USER MANUAL

# Atrium

Mix in three dimensions. Stay in stereo.

A2D — SOUND —

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CHAPTER 01

# Introduction

Atrium is a 3D panner and a room in one plugin. It places each track in a virtual room: left or right, near or far, low or high, narrow or wide. The result plays back as ordinary stereo, on headphones and on speakers.

Each track you put Atrium on appears in the room as a sphere. Every copy of Atrium in your session starts in the same room, the group called Main, so one window shows the whole mix and any track can be moved from any track's window. You can later split the session into up to eight rooms, called groups. A window then shows one group at a time. See chapter 6.

A pan control only moves a sound between the left and right speakers. Atrium places it with the cues your ears use in a real room: the difference in time and level between the two ears, the colour the head and outer ear give a sound from each direction, the early reflections of the walls, and the balance between direct sound and room sound. Height is placed the same way, without a surround or Atmos setup.

Because that colour is part of the effect, Atrium changes the tone of a track a little, much like an EQ: each direction has its own colour, far tracks sound darker and close tracks brighter. HRTF Depth sets how much of this colour you hear, and at 0% it is gone. See chapter 9.

The room is yours to build. You set its width and length, choose what the walls are made of, and decide how much room sound and tail the mix carries. Space comes first from the early reflections, so a track can sit at the back of the room without a long reverb tail masking the mix. Seating charts show where the players of common line-ups usually sit, and Snap places a track exactly on a seat.

Atrium places sources in front of the listener, from close to the head to the back wall. It cannot place a sound behind you. It is a mixing tool for stereo output. It does not produce surround or Atmos channels, and it needs no special monitoring: ordinary studio headphones or speakers are enough.

## Headphones or speakers

Placement is clearest on headphones, where each ear hears only its own side. On speakers both ears hear both speakers, so the effect is gentler, but direction, depth and the room still carry. Crossfeed tunes the output for each, see chapter 9. Small laptop and phone speakers show less of the depth and height.

## Your data

All processing happens on your computer. No audio is recorded, stored or sent anywhere. Atrium goes online for its licence: activating, checking and deactivating send your licence key and an ID for this computer, and the trial sends the computer ID. At most once a day it also downloads a small file from the A2D SOUND site that says whether an update exists. No audio, projects or track names are ever sent.

Words such as early reflections, crossfeed and HRTF are explained in the glossary, chapter 14.

CHAPTER 02

# Installation and activation

## System requirements

| | |
|---|---|
| **Computer** | macOS 11 or later, Apple Silicon and Intel. Windows 10 or later. 64-bit. |
| **Formats** | VST3 and AAX on macOS and Windows. Audio Units on macOS. |
| **DAWs** | Every modern DAW that supports these formats: Ableton Live, Logic Pro, Pro Tools, Cubase, Studio One, Reaper, FL Studio, Bitwig and others. |
| **Internet** | Needed to download, activate and start the trial. |

Atrium runs only inside a DAW. There is no standalone app.

## Installation

Atrium is delivered as a direct download. After purchase your licence key and download links are sent by email, and both are always in your account at a2dsound.com/account: sign in with the email you bought with. If the email does not arrive, open a support ticket at a2dsound.com/support.

Run the installer and select the formats your DAW uses. Logic Pro and GarageBand use Audio Units, Pro Tools uses AAX, and most other DAWs use VST3. Installing more than one format is safe, and one activation covers every format on the same computer.

If your host does not detect the plugin automatically, rescan your plugin folders. Some hosts require a restart before newly installed plugins appear.

## Where the files go

| | |
|---|---|
| **macOS** | `/Library/Audio/Plug-Ins/VST3/Atrium.vst3`<br>`/Library/Audio/Plug-Ins/Components/Atrium.component`<br>`/Library/Application Support/Avid/Audio/Plug-Ins/Atrium.aaxplugin` |
| **Windows** | `C:\Program Files\Common Files\VST3\Atrium.vst3`<br>`C:\Program Files\Common Files\Avid\Audio\Plug-Ins\Atrium.aaxplugin` |
| **Settings, licence and your presets** | macOS: `~/Library/Application Support/A2D SOUND/Atrium`<br>Windows: `%APPDATA%\A2D SOUND\Atrium` |

To uninstall, deactivate this computer first (see Managing activations), then delete these files. Deleting the settings folder also deletes your user presets.

## Activation

Until Atrium is activated or a trial is running, the licence panel covers the plugin and the track is silent. You can open the panel at any time with the A2D SOUND logo at the top right.

Enter your licence key and press Activate. The plugin asks only for the key: there is no login. Activation needs an internet connection, and there is no way to activate a computer that is offline.

If other copies of Atrium were already open when you activated, reload the project so they unlock too.

After Activate or Start Free Trial, the panel stays open so you can see the result. Once Atrium is activated or a trial is running, a click outside the card closes the panel; while Atrium is locked, the panel cannot be closed. Buy Atrium opens the store, User Manual opens this manual online, and the a2dsound.com/account line opens your account.

One licence covers three activations on computers you own. Each computer uses one activation, whatever formats and DAWs you use on it. A fourth computer is refused: deactivate one first, or open a support ticket to have your activations reset.

Each product has its own key. A key for Squeeze, our other plugin, does not activate Atrium.

## Managing activations

Each activation is tied to a computer. Activations are managed from your account at a2dsound.com/account, which lists each licence and the computers it is active on. To move Atrium to a new computer, deactivate the computer you no longer use from your account, then activate the new one from inside the plugin.

Deactivation from your account is performed remotely, so a computer that has been sold, replaced or has failed does not need to be running. If that computer still runs Atrium, its next licence check finds the activation gone: its tracks play dry and the licence panel shows.

The licence panel can also deactivate the computer it runs on. Once Atrium is activated, the panel's button is green and reads ACTIVATED / DEACTIVATE. One click deactivates this computer at once, with no confirmation, and Atrium goes silent until you activate again. Your projects and their settings are kept.

Before you wipe or reinstall a computer, deactivate it. Otherwise the fresh install counts as a new computer and uses another activation.

## Staying activated

Atrium checks its licence online when a copy loads, at most once every six hours, and never while you work. Without a connection it keeps working for up to fourteen days. After that, the next time it loads, the track plays dry, without Atrium, and the licence panel asks you to reconnect to the internet and reload the plugin.

## Trial

A seven-day trial is available. Open the licence panel and press Start Free Trial. No key is needed, but the trial needs an internet connection, and downloading the installer needs a free A2D Sound account. The trial is the complete plugin with all features enabled, so what you hear during the trial is what you get after purchase. The panel shows the days left. Each computer can run one trial.

If other copies of Atrium were already open when you started the trial, reload the project so they unlock too. Copies you add later unlock on their own.

During the trial, Atrium checks it online each time a copy loads. Without a connection the trial keeps running for up to two days; after that it is silent until Atrium can reach the server again.

When the trial ends, Atrium goes silent, but every setting stays saved in your projects. To buy, enter your key in the same panel. Activating that computer uses one of your three activations, and your projects sound as they did.

## Licence terms in short

- Atrium may be activated on up to three computers you own.
- A licence cannot be sold, given or transferred to another person or account.
- Sales are final once your licence key is issued. That is why the trial exists. If Atrium will not activate, open a support ticket at a2dsound.com/support.
- The audio you make with Atrium is yours.

The full licence agreement is at a2dsound.com/eula.

CHAPTER 03

# Getting started

Placing tracks in Atrium takes four steps.

