Model**, which is a format used in professional audio post-production, particularly for surround sound and immersive audio formats (like Dolby Atmos). This option imports ADM files that contain metadata about the audio content and its spatial properties.

3. **Import MIDI**: Imports **MIDI** (Musical Instrument Digital Interface) files, which contain performance data (like notes, velocities, and timing) but no actual audio. These files can be used to control virtual instruments or hardware synthesizers within the DAW.

   > Note: If the tempo and/or time signature is different from the project, importing a MIDI clip will trigger a pop-up message. **Cancel** will not import the MIDI clip. **Keep** will maintain the project tempo and time signature as it was. **Update** will update the tempo and time signature based on the MIDI clip.
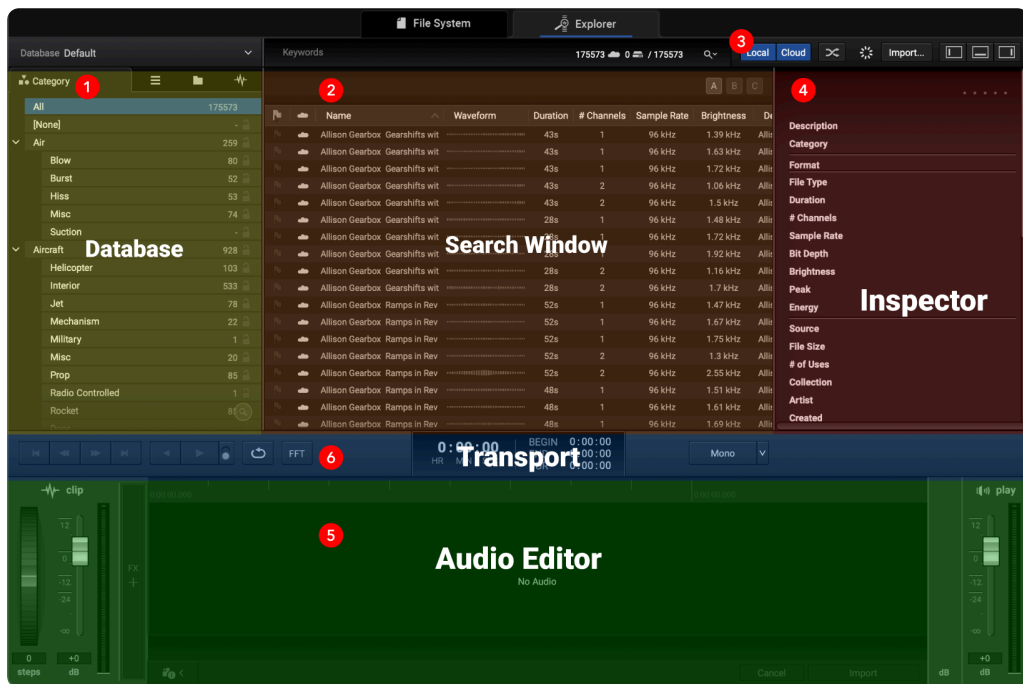
4. **Import Video**: Access the "Video Import" menu (see the Importing a video section).

115

5. Import CGI: Access the "CGI Import" menu (see the CGI Import section).

Explorer

MAIN INTERFACE

When you open Explorer, the main view of the sound library is presented. Here, you are able to load and look at the properties of each audio file.

Explorer

1. Database

2. Search Window

3. Source Filter

4. Inspector

5. Audio Editor

6. Transport

MAIN INTERFACE HEADER

Main Interface Header

1. **Database Selection** - Select the database to be used.

2. **Search Toolbar** - Here, you can filter the search of sound files. Either by using keywords or by doing a more advance search, by clicking the magnifying glass on the right side of this bar.

   You will be presented with the following window, where it is possible to filter by property and impose conditions on the search. Several conditions can be added and the user can switch between "Match all conditions" or "Match any condition" mode.

3. **Source Filter** – These buttons enable you to choose the origin of the audio files, you can select sound of your own library or our cloud sounds.

4. **Random Order** - This button will rearrange the audio files in the search window with a random order.

5. **Database status** - This icon shows the status of the synchronisation with the cloud and the progress of the indexation of local audios.

6. **Import** - Use this section to import individual audio files or directly import folders with audio files.

7. **View Selector** - Use these buttons to select what you want to see on the screen.

   The first button will open/close the database on the left side of the screen.

   The middle button opens/closes the editing window on the bottom of the screen.

   The last button opens/closes the inspector on the right side of the screen.

CREATING YOUR OWN LIBRARY

Use the import button on the top right corner to load your libraries of sounds to the Explorer. Sounds can also be imported by dragging and dropping them directly into the Explorer window.

117
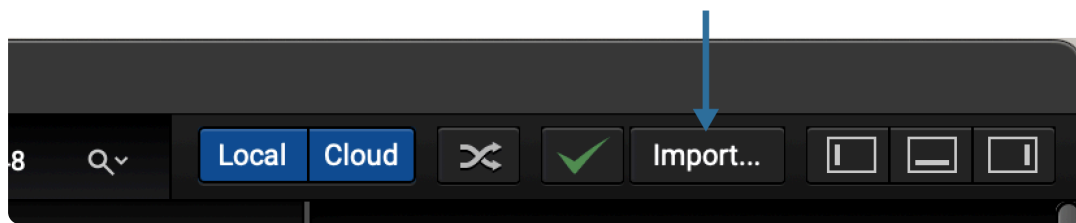
Import Button

Sounds can be loaded individually or through folders. Either way, you will have access to the path of the samples in the database section, on the left panel of the screen.
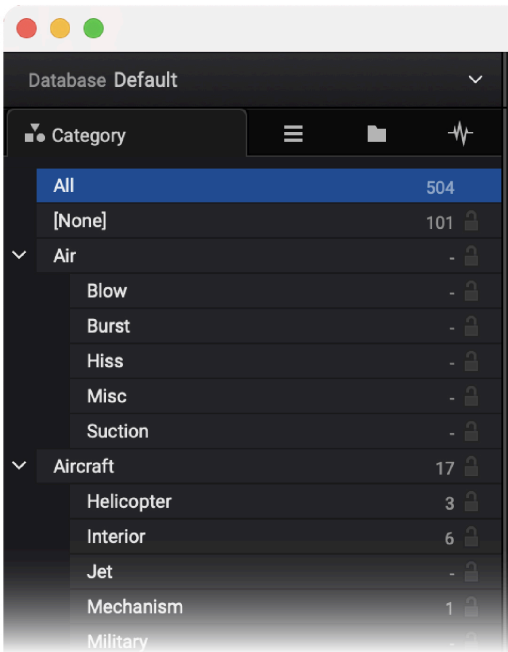
The Local and Cloud buttons enable you to choose the origin of Explorer sounds - you can select sound files from your own library or cloud sounds.

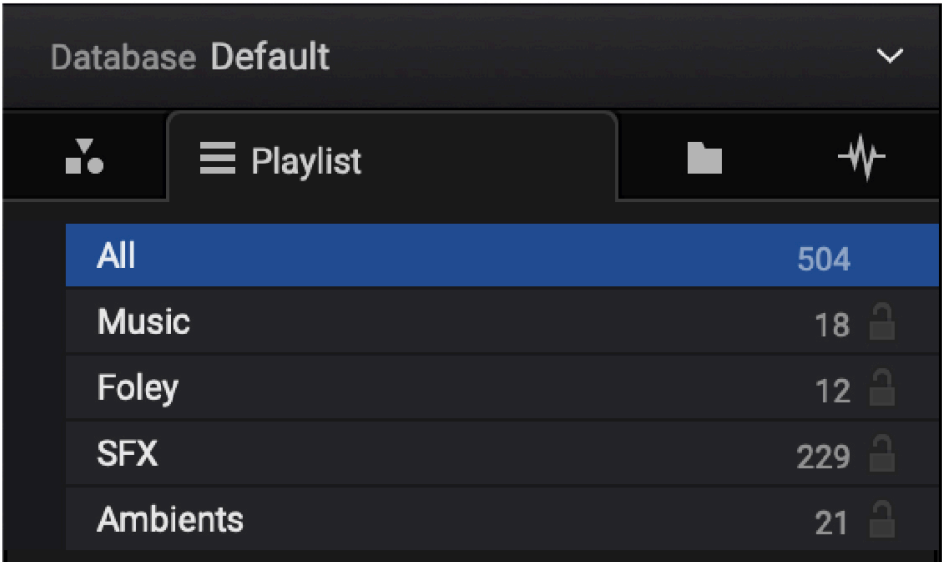In the database section, you can have an overview of the library divided by:

Library View

1. **Category** - Sort the library by category and subcategories (according to the Universal Category System).
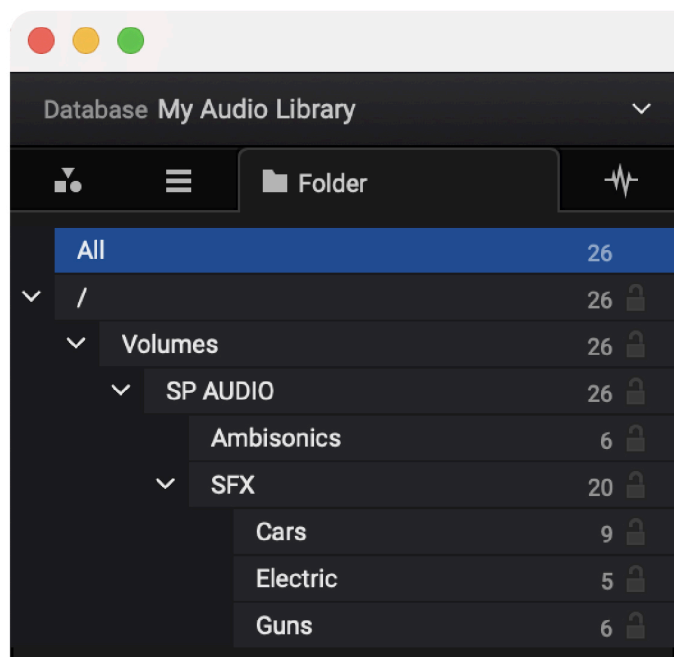
Category System View

2. Custom Playlists - Create a playlist and view all the sounds inside each one.
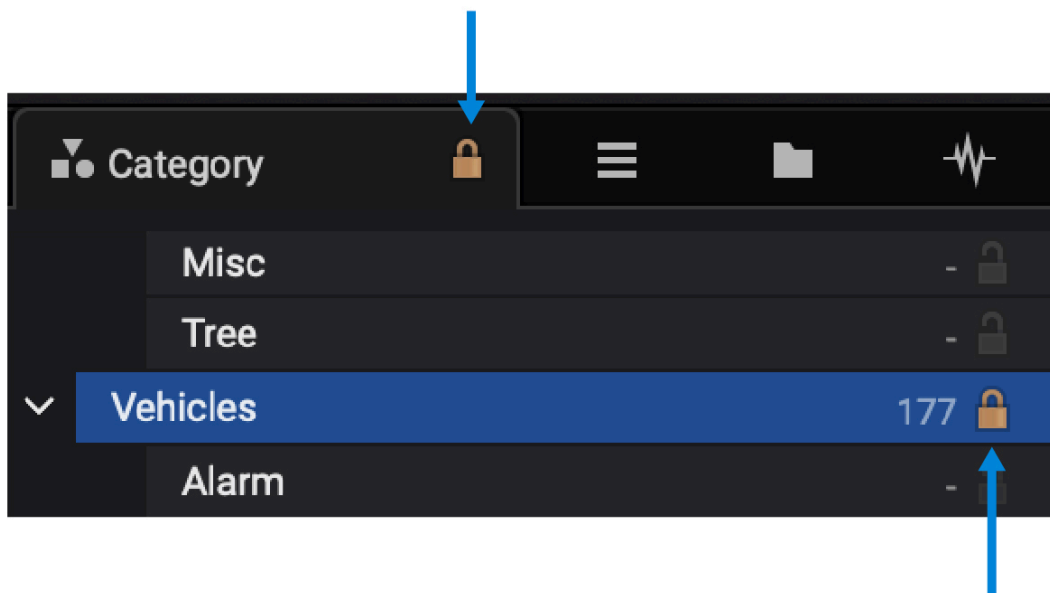

Playlist View

3. Folder Path - Use the folder section to view audio files grouped by path.

Folder View

4. **Audio Properties** - The "Audio" view separates the library sounds by file format, sample rate, and audio format. There is also a tab with all the flagged audios.

Click the locker icon to keep the filter even when the keywords are changed in the search bar.

