Ambiente
User Manual

v1.0.0

Audio Modeling

Table Of Contents

Before you start

Welcome to *Ambiente*, a unique and powerful tool designed to bring authentic spatial placement to your audio. Unlike traditional reverb or convolution reverb, *Ambiente* is a true Room Simulator. It doesn't simply add a reverb effect or apply impulse responses; instead, *Ambiente* places each audio source within a modeled room and accurately calculates the geometric reflections of sound waves based on the room's specific dimensions and materials.

This approach allows you to position instruments and tracks in a shared acoustic space, giving your mix a natural, cohesive sound that feels as if all elements were recorded together in a real room. As you explore *Ambiente*, remember that it's not just about adding reverberation—it's about creating a realistic spatial environment where each sound source interacts with the room in an organic, lifelike way.

Please read this user manual carefully. It contains very important information that will help you achieve the best results in as short a time as possible. The latest version of all Audio Modeling product manuals can be found at audiomodeling.com/manuals. Release Notes are available at audiomodeling.com/support/release-notes.

The Desktop version will function on any modern computer (see Specifications), using any host application which supports VST, VST3, Audio Units or AAX plug-in formats, or running as a standalone application. An example host software could be a sequencer or a digital audio workstation (DAW) such as Camelot Pro, Ableton Live, Cubase, Logic, Pro Tools, Studio One, Digital Performer, Reaper, LUNA, etc.

Licensing

The product can be activated on up to four computers at the same time. Refer to the Installation paragraph for instructions on how to install and authorize Audio Modeling products.

To move an authorization to a different computer, please go to the Customer Portal at my.audiomodeling.com and delete it from the activations list of the corresponding License Key.

The full terms and conditions can be found in the End User License Agreement (EULA) provided with the product. Please refer to the "Installation Path" paragraph of this user manual to locate the EULA on your system.

Specifications

Supported Platforms

macOS

- Versions: 10.13 (High Sierra) – 15 (Sequoia)
- Formats: Standalone, Audio Units, VST, VST3, AAX (64-bit)
- NKS (Native Instruments Komplete Kontrol) – VST3 only
- Apple Silicon architecture supported natively

Windows

- Versions: Windows 10, Windows 11
- Formats: Standalone, VST, VST3, AAX (64-bit)
- NKS (Native Instruments Komplete Kontrol) – VST3 only

Storage Requirements

macOS

- Installer Size: 80 MB
- Required Space: 28 MB per plugin format + 9 MB for shared resources (Total: 37 MB to 149 MB)
- RAM Occupancy: About 45 MB per instance

Windows

- Installer Size: 47 MB
- Required Space: 16 MB per plugin format + 9 MB for shared resources (Total: 25 MB to 73 MB)
- RAM Occupancy: About 60 MB per instance

All Audio Modeling apps and plugins are navigable by the native accessibility frameworks on macOS and Windows.

Installation

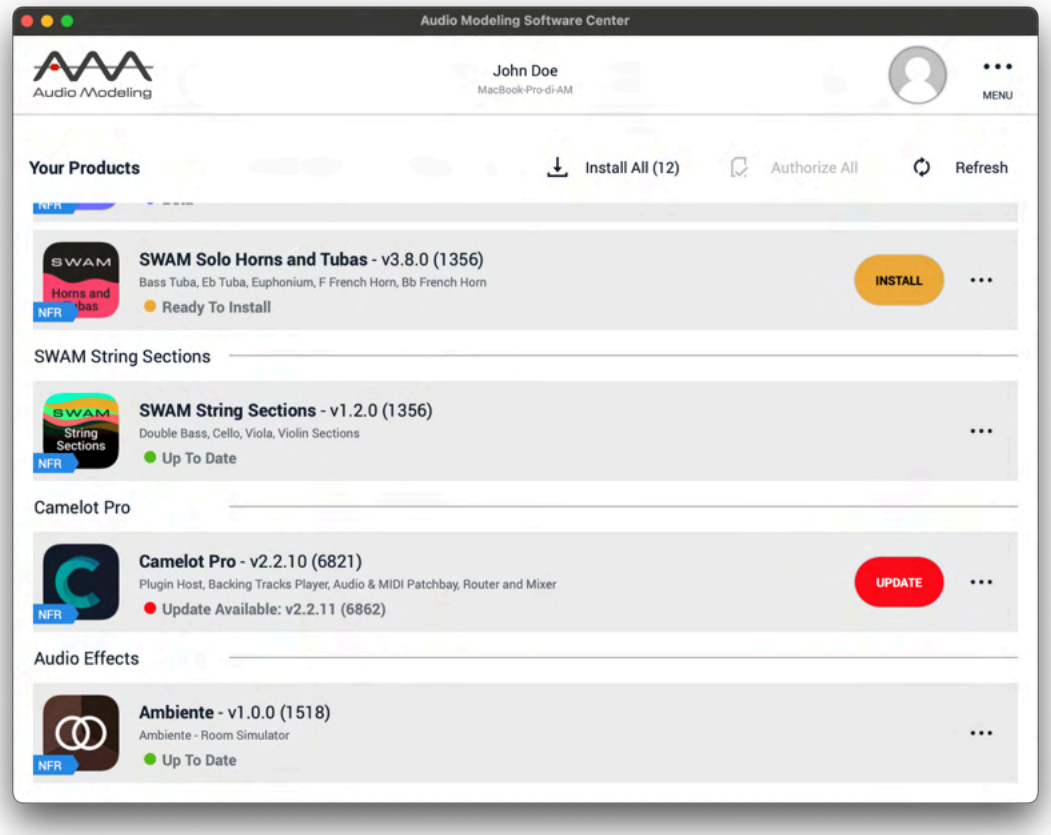
Product Registration and Installation

1) login to our Customer Portal (https://my.audiomodeling.com); create a new account if you have never signed up;
2) select "Register" under the "Products" menu item;
3) type the License Key or Redeem code provided, select "Continue";
4) download, install and launch the "Audio Modeling Software Center", available both on the Customer Portal and at https://audiomodeling.com/support/install-and-update, to download and authorize the products on your computer.

If you installed a previous version

The updates are managed through the Audio Modeling Software Center.

NOTE: the products can be activated "online" only, i.e. your computer must be connected to the Internet at the time of authorization. If you need to work offline, just connect to the Internet for the time required for the authorization, then disconnect once the authorization is complete.



Installation paths

macOS

- Standalone app, End User License Agreement, Uninstaller are located in the folder chosen in the Audio Modeling Software Center, by default: /Applications/Audio Modeling/Ambiente
- Audio Units plug-ins are located under: /Library/Audio/Plug-Ins/Components
- VST3 plug-ins are located under: /Library/Audio/Plug-Ins/VST3
- VST plug-ins are located under: /Library/Audio/Plug-Ins/VST
- AAX plug-ins are located under: /Library/Application Support/Avid/Audio/Plug-Ins
- Factory presets and and auxiliary resources are stored under: /Users/Shared/Audio Modeling/SWAMv3/AudioEffects/Ambiente
- User presets are stored under: ~/Library/Audio Modeling/SWAMv3/AudioEffects/Ambiente

Windows

- Standalone app, End User License Agreement, Uninstaller are located in the folder chosen in the Audio Modeling Software Center, by default: C:\Program Files\Audio Modeling\Ambiente
- VST3 plug-ins: the installation path is defined in the Audio Modeling Software Center, default: C:\Program Files\Common Files\VST3
- VST plug-ins: the installation path is defined in the Audio Modeling Software Center, default: C:\Program Files\VSTPlugins
- AAX plug-ins are located under: C:\Program Files\Common Files\Avid\Audio\Plug-Ins
- Factory presets and and auxiliary resources are stored under: C:\Users\Public\Documents\SWAMv3\AudioEffects\Ambiente
- User presets are stored under: %AppData%\Audio Modeling\SWAMv3\AudioEffects\Ambiente

Hardware Requirements

CPU load

Ambiente requires a modern computer with at least a 2.5 GHz 4-Core CPU for a single instance. Additional instances will require both a more powerful processor and a low-latency audio driver/device (e.g. ASIO).
Less powerful systems may also prove satisfactory, but may require larger buffer sizes, which incur higher latencies.

Note: This may not necessarily result in an actual problem for music production. Using the freeze feature or bouncing the single tracks to audio provides a useful remedy.

Audio interface (sound card)

A good quality audio interface with suitable low-latency drivers is required. On Windows, ASIO drivers are recommended. Suggested settings for buffer size at 44.1 or 48 kHz are 128, 256, or 512 samples (larger buffers provide higher latency, but less CPU load). Onboard audio devices are often suitable on modern computers, iPad and iPhone.

Software Requirements

Standalone

We provide a Standalone version of each instrument, please check the Installation Path paragraph of this User Manual to locate the applications.

Plug-ins

A DAW (Digital Audio Workstation) or other host capable of running VST2.4, VST3, Audio Units or AAX plug-ins is needed to run the Audio Modeling products. A list of compatible hosts and DAWs can be found on our Knowledge base: https://kb.audiomodeling.com/ .