1. **Insert Atrium on a track**
   Add Atrium as an insert effect on any audio or instrument track, mono or stereo. Atrium is stereo in and stereo out. A sphere appears in the room, named after the track.

2. **Add it to the other tracks**
   Every new copy joins the same room, the group Main, so each window shows every sphere. You do not need Atrium on every track: tracks without it play as normal. See chapter 6.

3. **Move the spheres**
   Click a sphere to select it, then drag it across the floor. Hold Shift while dragging to raise it. See chapter 5.

4. **Build the room**
   Pick a room preset from the menu at the top left, or choose the walls and the size yourself. See chapter 7.

The sound follows a sphere as soon as audio plays through its track. Playback does not need to run while you place tracks.

## The selected track

Every window can edit any track in the group it shows. The selected sphere is drawn on top in full colour, with its name on a dark plate edged in that colour and arrows that show its width, and the other spheres are dimmed. The four knobs on the main panel show and edit its position. When the project opens, each window has its own track selected. Click another sphere, or step to it with the track switcher at the left of the main panel, to edit that track instead. Closing and reopening the window keeps that selection; if the selected track is removed, the window goes back to its own track.

A window still belongs to its own track. Only that window records automation for its track, Mix and CLIP in its ADVANCED drawer always belong to its track, and its correlation meter and Mono-Guard read its track. The drawer's other track controls, such as Punch and Crossfeed, follow the selected track. See chapters 9 to 11.

## Starting values

A new copy of Atrium starts in the centre, at ear height and at Depth 0%, which is about 3.3 metres in front of you. Mix and 3D Gain are at 100% and Crossfeed is set to Speaker. At that spot the level matches the input, so your faders need little change. Moving a track forward or back makes it up to about 4 dB louder or quieter.

The first copy in a session starts in a built-in room: Ceramic Tile walls, 17 by 22 metres, Space 20% and Decay 0.80 seconds. This is not the Default / Init Room preset. Later copies join Main and take its current room.

Atrium adds no latency, so your DAW has nothing to compensate. It processes from the first moment, so a track sounds placed as soon as Atrium is inserted.

## Headphones or speakers

Atrium works on both. Crossfeed, in the ADVANCED drawer, tunes the output for speakers or headphones (see chapter 9). It is set to Speaker by default. When you mix on headphones, set it to Headphone on each track: Crossfeed belongs to each track, and there is no single switch for the whole session.

## Buses, the master and other reverbs

Atrium can go on a bus or on the master, but the whole bus then becomes one sphere.

Do not blend Atrium's output with an unprocessed copy of the same track outside the plugin, such as a parallel dry bus: together they cause a dip in the sound near 870 Hz.

Atrium already gives each track a room, so other reverbs are optional. If you add one on a send, keep the send fully wet.

CHAPTER 04

# The interface

## Layout

The top bar holds the room presets menu on the left, the window size and BYPASS on the right, and the A2D SOUND logo, which opens the licence panel.

The room fills the middle of the window. Every track in the group appears in it as a sphere in its own colour, with its name above it. The selected track, the one the knobs edit, is drawn on top in full colour; the others are dimmed. The listener head marks your fixed listening position at the front. It faces into the room, toward the back wall, so the left of the screen is your left ear.

Below the room runs the group strip. Each group that has tracks gets a pill, a rounded button with the group's name and its number of tracks: MAIN · 6 is the group Main with six tracks. Next comes a round + button that starts a new group. On the right sit the SEATING menu and two toggles: Ghost, a small ghost icon that shows or hides a chart's seats, and Snap, a horseshoe magnet that places a track exactly on a seat. Seating is explained in chapter 8.

The main panel at the bottom holds the track switcher, the wall material and the room size readout on the left, the four placement knobs in the middle, Azimuth, Depth, Elevation and Source Width, and on the right the correlation meter, a mono safety check (see chapter 10), and the ADVANCED button.

The panel overview on the following page numbers each control and states what it does.

## Adjusting controls

- Click and drag a knob vertically to change its value. The value shows while you drag. To read or type an exact value, use the parameter in your DAW (see chapter 11).
- Knobs move at one speed: there is no fine-adjust key, and the mouse wheel does not turn them.
- Double-click a knob to return it to its default value.
- Click a sphere, or use the track switcher's arrows, to select a track. Drag the selected sphere to move it, and hold Shift while dragging to change its height.
- Click ADVANCED to open the drawer of detail controls. Click ADVANCED again, or anywhere outside the drawer, to close it.
- Menus close with a click outside them. The group menu, the track lists and the colour grid also close with Esc.
- Atrium has no undo of its own.

## Window size

S, M, L and the expand icon (FULL) on the top bar set the size of the window. FULL is the largest size that fits your main display, and M and L sit between S and FULL. The size you pick is kept on your computer, not in projects. Copies loaded after that open at it; copies already open keep their size until you change it there.

Sizes come from your main display, so on a smaller second monitor a window can be taller than the screen. The size control is on the top bar, which stays on screen: pick a smaller size.

# Panel overview




**01 ROOM PRESETS**
Factory rooms and your own presets.

**02 WINDOW SIZE**
S, M, L, FULL (icon).

**03 BYPASS**
The whole mix without Atrium.

**04 A2D LOGO**
Opens the licence panel.

**05 THE ROOM**
Every track in the group.

**06 SELECTED SPHERE**
The track the knobs edit.

**07 SPHERE**
A track. Click to select it.

**08 LISTENER**
Your listening position.

**09 NEW GROUP**
The + button. Starts a group with the selected track.

**10 GROUP**
A group's room and its menu.

**11 SEATING**
Charts of where the players sit.

**12 GHOST**
The ghost icon. Shows or hides the chart's seats.

**13 SNAP**
The magnet icon. Drops a sphere onto the nearest seat.

**14 TRACK SWITCHER**
Picks a track. Its dot sets the colour.

**15 MATERIAL**
What the walls are made of.

**16 ROOM SIZE**
Readout in metres. Set it in ADVANCED.

**17 AZIMUTH**
Left to right.

**18 DEPTH**
Near to far.

**19 ELEVATION**
Height above ear level.

**20 SOURCE WIDTH**
How wide the track sounds.

**21 CORRELATION**
Mono safety of this window's track, below 250 Hz.

**22 ADVANCED**
Opens the drawer of detail controls.

CHAPTER 05

# Placing a track

Every track has four placement controls. They are set by dragging the sphere in the room, or with the four knobs on the main panel. Both edit the selected track.

## Azimuth

PER TRACK · DEFAULT CENTRE

Left to right, from 90 degrees left through the centre to 90 degrees right. 90 degrees is fully to the side. The knob reads in degrees.

Azimuth moves the source with the difference in time and level between the two ears, not with level alone, so a track placed to the side keeps its body: it stays full in both ears, and the far ear never drops more than 12 dB.

## Depth

PER TRACK · DEFAULT 0%

Near to far, from close in front of the listener (-100%, about 0.3 metres away) through 0% (about 3.3 metres) to just before the back wall (+100%, about 19 metres away in the starting room). A longer room moves the back positions further away. The change in level follows the percentage, not the metres.

Depth changes level, brightness, early reflections and the balance of direct and room sound together. A track brought forward becomes louder, brighter and drier. A track pushed back becomes quieter and softer, and the room takes over. 3D Gain and Distance set how strongly this happens. See chapter 9.

## Elevation

PER TRACK · DEFAULT 0%

Height above ear level, from 0% to 100%. A raised sphere stands on a stem above its spot on the floor. Every room has a fixed 3 metre ceiling. Elevation 100% raises the source by 0.4 metres and adds the cues of a sound from above; it does not reach the ceiling.