Lock Filter

It is possible to rename the selected database at the top of the panel as well as create new databases. In this section, the local files can also be rechecked to delete the files that no longer exist.
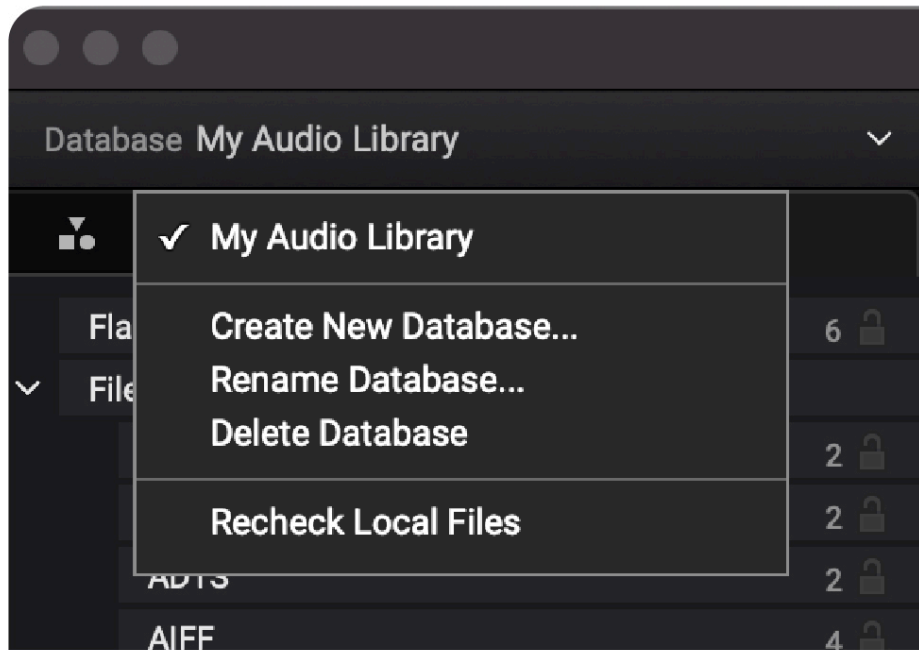
Database Options

BROWSING THROUGH THE EXPLORER WINDOW

The search window allows you to navigate through the library with the view of the waveform to facilitate the search. The Explorer workspace is the main playground of Explorer. Here the users have access to all sound files that are on their own library, and the ability to organize the different audio properties in order to better manage the collection.

The Explorer workspace consists of several audio-related fields (columns). These columns can be freely rearranged to display the information most relevant to you and sort them in the order that best suits your needs.

The Explorer workspace header shows the name of each column. Then, the lines below represent each audio file content for the corresponding field.

Table Header

At the top right corner of the search window, the letters A, B, C allow the user to have three different filters for different search setups.
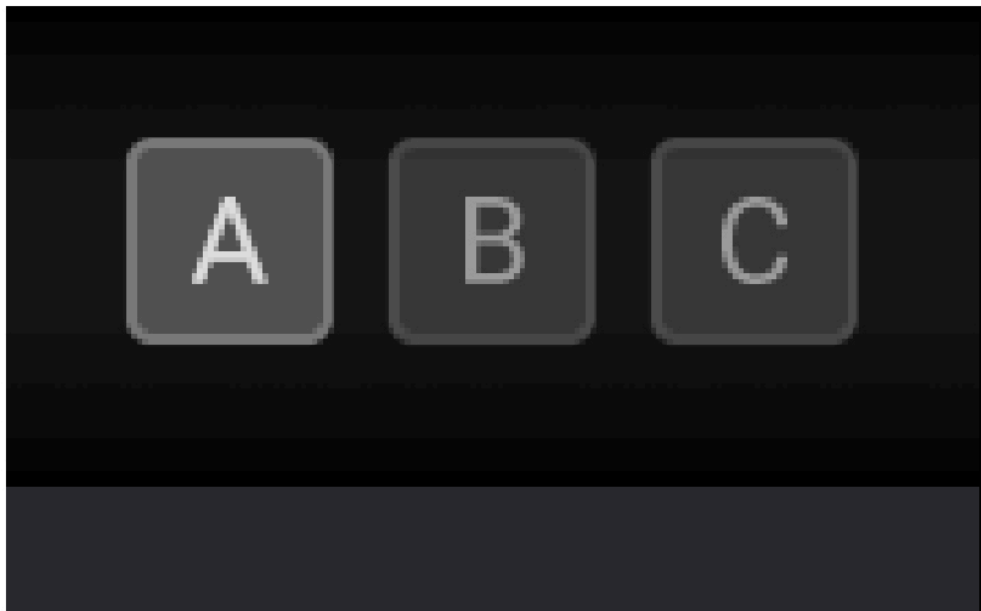
Search Filters

By default, the Explorer shows the flag, name, duration, number of channels, sample rate, description, category, and rating. These filters can be used to sort the audio files. Furthermore, when you right-click on the top bar, the following list is presented to add more fields.

Clicking on the flag icon will make the selected audio stand out from the rest for easiness of identifying the favorite sounds. It is also possible to rate the audio files and arrange them by rating. To undo the rating, simply click with the right mouse button on top of this section for the corresponding audio and select "clear".

There are other useful fields that make Explorer stand out from the other sound collection apps, like brightness and energy. The brightness uses the centroid value, a parameter that represents the center of spectral mass, which is related to the perception of brightness. The energy field is an average RMS value of the entire file. Those fields can be very useful to organize the sounds from low to high or from quiet to loud.

Right-clicking an audio file will open the following window with the option to add/remove the file from a playlist, directly change the category, remove it from the database, show the file in Finder/Windows Explorer, export the audio file and also change the audio table font size.

✓ Flag
✓ Name
✓ Waveform
✓ Duration
✓ # Channels
   Audio Format
   File Format
   SR + Depth
✓ Sample Rate
   Bit Depth
✓ Brightness
   Peak
   Energy
✓ Description
✓ Category
✓ Rating
   Path
   Artist
   Checksum
   Date Created
   Date Modified
   File Size
   Uses
   Notes

Reset to default
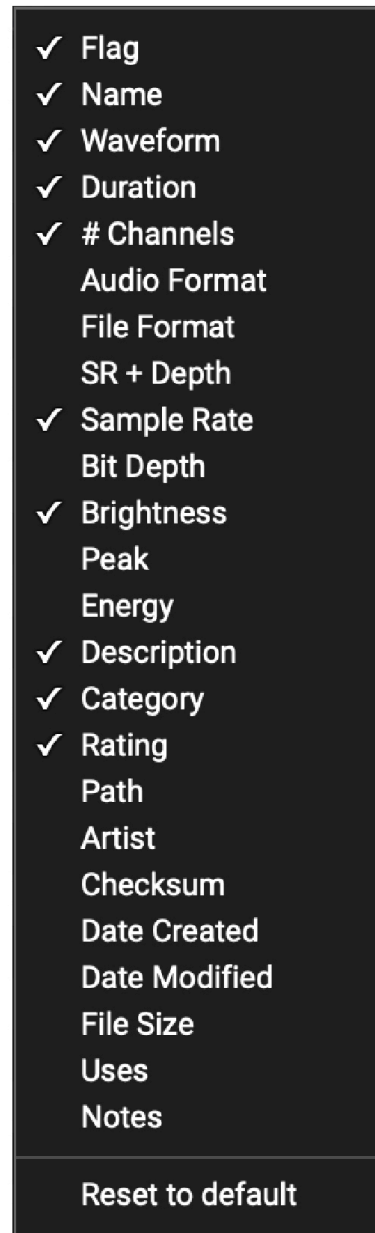
Sound Fields
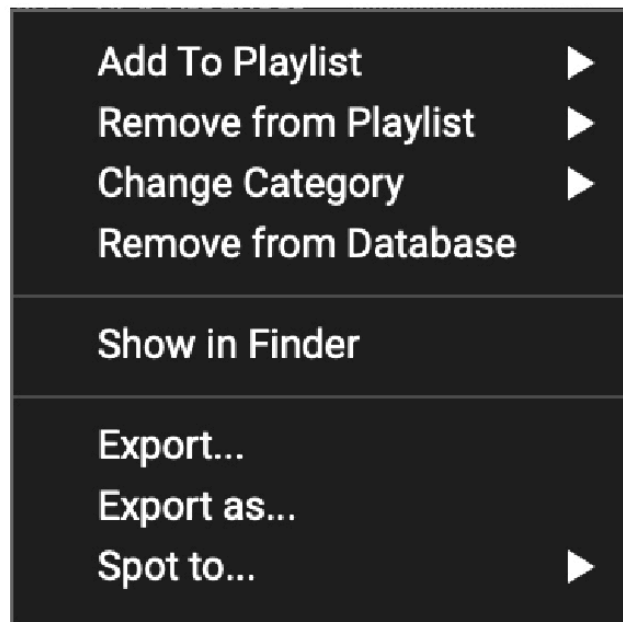
File Options

The inspector window on the right side of the screen shows all the information regarding the selected audio file. In this section, the category of the audio file can also be changed by clicking the corresponding field and selecting the desired subcategory from the pop-up menu. The format order and normalization can also be changed for multichannel formats and ambisonics files. For audio files with a number of channels that can suit common formats, you also have the option to choose how this file is going to be read by Explorer in the "Interpret as" option.

At the bottom of this section, you can also tick a checkbox to show the metadata of the file as well as add audio samples notes.

EDITING SAMPLES

Explorer also allows you to edit audio files inside the application. Open the editor window by clicking the center item on the view selector.

The time selection of the clip to be exported can be changed by dragging the borders of the loop marked with the orange region. Drag the edge of the region through the timeline to the desired location. At the bottom of the timeline there is a zoom navigator which can be used to zoom in and out as well as navigate through the entire length of the audio file.

Metadata

TIP: To zoom horizontally use Scroll and to zoom vertically zoom use Option + Scroll.
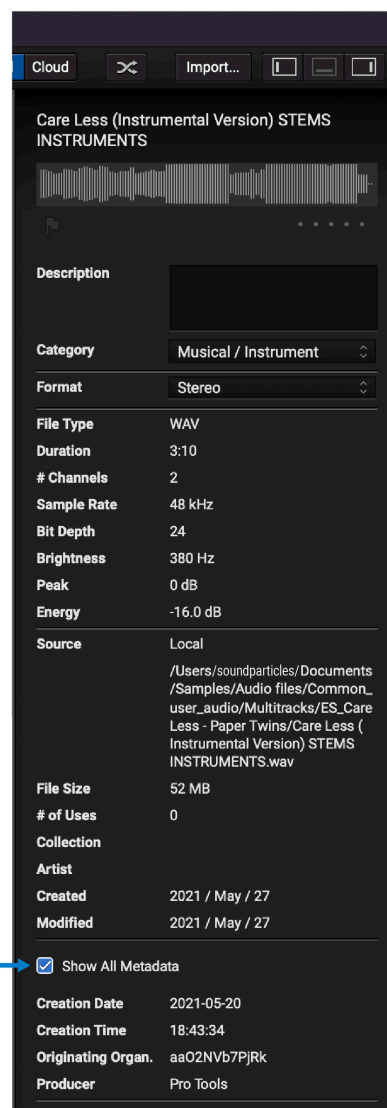
Zoom

On the left side of the zoom navigator there is an information icon that will show/hide the information of the output file.

126
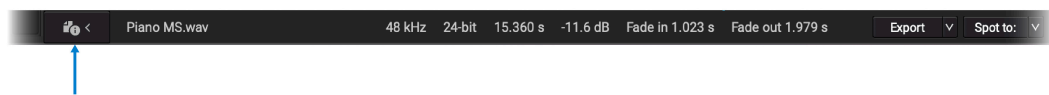
Zoom Navigator

When the cursor is placed at the border of the selected region, a fade item with horizontal arrows will appear and can be dragged as well. Once the loop has a fade, a white dot with vertical arrows will show up and can be moved to change the fade slope and form. Right-clicking on the fade will also allow you to choose different fader curves.
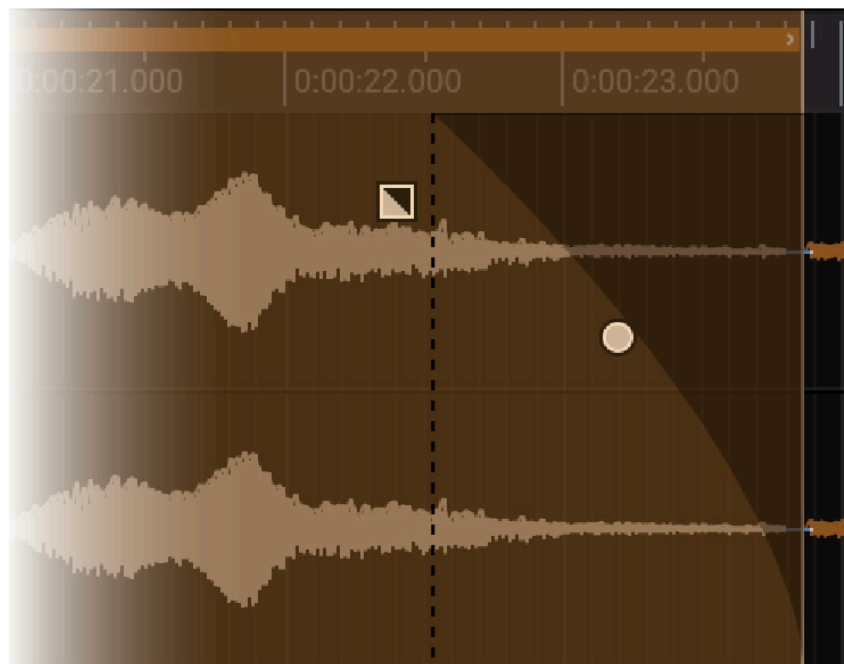
Cursors

The player section has the following features:
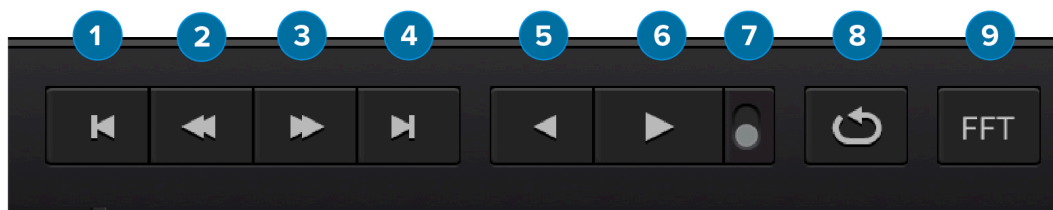
Player