Introduction

Ambiente is an advanced Room Simulator by Audio Modeling that allows musicians and producers to place any sound source, from virtual instruments to recorded tracks, in a shared acoustic space. *Ambiente* leverages Audio Modeling's expertise in physical modeling to recreate realistic room acoustics, offering users unprecedented control over sound placement, room characteristics, and sound interaction within their DAW or as a standalone application.

Ambiente functions as a traditional audio effect and can be used as a standalone app or more optimally as a plugin within a DAW:
Using as an Insert FX Plugin: Insert Ambiente on any track in your DAW to position that track within the simulated room. When multiple tracks use Ambiente, all sources appear in the shared Ambiente room. If SWAM instruments are included, they will automatically integrate into the shared environment (with "Legacy Reverb" disabled in SWAM settings).
Suggested Workflow: *Ambiente* enables cohesive integration of SWAM instruments, third-party virtual instruments, and even close-miked acoustic recordings (vocals, acoustic instruments) captured outside of professional studios. This setup makes it possible to achieve professional sound from modest home studio recordings, unifying all elements within a single, natural-sounding space.

User Interface

The *Ambiente* GUI is divided into two main sections: the Header and the Main Area.

Header

The Header contains essential navigation and management tools:

- Room Tabs: Four tabs allow you to navigate between three customizable rooms and a fourth fixed "Close Mic Room." Each tab displays the room's name (defaulted to Studio A, B, C) and the number of sources within it.
- Manage Button: Opens a sidebar panel that allows management of the selected room, including renaming the room and moving sources. Users can also reassign sources to other rooms by selecting them individually.
- Main Menu ("..."): Opens a wizard menu panel for managing presets and application settings. Available options include:
    - Preset Management: Save, load, rename, and delete presets.
    - Import/Export Presets: Import or export presets to/from external files.
    - Application Settings: Adjust audio settings, accessibility options, window size, and graphics rendering options, as well as choose between metric and imperial measurement systems.

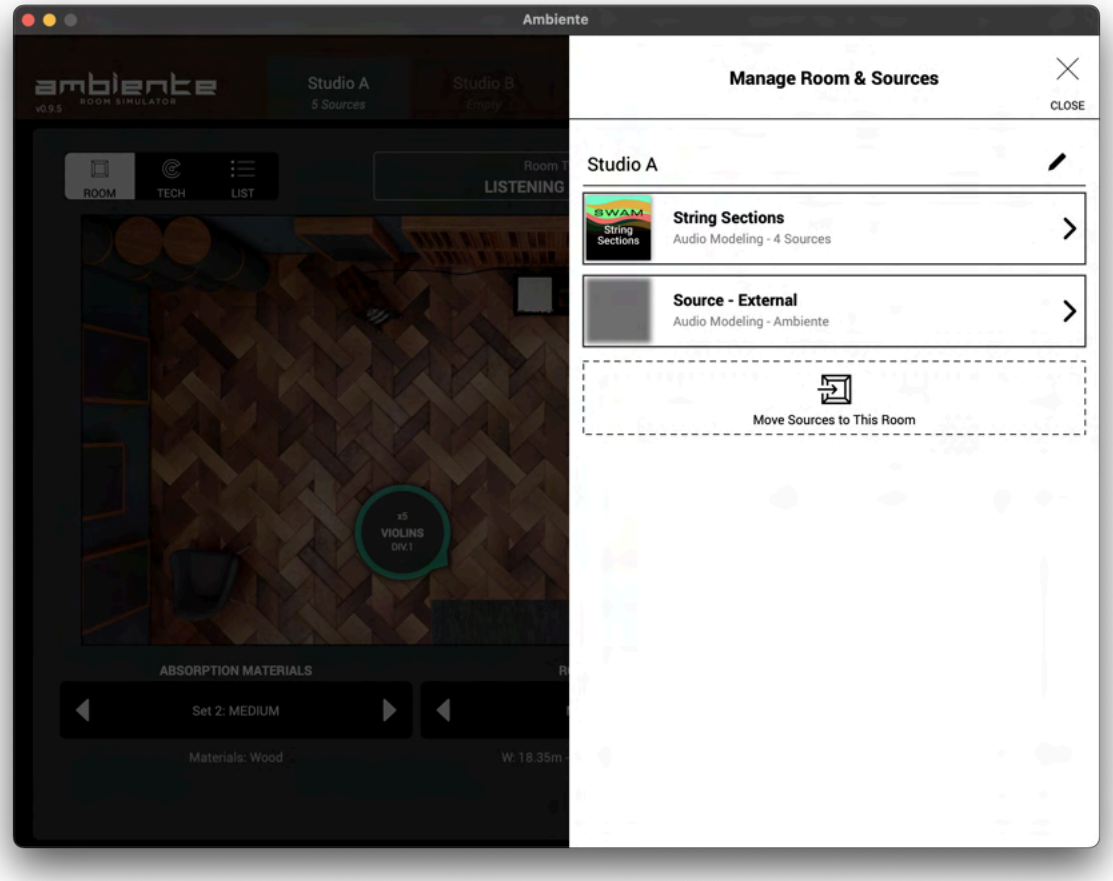
Rooms

In Ambiente, the Room section provides access to four distinct tabs: three fully customizable rooms and a dedicated Close Mic Room. The customizable rooms allow you to tailor each environment to specific acoustic preferences, while the Close Mic Room is designed for very close-mic recording setups—ideal for external processing, like 3rd party spatializers, when working with SWAM instruments and String Sections.

Think of these rooms as different spaces within a large recording studio, where multiple instruments can be recorded simultaneously, each within its own unique setting. Unlike a physical studio, however, Ambiente lets you configure each room individually, adapting room size, absorption materials, and other parameters to create the exact environment you need for every instrument and track. This flexibility provides a versatile approach to spatial positioning and acoustic control, ensuring that each element in your mix has the ideal setting to sound cohesive and realistic.

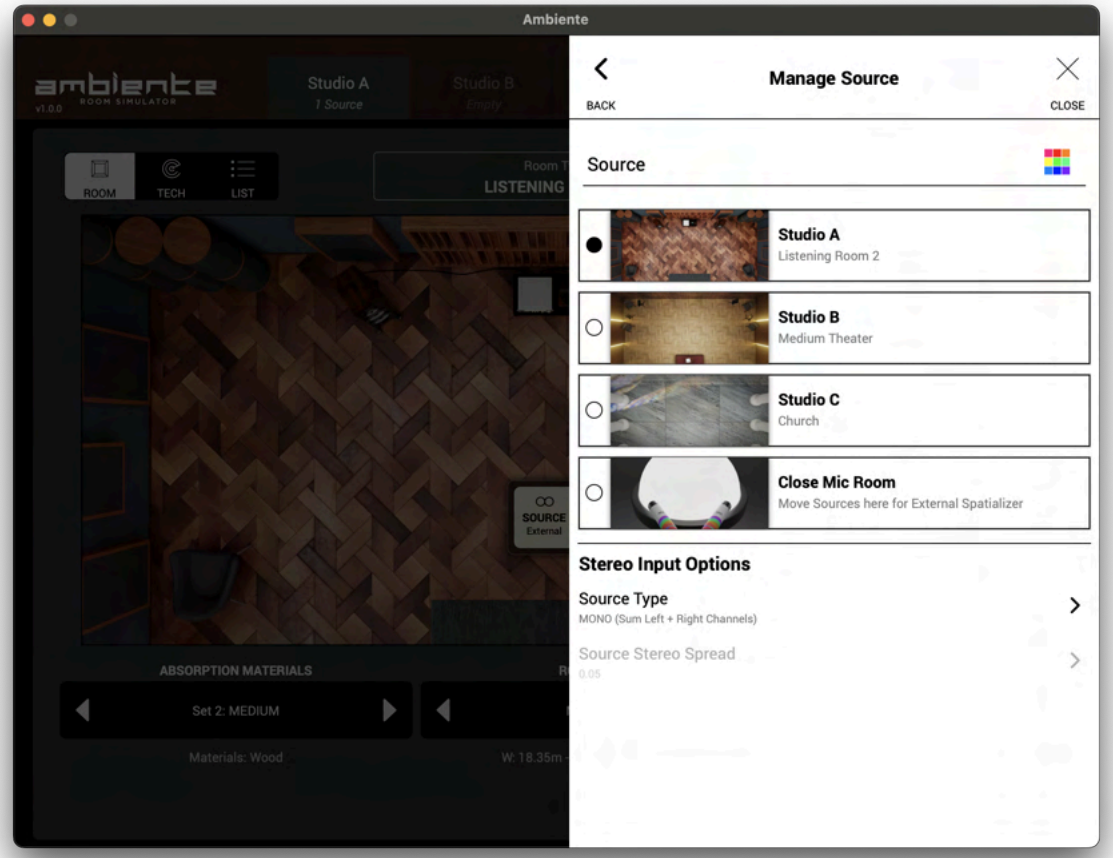
Audio Modeling

Manage Room & Sources



The Manage function, accessible from the header's "Manage" button, provides detailed control over the current room and its sources. Initially, it displays the name of the selected room (which can be edited) along with a list of all audio sources currently allocated to that room. There is also an option to move additional sources from other rooms into the current one.