Height is carried by the colour the outer ear gives a sound from above. HRTF Depth sets how strong that colour is, so height is clearer at higher HRTF Depth settings.

## Source Width

PER TRACK · DEFAULT 0%

How wide the track itself sounds, from a point source at 0% to a broad source at 100%. The arrows beside the selected sphere appear above about 5% and grow with it. A stereo track keeps its own left and right at 0%: Source Width only adds spread and never makes a track mono.

Source Width spreads one track, for example to make a stereo piano or a pad sound like a broad instrument. Width in the ADVANCED drawer widens or narrows the processed sound of the whole group, for example to narrow a drum room that feels too wide. They are different controls.

## Moving spheres

- Click a sphere once to select it. A click never moves a sphere. Only the selected sphere can be dragged, so click first, then drag.
- Drag the selected sphere across the floor to set Azimuth and Depth together.
- Hold Shift while dragging to change the height. Pressing or releasing Shift during a drag switches between floor and height. While the height changes, a tag beside the sphere reads it, for example ELEV 40%.
- A sphere stops at the walls. It cannot leave the room or go behind the listener head.
- When a click lands on two or more spheres, even ones that only partly overlap, a list of those tracks opens. Pick one to select it.

## What the spheres show

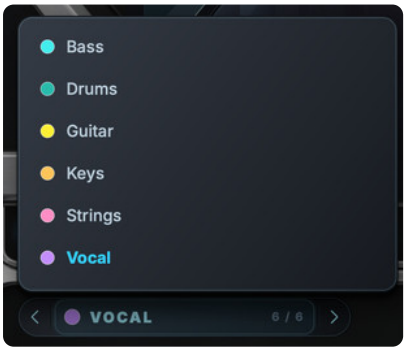
Spheres glide to a new position at the same speed as the sound moves, over about 64 milliseconds, so what you see matches what you hear. Even automation cannot make an instant jump. A sphere's size follows its distance and its 3D Gain: a bigger sphere is nearer, not louder. While audio plays, the selected sphere ripples with the hits, the attacks, of its track.

The other tracks' names sit on quieter plates. A name that would cover the selected sphere or its name fades, so the selected track always stays readable.

Spheres that share the same position are drawn stacked. A click on a stack opens the list of the tracks in it.

## Resetting a position

Double-click a placement knob to return it to its default: Azimuth to the centre, Depth to 0%, Elevation to ear level, Source Width to 0%.




THE TRACK SWITCHER AND ITS LIST

## The track switcher

The pill at the left of the main panel shows the selected track: its colour dot, its name and its place in the group, for example 2 / 6. It lists the tracks of the group the window shows, in alphabetical order.

- The arrows select the previous or next track. After the last track comes the first again. The mouse wheel does not step it.
- Click the name to open a list of the group's tracks, each with its colour, the selected one lit. A long list opens in columns. Pick a track to select it. Esc or a click outside closes the list.
- Click the colour dot to change the selected track's colour. See Changing a track's colour, later in this chapter.

A long name is drawn smaller and fades at the end. Rest the mouse on it and it scrolls to show the rest.

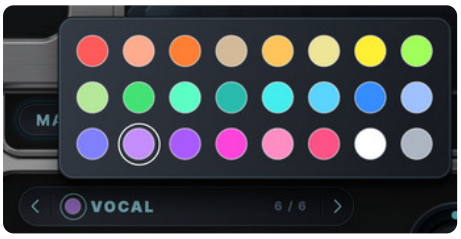
## Names and colours

Each sphere is named after its DAW track and follows it when you rename the track. DAW names are shortened to fifteen characters. Some hosts do not send track names. The sphere is then named Track followed by a number.

To use a different name, open the ADVANCED drawer and type it into the name field, up to sixteen characters. A typed name stays until you clear the field and press Enter, which brings back the DAW track name.

Type a lasting name in the track's own window. A name typed while another track is selected shows in every window for this session only: it is not saved with the project, and the track's own name returns when that DAW track is renamed. Clearing the field works only in the track's own window.

Names use English letters, numbers and common symbols. Other letters, such as accented or Hebrew letters, show as ? in track names and are left out of group and preset names.




THE COLOUR GRID, OPENED FROM THE TRACK SWITCHER

### Changing a track's colour

- Select the track: click its sphere, or step to it with the track switcher.
- Click the colour dot on the track switcher. A grid of twenty-four colours opens, with a white ring around the track's colour now.
- Click a colour. The sphere, its name plate and the colour dots change at once, in every window. Esc or a click outside closes the grid with no change.

The colour dot in the ADVANCED drawer, next to the name field, does the same.

The colour is only for your eyes: it does not follow the DAW track colour and changes nothing in the sound. Colours are saved with the project.

A new copy of Atrium takes a colour that no other track in its group is using, while one of the twenty-four is free. Two tracks can still share a colour if you pick it for both.

## Editing another track

Selecting another sphere does not change which track the window belongs to. The four knobs and a drag edit the selected track, and the change is heard on that track at once.

The ADVANCED drawer follows the selected track too: its name field, colour dot, Crossfeed and the knobs 3D Gain, Punch, Distance, Proximity, Mono Below and Externalize show and change the selected track. Mix, HEAD and CLIP always belong to the window's own track.

To record a move as automation, make it in the track's own window. See chapter 11.

CHAPTER 06

# Shared room and groups

## One room to start with

Every copy of Atrium in a DAW session joins one shared room, the group Main. While all tracks are in Main, each window shows every track's sphere with its name, and any track can be selected and moved from any window. Up to 128 copies can run in a session, across all groups together. A 129th copy is not added to the room, so the other windows do not show it.

A track joins the room as soon as Atrium is inserted or the project opens, whether or not audio is playing. Removing Atrium or deleting the track removes its sphere from every window. A copy bypassed in the DAW stays in the room and looks the same.

The room's settings are shared by every track in it. Changing the size, the walls or the reverb in one window changes them for every track in the room. The placement and the other per-track controls stay with each track. To give one track more or less room without a group of its own, use its Depth, Distance and Proximity.

| | |
|---|---|
| **Per track** | Azimuth, Depth, Elevation, Source Width, 3D Gain, Punch, Mix, Distance, Proximity, Mono Below, Externalize, Crossfeed, CLIP, name and colour. |
| **Per room** | Room preset, Material, Room Width and Length, ER Send, Space, Decay, Tail Cut, ER/Tail, Tail Duck, HRTF Depth, Width, the seating chart, Ghost, Snap and Collapse. |
| **Whole session** | BYPASS. |

The room is shared inside one running DAW, as long as every copy of Atrium runs in the same process. Some hosts can run plugins in separate helper programs, called sandboxing or process isolation. Copies in different helper programs cannot meet: each window then shows only its own track, with no error message. If your host runs each copy in its own helper program, turn that off for Atrium. Two projects open in the same DAW share one room; two different DAWs never do. See chapter 13.

## Groups

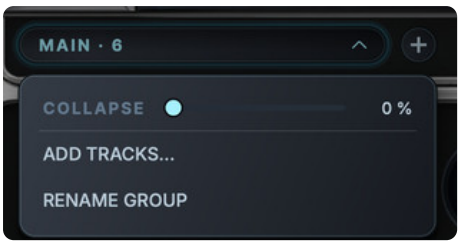
A session can hold up to eight rooms, called groups. Each group is a room of its own, with its own size, walls, reverb and seating, so drums can sit in a tight room while the strings play in a hall. Every new track starts in the group named Main, whichever group the window is showing. All groups play at the same time around the same listener, and each track sounds in its own group's room.