1. Back to the start

2. Fast backwards

3. Fast forward

4. Skip to the end

5. Reverse Play (right-click to switch between Play / Pause and Play / Stop modes. The icon will switch to the pause or stop icon while the audio is being played)

6. Play (right-click to switch between Play / Pause and Play / Stop modes. The icon will switch to the pause or stop icon while the audio is being played)

7. Auto play (the audio file will play every time the user selects a new file in the search window)

8. Loop (the cursor will return to the start position once it reaches the end of the file)

9. FFT (the timeline will display the FFT spectrogram instead of the waveform)
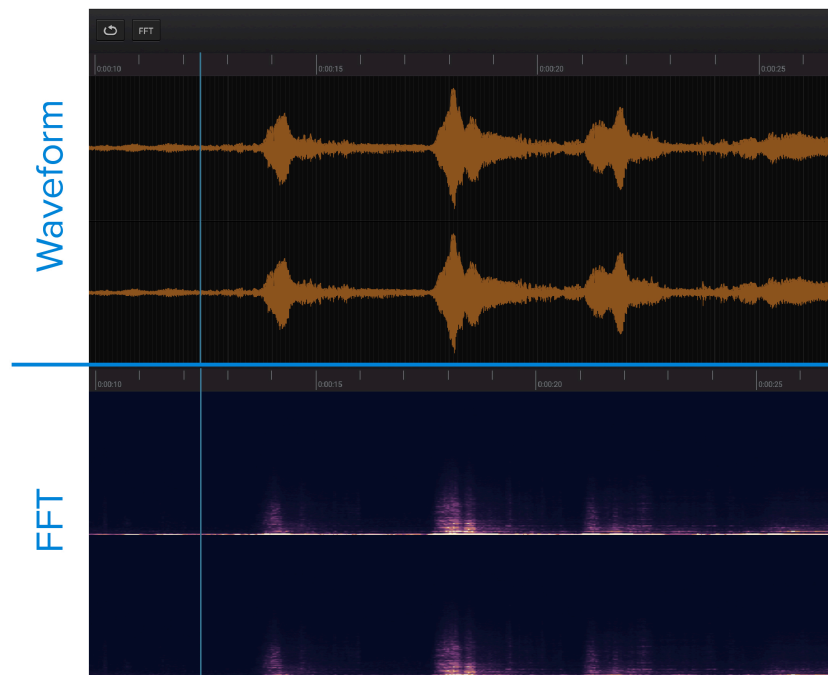
Waveform and FFT

In the center of the editor window, a time display can be found. Here you can see the position of the cursor (left section), as well as the beginning, end, and duration of the loop selection (right section).

All these values can be directly changed by clicking the appropriate field and inserting the desired value or by simply clicking and dragging the field to be changed. The time selection will respond accordingly.
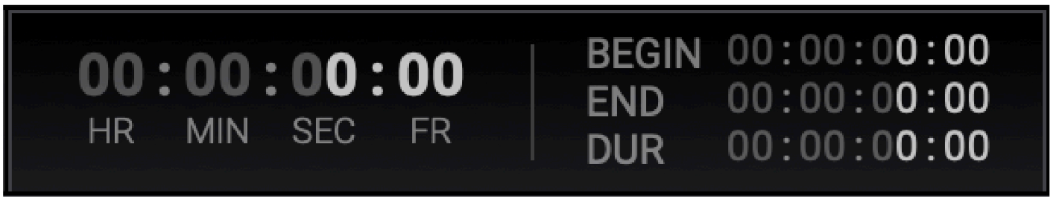
Timer

Using right-click on time display, allows you to define if it is a single or dual time display, the time units as well as linking several displays. When time displays are linked, their units can be changed in the "Time Settings" menu.

You can add or remove displays, as well as move them to the left or right. You can also save custom display presets to be loaded according to the project.
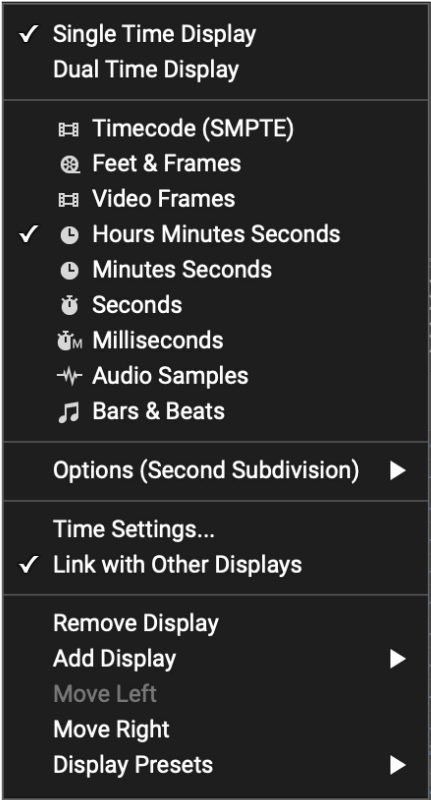
Time Display

On the right side of the editor window, there is a channel selector which allows you to select which channels are visible in the editor. Using the shortcut "Shift + Click" on an individual channel will enable only that channel and disable the others.

The audio editor is divided into two sections. On the left side, you can use the pitch wheel to adjust the audio pitch. By right-clicking the tuning wheel, you can select the range from +/- 2 semitones to +/- 4 octaves. Next to it, the fader controls the clip gain, with the waveform and VU meter responding accordingly. The FX section is also located here. On the right side, a pitch scale for the selected audio file is displayed. The fader in this section controls the output volume of the file to be exported.
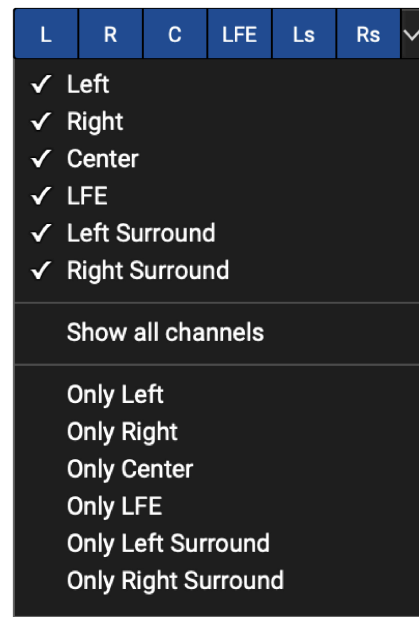
Channels
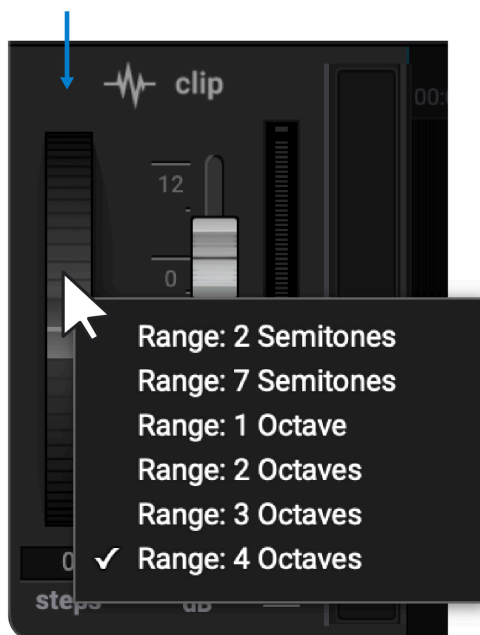
Range Selector

Pitch

On the left side of the editor window, you can add stock audio effects to the selected file. These include:

- **Invert** - Polarity inversion.
- **Reverse** - Reverse the beginning and end of the file.

130

- **Whoosh** - Applies a whoosh effect to the file.
- **Normalize 0dB** - Normalizes the sound at 0dB.
- **Normalize -1dB** - Normalizes the sound at -1dB.
- **Left-Right to Mid-Side** - Converts an LR to an MS format.
- **Mid-Side to Left-Right** - Converts an MS to an LR format.
- **Convert** - Allows the user to convert the audio file to the following formats.
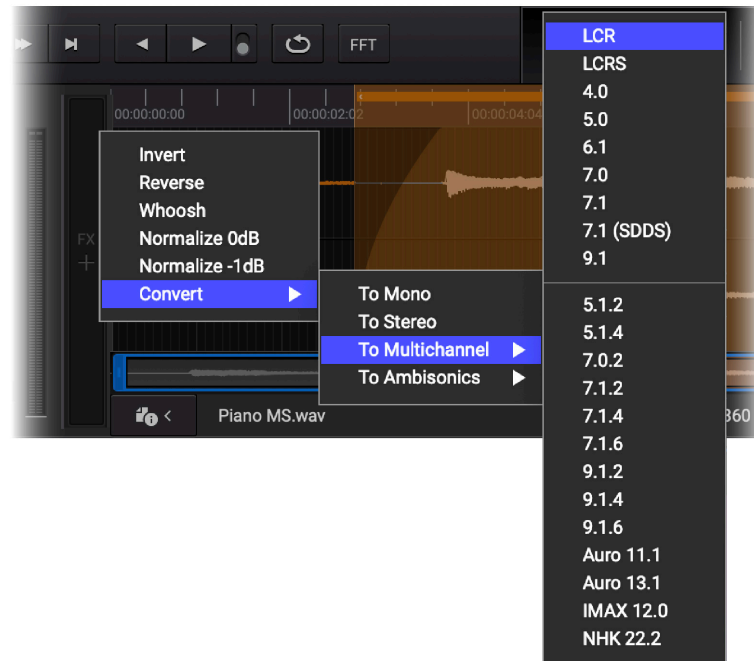
Metadata

On the right side, it shows a decibel scale for each channel in the audio file. The fader controls the output volume of the file to be exported.

Export

Once your scene has been fully rendered through the microphones, you can export the rendered audio to your system.

To export, open the "Export Audio" panel either through "File -> Export -> Export Audio…" or by right-clicking on a microphone and choosing "Export Audio…" from the context menu.

> TIP: By clicking on "Export Audio…" through a microphone's context menu, the Export window will immediately have that same mic selected for exporting.

> Note: The microphone you want to export from has to be rendered first.

Export Audio

The "Export Audio" window lets you configure how to export the audio from a microphone of your scene. You can select the microphone to export, choose the interleaving mode, file format, bit depth, metadata inclusion and specify channel order and selection.

Export Audio Window

1. **Microphone:** The microphone to export the audio from.

2. **Interleaved:** Choose how you want to export your audio:

    a) Interleaved - one single file with all the selected channels on it.
    b) Non-Interleaved - each selected channel will be exported to its own audio file.

3. **File format:** The format that the file(s) will be exported:

    a) BWF (.WAV)
    b) AIFF (.AIFF)

4. **Bit Depth:** The bit depth of the export audio file(s):

    a) 16-bit
    b) 24-bit
    c) 32-bit (float)

> TIP: The higher the Bit Depth, the better quality the audio file will have (but it will also be larger).

5. **Sample Rate:** The sample rate at which the audio file(s) will be exported.

> Note: This value is affected by the Sample Rate chosen on the "Project Settings" (see the Project Settings section). If you wish to export to a different sample rate, you'll have to change your project's sample rate and re-render the microphone again.

6. **Channel Order:** The order that the channels will have when exporting the audio file(s). You can choose from:

    a) SMPTE

        a.1. 5.1: L R C LFE Ls Rs
        a.2. 7.1 (3/4): L R C LFE Lss Rss Lsr Rsr

    b) Film

        b.1. 5.1: L C R Ls Rs LFE
        b.2. 7.1 (3/4): L C R Lss Rss Lsr Rsr LFE

    c) Custom - a custom channel order.

> Note: This option is only available when the default 5.1 / 7.1 (3/4) setups are applied on the corresponding microphone.

7. **Export Selection Only**: Check this box to export only the portion of audio currently covered by the selection.

8. **Include Metadata:** Check this box if you want to include Metadata information on the audio file(s), such as the project "Title", "Artist", "Copyright", etc. (see the following section).

> Note: This checkbox is "checked" and locked if you are running the Trial version.

9. **Include Timecode:** Check this box if you want to include Timecode information on the audio file(s).

10. **Include FX inserts:** Check this box if you want FX inserts to be printed on the result audio.

11. **Channel List:** This list displays all the channels from your microphone, including with their names and order, and also checkboxes for you to select which channels you want to export.

12. **Move Up/Down:** Use these buttons if you want to move up or down a channel on the list.

> Note: this value is affected by the sample rate chosen on the "Project Settings" (see the Sample Rate section). If you wish to export to a different sample rate, you'll have to change your project's sample rate and re-render the microphone again.

13. **Cancel/OK:** Cancel the export process or accept the changes and go to the file explorer / Metadata screen (if "Include Metadata" is selected).

INCLUDE METADATA

If you checked the "Include Metadata" checkbox in the "Export Audio" window, a metadata editor will appear after the export begins. In this window, you can edit various labels related to your project, such as "Title," "Artist," "Keywords," and more.

Include Metadata Window

1. **Title:** The given title of the project.
2. **Artist:** The original artist of the project.

3. **Copyright:** Copyright information you may require for the project.

4. **Date:** A date you may want to identify the project with (e.g: when it was started, when is to be released, etc.)

5. **Software:** The software you used for the project.

6. **Keywords:** Keywords that might help you or your team to identify/sort the project.

7. **Comments:** Additional comments to the project that may be useful.

8. **Cancel:** Cancel the export process and return to your project window.