When you select an individual source within the room, you access the Manage Source functionality. Here, you can rename the source, assign it a custom color using the button next to the name, and reposition it to another room via a radio button selector.

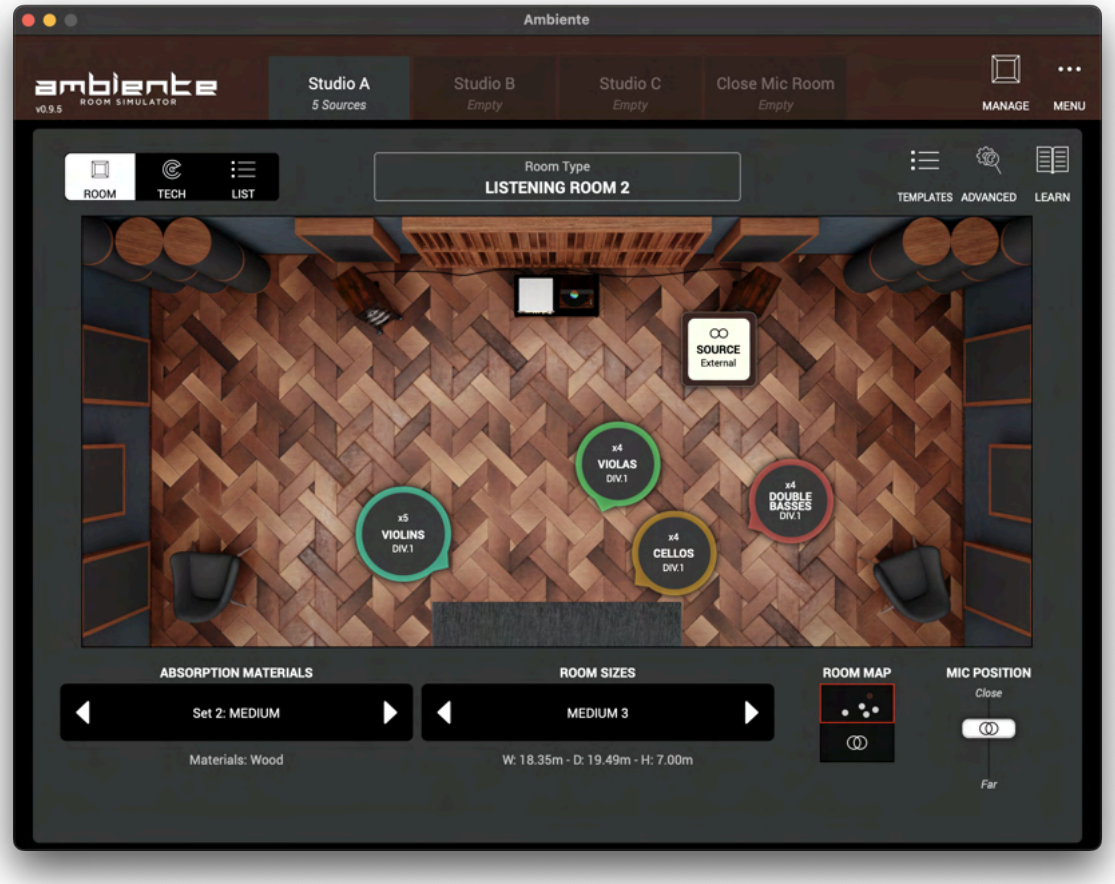


At the bottom of the Manage Source panel, the Stereo Input Options section provides advanced settings to optimize stereo sources for Ambiente's room simulation. This option is available only when the DAW track (or audio input, on the standalone app) is Stereo. The primary setting to consider here is Source Type. By default, stereo sources are summed to mono, combining the left and right channels. Alternatively, you can select only the left or right channel as a mono source, or keep the source in full stereo. When STEREO is selected, the "Source Stereo Spread" parameter defines the distance between the left and right signals relative to the center position of the source. Selecting the appropriate option depends on how the source was recorded and/or the track properties in your DAW. For instance, a DAW track might be stereo, but the recording itself could be mono—since DAWs often handle mono and stereo tracks differently. Refer to the Ambiente Audio Configurations for Using in DAWs section for more detailed guidance on choosing the correct setting.

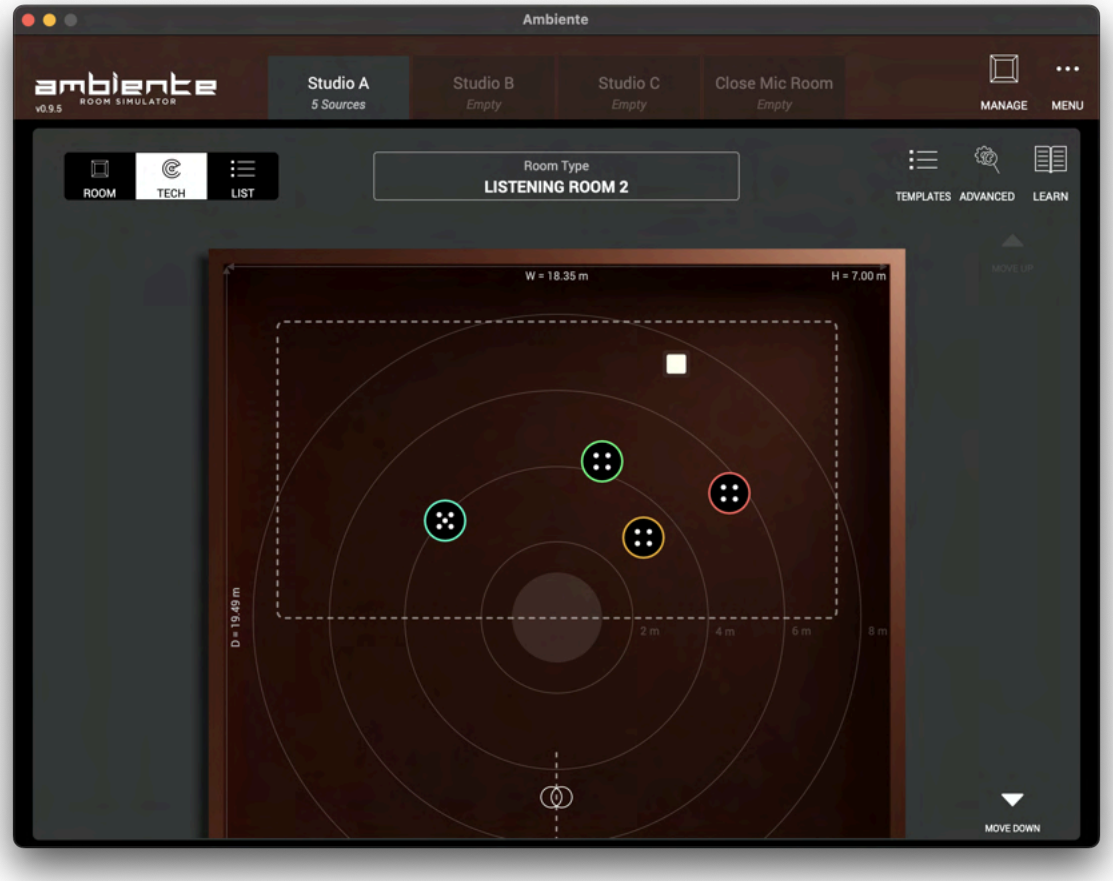
If you choose to keep the source in stereo, Ambiente will treat each channel as a separate entity in the room, resulting in unique reflections for each channel.