The group strip under the room shows one pill for each group that has tracks. A click on a pill's name shows that group's room and selects a track in it: your own track in its own group, otherwise the group's first track in alphabetical order. The track switcher then steps through that group. The arrow on the pill opens the group menu, and so does a click on the name of the group already shown.

A window shows one group at a time. Selecting a track that belongs to another group switches the window to that group's room, and the room controls then edit that room.

## How groups behave

| | |
|---|---|
| **Eight slots** | There are always eight group slots. A free slot is one with no tracks. |
| **A new group** | The round + button after the pills, shown while a slot is free, moves the selected track into the first free slot, which keeps that slot's default name (Drums, if only Main is in use). Its pill opens as a name field at once, so you can type a new name. |
| **Its room** | A new group starts with a copy of the selected track's current room. After that, the two rooms change separately. |
| **Moving a track** | Moving a track to another group changes only its room. Its position and per-track settings stay. |
| **An empty group** | A group with no tracks loses its pill and becomes free again. There is no delete: move a group's tracks elsewhere to free it. |




THE GROUP MENU

## The group menu

- **COLLAPSE.** A slider that gathers the whole group toward the centre. Drag it; double-click it to return to 0%. The menu stays open while you use it. See below.
- **ADD TRACKS.** Moves several tracks into this group at once.
- **MOVE SELECTED TRACK HERE.** Shown when the selected track belongs to another group, for example when you open this menu from another group's pill.
- **RENAME GROUP.** The group's pill becomes a name field with the name highlighted: type to replace it, or click the pill first to keep it and add to it. Up to sixteen characters. Enter or a click outside the pill confirms, Esc cancels. An empty name keeps the old one.

The default group names are Main, Drums, Band, Vocals, Strings, Brass, Keys and FX.

## Moving tracks between groups

ADD TRACKS lists every track that is not in this group, under the group it is in now. Click tracks to tick them, or click a group's label to tick its whole section, then press MOVE. CANCEL, Esc or a click outside closes the list. The window then shows the group the tracks moved into.

A track that moves into a group that already has tracks takes on that group's room. A track that starts a new group brings its current room with it, so its sound does not change.

## Collapse

Collapse gathers a whole group toward the starting spot: the centre, at Depth 0% and ear height. At 0% every track sits where you placed it. At 100% the whole group sits on that spot with no source width. A collapsed group is not mono: each track keeps its own stereo and the room. The stored positions never change, so returning Collapse to 0% opens the group back exactly as it was.

In a collapsed group the knobs still show each track's own position. A sphere can still be dragged: a thin line runs from it to a dot that marks where it will sit when the group opens.

Collapse can be automated, for example to draw a section in for a breakdown. Each track's Group Collapse parameter controls the group that track belongs to. Automate it on one track per group only: if two tracks in a group both automate it, the latest value wins and the two lanes fight. Moving the COLLAPSE slider records automation only in a window whose own track is in that group.

CHAPTER 07

# The room

The room menu at the top left holds twenty-three factory rooms in seven categories. Hover over a category to open it, then click a room to load it. Rooms marked (Dry) have almost no room sound, for speech and close vocals.

| | |
|---|---|
| UTILITY | Default / Init Room · Podcast / Dialogue (Dry) · Headphone Reference |
| DRUMS | Tight Room · Punchy Wood Room · Big Ambient Room · Cinematic Impact |
| FULL BAND | Rock · Pop · Jazz Club · Metal · Indie · Funk |
| ORCHESTRA | Chamber · Classical Hall · Cinematic · Hollywood Scoring Stage |
| VOCAL | Booth (Dry) · Lead Upfront |
| ELECTRONIC | EDM / Club · Ambient / Pad Bloom |
| SPECIAL | Cathedral · Outdoor / Open Air |

## Room presets are not positions

A factory room preset sets the room only: its size, its walls, ER Send, Space, Decay, Tail Cut, ER/Tail and Tail Duck. It never moves a track, never changes Mix or CLIP, and leaves HRTF Depth and Width as they are, so loading a room keeps your placement and your blend.

A preset loaded in one window changes the room for every track in that group. Your own presets, saved from the same menu, are rooms too and work the same way (see chapter 11). Default / Init Room is a preset like the others; a new session starts in a built-in room of its own (see chapter 3).

The menu's label names the room, factory or your own, that the current room matches. After you change the room by hand, it keeps the last name, so the label alone does not mean the room still matches that preset.

## Walls

The material menu on the main panel sets what the walls are made of. The material decides how loud and how bright the reflections and the tail are. Soft materials such as Heavy Velvet and Fiberglass keep the room dry and dark. Hard materials such as Glass, Marble and Steel Plate sound brighter and more reflective. The material never changes the length of the tail: Decay sets that.




## Size

Room Width and Room Length, in the ADVANCED drawer, set the size of the room: 4 to 30 metres wide and 4 to 40 metres long. The readout under the material menu shows the size in metres; it only shows the size and cannot be clicked. The room drawing follows it. A larger room spaces the reflections further apart and moves the back wall, and the tracks placed near it, further away. Every room has a fixed 3 metre ceiling.

## Reflections and tail

Atrium builds space in two parts. The early reflections are the first echoes from the walls. They tell the ear where a source is and how big the room is. The tail is the reverb that follows.

Space, in the ADVANCED drawer, is the room control to reach for first. It opens the early reflections first and lets the tail in only as it rises. A track can sit deep in a room with little or no tail, which keeps the mix clear.

| | |
|---|---|
| **Space** | How much room the mix carries. Early reflections first; above about 10% it opens the tail. |
| **ER Send** | The level of the early reflections, and of what feeds the tail. |
| **Decay** | The length of the tail, from 0.15 to 3.0 seconds. |
| **ER/Tail** | How much of the tail you hear. At 0% the room is reflections only, however high Space is. |
| **Tail Cut** | Darkens the tail. |
| **Tail Duck** | Lowers the tail under transients, the sharp attacks of notes and hits. |

How they work together: ER Send sets how loud the reflections are, Space scales them and opens the tail, and ER/Tail sets how much of that tail reaches you. Space high with ER/Tail at 0% gives a clear sense of room with no tail at all.

These controls sit in the ADVANCED drawer and belong to the room. Each is described in chapter 9.

## Mix and the room

Mix blends a track's dry signal with Atrium's processed signal. To change how much room a track carries, use Space, ER Send and the track's Depth, and keep Mix at 100%. A partial Mix blends the placed signal against the dry one, which can thin the sound.

CHAPTER 08

# Seating

A seating chart shows where the players of a common line-up usually sit. Its seats appear in the room as ghost spheres, and Snap places a track exactly on a seat. You can also save the way you placed a room's tracks as a seating of your own.




ROCK BAND. VOCAL, GUITAR, KEYS AND ACOUSTIC ARE SEATED, AND VOCAL IS SELECTED. THE FAINT DASHED CIRCLES ARE THE FREE SEATS: BVOX, THE SECOND GUITAR, AND BASS AND DRUMS BEHIND VOCAL.

The chart's seats are the faint dashed circles. A chart with up to ten seats shows a white tag on every seat. Larger charts (the orchestras, EDM, Choir, Marching / Drumline and Big Band) show no tags, so the room stays readable; the target seat's tag still shows while you drag.