9. **OK:** Accept the "Include Metadata" changes and open your OS file explorer/finder.

After completing the "Include Metadata" process, the OS file explorer will open, allowing you to choose the save location and the file name.

Note: Closing the OS window with "Cancel" will only return you to the project window, and you will have to restart the Export process again if required.

Export ADM

ADM (Audio Definition Model) is a standardized format for storing and defining the metadata of multichannel and object-based audio, often used for immersive sound formats. **ADM** files are used to specify how audio objects and channels are arranged, allowing for precise control over spatial audio and speaker configurations.

This model is particularly useful when working with immersive or 3D audio environments, as it describes the placement and movement of audio objects within a sound space, ensuring a consistent experience across varying hardware configurations, different platforms or playback systems.

1. **Program Name:** Usually used to define the name of the show (TV Series, Movie, etc.).

2. **Content:** Usually used to define the content of the file (Sound Effects, Music, Dialog, etc.).

3. **Tracks:** Selection of the tracks that will be taken in consideration when exporting ADM.

    a) **Tracks:** Name of each track on the project.
    b) **Priority:** Define the priority for each Track.
        b.1. 7.1.2 Bed - The track will be considered as a 7.1.2 bed.

b.2. Object (High Priority) - Each sound source of the track will take the highest level of priority to become an object on the ADM file. These will be the first sound sources to become objects

b.3. Object - Each sound source of the track will take the medium level of priority to become an object on the ADM file. This sound sources will become objects after all the High Priority, if there are still object slots available.

b.4. Object (Lower Priority) - Each sound source of the track will take the lowest level of priority to become an object on the ADM file. This sound sources will become objects after all the other tracks, if there are still object slots available.

4. **Deselect All:** Deselect all tracks.

5. **Select All:** Select all tracks.

6. **Reference:** The centre of the ADM file.

   a) Origin - The reference of the ADM file (centre) will be the origin of the 3D view of Sound Particles.
   b) Microphone - The reference of the ADM file (centre) will be the selected microphone.

7. **Position:** Select the coordinate system.

   a) X, Y, Z (Cube).
   b) Azimuth, Elevation, Distance (Polar).

8. **Limit Objects:** The maximum number of objects to be exported on the ADM file. This will take in consideration the priority of each track.

9. **Use Beds:** Define if you want tracks to be treated as Beds.

10. **Use Objects:** Define you want tracks to be treated as Objects.

11. **Re-use Objects:** Define if you want objects to be reused by different audio tracks.

12. **Time Resolution:** Determines the time resolution of the file. This allows to decrease the size of the ADM file.

   a) High Resolution (5ms)
   b) Medium Resolution (20ms)
   c) Low Resolution (100ms)

137

Export MIDI

1. **Save As:** Define the name of the export Midi file.
2. **Where:** Select the path where you want your Midi file to be saved on.

Video

In Sound Particles, you can import a video reference for your project to help working on your scene with a visual aid, both for plain or 360º/VR image references.

Importing a video

You can start importing a video by going to the "Add" button on the Transport (see the Transport section) or by going through "File -> Import -> Import Video…" on the Menu Bar above (see Other Features).

That will open the "Import Video" panel, and you can use that panel to import a video reference file to your project, allowing you to specify if you want to import the entire file or only a fragment of it.
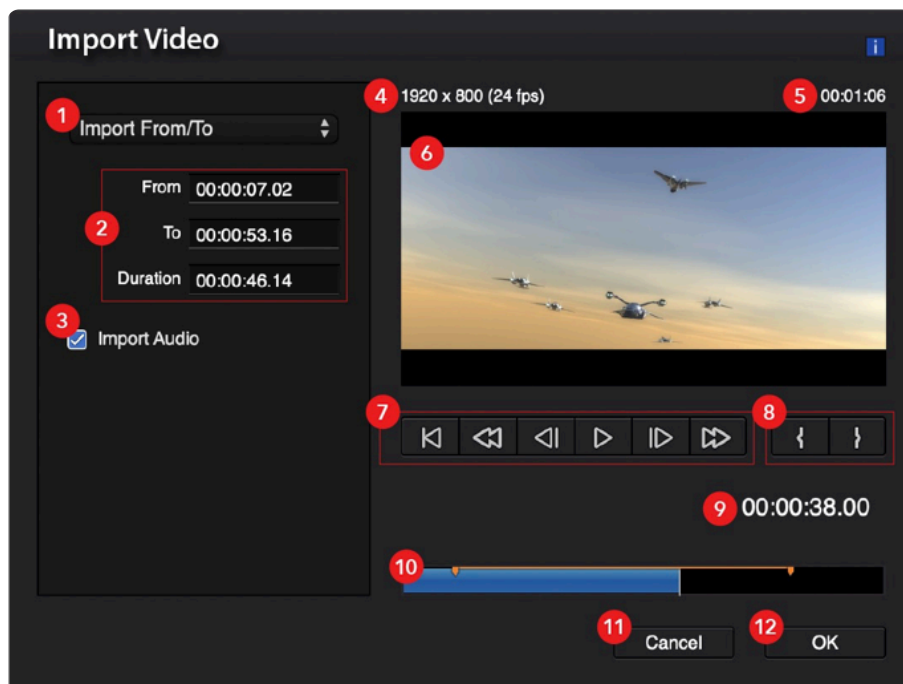
Video Import Setup Panel

1. **Import Entire Video/ From To:** Use this popup button to specify if you want to import the entire video or only a part of it.

2. **From/To/Duration:** If you choose to import only a part of the video, these will specify the start frame, the end frame and the duration of it.

> Note: All fields are only enabled if the "Import From To" choice is selected and all fields use the SMPTE format (hours:minutes:seconds:frames).

3. **Import Audio:** Leave this checkbox checked if you want to import the audio from the video. The audio from the video will then be played when you play your project.

> Note: The video's audio will not appear on any exported render.

4. **Resolution/Frame Rate:** The resolution and frame rate of the original video file.

5. **Duration:** The duration of the original video file.

6. **Video Preview:** The video preview allows you to watch the video as you define your import settings.

> TIP: Above the video preview, you can see the image features (resolution and frame rate) and duration of the original video file.

7. **Transport:** Use the transport buttons to control the video preview.

8. **Mark In/Mark Out:** Set the start and the end of the imported clip.Note: Using these buttons will automatically activate the "Import From To" mode.

9. **Current Time:** The current time of the video playback.

10. **Play Bar:** Use the play bar to quickly navigate through the video file.

> Note: The "From/To" points will appear in orange markers.

11. **Cancel:** Cancel the video import.

12. **OK:** Import the video with the changes done on the panel.

Inspector - General

After importing a video, the "Video" inspector will open and will give you access to certain parameters and information regarding the imported video. This inspector can then be accessed by clicking on the video track on you "Time Editor".

Video General Panel

1. **Description:** A small description for this video track.

2. **Time Offset:** The time offset of the video clip.

> TIP: For instance, a time offset of 30 seconds means that the video clip will only start reproducing at the time of 30 seconds. A time offset of -30 seconds means that the video will start 30 seconds earlier (the first 30 seconds of the video will not be shown since the timeline starts at zero seconds).

3. **Volume:** The volume (gain) of the audio track of the video.

> TIP: Increase this value to make the audio sound louder or decrease this value to make the audio sound softer.

4. **View Angle:** If you are using a spherical view, this defines the width of the video.

Note: By default, it has a value of 60 degrees.

TIP: If you are working with virtual reality videos, change this to 360 degrees.

Inspector - Video Info

Some information about the video clip.
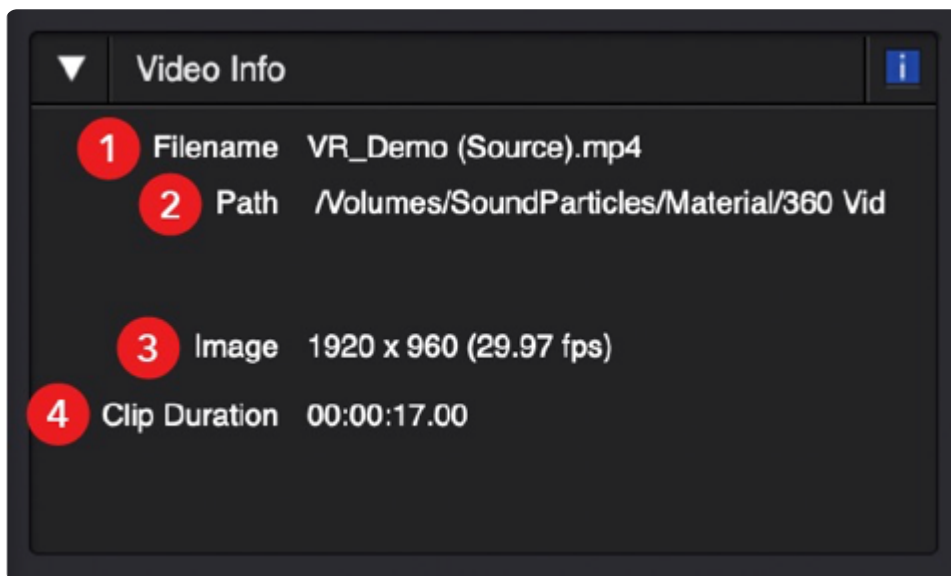
Video Info Panel

1. **Filename:** The name of the video file.

2. **Path:** The complete path of the video file.

3. **Image:** The image characteristics of the video, including the image resolution and the video frame rate.

4. **Clip Duration:** The duration of the imported clip.

Note: The original video could have had a larger duration, but this value only represents the duration of the video segment that was imported into the project.

Inspector - Video Audio Hardware

This panel maps the output of the stereo audio tracks with the outputs of your audio interface.
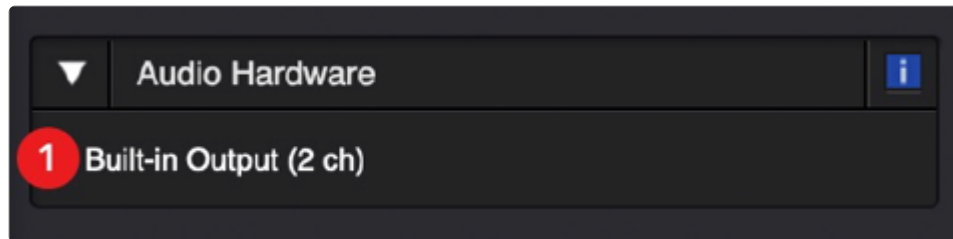
Video Hardware Panel

1. **Device name -** This small label reminds you what is the current selected audio device.

CGI Import

A newcomer to Sound Particles 3: now it's possible to import CGI animation files.

With this new feature, you can select any 3D model of the scene, or even only a section of the model (e.g.: a wing of an airplane), to be transformed into any particle objects, and you can also import the scene's cameras as microphones. All of this process will then import every inherent automation(s) that every object had when animated originally.

This feature, combined with the video import, can help you in working on your animation projects much more efficiently, as you won't need to manually create and automate the particles over a 2D video reference.

Note: Only FBX files are accepted.

Import CGI Window

You can start the CGI import process by going to "File > Import > Import CGI…" on the top Menu Bar, opening the CGI Import window with information regarding your file and how to import it.
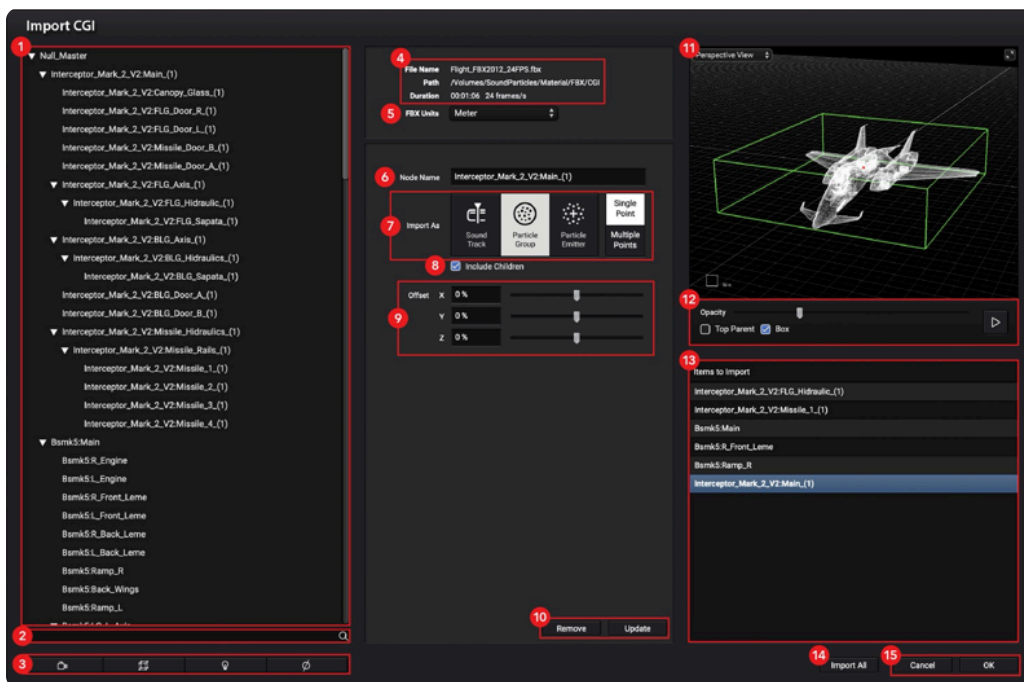
Import CGI Window

1. **Mesh List:** A list of all the meshes of the selected FBX file.