Main Area

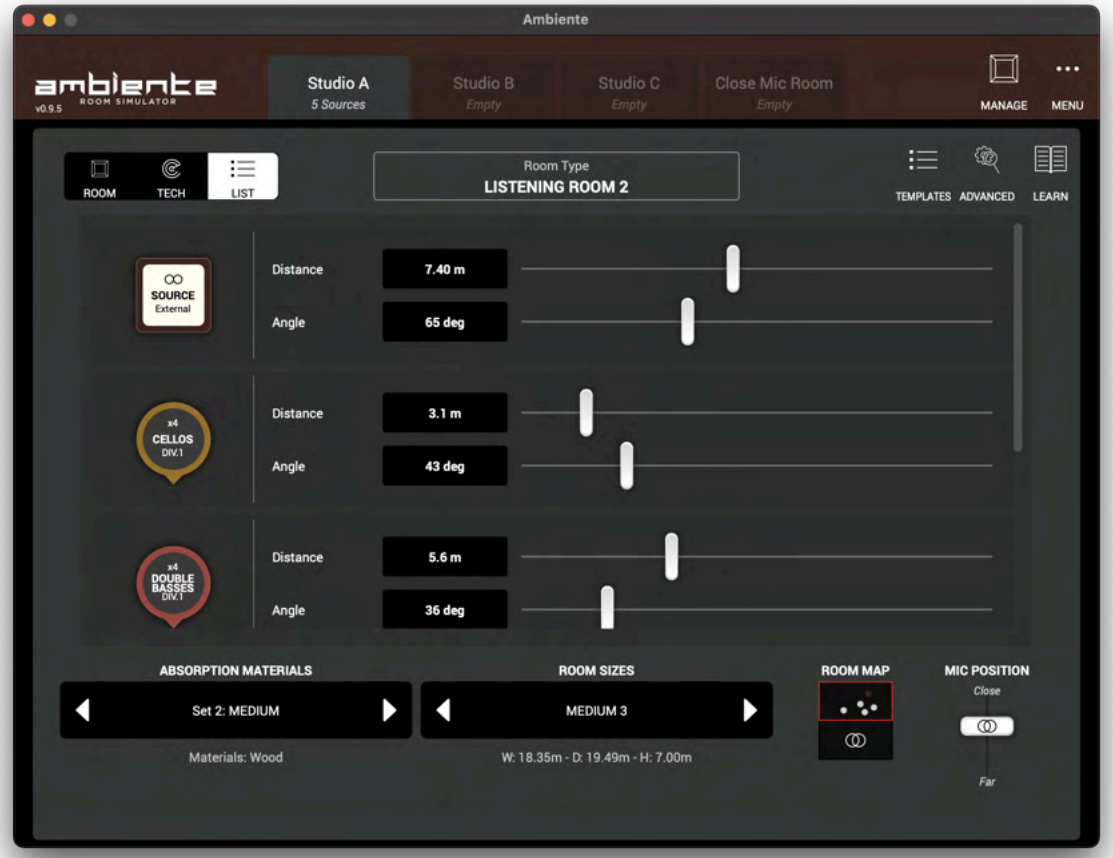
The central area where primary actions take place, divided into three views for different types of control: ROOM, TECH, LIST.



Room View: A qualitative view showing room size and absorption materials, displaying sources without precise scale. Users can adjust positioning by dragging sources, change wall/floor materials, and alter room size. The stereo microphone distance can be adjusted with a fader at the bottom right.



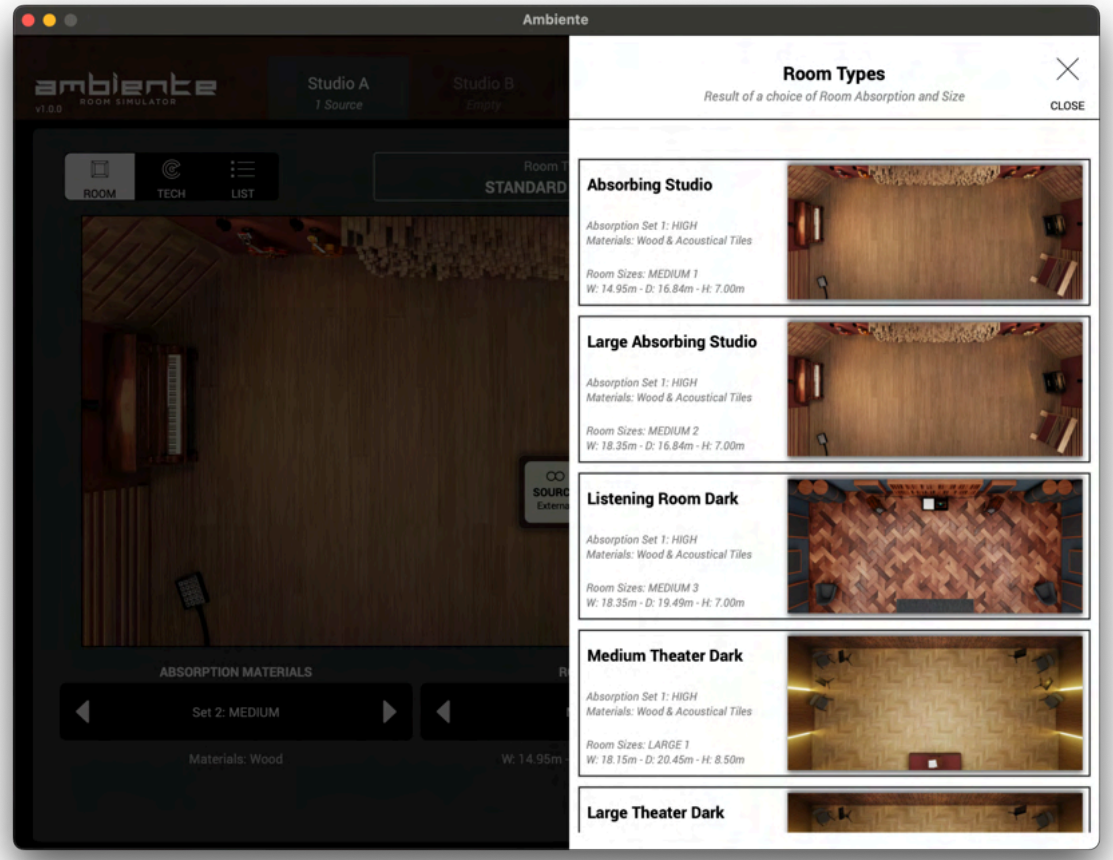
Tech View: For precise positioning, *Tech View* shows scaled dimensions, allowing for accurate placement and size visualization. Room dimensions and heights are displayed, with concentric guides marking distances from the room center. The dashed area indicates allowable source placement. Vertical scrolling is available via buttons on the right side, while microphone positioning is controlled from the bottom.



List View: A tabular format, accessible for screen readers and accessibility tools. Each source is listed with controls for adjusting distance and angle from the room center. This view also includes options for absorption materials, room size, and microphone distance, like in Room View.

Shared Controls Across All Views

At the top center, a selector allows users to quickly choose room types based on specific combinations of **room size** and **absorption materials**. Each unique combination results in a different acoustic character for the room.



Room Sizes and Absorption Materials

Adjustable across views, room size and absorption materials (wall/floor) influence the type and intensity of reflections calculated. Rooms with higher absorption materials will produce less reflected sound, creating a more controlled and dampened effect. Smaller rooms will have less reverberation, while larger rooms increase reverb, simulating a more open, spacious environment. There are three sets of materials: Set 1: HIGH, Set 2: MEDIUM, Set 3: LOW. There are six room sizes available: MEDIUM 1, MEDIUM 2, MEDIUM 3, LARGE 1, LARGE 2, LARGE 3.

Microphone Position

A fader adjusts the stereo microphone's proximity to sources for a customized spatial effect. When the microphone is positioned closer to the sources, it reduces the influence of room reflections on the direct sound, resulting in a more intimate, focused capture.

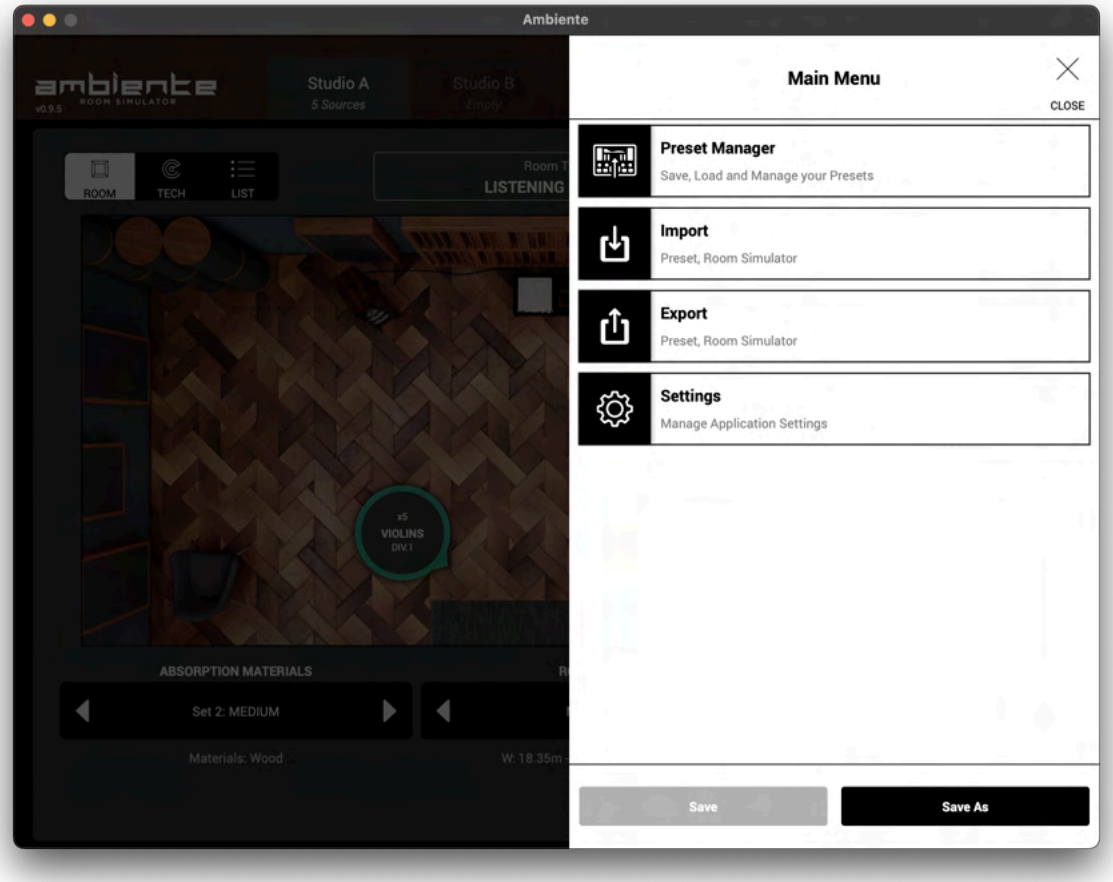
The **Room Map** offers a convenient preview of the whole room, with sources and microphone displacement.