## Using a chart

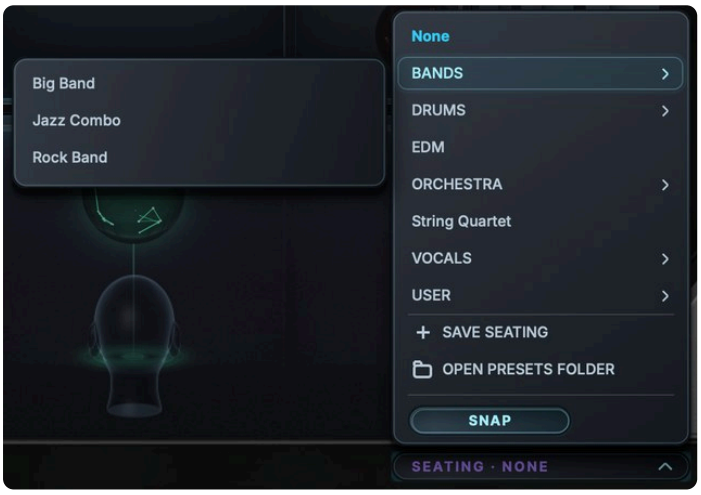
- Open the SEATING menu on the right of the group strip and pick a chart. A row with an arrow is a group: point at it and its charts open in a list to the left, then click one. Picking a chart shows its seats. None hides them.
- The ghost toggle, a small ghost icon next to the menu, shows or hides the seats. It is purple while seats show. With no chart picked, it opens the SEATING menu.
- Drag a sphere toward a seat and release it near the seat: within about 30 pixels at size S, a little more at larger sizes. With Snap on, the sphere lands on the nearest seat exactly: its left and right position, its distance and its height. While you drag, a purple ring marks the target seat with its name in a purple tag above it, and the track's own name moves under the sphere until you let go.

## Snap

Snap is on by default. Ghost is off until you pick a chart. Snap works only while a chart's seats are showing, and acts only at the end of a floor drag: a click never snaps a sphere, a Shift-drag for height never snaps, and snapping never changes 3D Gain or Source Width. The magnet toggle, cyan while Snap is on, and SNAP at the foot of the SEATING menu, switch Snap on and off.

The band, drum and vocal charts, EDM and String Quartet give every seat a fixed height, the same in any room size. The three orchestra charts work out each seat's height from its real angle and its distance in this room. Resizing the room later does not move tracks already seated. Several tracks can share a seat, and nothing marks a seat as taken.

## The SEATING menu




THE SEATING MENU WITH BANDS OPEN.

The menu lists None and then the charts from A to Z. USER holds your own seatings and appears once you have saved one. Below come SAVE SEATING and OPEN PRESETS FOLDER, then SNAP and, for a chart with families, the FAMILIES chips.

| | |
|---|---|
| BANDS | Big Band · Jazz Combo · Rock Band |
| DRUMS | Cinematic Drums · Drum Kit (audience) · Drum Kit (drummer) · Marching / Drumline · Percussion Section |
| ORCHESTRA | Cinematic · Classic · Symphonic |
| VOCALS | Choir · Vocal + Backing |
| ON THEIR OWN | EDM · String Quartet |

- **Drum Kit (audience)** lays out the kit as the audience sees it. **Drum Kit (drummer)** is the same kit seen from the drummer's stool, mirrored.
- **Orchestra - Classic** seats the first violins on the left and the second violins on the right, facing each other. **Orchestra - Symphonic** seats both violin sections on the left and the cellos on the right. **Orchestra - Cinematic** spreads the string sections across the full width of the stage.

## Families

The orchestra charts and EDM mark each seat with its family. While such a chart is picked, the foot of the SEATING menu shows FAMILIES chips. The orchestras have STRINGS, WINDS (woodwinds), BRASS, PERC (percussion, timpani included) and KEYS (harp included); EDM has TOPS, PERC, STABS, LEADS and PADS. Each chip shows or hides that family's seats, so a dense chart can be worked one family at a time. Snap skips the seats of a hidden family. The tracks always stay visible.

## Seating belongs to the room

The chart, Ghost, Snap and the family chips belong to the group's room. Every track in the group sees the same chart, and a change made in one window shows in all of them.

The project remembers each room's chart and whether its seats were showing, so a reopened project gets its seating back. Your own seatings come back by name; one deleted in the meantime comes back as None. Snap and the family chips are not saved and start on. A track added to a session that is already running never changes its room's seating.

Seating is a guide. It changes nothing in the sound until a track is moved onto a seat.

## Your own seatings

Place the tracks of a room where you want them, then open the SEATING menu and click SAVE SEATING. The SEATING pill becomes a name field showing MY SEATING, highlighted (MY SEATING 2, 3 and so on when the name is taken). Type a name: the first key replaces it. Press Enter, or click outside the pill, to save; Esc cancels.




SAVE SEATING TURNS THE SEATING PILL INTO A NAME FIELD.

- A seating holds one seat for each track in the room: its name, its left and right position, its distance and its height. Source Width is not part of a seat.
- The new seating is picked at once. Its seats show in each track's colour at the time you saved, with the track's name on the floor under every seat, however many seats there are.
- Names take English letters, numbers, spaces, - and _, up to 32 characters. A name already in use shows REPLACE and CANCEL in the pill: REPLACE, or Enter, overwrites that seating; CANCEL, or Esc, takes you back to typing; a click outside cancels the save. A factory chart's name shows FACTORY NAME and is not used. You can keep up to 32 seatings; after that the pill shows LIST FULL.
- In a room with no tracks, SAVE SEATING is dimmed and reads no tracks here.
- Your seatings are listed under USER. To delete one, point at it and click the x at the right end of its row; the row asks DELETE or KEEP. Deleting the seating in use sets the room to None.
- Each seating is one small .seating file in your presets folder, next to your room presets; OPEN PRESETS FOLDER shows it. Copy the files to the same folder on another computer to take your seatings with you.

CHAPTER 09

# Advanced controls

ADVANCED, at the bottom right of the main panel, opens a drawer over the lower part of the room with the detail controls. Click ADVANCED again, or anywhere outside the drawer, to close it. The top of the room stays in view, but while the drawer is open a click anywhere outside it only closes the drawer: close it first to select or move a sphere or to use the main panel.

The drawer is laid out in sections. SOURCE, SPACE, SHARED ROOM, ROOM, SPATIAL and STEREO DOMAIN hold the knobs. SHARED ROOM holds the reflection and tail controls and ROOM holds the room's size; both belong to the room, as do Space and Decay in SPACE. The row under the knobs holds the selected track's name, colour and Crossfeed, the HEAD toggle and CLIP, and the bottom row is the Mono-Guard strip.

Some controls belong to the selected track, some to the window's own track and some to the room it shares with the rest of its group. The drawer itself does not mark which is which. Each description on the following pages states it and gives the default value, and the control reference at the end of this chapter lists every control in one table. Double-click any knob to return it to its default.

## Selected track

3D Gain, Punch, Distance, Proximity, Mono Below, Externalize, Crossfeed, the name field and the colour dot show and change the selected track, like the knobs on the main panel. Select another sphere and the drawer shows that track's values. Each value belongs to its track and is saved with it.

## This window's track

Mix and CLIP always belong to the window's own track, whichever sphere is selected.

## Per room

Space, Decay, Tail Cut, ER/Tail, Tail Duck, ER Send, Room Width, Room Length, HRTF Depth and Width set the room. A change applies to every track in the group.

## The listener head

HEAD shows or hides the listener head in this window's room. It changes the picture only, not the sound, affects only this window, and is saved with the project. The head is also hidden while the drawer is open.

The drawer overview on the following page names each section.