> TIP: you can filter this list by using the buttons on point 3.

2. **Search Bar:** A search bar that allows you to find objects faster by writing down keywords or part of keywords.

3. **List Filters:** This are the filters for the object list, only showing objects that correspond to the respective selected filter(s):

   a) Cameras
   b) Objects
   c) Lights
   d) Null Objects

4. **File Info:** Information regarding the FBX file, containing its: filename; path on the computer; duration and frame rate.

5. **Measurement Units:** The unit of measurement at which the original ones will be transformed into when put on the project scene.

> TIP: for example, if you worked with an object with 10 meters of length, and choose "Inches", it will turn its length, on the Sound Particles scene, to 10 inches.

6. **Name:** The name given to the selected object when imported.

7. **Import as & Single/Multiple Point:** Select what kind of particle object you want the selected model to become when imported:

   a) **Audio Track:** One single Audio Track point that only plays one audio file.

   b) **Particle Group:** A single point or multiple points Particle Group.

   > TIP: Working with a single point Particle Group is ideal for you to try out different configurations over time over the Group, as with different forms, modifiers, etc.).

   c) **Particle Emitter:** A single or multiple points that have emitters that spawn particles.

   You will then be able to select if you want to only have a Single Point or Multiple Points assigned to the model:

   > Note: Single Point is the default mode when importing as an audio track.

   c.1. **Single Point:** Only one point is created within the model. You then can edit its Offset from the center of the model itself, distributing it through the XYZ axis.

   c.2. **Multiple Point:** Multiple points ((particles) are created through the 3D model, and you can select how you want the points' distribution to be.

   > Note: the "Single/Multiple Points" only appear when Particle Group or Emitter are selected.

8. **Include Children:** Check this box if you also want to import any children that a currently selected mesh has.

> TIP: You can see that a mesh has children if there's a triangle at the left of its name on the Mesh List.

9. **Parameters:** For each Single/Multiple Points mode, each will display its own set of parameters to edit:

   a) Single Point - in Single Point mode, you can edit the **Offset** of the respective point, changing where the object is placed within the 3D model when imported to the scene.

   b) Multiple Point - in Multiple Point mode, you can work within two **Convert Methods**:

      b.1. Use Vertices as particles - choose the number of particles that will be created for each available vertex on that model.

      > Note: The number of particles per vertex will be divide with the total number of vertices, also meaning that the maximum number of particles per vertex that you can choose is equal to the total number of vertices.

      b.2. Random points in mesh lines - choose how much particles per mesh line (between two vertices) you want to be created.

10. **Add/Remove/Update Mesh:** These buttons allow you to interact with the placement of meshes on the "To import" list (#13).

    a) Add to list - add the current selected meshed to the "To import" list.
    b) Remove - remove the selected mesh of the "To Import" list.
    c) Update - if you need to change anything on a mesh you've already placed on "To Import", just select it there, do the changes, and click on this button.

11. **Mesh View:** Allows you to see the selected mesh within the different 3D perspectives. It works as a regular View, allowing you to move around, zoom, rotate, and also allows to maximize the View for a better insight.

12. **View Controls:** These elements allow you to configure how the Mesh View is presented:

    a) Top parent - shows the selected mesh in yellow within its top-parent mesh (the furthest mesh without a parent).

    b) Show box - shows the box of the volume/area occupied by the mesh.

> TIP: the box margins correspond to the Single Point Offset limits, giving you a better insight on where and how further the point was/can be moved.

    c) Mesh Opacity (slider) - this slider allows you to adjust the opacity of the mesh on the View.

    TIP: different opacities may work differently from monitor to monitor, so, level it out until you reach a comfortable state.

    d) Pause/Play - this button allows to stop/resume the camera rotation around the mesh on the Mesh View.

13. **Items to Import:** This list includes all the meshes that you previously edited and will import to the scene.

14. **Import All:** A shortcut to add all the FBX meshes and objects to the "Items to Import" window.

15. **Cancel/OK:** Cancel the import/import the "Items to Import" objects.

Project Settings

On the "Project Settings", you can configure certain aspects of your project(s), including what is saved on the "Save" file, the project sample rate and the physical behavior of sound within your scene.

Project Settings - Project File

What do you want to include on your project file?
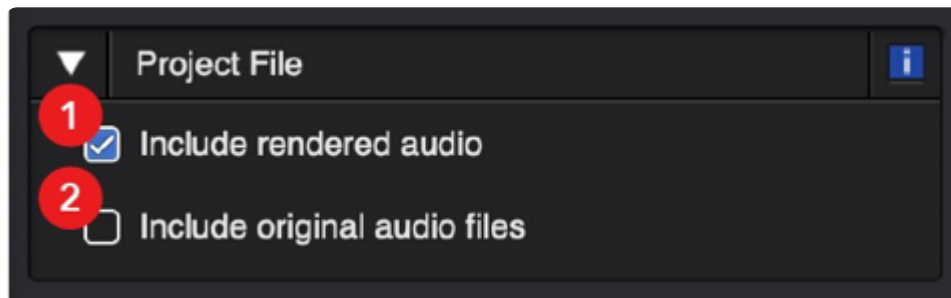
Project File Panel

1. **Include Rendered Audio:** By default, this feature is enabled, which means that all rendered audio is stored on the project file.

> TIP: If you disable this, the saved file will be smaller, but you will need to re-render the project again to be able to listen to it.

2. **Include Original Audio Files:** By default, this feature is disabled, which means that your project file will only save the file locations of each original audio file (the files you use to assign audio to the particles).

> TIP: by enabling it, you add all input audio files on the saved file, increasing its size, but allowing you to easily move the project to another computer without worrying about file locations.

3. **Recordings:**

    a) Project file only - all recorded material will exist on memory and inside the project file.

    b) Save individual files - Select a path to save recorded files. A browse button will allow you to change the location of the folder where recordings should be placed.

Sample Rate

The sample rate of your project will define the sample rate of your final render.

Note: Any input audio file that presents a different sample rate, will be automatically resampled (done in memory – Sound Particles never changes the content of input audio files).

TIP: Take into consideration that as you increase the sample rate value, you also increase the render complexity – doubling a sample rate value will double the time needed to render the project.
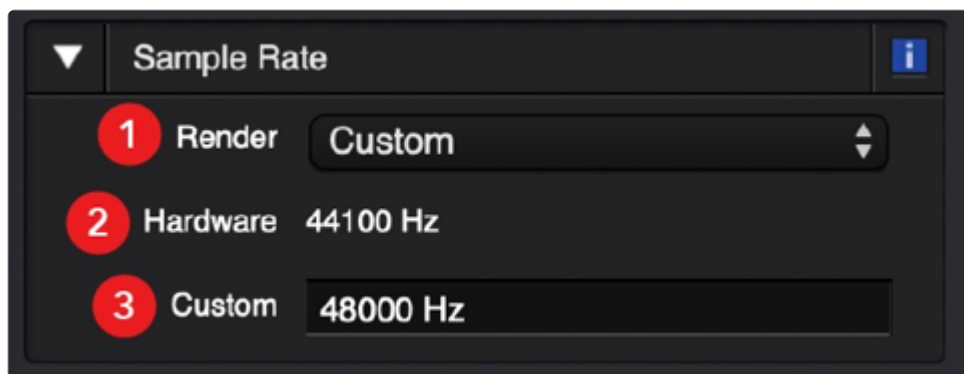
Sample Rate Panel

1. **Render:** Choose the sample rate of your final render. The following choices are available:

    a) **44 100 Hz**
    b) **48 000 Hz**
    c) **88 200 Hz**
    d) **96 000 Hz**

        e) 192 000 Hz

        f) Custom

> Note: The default value is 48 000 Hz. If there is a difference (sample rate of the render vs. sample rate of the hardware), the system will automatically resample the output audio streams before sending them to the audio hardware.

2. **Hardware:** This label allows you to see what the current sample rate of your hardware, which could be different from the sample rate of your project (render).

> TIP: For instance, you may work on a 192 kHz project, but with an audio interface that only supports up to 96 kHz.

3. **Custom:** Besides the standard sample rate values, you can use a custom sample rate value.

> Note: This field only appears when the user selects "Custom" from the sample rate popup menu.

Sound Propagation

These settings will define the behavior of sound propagation between the particles and the virtual microphones.
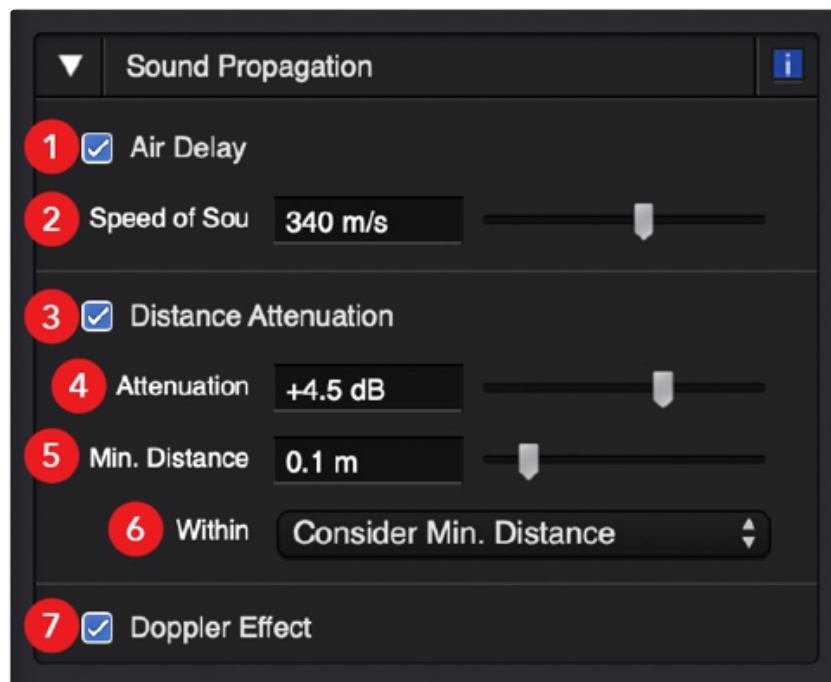
Project Sound Propagation Panel

1. **Air Delay:** Sound takes some time to travel between points.

> TIP: A checked value will add some delay between the moment the particle starts to reproduce sound and the moment that sound is captured by the virtual microphone (the amount of delay depends on the distance between the particle and the microphone). An unchecked value (black) will consider an instantaneous traveling between particles and microphones. Eventually, you may uncheck this, if you have particles at different distances from the microphone that you want to capture perfectly in sync.

> Note: The default value is checked.

2. **Speed of Sound:** The speed of sound slightly depends on the temperature and it usually varies between 330 and 340 meters per second.

> TIP: You can specify a different speed value for any creative reasons.

> Note: The default value is 340 m/s. This parameter only appears if the "Air Delay" is checked.

3. **Distance Attenuation:** Sound suffers attenuation as it travels through the air.

> TIP: If checked, the distance between the particle and the microphone will control the amount of the attenuation applied to the sound. If unchecked (black), the distance will not affect the attenuation of sound. Consider disabling this, if you want all particles to reach the microphone with the same strength, regardless of its distance.

> Note: The default value is checked.

4. **Attenuation:** What is the amount of dB attenuation that is applied to the sound as the distance doubles?

> Note: This is a very important parameter, as it controls the relation between the foreground sounds (near the microphone) and the background sounds (further away), acting almost like a depth-of-field parameter. This parameter only appears if the "Distance Attenuation" is checked and the default value is 4.5 dB.

> TIP: For instance, a 6 dB attenuation means that a particle located at 8 meters from the microphone will sound 6 dB quieter compared to when it is 4 meters away, or a 12 dB quieter compared to 2 meters, or 18d B quieter compared to 1 meter. Increase this value if you want to reduce the impact of background (distant) sounds, or decrease this value (near zero) if you wish to make distant sounds more prominent. Negative values are also possible as a creative option, causing sounds to become louder with distance - opposite to real-world behavior.

5. **Min. Distance:** As you decrease the distance between the particle and the microphone, the intensity of the captured sound increases. As the distance value gets near a zero value, the increase of intensity gets near infinity, which will create problems. Even with the normalization process that prevents clipping, such increase of intensity will result in full attenuation of all other sounds.

   To prevent strange results, this "minimum distance" parameter exists – if the distance between the particle and the microphone reaches a value that is lower than this "min. distance", the render process will not continue to increase its strength.

   > Note: This parameter only appears if the "Distance Attenuation" is checked.

6. **Within:** If the distance between the particle and the microphone reaches the "min. distance" value, you can specify two possible behaviors:

   a) Consider Min. Distance - the render engine will use the "min. distance" value (instead of the actual distance) to calculate the gain/attenuation of its signal.

   b) Mute Particle - the render engine will mute the particle, as long the particle is within the min. distance.

   > Note: The default value is "Consider Min. Distance". This parameter only appears if the "Distance Attenuation" is checked.

7. **Auto Normalize:** Check the box so the engine will consider that the microphone min. distance will correspond to a 0 dB gain.

8. **Doppler:** Changes of movement between the sound source and the listener result in frequency changes. This is called the "Doppler effect", and it is the responsible for the passing-by type of sound.

   > TIP 1: If checked, the render will take movement into consideration, applying the corresponding Doppler effect on the output result.

TIP 2: If unchecked (black), no audio changes occur due to movement between particles and microphones (the original delay on the start of sound reproduction by the particle will continue during the entire life of the particle). You may want to uncheck this if you don't want pitch variations due to movement (for instance, flying violins that don't have their pitch changed due to movement).