Templates and Advanced settings

The **Templates** button allows the user to apply predefined configurations, while the **Advanced** button reveals additional room customization options, including:

- Reverb Modulation: when set to ON, reverb has a lusher, silky sound, but it requires more CPU power.
- Source Delay Mode: in real acoustic environments sound travels at a given speed, so there is a latency between the sound generation time and the time the sound signal is captured by the microphone (or listener's ears). This applies also to the traveling time of the sound waves reflected by the room surfaces.
  Source Delay Mode controls how the sound traveling time is computed.
  - No Delay: to avoid extra latency when playing the section in real-time, direct sound traveling time is ignored. Traveling time of the reflected waves is computed subtracting the direct wave traveling time.
  - Real Delay: direct sound traveling time is not ignored, behaving like in the real acoustic environment. This can lead to latency, when playing the instrument in real-time.
  - Nearest: direct sound traveling time is ignored for the section closest to the microphone only. All other sound wave traveling latencies are computed accordingly.

Main menu



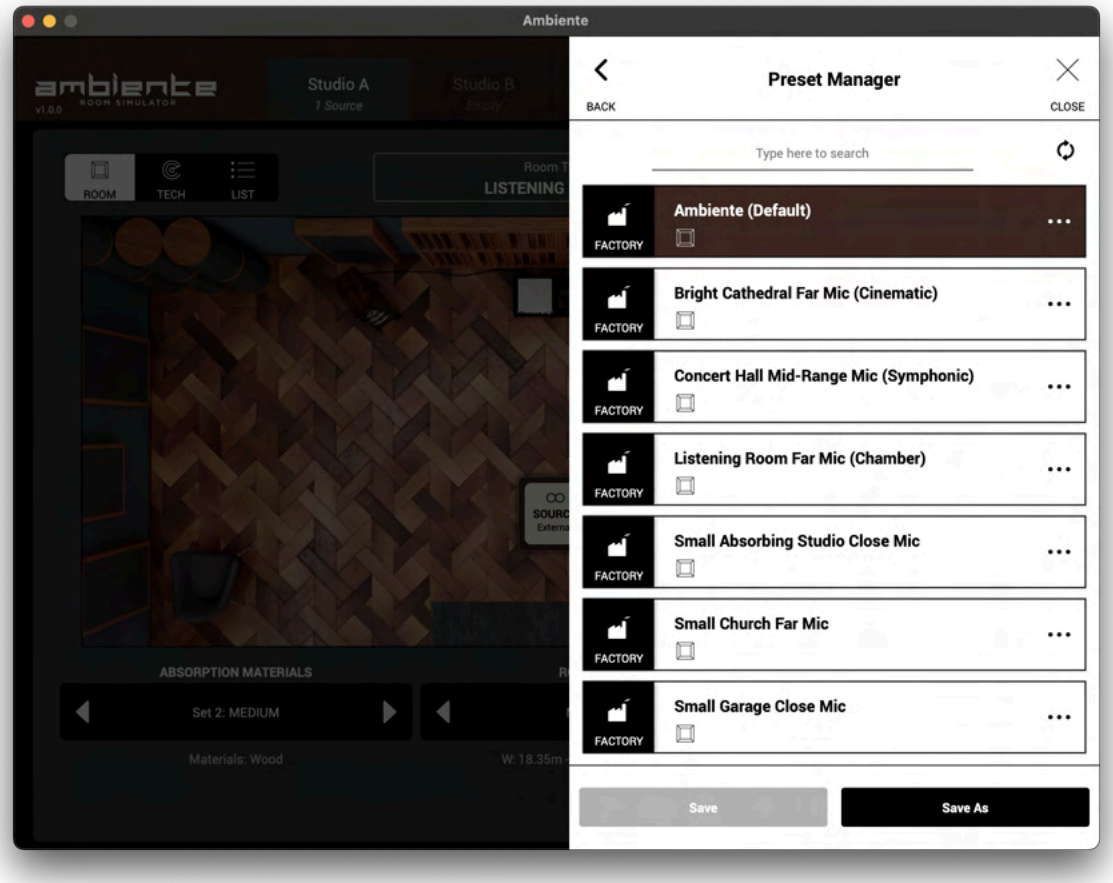
The Main Menu is available when clicking on the top-right 

icon.

- Preset Manager: open the Preset Management window.
- Import:
  - Preset: load whole plugin state from a *.swam* preset file
  - Room Simulator: load room simulator settings only
- Export:
  - Preset: save the current plugin state as a *.swam* preset file
  - Room Simulator: save only room simulator settings only
- Settings:
  - Audio: open the "Audio Setup" window (available for the Standalone App only).
  - Options: show a list of global settings for the application or plugin
  - Accessibility: show keyboard shortcuts
  - Window Size: show a small popup window that allows settings the GUI orientation and zoom factor.

- Account & License: open the “Account & License” window.
- About: open the “About” page, where it’s possible to check the version and build number, access to the online resources and show the Credits

Preset Management

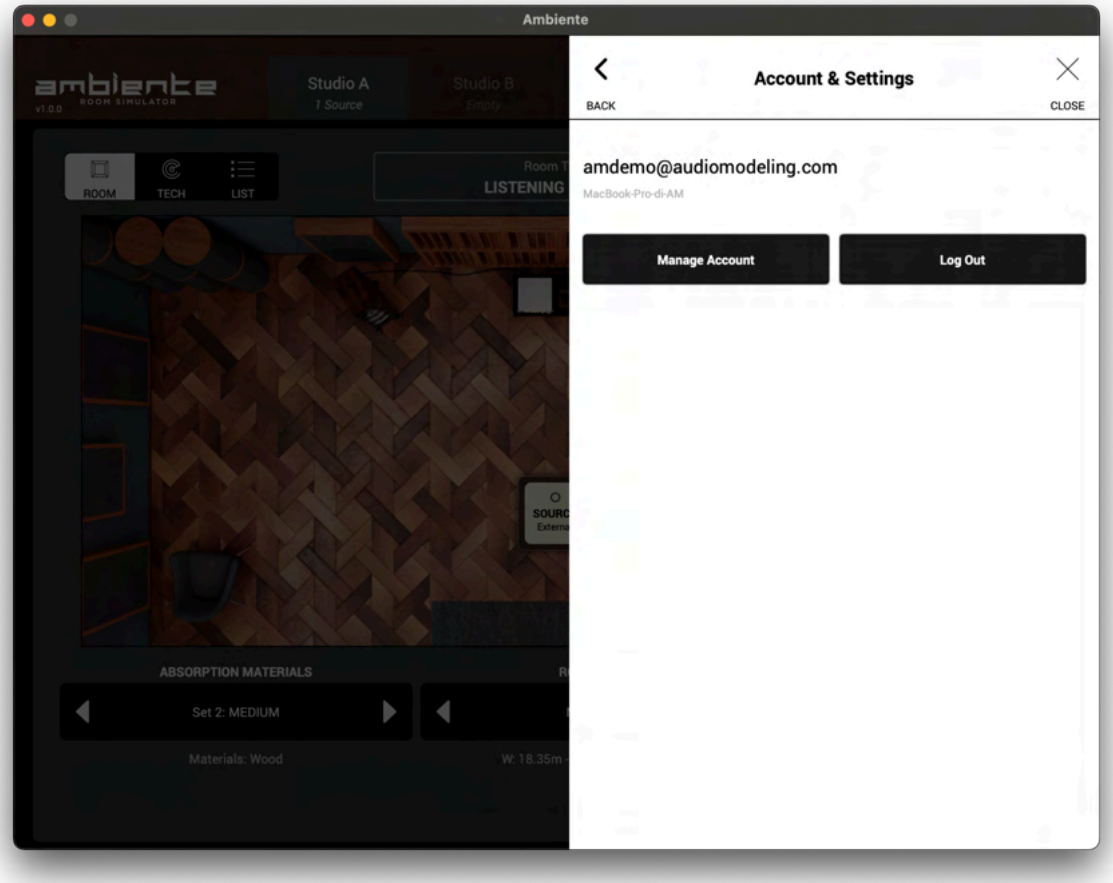


The Preset Manager allows users to select and load Factory and User presets from a list. Factory presets cannot be edited or deleted; any "Save As" action performed on a Factory preset creates a User preset.
Any additional action on a preset can be done selecting the contextual … menu that provides all available options like duplicate, export, delete or selecting the default startup preset.