# Drawer overview

**01 SOURCE**
3D Gain and Punch.

**02 SPACE**
Space, Decay and Mix.

**03 SHARED ROOM**
Tail Cut, ER/Tail, Tail Duck, ER Send.




**04 ROOM**
Width and length of the room.

**05 SPATIAL**
HRTF Depth, Width, Distance, Proximity.

**11 MONO-GUARD**
Mono safety lamp.

**06 STEREO DOMAIN**
Mono Below and Externalize, which is dimmed unless Crossfeed is Headphone.

**12 MONO · SIDE · CLR**
Listen in mono, to the side signal (left minus right), or clear back to normal.

**07 TRACK NAME**
The selected track's name.

**08 COLOUR**
The selected track's colour.

**09 CROSSFEED**
Off, Speaker or Headphone. SP is Speaker.

**10 HEAD**
Listener head on or off.

**13 CLIP**
Output guard of this window's track. Lit is on.

## Source and space

### 3D Gain

PER TRACK · DEFAULT 100%

How much the track's level follows its distance. At 100% a sphere brought to the very front gets about 4 dB louder and one pushed to the back wall about 4.5 dB quieter, as in a real room. At 0% the level stays the same wherever the sphere sits, and the other distance cues still apply. The sphere's size follows it.

### Punch

PER TRACK · DEFAULT 25%

Lifts the attack of transients on a track placed in front of the starting spot, so close sources keep their impact. The lift only boosts, never cuts, and is limited to 6 dB at 100%. It grows from nothing at Depth 0% to its full effect at -100%, so at the starting spot and behind it Punch has no effect.

Punch, a close position and a loud, bright room can all raise a track's level. Atrium has no output level control, but CLIP keeps the track's peaks from going over -0.1 dBFS (see CLIP, later in this chapter).

### Space

PER ROOM · DEFAULT 20%

The room control to reach for first. Space opens the early reflections first, so even a low setting puts a room around the track. Above about 10% it begins to let the tail in, and the tail grows as Space rises. At 0% there are no reflections and no tail.

### Decay

PER ROOM · DEFAULT 0.80 S

The length of the tail, from 0.15 to 3.0 seconds. Decay sets the tail's length in every room, whatever the size and the walls; they change only how bright it is.

### Mix

THIS WINDOW'S TRACK · DEFAULT 100%

Blends this track's dry signal with Atrium's processed signal. At 0% the track is heard without Atrium's placement and room. Room presets never change Mix. See chapter 7 before using a partial setting.

## Shared room

### Tail Cut

PER ROOM · DEFAULT 50%

Darkens the tail. Raising it lowers the tail's high cut from 12 kHz at 0% to 1.5 kHz at 100%, for a warmer, less obvious tail: at 12 kHz the tail stays bright, at 1.5 kHz it is dark and muffled. The direct sound and the early reflections are not affected.

### ER/Tail

PER ROOM · DEFAULT 50%

How much tail joins the early reflections. At 0% the room is early reflections only, however high Space is. Raising it brings the tail up.

### Tail Duck

PER ROOM · DEFAULT 30%

Lowers the tail while a track's transients play and lets it return between them, so attacks stay clear of the room. Each track's tail ducks under its own hits. At 0% the tail does not duck.

### ER Send

PER ROOM · DEFAULT 40%

The level of the early reflections, the first echoes from the walls. ER Send also feeds the tail: at 0% the room adds no reflections and no tail.

## Room

### Room Width and Room Length

PER ROOM · DEFAULT 50%

The size of the room: 4 to 30 metres wide and 4 to 40 metres long. The knobs read in percent and the readout under the material menu in metres. The default, 50%, is 17 metres wide and 22 metres long. The room drawing follows them.

## Spatial

### HRTF Depth

PER ROOM · DEFAULT 60%

How strongly Atrium applies the colour the head and outer ear give a sound from each direction. Higher settings make direction and height clearer, lower settings colour the tracks less. At 0% placement uses time and level between the ears alone. HRTF Depth belongs to the room: to give one track less colour, put it in a group of its own.

### Width

PER ROOM · DEFAULT 150%

The stereo width of the processed sound: mono at 0%, unchanged at 100%, extra wide at 200%. The default is 150%, so a track sounds a little wider than its input as soon as Atrium is inserted. Set 100% to keep the original width.

Extra width never changes what is heard in mono, but it does lower the correlation reading (see chapter 10). When Mono Below is set, the bass below it stays out of the widening.

### Distance

PER TRACK · DEFAULT 60%

How strongly distance sounds distant. As a sphere moves back, Distance lowers the direct sound against the room and softens the highs, as air does over distance. With Distance at 0%, Depth still changes the level and the reflections, with less of this effect.

### Proximity

PER TRACK · DEFAULT 60%

The effect of a source very close to the listener: fuller low end and a stronger difference between the ears. It starts about 1 metre from the head (Depth about -52%) and is at full strength at -100%. Behind the middle of the room it has no effect, and its knob turns grey.

## Stereo domain

### Mono Below

PER TRACK · DEFAULT OFF

Makes the low end of the track mono below the frequency you set, from OFF through 1 to 250 Hz. It works on the low end of any track, not only on bass instruments. It is off by default and is not needed on every track. 120 Hz is a good start for a mix that must hold up in mono, for example in clubs or on phone speakers. At OFF the bass keeps its own stereo image.

### Externalize

PER TRACK · DEFAULT 0% · HEADPHONE

Helps a track sound outside your head on headphones, with a gentle spread in the mid range, about 400 to 800 Hz, that drifts very slowly, one cycle about every 7.7 seconds. It is stronger on distant tracks. The range is 0 to 100%, and the mono sum is unchanged.

Externalize works only when Crossfeed is set to Headphone, which is what the headphone label means. Its readout shows (HP) and dims in the other modes.

## Track

### Name and colour

SELECTED TRACK

The name field shows and renames the selected sphere's track, filled from the DAW track name and written in the track's colour. Type a new name, up to sixteen characters, to replace it; clear the field and press Enter to bring back the DAW name. A name typed for another track lasts for this session only (see chapter 5).

The colour dot shows the selected track's colour and opens the grid of twenty-four colours for it, like the dot on the track switcher (see chapter 5). The colour is for the eye only and is saved with the project.

### Crossfeed

PER TRACK · DEFAULT SPEAKER

Off, Speaker or Headphone. Crossfeed feeds a delayed, softened copy of each side to the opposite ear. Speaker is a light feed tuned for monitors: it keeps Atrium's ear cues from sounding too wide or split on speakers, and it is the default. Headphone feeds more, so headphones sound closer to speakers in a room, and enables Externalize. Off removes it.

Crossfeed is part of the processed sound and is included when you bounce. It switches instantly, so changing it while music plays may click. It is set on each track; there is no switch for the whole session.

### HEAD

PER WINDOW · DISPLAY ONLY

Shows or hides the listener head in this window's room. It changes the picture only, and it is saved with the project.

### CLIP

THIS WINDOW'S TRACK · DEFAULT ON

A guard on the track's output. A loud track brought forward with Punch can peak well over 0 dB. With CLIP on, its peaks stop at -0.1 dBFS: short peaks are shaved off, by 3 dB at most, and longer overs are turned down smoothly, so the hits keep their punch. Below -0.1 dBFS CLIP does nothing, so a track that never reaches it sounds exactly the same with CLIP on or off. It adds no latency.