Note: The default value is checked.

Reset

Press the "Reset Settings" button to reset the project settings to their default values.
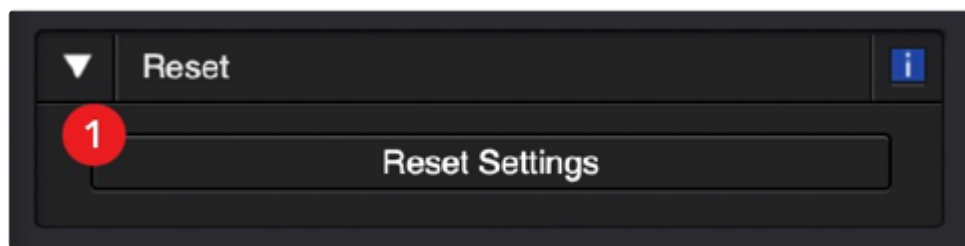
Reset Settings Button

Other Features

Track Presets

With "Track Presets" you can instantly apply a preset to a track, while maintaining its audio files, allowing you to easily tests different parameters and exploring new possibilities for your audio material.

You can create presets from the following objects:

- Audio Tracks
- Particle Groups
- Particle Emitters
- Microphones

APPLYING TRACKS PRESETS

There are two ways that you can load a Track Preset:

- **Apply a preset to an existent track:** By opening the context menu (right-clicking over one track), you can apply a compatible preset for that same track by selecting on "Apply Track Preset", overriding the previous one with the new preset.

Note: You can only see and apply presets over compatible tracks, meaning that you will only be able to apply Audio/Particle Presets over Audio Tracks, Particle Groups and Particle Emitters tracks, and apply Microphone Presets over Microphone tracks.

- **Creating a new track based on a preset:** In the Add (+) menu of the Transport, you have the "From Presets" menu that allows you to add a new, single Audio/Particles or Microphone preseted tracks.
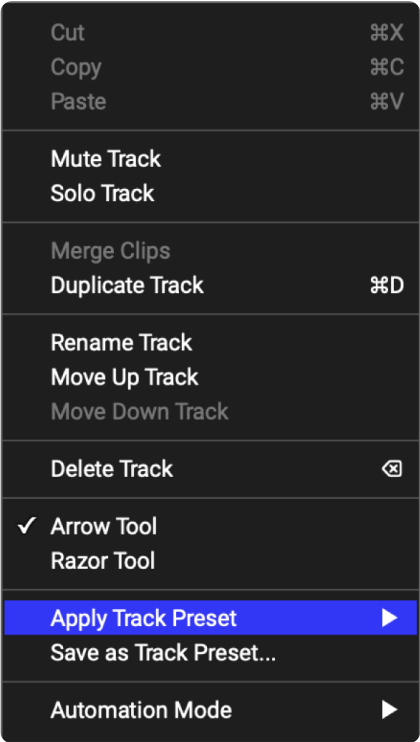
"From Presets" menu located on the Add menu of the Transportwewew

"From Presets" menu located on the Add menu of the Transport

157
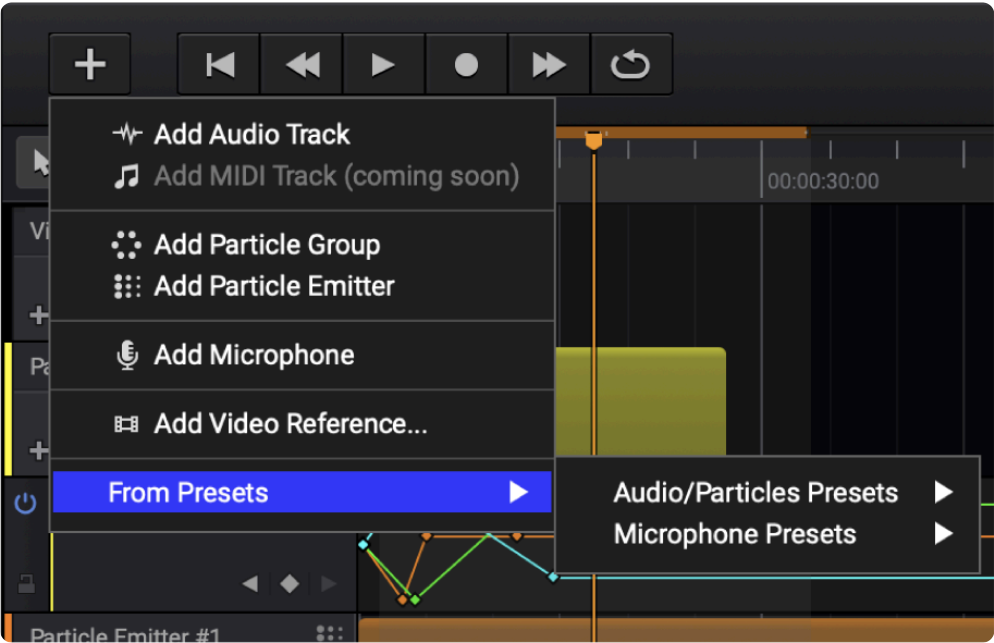
 TIP: Several Track Presets are available on the software by default, both from tracks of the Project Templates and also newly customized ones.

SAVING TRACK PRESETS

To save a track preset, right-click over it and select "Save as Track Preset…", opening then the "Save Preset" window on top of your project window (you can also open the window by going on the "Track" menu, above on the Menu Bar, and activate the same option).
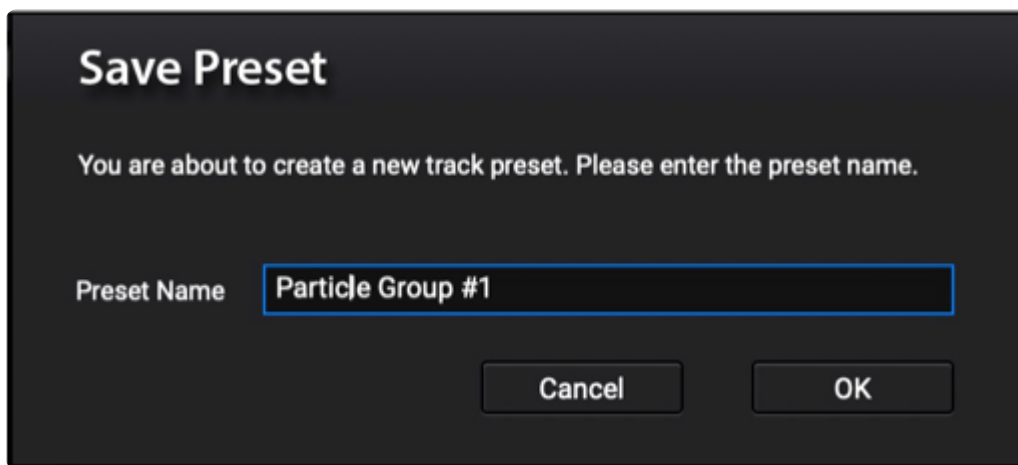
Save Track Preset Window

On the window, you can define the **Preset Name** and clicking "OK" to complete its saving.

Note 1: The Preset Name will NOT affect the track's saved Description and vice-versa.

Note 2: Currently, it's not possible to delete a preset or overwrite one over another with the same name, displaying the respective warning message. If you intend to delete an existent present, go to "~/Library/Application Support/Sound Particles/Sound Particles" on MacOS or *C:\Users[Username]\AppData\Roaming\Sound Particles\Sound Particles on Windows, and delete the intended presets on the "TrackGroupTemplates" or "TrackMicTemplates" folders.

Batch Processing

The Batch Processing feature allows you to automatically generate multiple renders using different audio material, which can be used to achieve.

- Create 50 variations of the same sound.
- Render the same project using a different original sound for each project.
- Render the same project using different groups of sounds, organized in different folders.
- All of the above together.

Concerning the workflow for the current project:

1. Select the input folder, making a different render for each sound or for each sub-folder of sounds.

2. Eventually re-render the same project more than once, recreating new particles in each render, to obtain different audio "takes".

3. Exporting all the audio files to specific folder with additional suffixes.
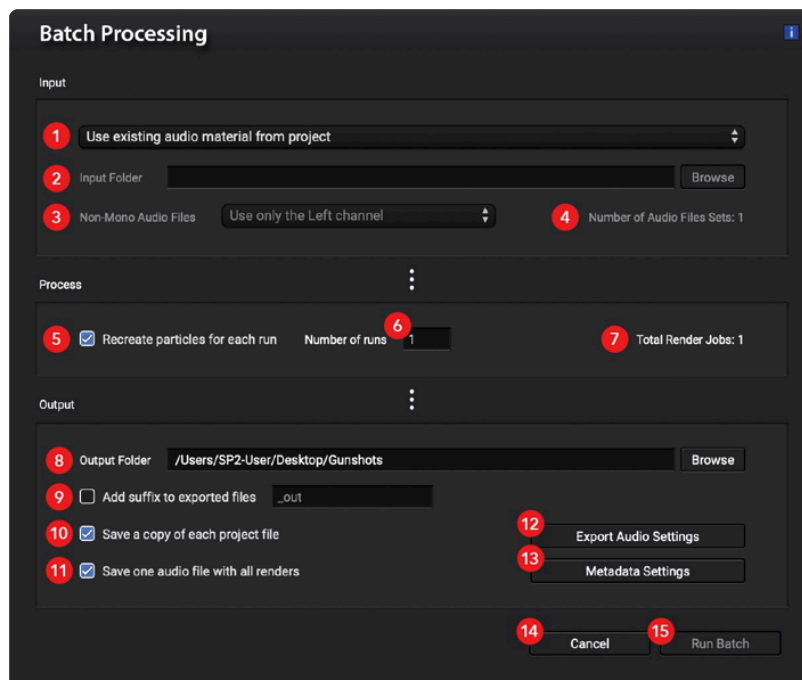
Batch Processing Window

1. **Audio Material Source:** Select how you want the Batch Processing to place audio onto the project or track(s). You can opt for several options:

a) Use existing audio material from project - each render process utilizes the already imported audio files on each available track.

b) Import new audio material on track # x ("[Name of track]") - new files from the Input Folder will be imported to the selected track.

TIP: if your project has more than 1 track, you can individually select which track you want to be processed with the new audio.

Note: a path from your computer/network must be defined to use this option.

c) Import new audio material on all tracks - all the tracks from your project will have every audio file from the Input Folder imported to them and then subsequently rendered with those files.

Note 1: this option is only available when your project has more than 1 track.

Note 2: a path from your computer/network must be defined to use this option.

2. **Input Folder:** The path of the folder that contains the audio file(s) and/or sub-folder(s) you want to use on the runs.

Note 1: For every file or sub-folder that exists on the selected Input Folder, the software will count each one for every run, as shown on the "Number of Audio Files Sets".

WARNING: The Input Folder **cannot** be the same one as the Output Folder.

TIP: You can either manually write down the path or you can use the "Browse" button to use the file explorer.

3. **Non-Mono Audio Files:** Select how you want the software to import non-mono audio files (e.g.: Stereo, 5.1, etc.). You can select from:

   a) Use only the Left channel - only imports the Left channel of the audio file(s).

   b) Use only the Right channel - only imports the Right channel of the audio file(s).

   c) Convert to Mono - mixes and imports all the channels of the audio file(s) into a Mono audio stream.

   d) Use all channels as different streams - imports all of the channels of the audio file(s) into different streams.

4. **Number of Audio Files Sets:** Displays the number of the audio file sets (audio files + sub-folders) to be used on the Batch's runs.

5. **Recreate particles for each run:** Activating this option makes that, for every executed run, all the particles Groups/Emitters will be recreated.

TIP: Using this option allows for more diverse renders between the imported audio file(s)/sub-folder(s).

6. **Number of runs:** How many runs you want the software to run for each imported audio file/sub-folder.

Note: this parameter is only enabled if "Recreate particles for each run" is enabled.

7. **Total Render Jobs:** the total number of renders of the executed Batch (Number of Audio File Sets x Number of runs).

8. **Output Folder:** The folder where the runs will be exported to.

> TIP: You can either manually write down the path or you can use the "Browse" button to use the file explorer.

> Note: The Output Folder **cannot** be the same one as the Input Folder.

9. **Add suffix to exported files:** If enabled, you can write down a suffix to be added to the exported file's name.

10. **Save a copy of each project file:** If enabled, for every executed run, its respective project file will be saved alongside it.

11. **Save one audio file with all renders:** If enabled, this will save all the renders into a single file. If disabled, each render will be saved into its own file.

12. **Export Audio Settings:** Opens the "Export Audio" window, allowing you to configure the export parameters of each microphone (See Export Audio).

13. **Metadata Settings:** Opens the "Metadata" window, allowing you to edit the respective Metadata information of the save files (See Export Audio - **Include Metadata** section).

14. **Cancel:** Cancels the Batch Processing and closes its window.

15. **Run Batch:** Runs the Batch with the defined configurations.

User Project Template

It is possible to save a project as a "Project Template", adding it to the "Project Templates" list, allowing you to reuse when needed for future projects.