Default startup Preset

Any preset can be selected to become the “default” one, i.e. the one loaded at startup: click on [...] next to the preset name and choose “Set as default”.

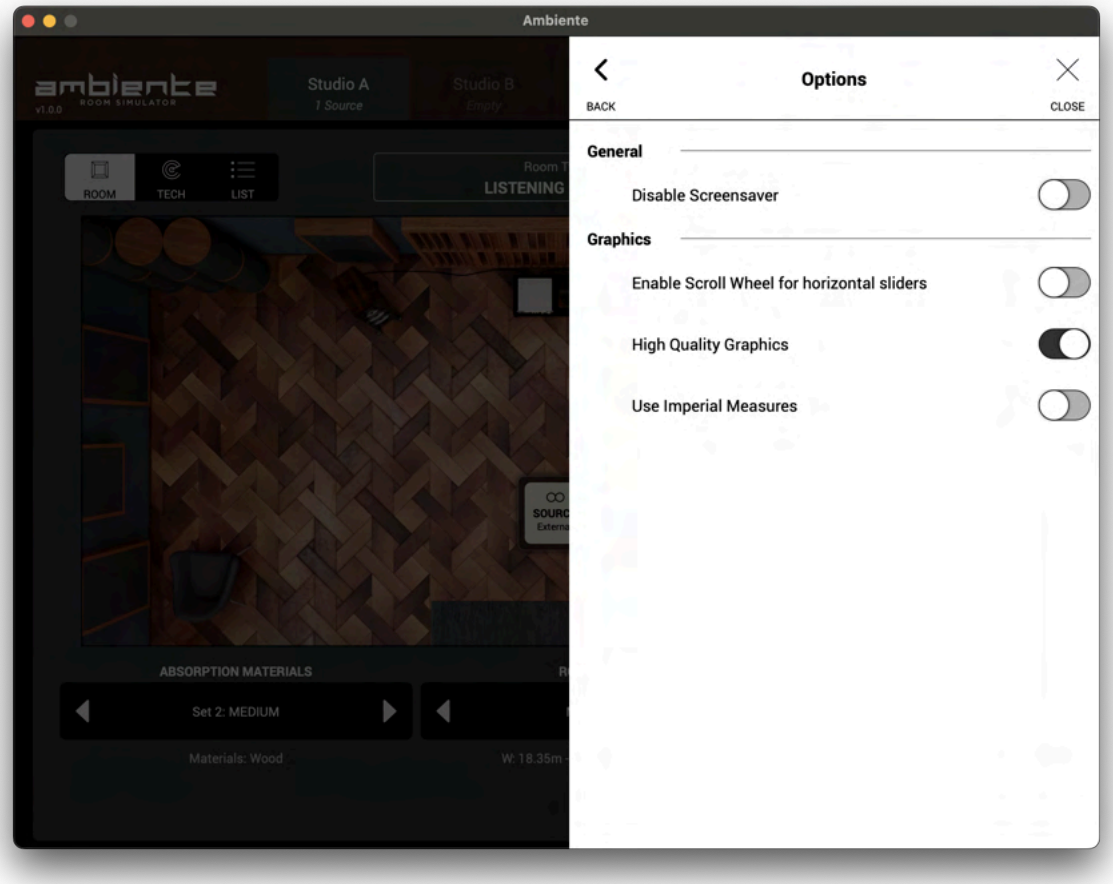
Account & License



The Account & License shows the user currently logged in.

- Manage account: opens the Audio Modeling Customer Portal in a Web Browser
- Log out: logs the user out from the application

Options



General

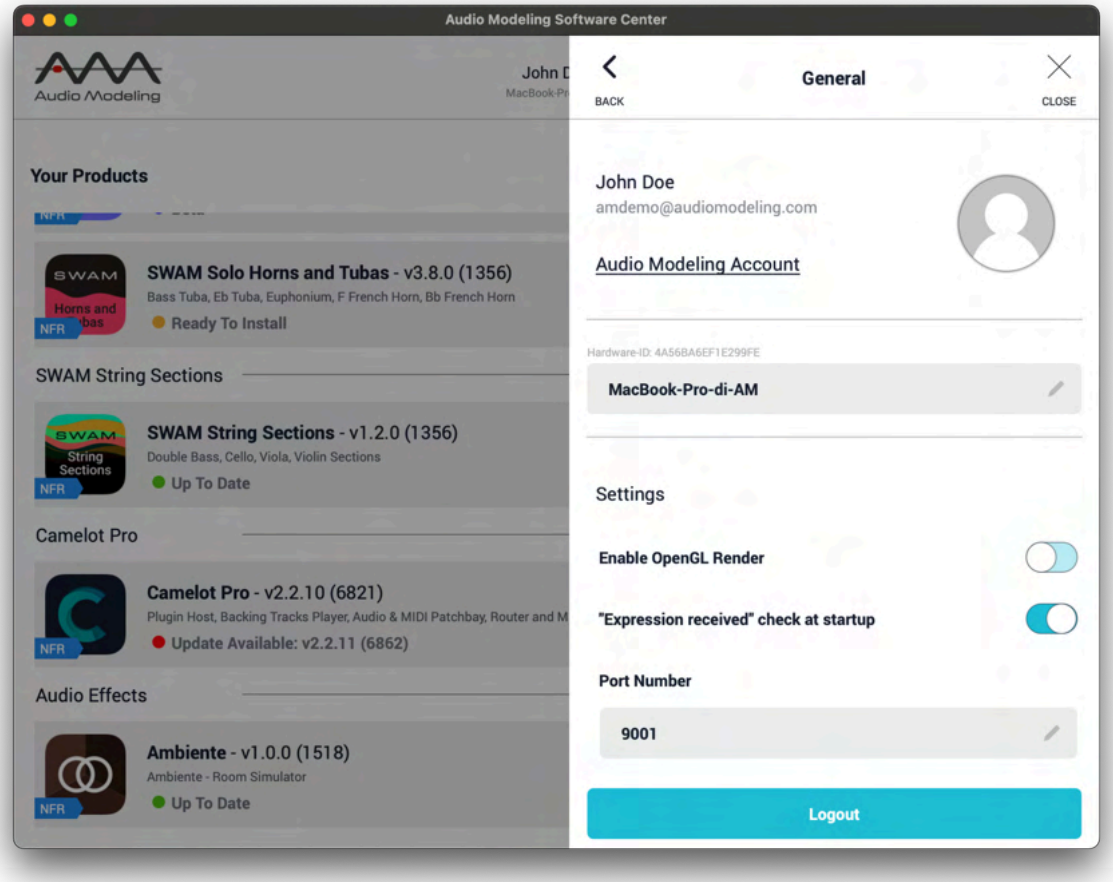
- Disable screensaver: avoid screensaver activation when the App is open.

Graphics

- Enable scroll wheel for horizontal sliders: allow the use of the scroll wheel for changing slider values.
- High Quality Graphics: when enabled, graphics are rendered with higher quality details (requires more CPU).
- Use Imperial Units: when enabled, measures are shown using Imperial units. When disabled (default), measures are shown in Metric units.

Global Settings

Common / global settings for all products are managed from the Audio Modeling Software Center application. Click on the "..." menu and select "General" option.