CLIP is lit while it is on; click it to switch it. It always shows and switches this window's own track, even while another sphere is selected, and switching it while music plays does not click. It is saved with the project and is part of a bounce. It is not a DAW parameter, and room presets never change it. Projects saved before CLIP existed open with it on.

## Mono-Guard

The bottom row of the drawer holds the Mono-Guard lamp and the MONO, SIDE and CLR listening buttons. See chapter 10.

## Control reference

Track: the selected track's own value. Window's track: always this window's track. Room: shared by every track in the group. The DAW column shows which controls can be automated (chapter 11).

| CONTROL | WHERE | BELONGS TO | RANGE | DEFAULT | DAW |
|---|---|---|---|---|---|
| **Azimuth** | Main panel | Track | 90L to 90R | Centre | Yes |
| **Depth** | Main panel | Track | -100% to +100% | 0% | Yes |
| **Elevation** | Main panel | Track | 0 to 100% | 0% | Yes |
| **Source Width** | Main panel | Track | 0 to 100% | 0% | Yes |
| **Material** | Main panel | Room | Ten materials | Ceramic Tile | No |
| **3D Gain** | Source | Track | 0 to 100% | 100% | Yes |
| **Punch** | Source | Track | 0 to 100% | 25% | Yes |
| **Space** | Space | Room | 0 to 100% | 20% | No |
| **Decay** | Space | Room | 0.15 to 3.0 s | 0.80 s | No |
| **Mix** | Space | Window's track | 0 to 100% | 100% | Yes |
| **Tail Cut, ER/Tail** | Shared room | Room | 0 to 100% | 50% | No |
| **Tail Duck** | Shared room | Room | 0 to 100% | 30% | No |
| **ER Send** | Shared room | Room | 0 to 100% | 40% | No |
| **Room Width** | Room | Room | 4 to 30 m | 50% (17 m) | No |
| **Room Length** | Room | Room | 4 to 40 m | 50% (22 m) | No |
| **HRTF Depth** | Spatial | Room | 0 to 100% | 60% | No |
| **Width** | Spatial | Room | 0 to 200% | 150% | No |
| **Distance, Proximity** | Spatial | Track | 0 to 100% | 60% | Yes |
| **Mono Below** | Stereo domain | Track | Off, 1 to 250 Hz | Off | Yes |
| **Externalize** | Stereo domain | Track | 0 to 100% | 0% | Yes |
| **Crossfeed** | Track row | Track | Off, Speaker, Headphone | Speaker | Yes |
| **Name** | Track row | Selected track | Up to 16 characters | DAW track name | No |
| **Colour** | Track row, switcher | Selected track | Twenty-four colours | One not in use | No |
| **HEAD** | Track row | Window | On, off | On | No |
| **CLIP** | Track row | Window's track | On, off | On | No |
| **Group Collapse** | Group menu | Group | 0 to 100% | 0% | Yes |
| **Seating, Ghost, Snap** | Group strip | Room | Charts, on, off | None, off, on | No |
| **BYPASS** | Top bar | Whole session | On, off | Off | No |

CHAPTER 10

# Checking the mix

## Bypass

BYPASS on the top bar switches Atrium off on every track in the session at once, every group included, so you hear the whole mix as plain stereo. The button turns red while bypass is on, and the spheres gather in the centre of the room. Click it again to return. Bypass fades in and out smoothly.

While bypass is on, each track's output is its input unchanged, and spheres cannot be dragged. Bypass is not level matched: tracks you moved forward or back can be up to about 4 dB louder or quieter than their bypassed sound, so allow for that when you compare. BYPASS is not a DAW parameter. To switch a single track, use your DAW's own bypass for that track.

**Turn BYPASS off before you export.** An export made while it is on has no Atrium processing at all. BYPASS is not saved: it is off again when the project reopens.

## Correlation meter

The correlation meter on the main panel shows how the low end of this window's track behaves when it is summed to mono. The marker moves along a scale from -1 to +1: +1 means left and right are the same, 0 that they are unrelated, and -1 that they are opposite and cancel in mono. The meter reads the low end, below about 250 Hz, where mono cancellation costs the most.

| | |
|---|---|
| **Cyan** | Mono-safe. The reading is above 0.5 and less than 3 dB is lost in mono. |
| **Amber** | Watch it. Between cyan and red: part of the low end will thin out in mono. |
| **Red** | Below 0, or 6 dB or more lost in mono. |

With no signal the marker is hidden.

## Mono-Guard

The Mono-Guard strip at the bottom of the ADVANCED drawer shows the same reading as a lamp, green, amber or red, where green means the same as cyan on the meter; with no signal the lamp is unlit. It holds three listening buttons for this track.

- **MONO** plays this track's output summed to mono. The rest of the mix plays normally; it is not a solo.
- **SIDE** plays only the difference between left and right, the part that disappears in mono.
- **CLR** (clear) returns to normal listening. Clicking MONO or SIDE again does the same.

These buttons are for listening. They stay on only while the drawer is open: closing the drawer, or changing the window size, returns the track to normal listening. They are not saved. **A bounce made while MONO or SIDE is lit does print it**, so press CLR before you export.

CHAPTER 11

# Automation, presets and recall

## DAW parameters

Each copy of Atrium shows thirteen parameters to the DAW, all for its own track:

| | |
|---|---|
| PLACEMENT | Azimuth · Depth · Elevation · Source Width |
| TRACK | 3D Gain · Punch · Mix · Crossfeed · Distance · Proximity · Externalize · Mono Below |
| GROUP | Group Collapse |

Dragging a sphere or turning a knob writes automation in your DAW's usual way, and playback moves the sphere smoothly. Automating one track never moves another, with one exception: Group Collapse moves the whole group.

Values can be typed into the DAW's parameter fields. Azimuth reads in degrees, shown as 45L, C or 30R: type a number, so -45 gives 45L and 30 gives 30R. Mono Below reads in Hz. Crossfeed reads Off, Speaker or Headphone, and switches instantly, so automating it while music plays may click. The rest read in percent.

The room settings and BYPASS are not DAW parameters, because they belong to a room or to the whole session rather than to one track.

## Moves from other windows

A sphere moved, or a drawer control changed, from another track's window plays and saves correctly, and the DAW shows the new value, but no automation is recorded. To record a move, make it in the track's own window. While the DAW plays automation on a track, a move made from another window is pulled back by the automation.

## User presets

Your own presets are rooms, just like the factory rooms. The room menu ends with two rows: SAVE PRESET and OPEN PRESETS FOLDER.

SAVE PRESET turns the menu's pill into a name field. It lights up and shows NEW PRESET, highlighted, with a cyan cursor after it. Type a name: the first key replaces NEW PRESET. Backspace deletes the last letter; the cursor always stays at the end. Press Enter, or click outside the pill, to save the room this window shows: its walls, width and length, ER Send, Space, Decay, Tail Cut, ER/Tail and Tail Duck. Enter with NEW PRESET left as it is saves a preset called New Preset. Esc cancels. Names take English letters, numbers, spaces, - and _, up to 32 characters; other keys do nothing. A name already in use replaces that preset without asking.

Saved presets appear in the room menu under USER. Loading one works exactly like a factory room: it changes the room for every track in the group and leaves every track as it is, with its position, controls, Mix, name, colour and group. HRTF Depth and Width stay as they are too.

The pill names your preset the way it names a factory room: in every window of the group while the room matches it, also after the project is reopened, and it keeps the last name after a hand change. If one of your presets is identical to a factory room, the pill names the one you picked.

To delete a user preset, point at it in the USER list and click the x at the right end of its row. The row asks DELETE or KEEP. DELETE removes the preset at once and cannot be undone; KEEP, or any other click, leaves it. Projects that used the preset keep their settings.