CREATING PROJECT TEMPLATE

You can start creating your Project by going on the "File" menu, of the Menu Bar, and clicking "Save as Template…".
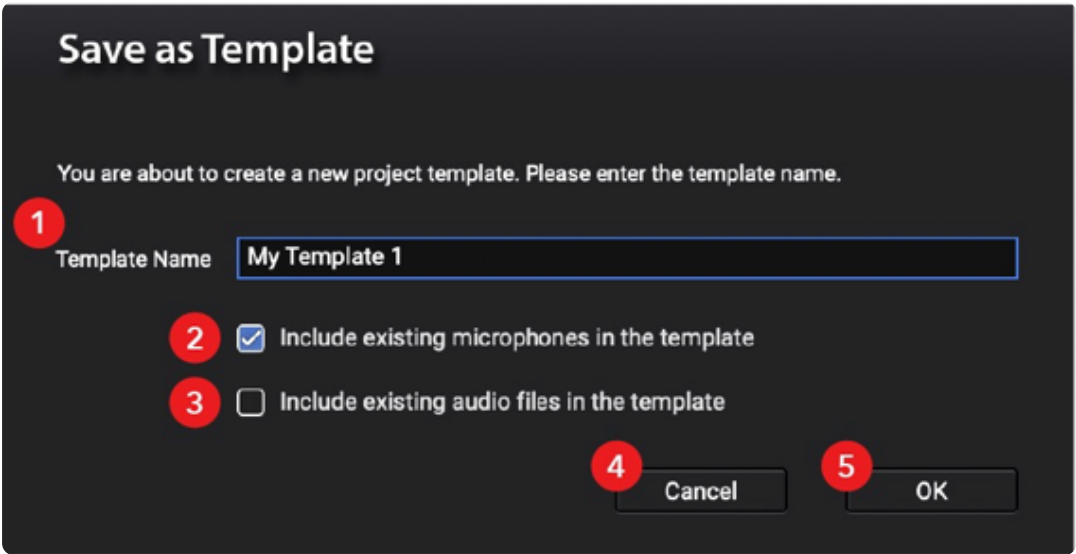
Save as Template

The "Save as Template" window will then appear:
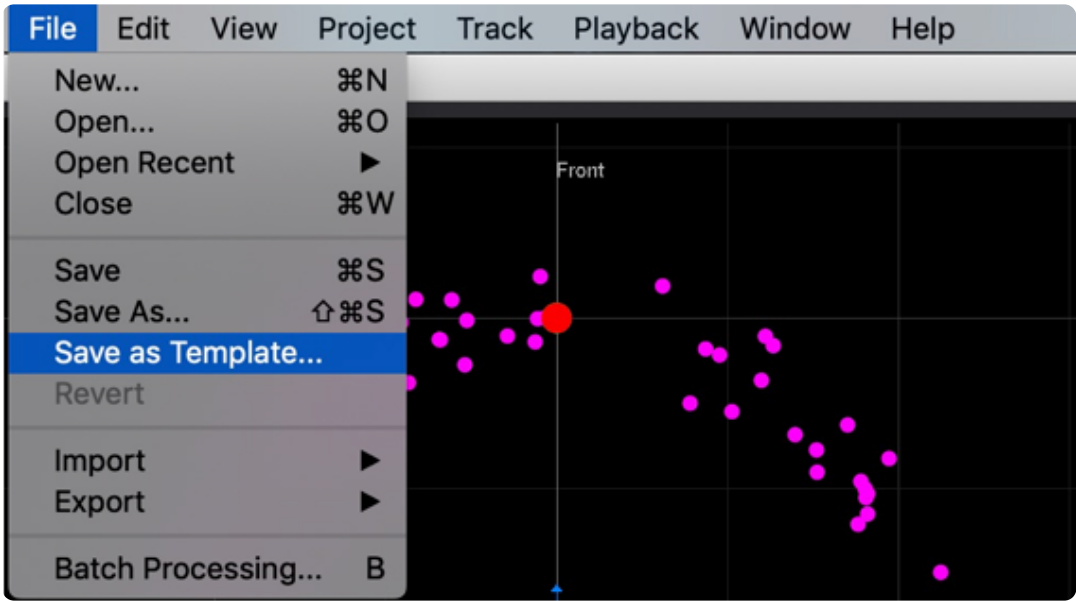
"Save as Template" location on the Menu Bar

1. **Template Name:** The name of your Project Template.

Note: You cannot create a Template with the same name as of another one already existent.

2. **Include existing microphones in the template:** If enabled, the microphones of your project will be included on the saved template, being present on it when opening.

3. **Include existing audio files in the template:** Saves the imported audio of your project into the template, meaning that the next time you load the template, the respective audio files will already be present on their assigned tracks.

4. **Cancel:** Cancels the template creation.

5. **OK:** Creates the User Template with the respective configurations on the Project Template's list on the "New Project" window.

LOADING A PROJECT TEMPLATE

To create a new project using one User Project Template, you can find the create User Templates created at the bottom of the Project Templates list of the "New Project" window.
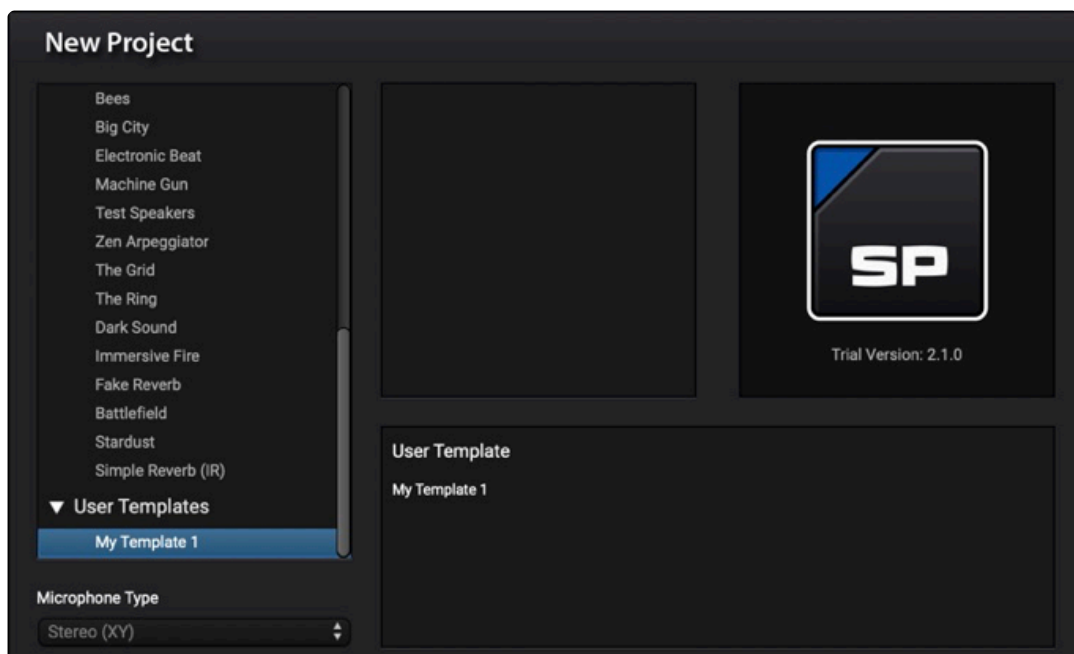
The User Templates location on the "New Project" window

Note: It's not possible to select a Microphone Type when opening a User Template, even if the "Include existing microphones in the template" option, upon saving, was deactivated.

To create a new project using one User Project Template, you can find the create User Templates created at the bottom of the Project Templates list of the "New Project" window.
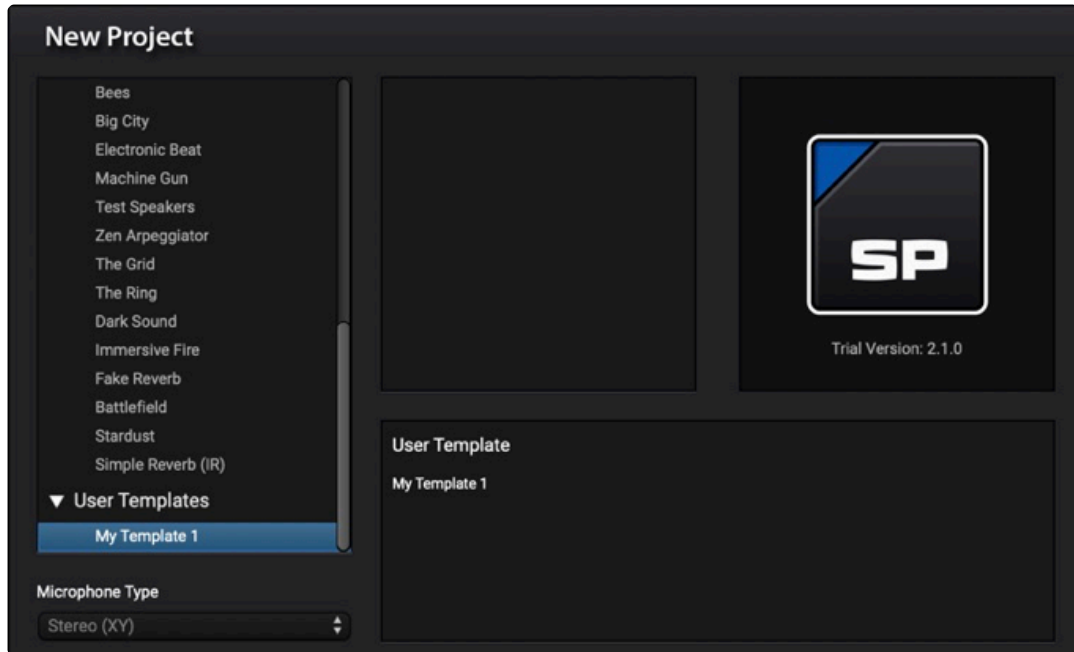
The User Templates location on the "New Project" window

Note: It's not possible to select a Microphone Type when opening a User Template, even if the "Include existing microphones in the template" option, upon saving, was deactivated.

Slider Controls

You can control certain parameters with a slider control, allowing you to easily achieve an intended value more rapidly.

You can use certain key combinations alongside a mouse click to achieve certain effects when controlling a slider:

- **Alt + Primary Mouse Button:** resets the parameter value and places the slider accordingly.

- **Ctrl + Primary Mouse Button:** makes the slider move slower, allowing you to pick a value more precisely.

- **Shift + Primary Mouse Button:** only available for parameters with a Degree unit, this allows you to instantly loop its value around when one of the tips is reached.

Shortcuts

Views Navigation

3D Navigation	Mac	Windows	
	Translate View	Mouse Drag	Mouse Drag
	Zoom View	Ctrl + Mouse Drag	Ctrl + Mouse Drag
	Rotate View	⌥ + Mouse Drag	Alt + Mouse Drag

Time Editor

Tracks	Mac	Windows	
	Duplicate Track	⌘ + D	Ctrl + D
Automation		**Mac**	**Windows**
	Create Keyframe	Double Click on Line	Double Click on Line
	Add/Remove Keyframe to Selection	⌘ + Primary Mouse Button (on keyframe)	Ctrl + Primary Mouse Button (on keyframe)
	Drag Keyframe(s)	Shift + Primary Mouse Button (drag)	Shift + Primary Mouse Button (drag)
	Drag Keyframe(s) Horizontally	Shift + Alt + Primary Mouse Button (drag)	Shift + Option + Primary Mouse Button (drag)
	Drag Keyframe(s) Vertically	Shift + ⌘ + Primary Mouse Button (drag)	Shift + Ctrl + Primary Mouse Button (drag)
Zoom		**Mac**	**Windows**
	Zoom+ Horizontally	+	+
	Zoom- Horizontally	-	-
	Zoom+ Vertically	⌘ +	Ctrl +
	Zoom- Vertically	⌘ -	Ctrl -

Menu Bar & Shortcuts

File	Mac		Windows	
	New Project	⌘ + N	Ctrl + N	
	Open Project	⌘ + O	Ctrl + O	
	Open Recent			
	Close Current Project	⌘ + W	Ctrl + W	
	Save Current Project	⌘ + S	Ctrl + S	
	Save Current Project as...	⇧ + ⌘ + S	Shift + Ctrl + S	
	Revert			
	Import			
	Import Audio			
	Import Video			
	Import CGI			
	Export			
	Export Audio			
	Batch Processing	B	B	
	Setup/Manage Account			
	[Windows] Exit Sound Particles		Alt + F4	

Edit	Mac		Windows	
	Cut	⌘ + X	Ctrl + X	
	Copy	⌘ + C	Ctrl + C	
	Paste	⌘ + V	Ctrl + V	
	Select All	⌘ + A	Ctrl + A	
	[Windows] Preferences	⌘ + ,	Ctrl + ,	

View	Mac	Windows	
	3D Views			
	Transport	⇧ + ⌘ + T	Shift + Ctrl + T	
	Time Editor	⌘ + T	Ctrl + T	
	Inspector	⌘ + I	Ctrl + I	
	Single View	Q	Q	
	Dual View	W	W	
	Left View			
	Top View	1	1	
	Front View	2	2	
	Left View	3	3	
	Right View	4	4	
	Perspective View	5	5	
	Video View	6	6	
	360º View	7	7	
	VR View	8	8	
	Maximize	0	0	
	Right View			
	Top View	⌘ + 1	Ctrl + 1	
	Front View	⌘ + 2	Ctrl + 2	
	Left View	⌘ + 3	Ctrl + 3	
	Right View	⌘ + 4	Ctrl + 4	
	Perspective View	⌘ + 5	Ctrl + 5	
	Video View	⌘ + 6	Ctrl + 6	
	360º View	⌘ + 7	Ctrl + 7	
	VR View	⌘+ 8	Ctrl + 8	
	Maximize	⌘ + 0	Ctrl + 0	