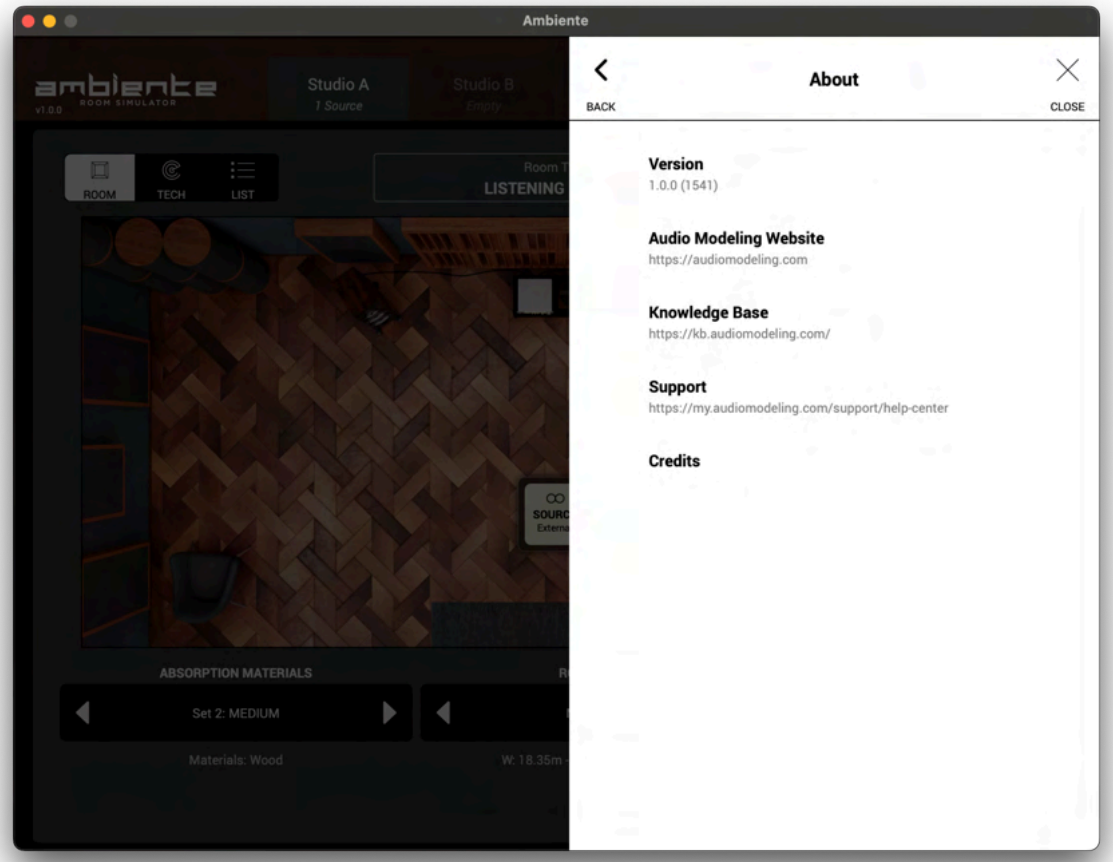


These settings apply to all installed Audio Modeling products

- Enable OpenGL Render: when selected, render the graphics of Audio Modeling products using OpenGL engine.
- "Expression received" check at startup: this option applies to SWAM instruments only. When selected, warns the user to check the controller mapped to the Expression parameter if a note is received before an Expression event (for Desktop version only).
- Port Number: (OSC Settings) used for the intercommunication of Audio Modeling product instances via Open Sound Control (OSC) UDP network messages on port 9001. You can change the port number and select a port from 5000 to 9999.

- Multicast IP Address: (OSC Settings) used for the intercommunication of Audio Modeling product instances via Open Sound Control (OSC) exclusively on 234.0.0.173 IP address.

About



The About page shows the current version and build number, as well as a few other options:

- Version: the current version and build number of the App.
- Audio Modeling Website: open the Audio Modeling website in a Web Browser.
- Knowledge Base: open Audio Modeling knowledge base (Support Center).
- Support: open the Audio Modeling Help Center in a Web Browser. To get support select a topic, check for an existing solution, otherwise open a support ticket.
- Credits: show the credits page.

Applications and Practical Tips

Ambiente offers a unique approach to mixing by allowing you to work with spatial positioning just as a conductor would in a concert hall or theater, thoughtfully arranging the placement of each instrument in relation to the listener. This approach enables a natural and cohesive mix, where instruments are placed closer or farther from the audience to create a balanced soundscape that feels immersive and lifelike.

To achieve this "natural mix" in your DAW, start by keeping the levels of each track consistent and centered in the stereo field (i.e., with pan settings at center). Then, use Ambiente to control the spatial positioning: bring instruments forward to make them more prominent or move them back to create a subtler presence. This spatial arrangement, combined with the natural dynamics of each instrument's performance, becomes the primary tool for achieving depth and balance.

The Microphone Distance control is also a powerful tool for managing the balance between direct sound and room reflections. By bringing the microphone closer to the sources, the direct sound becomes more prominent, minimizing the room's influence and creating a more focused, intimate effect. Moving the microphone farther away increases the room's presence, making the mix feel more open and ambient. This control allows you to fine-tune the direct-to-room ratio based on the needs of each instrument or section, adding versatility to your mix.

This approach is particularly valuable in acoustic live performances, where unamplified instruments are not managed by a sound engineer and their presence in the mix is determined by their natural dynamics and positioning in the room. While modern audio technology and post-production tools can often overtake the natural essence of an acoustic performance, Ambiente enables a return to these roots, allowing you to achieve a level of realism and quality that captures the authentic character of each instrument in the mix. By focusing on spatial arrangement and performance dynamics from the start, you can create a mix with exceptional clarity and depth.

Examples and Inspiration

Hybrid Orchestration with SWAM and Real Instruments

Combine SWAM String Sections with close-miked acoustic instruments recorded in a simple studio setup to create hybrid projects that sound expansive and realistic. The SWAM string sections provide the rich texture of orchestral sections, while real instruments such as first chairs and soloists add expressiveness and nuance. This blend of virtual and real instruments allows for the lush sound of a large orchestra, even on a limited budget.

Enhancing Attack and Transients in Pop, Soul, or Blues

For genres like pop, soul, or blues, where you want to capture clear attacks and transients, use smaller rooms or materials with higher absorption. This setup allows each transient to be heard crisply, adding punch and clarity. For instance, place rhythm sections or lead instruments in an acoustically "dry" room to bring out detail and articulation.

Separate Spaces for Different Instrument Groups or Soloists

In any genre, consider placing different instrument groups or soloists in separate rooms to optimize their individual characteristics. For example, strings can be placed in a larger, more reflective room to create warmth and depth, while a solo instrument, like a saxophone or lead vocal, might benefit from a smaller, more controlled space to add presence and focus. This approach gives each part its own distinct space in the mix, while ensuring a cohesive overall sound.

With Ambiente, you can mix intuitively, experimenting with room choices and positioning to suit any musical genre and achieve a polished, natural sound.

DAW Setup and Troubleshooting

Recommendations for Managing DAW Tracks with Ambiente

Ambiente is an advanced room simulator designed to create highly realistic virtual spaces, usable both as a standalone application and as an effect plugin within a Digital Audio Workstation (DAW). Unlike a conventional reverb, Ambiente goes beyond simply adding reverberation effects via a dedicated bus. Typically, reverb is applied on a bus, where each track's signal is sent via a Send control to adjust the desired "wet" level. Ambiente, however, operates as a three-dimensional spatial simulator: it is inserted as an **Insert effect directly on each track** that needs spatial positioning within the virtual room emulated by the plugin. The level of reflections and reverberation generated by Ambiente depends on the room's geometry, the materials of its walls, and the position of the sound source, delivering an authentic and immersive acoustic experience where each track truly inhabits a shared spatial context.

To ensure the correct integration of **Ambiente** in the most popular Digital Audio Workstations (DAWs), it's essential to understand how each DAW handles input and output track layouts. Since Ambiente works with a stereo output, we only support **Stereo in→Stereo out** and **Mono in→Stereo out** configurations.

Reaper & Ableton Live

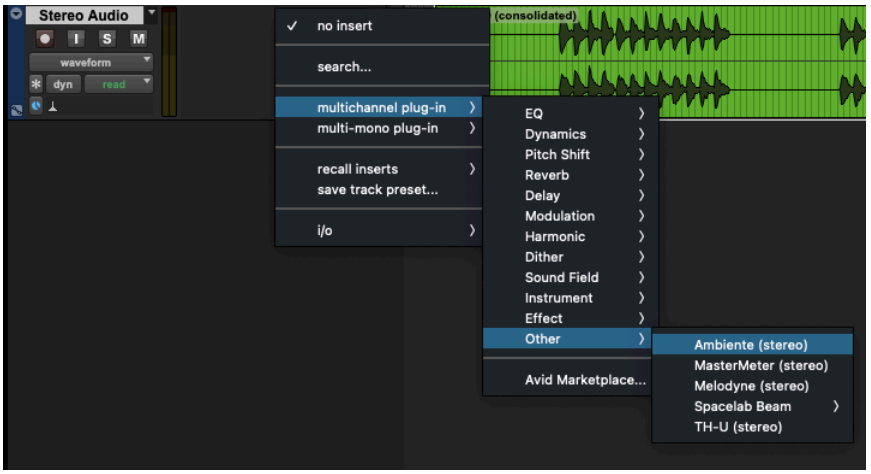
In **Reaper & Ableton Live**, Ambiente can only be used in a **Stereo in→Stereo out** configuration. For this, you need to create a stereo track and instantiate Ambiente with its default configuration, which supports **Stereo in→Stereo out**.

Logic Pro & Pro Tools

Logic Pro & Pro Tools can use Ambiente in two ways:

1. **Mono in→Stereo out Track**
   If you want to spatialize a mono source, you can use Ambiente in the **Mono in→Stereo out** configuration. This allows you to keep a mono input, which, once processed, will be distributed in the stereo field. The final output will be stereo.
   To get **Mono in→Stereo out**, simply create a mono track; the DAW will automatically notify you that Ambiente will be instantiated in the **Mono→Stereo** configuration.
2. **Stereo in→Stereo out Track**
   Alternatively, you can create or use a track with a stereo configuration and apply Ambiente in its default **Stereo in→Stereo out** configuration.