OPEN PRESETS FOLDER shows your presets folder in Finder or File Explorer. Each preset is one small .room file: copy the files into the same folder on another computer to take your presets with you, or rename a file to rename its preset. Your own seatings are .seating files in the same folder (chapter 8).

Your DAW's own preset save and load still store the whole track, the same state as the project: the track's position, its controls, its room settings and its group.

## Recall

A saved project restores every track's position, name, colour and controls, the group each track belongs to, the group names, each room with its settings and its seating chart (shown or hidden), Collapse, and each window's HEAD and CLIP settings.

Not saved: Snap and the FAMILIES chips; BYPASS; MONO and SIDE; and the window size, which is a setting of your computer.

A project opened on another computer with Atrium comes back the same way. After a trial has ended, its tracks stay silent until Atrium is activated.

## Duplicating a track

A duplicated track, or a copy of Atrium dragged onto another track, keeps the position, controls, typed name and group of the original, so its sphere sits on the same spot. It gets a colour of its own, so the two can be told apart. Without a typed name it takes the new track's name.

A deleted track brought back with your DAW's undo, or a track cut and pasted, keeps its colour.

CHAPTER 12

# Procedures

## Placing a band

Insert Atrium on every track you want to place, vocals and audio tracks included. Pick a room preset that suits the music. Open SEATING, choose the chart for the line-up and, with Snap on, drag each sphere to its seat. Then adjust by ear.

## Bringing a track forward

Drag its sphere toward the listener head. With 3D Gain at 100% it gets louder and drier as it comes forward. Proximity adds the fuller low end of a very close source, and Punch keeps its attacks clear.

## Pushing a track back

Drag its sphere toward the back wall. Raise Distance to make the distance more obvious, or lower 3D Gain if the track must keep its level.

## Adding height

Hold Shift and drag the sphere upward, or turn Elevation. Height is clearest with HRTF Depth at its default or above.

## More room without a long tail

Raise Space and ER Send, keep ER/Tail low and Decay short. Because ER/Tail sets how much tail you hear, Space can rise without bringing a long tail. Tail Duck keeps the attacks clear of whatever tail remains.

## Giving parts of the mix their own rooms

Select a drum track and press + to start a new group with it. Open the new group's menu, choose ADD TRACKS, tick the other drum tracks and press MOVE. Pick a room preset for the drums. Repeat for the other sections.

## Mixing on headphones

Set Crossfeed to Headphone on each track and raise Externalize to taste. Crossfeed is part of the processed sound, so choose the mode for the listening the mix is made for, and check the mix on both headphones and speakers.

## Checking mono

Each window's correlation meter shows only its own track, so open each track's window to check it. Open ADVANCED and press MONO to hear the track summed to mono. On bass-heavy tracks with a wide image, set Mono Below to around 120 Hz. Press CLR before you export.

## Opening and closing a section

Automate Group Collapse on one track in a group to draw the whole section into the centre for a breakdown, then open it again.

CHAPTER 13

# Troubleshooting

## The plugin does not appear in the DAW

Confirm the format your host uses was installed, VST3, Audio Units or AAX: the files are listed in chapter 2. Then rescan your plugin folders. Some hosts require a restart before newly installed plugins are detected.

## A track does not appear in the other windows

A window shows one group at a time. Check the group pills: the track may be in another group. If it is in the same group, the copies may be running in separate processes. Set your host so all copies of Atrium run in the same process.

In Bitwig Studio: open Settings, then Plug-ins. Under Plug-in Hosting Mode, choose any option except Individually. Bitwig's default, Together, works. In Per Plug-in Overrides, make sure Atrium is not ticked. Save, then close and reopen the project.

## A sphere cannot be dragged

Click the sphere once to select it first. Only the selected sphere drags. If BYPASS is on, the spheres gather in the centre and cannot be dragged. Switch BYPASS off. Close the ADVANCED drawer: while it is open, a click in the room only closes it.

## Every track sounds unprocessed

BYPASS covers the whole session and may have been switched on from another track's window. Switch it off. If only one track is affected, check that its Mix is not at 0%.

If the licence panel covers the plugin, Atrium is not licensed on this computer. With no licence or trial, or after the trial ends, tracks are silent. A licence that has not been checked online for fourteen days plays them dry. See chapter 2.

## Changing the room changed other tracks too

The room belongs to the group. To give a track a room of its own, move it into a group of its own. See chapter 6.

## Externalize, Proximity or Punch has no effect

Externalize works only with Crossfeed set to Headphone. Proximity acts only when the sphere is close to the listener. Punch acts only in the front half of the room.

## The correlation marker is red

Lower Width, or set Mono Below on that track, then check again with MONO. Width never changes the mono sum itself, but it lowers the correlation reading, so lowering it moves the marker back.

## Atrium asks to reconnect

Atrium has not been able to confirm its licence for fourteen days. Connect to the internet and reload the plugin.

## Crackles, dropouts or a crash

Raise the buffer size in your DAW's audio settings, and close other heavy plugins and projects. Make sure you have the latest version of Atrium. If it still happens, open a support ticket with your DAW and its version, your buffer size and your operating system.

## Updates

When an update is available, Atrium tells you a few seconds after it opens. UPDATE NOW opens your A2D SOUND account, where you download it. SKIP THIS VERSION hides that update, and REMIND ME LATER asks again after three days; a click outside the card does the same. Atrium checks at most once a day, for all its copies together. Updates within version 1 are free. An update does not change how your existing projects sound, unless its release notes say so.

To see which version you have, open the licence panel: the version shows at its top left.

## Any issues or questions?

Open a support ticket at a2dsound.com/support.

CHAPTER 14

# Glossary

| | |
|---|---|
| **Correlation** | How alike the left and right channels are, from +1 (the same) through 0 (unrelated) to -1 (opposite). See chapter 10. |
| **Crossfeed** | Feeding a softened, slightly delayed copy of each side to the other ear. See chapter 9. |
| **Direct sound** | The sound that travels straight from the source to your ears, before any reflection. |
| **Early reflections** | The first echoes from the walls, arriving just after the direct sound. They tell the ear where a source is and how big the room is. |
| **High cut** | A filter that removes the highs above a set frequency, making a sound darker. |
| **HRTF** | Head-related transfer function: the way your head and outer ears change the tone of a sound depending on the direction it comes from. |
| **Hz and kHz** | Hertz, the unit of frequency: cycles per second. 1 kHz is 1000 Hz. Low notes are tens of Hz; the highest sounds we hear are near 20 kHz. |
| **Insert effect** | A plugin placed directly on a track, so the track's whole signal passes through it. |
| **Latency** | A delay a plugin adds to the sound. Atrium adds none. |

| | |
|---|---|
| **Low end** | The lowest part of a sound. Atrium's correlation meter reads it below about 250 Hz. |
| **Masking** | When one sound covers another so it is harder to hear, as a long reverb tail can cover the detail of a mix. |
| **Mono cancellation** | Parts of a stereo sound that disappear when left and right are added together, as on a phone speaker or a club system. |
| **Point source** | A sound that seems to come from a single spot, with no width. |
| **Room sound** | Everything the room adds after the direct sound: the early reflections and the tail. |
| **Surround and Atmos** | Formats that play on many speakers around the listener. Atrium does not need or produce them: its output is ordinary stereo. |
| **Tail** | The reverb that rings on after the early reflections and fades away. |
| **Transients** | The sharp attacks at the start of notes and hits. |

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