	Autofit (3D Views)	F	F	
	Enter Full Screen	⌘ + F	Ctrl + F	

Project	**Mac**	**Windows**	
	Render	R	R	
	Clear Render	⌘ +	Ctrl + Backspace	
	Recreate All Particles	⇧ + V	Shift + V	
	Add			
	Particles Group	⌥ + 1	Alt + 1	
	Particles Emitter	⌥ + 2	Alt + 2	
	Audio Track	⌥ + 3	Alt + 3	
	Microphone	⌥ + 4	Alt + 4	
	Video Reference			
	Project Settings	S	S	

Track	Mac	Windows	
	Multichannel Setup		
	Normalize Mic	⌥ + ⇧ + N	Shift + Alt + N	
	Normalize All Mics	⇧ + N	Alt + N	
	Recreate Particles	V	V	
	Color			
	Stems			
	Capture All			
	Capture None			
	Add			
	Add...			
	Remove			
	Delete		Backspace	
	3D Manipulator	M	M	

Playback	Mac	Windows	
	Play	Space	Space
	Reset Position	⇧ + ←	Shift + ←
	Rewind	⌘ + ←	Ctrl + ←
	Forward	⌘ + →	Ctrl + →
	I/O		

Window	Mac	Windows	
	Minimize	⌘ + M	Ctrl + M
	Zoom		

Miscellaneous	Mac	Windows	
	Preferences	⌘ + ,	Ctrl + ,
	Hide Sound Particles	⌘ + H	
	Hide Others	⌥ + ⌘ + H	
	Quit Sound Particles	⌘ + Q	
	Exit		Alt + F4

Credits

Produced by

Nuno Fonseca

Project Manager by

Rui Rijo

Product Manager by

Salvador Miranda, Nuno Fonseca

Developed by

Vítor Carreira, Ricardo Maltez, João Carreira, Diogo Cardoso, Fábio Louro, Pedro Ferreira, Alexandre Frazão, Gabriel Silva, Ashley Prazeres, Célio Mendes, Gonçalo Bernardo, Gustavo Reis, Miguel Carvalho, André Pinto

Quality Assurance and Testing by

Salvador Miranda, João Dionísio, João Franco, Tony Joy, Eduardo Mota, Luís Rodrigues, Henrique Vassalo, Paulo Teixeira

Graphic Designer by

Ricardo Monteiro, Marco Afonso

Artist Strategy by

Tony Joy

Marketing by

Catarina Chagas

Executive Assistance by

Marta Jorge

EULA

END USER LICENSE AGREEMENT OF SOUND PARTICLES – JANUARY 2020

I. GENERAL

The following End User License Agreement ("EULA") represents an agreement between you ("Licensee") and "Sound Particles, S.A.", with head office at IDD, Rua da Carvalha, 570, 2400-441 Leiria, Portugal (hereinafter "Sound Particles") for the use of software including related media documentation (for example, program descriptions and manuals) and other documents and materials manufactured by Sound Particles (the "Product(s)").

By installing the software on your computer, you declare yourself in agreement with these conditions. If you do not agree with these conditions, you must not install the software or use it.

II. SCOPE OF USE

The Products are intellectual property of Sound Particles and are protected by law. Licensee, as purchaser of the Products, acquires only a limited, non-exclusive and non-transferable license to use, personally or professionally, the Products. Any other use or exploitation not explicitly granted to Licensee in this EULA shall not be allowed without prior written consent from Sound Particles. Specifically, Licensee is not entitled to copy, decompile, reverse engineer the Product or parts thereof, create derivative works from the Products or sublicense or provide the Products as "software as a service".

Licensee must ensure by appropriate and reasonable steps that third parties, including its own employees, cannot make unauthorized use of the Product. Licensee shall be liable to Sound Particles for any loss or damage in this context.

The Software is being licensed to you and you hereby acknowledge that no title or ownership in the Software is being transferred or assigned and this EULA is not to be construed as a sale of any rights in the Software. Sound Particles retains all right, title and interest in the Products, including, but not limited to, all copyrights, trademarks, trade secrets, trade names, proprietary rights, patents, titles, computer codes, audiovisual effects, themes, settings, artwork, sound effects, musical works, and moral rights whether registered or not and all applications thereof.

1. Sound Particles grants Licensee the non-exclusive right without restrictions in time or place to use the Products. Sound Particles is not obliged to disclose the Products' software underlying source code, including the associated development documentation.

2. Licensee may either:

   a) Install and use the licensed Products' software on several devices (e.g. one laptop, one desktop), provided that the said software is used only by the same single person - Per user licensing. Simultaneous use on more than one hardware device is not permitted.

   b) Install the licensed Products' software on a single device, allowing its use by several users on the device (e.g. studio computer) - Per seat licensing.

3. Licensee may copy the licensed Products' software, only if such reproduction is necessary for the contractually agreed use. Licensee is authorized to create a backup, only if this is necessary to secure the future use.

4. Licensee is not authorized to modify the Products' software.

5. Licensee shall not attempt to develop any software that contains the "look and feel" of any of the Products' or is otherwise derivative of its software.

6. Third Parties

   a) Renting or lending the licensed Products' software to a third party is expressly forbidden. Apart from that and if not provided otherwise within this EULA, Licensee may leave the software to a third party for a certain amount of time, if the third party agrees to the terms of this EULA and Licensee does not use the software during this period.

   b) Except if otherwise stated within this EULA, Licensee may resell the software to a third party or transfer the software permanently free of charge, provided the third party agrees in writing with this EULA and Licensee ceases all use of the software, completely removes all installed copies of the software from its computer and – if the software was not purchased via download – deletes or transfers the original data storage to the third party (if Licensee is not obliged to a longer storage by law). In addition, Licensee is required to de-register the purchased software with Sound Particles. Following respective request from Licensee via its email address registered with Sound Particles, the serial number of the Product will be transferred by Sound Particles to the third party, and at the same time the registration of Licensee for the Product purchased will be deleted.

7. Licensee may not (i) distribute, lease, license, sell, rent, lend, convey or otherwise transfer or assign the Products or any copies thereof, (ii) make publicly available or available on a network for use or download by multiple users, (iii) remove, obscure or modify any copyright, trademark or other proprietary rights notices, marks or labels contained on or within the Products, falsify or delete any author attributions, legal notices or other labels of the origin or source of the material

8. In addition, for certain Products from Sound Particles the following shall apply:

    a) Bundles (product bundles consisting of hardware and software or software-only bundles) can only be resold / transferred as a whole. The individual components of a bundle must not be resold / transferred separately.

    b) Any Products from Sound Particles labeled or otherwise provided to you as "NFR" (Not For Resale) shall only be used for demonstration, testing and evaluation purposes. NFR Products must not be used for commercial purposes, and must not be resold or transferred. NFR Products are exempt from update, upgrade or crossgrade offers and cannot be purchased with or exchanged for vouchers or coupons.

    c) Any Products from Sound Particles labeled or otherwise provided to you as an EDU (Educational) version shall only be used by students or those working in educational institutions. This definition includes students, faculty, staff and administration attending and / or working at an educational institutional facility: private / public schools, training facilities, colleges, universities and similar. EDU Products must not be used for commercial purposes, and must not be resold or transferred. EDU Products are exempt from update, upgrade or crossgrade offers, and cannot be purchased with or exchanged for vouchers or coupons.

    d) Any Products from Sound Particles labeled or otherwise provided to you as "Demo Versions" or similar, shall only be used for demonstration, testing and evaluation purposes. Demo Versions must not be used for commercial or public purposes, and must not be resold or transferred.

If you are not sure which license type you own – (FULL / NFR / EDU) – please contact our Support Team.

III. THIRD PARTY RIGHTS

Some content included in Sound Particles software Products, as well as any associated intellectual property rights and titles, belongs to third parties. This content may be protected by copyright or other intellectual property laws and treaties and

may be subject to terms and conditions from the third party providing the content.

FFmpeg Notice - The Software utilizes the FFmpeg video application and its included libraries. FFmpeg is a trademark of Fabrice Bellard (originator of the FFmpeg project - FFmpeg project, http://www.ffmpeg.org) licensed under the GNU Lesser General Public License 3.0 and its source can be downloaded here.

IV. DUTIES TO PROTECT

Copyright notices, serial numbers and other identification features of the program may not be removed from the software or altered in any way.

V. WARRANTY, LEGAL LIABILITY, DAMAGES

DISCLAIMER OF WARRANTIES: YOU EXPRESSLY ACKNOWLEDGE AND AGREE THAT USE OF THE SOFTWARE IS AT YOUR SOLE RISK AND THAT THE ENTIRE RISK AS TO SATISFACTORY QUALITY, PERFORMANCE, AND ACCURACY IS WITH YOU. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, THE SOFTWARE IS PROVIDED "AS IS," WITH ALL FAULTS AND WITHOUT WARRANTY OF ANY KIND, AND SOUND PARTICLES HEREBY DISCLAIMS ALL WARRANTIES AND CONDITIONS WITH RESPECT TO THE SOFTWARE PRODUCT, EITHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES AND/OR CONDITIONS OF MERCHANTABILITY, OF SATISFACTORY QUALITY, OF FITNESS FOR A PARTICULAR PURPOSE, OF ACCURACY, OF QUIET ENJOYMENT, AND NON-INFRINGEMENT OF THIRD PARTY RIGHTS. SOUND PARTICLES DOES NOT WARRANT AGAINST INTERFERENCE WITH YOUR ENJOYMENT OF THE SOFTWARE, THAT THE FUNCTIONS CONTAINED IN THE SOFTWARE WILL MEET YOUR REQUIREMENTS, THAT THE OPERATION OF THE SOFTWARE WILL BE UNINTERRUPTED OR ERROR-FREE, OR THAT DEFECTS IN THE SOFTWARE WILL BE CORRECTED. NO ORAL OR WRITTEN INFORMATION OR ADVICE GIVEN BY SOUND PARTICLES OR A SOUND PARTICLES AUTHORIZED REPRESENTATIVE SHALL CREATE A WARRANTY. SHOULD THE SOFTWARE PROVE DEFECTIVE, SOUND PARTICLES MAY CHOOSE TO REPLACE THE LICENSEE'S COPY OF THE SOFTWARE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES OR LIMITATION ON APPLICABLE STATUTORY RIGHTS OF A CONSUMER, SO THE ABOVE EXCLUSION AND LIMITATIONS MAY NOT APPLY TO YOU. THIS LIMITATION OF WARRANTY SHALL NOT BE APPLICABLE SOLELY TO THE EXTENT THAT ANY SPECIFIC PROVISION OF THIS LIMITATION OF LIABILITY IS PROHIBITED BY ANY LAW, WHICH CANNOT BE PRE-EMPTED.

LIMITATION OF LIABILITY: TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL SOUND PARTICLES OR ITS AFFILIATES BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION,

OR ANY OTHER PECUNIARY LOSS) ARISING OUT OF THE USE OF OR INABILITY TO USE THE SOFTWARE OR DEFECT IN OR CAUSED BY THE SOFTWARE, INCLUDING BUT NOT LIMITED TO COMPROMISING THE SECURITY OF YOUR COMPUTER, OPERATING SYSTEM OR FILES, OR THE PROVISION OF OR FAILURE TO PROVIDE SUPPORT SERVICES, EVEN IF SOUND PARTICLES HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN ANY CASE, SOUND PARTICLES ENTIRE LIABILITY UNDER ANY PROVISION OF THIS EULA SHALL BE LIMITED TO THE AMOUNT ACTUALLY PAID BY YOU FOR THE SOFTWARE OR REPLACEMENT OF THE SOFTWARE WITH PRODUCT OF COMPARABLE RETAIL VALUE, AS SOUND PARTICLES MAY ELECT IN ITS SOLE DISCRETION. IF SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY, THE ABOVE LIMITATION MAY NOT APPLY TO YOU IN PART OR WHOLE. THIS LIMITATION OF LIABILITY SHALL NOT BE APPLICABLE SOLELY TO THE EXTENT THAT ANY SPECIFIC PROVISION OF THIS LIMITATION OF LIABILITY IS PROHIBITED BY ANY LAW, WHICH CANNOT BE PRE-EMPTED.

Licensee agrees to indemnify, defend and hold harmless Sound Particles and its affiliates and their respective officers, employees, directors, agents, licensees (excluding you), sublicensees (excluding you), successors and assigns from and against any and all liability, costs, losses, damages, and expenses (including reasonable attorneys' fees and expenses) arising out of any claim, suit, or cause of action relating to and/or arising from (a) your breach of any term of this EULA; (b) your violation of any rights of any third party; or (c) your use or misuse of the Software. Your indemnification obligations set forth in the immediately preceding sentence shall survive the termination of this EULA.

VI. CLOSING PROVISIONS

1. If any stipulation of this EULA should be or become invalid, either completely or in part, this shall not affect the validity of the remaining stipulations. The parties undertake instead to replace the invalid stipulation with a valid regulation which comes as close as possible to the purpose originally intended.

2. TERMINATION: This EULA will terminate automatically if you fail to comply with its terms and conditions. In such event, you must destroy all copies of the Product and all of its component parts (including the software) and cease and desist from accessing any Products.

3. This Agreement shall be governed and construed by the laws of Portugal. The United Nations Convention for the International Sale of Goods shall not apply.

The exclusive place of jurisdiction with respect to all disputes based on or in connection with this Agreement shall be Leiria, Portugal. However, Sound Particles reserves the right to sue Licensee at Licensee's place of residence or place of business.

Should you have any queries concerning this EULA, please write to this address:

Sound Particles S.A.
Rua da Carvalha, 570,
2400-441 Leiria
Portugal