In Logic Pro, plugins cannot be instantiated in configurations that aren't compatible with the selected track, so Logic will automatically display only the supported configurations.



Cubase & Studio One

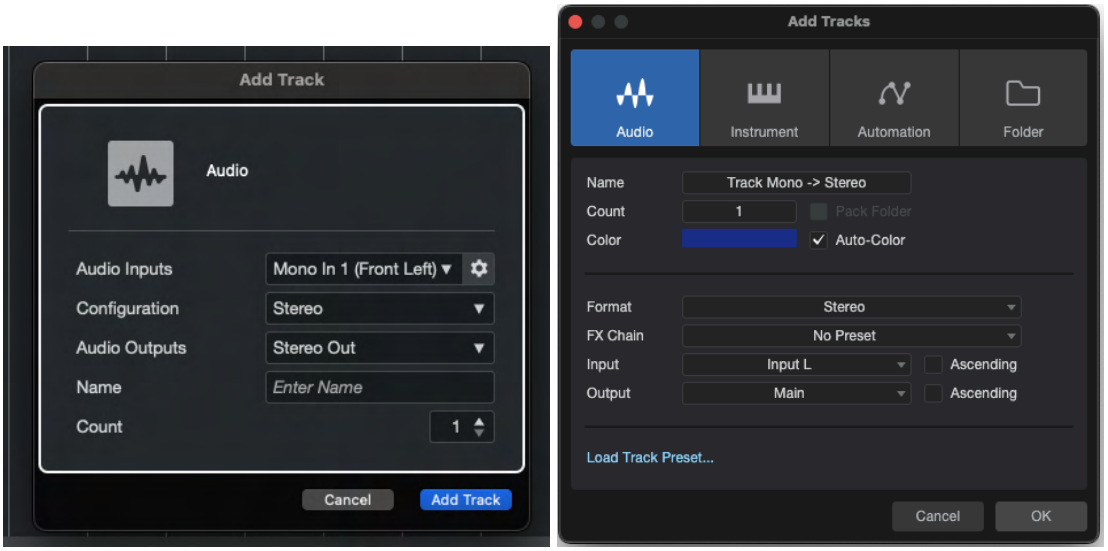
If you are working with a Stereo Track, you can use Ambiente without any specific configuration.

To use Ambiente **with a mono input** In **Cubase and Studio One** , you need to:

1. Create a track with a stereo configuration but with a **Mono Audio Input**.
2. Insert Ambiente on this track in its default **Stereo in→Stereo out** configuration.

This setup allows Ambiente to process the signal correctly and produce a stereo output even from a mono input.

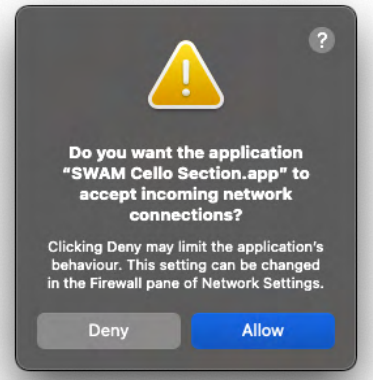
NB: In **Cubase & Studio One**, it's possible to instantiate plugins even in unsupported configurations, which may lead to unexpected behavior. Specifically, Cubase allows Ambiente to be inserted on a **Mono in→Mono out** track. However, since Ambiente is designed exclusively for stereo output, this configuration is incompatible and will not allow the plugin to function correctly. To avoid such errors, we recommend always following the steps outlined above.



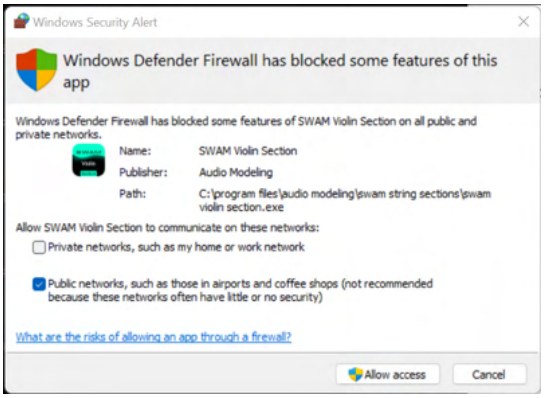
Network Permission

Granting local network permission to your DAW or standalone Audio Modeling products is essential to enable proper communication between product instances.
If your Firewall protection is enabled, you should see the following alert message:

macOS:



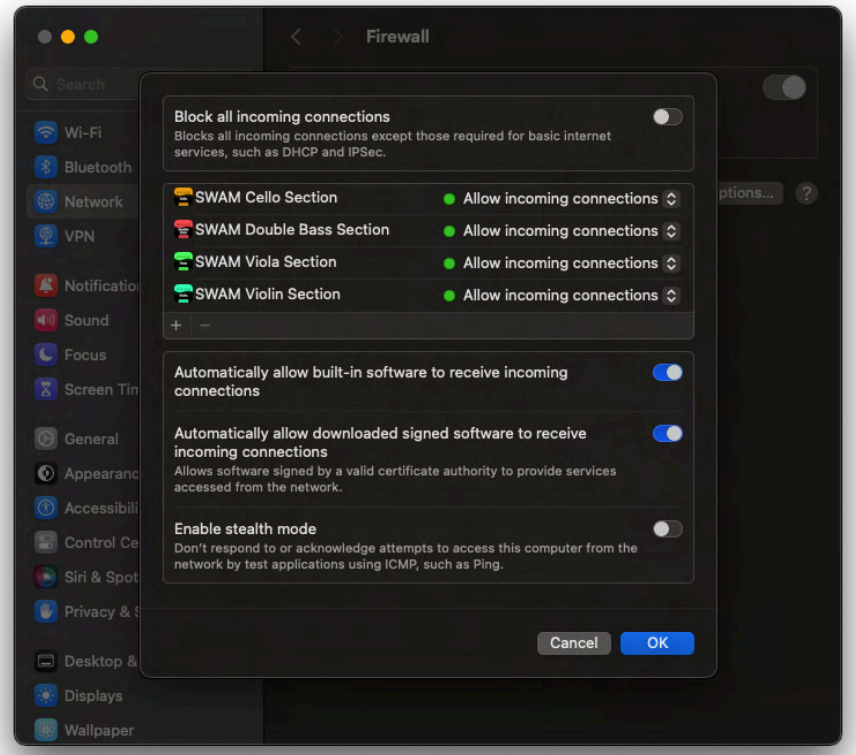
Windows:



If you have denied network permission, you can re-enable it in the operating system control panel.

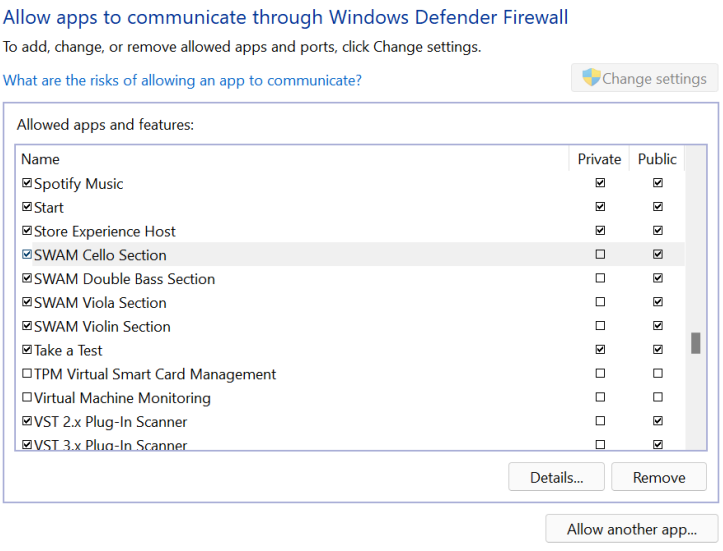
macOS

System Settings ... -> Network -> Firewall -> Options …
and select "Allow incoming connections" for each Audio Modeling product.



Windows

Go to Settings -> Privacy & security -> Windows Security -> Firewall & network protection -> Allow an app through the firewall and press "Allow another app…" button to add any Audio Modeling product to the list of authorized applications.



Technical Support

Before requesting technical support, please make sure you have carefully read the User Manual and the FAQs on our Support Center at audiomodeling.com/support. There, you'll quickly find appropriate answers to most questions.

Should you still need technical support, please login to the Customer Portal at https://my.audiomodelin.com, browse to the "Support" section, choose the appropriate topic and follow the instructions to open a support Ticket .

When requesting technical support, please don't forget to provide as much system information as possible, including your type of computer, OS, audio interface, host application, software version, etc. If the problem can be replicated, a DAW project that shows the issue is usually very helpful.