

REVERSIDE User Manual

Product version: 1.0.0 [Build 650, 19 July 2026]

Manual edition: 180

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For installation, authorization, and a quick-start walkthrough, see the [Quick Start Guide](#).

REVERSIDE is a sophisticated dual-engine reverb processor that combines **Early Reflections (ER)** and **Late Reflections (LR)** to create both realistic acoustic spaces and imaginative sonic environments. Both ER and LR engines include an integrated **Diffuser**, which functions as additional mini reverb stage — adding density, diffusion, envelope controls and spatial complexity.

REVERSIDE supports two complementary approaches to reverb design:

Physical Modeling: Shape the reverb using parameters that simulate real acoustic behavior — room geometry, surface scattering, material absorption, material filters, and 3D source/listener positioning.

Traditional Musical: Work with familiar controls — REV TIME, DIFFUSE, PRE-DLY, and DCY (Decay) filters for intuitive shaping.

You can freely blend both approaches. This flexibility makes REVERSIDE equally suited for scientific spatialisation, immersive music production, and creative sound design.

Key Features

- **Fully independent ER and LR engines** with separate controls for timing, diffusion, filtering, EQ, stereo imaging, and modulation.
- **3D spatialisation** — place a virtual sound source and stereo listener within a 3D room. Direct path and early reflections get automatic directional cues. Includes a **3D Position Display** for visual inspection of the spatial arrangement.
- **Bidirectional filter routing** between MAT (material) and DCY (decay) filters.
- **Independent modulation for ER and LR** with dedicated M-DEPTH, M-RATE, and on/off controls.
- **Comprehensive stereo imaging** with full Mid/Side control, rotation, cross-mixing, and spatial panning.

- **Asymmetric parameter panning** — split decay times and filter gains between L/R or M/S channels.
- **Comprehensive pre-delay controls** with host tempo sync modes.
- **Persistent parameter locks** with sub-preset support.

Typical Use Cases

- **Immersive orchestral staging** — place instrument sections around the listener
- **Realistic source placement** — simulate proximity to walls or ceiling via Z positioning
- **Creative spatial motion** — animate DIS X/Y, ROT XY, or DISTANCE for moving sources
- **Spatial mixing tool** — use REVERSIDE as a 3D audio placement engine in stereo or immersive production

Design Philosophy

REVERSIDE is a physically informed, highly flexible reverb engine with deep parameter interdependence. This manual describes **what parameters do** and **how they interact**, rather than prescribing specific settings. Optimal settings always depend on your source material, monitoring environment, and artistic intent.

Privacy

DEVPROAUDIO respects your privacy. The plug-in has no network connection code — it cannot send or receive any data. Authorization uses anonymous system settings stored locally in encrypted form.

Plug-in generates debug logs in the following folder: [MAC] /Users//Music/Devproaudio/logs/reverside [WINDOWS](#) C:<user>

This data is stored locally on your system. It's never sent to the company automatically.

ACKNOWLEDGMENTS

REVERSIDE exists thanks to invaluable support from Jeffrey Jaskunas of [Altitude Audio](#). Altitude Audio Full Music Spectrum Hearing Test is a free mobile app for iOS and Android that measures your personal dual-ear hearing profile — an indispensable tool for audio production.

REVERSIDE has been developed using Shenzhen Audio's Moondrop Blessing 2 In-Ear Monitors.

1. Reverb Engine Architecture

1.1 Key Terms

Reflection Types

- **Early Reflections (ER)** – The first echoes that arrive after the direct sound. They tell your ears how big the room is, what shape it has, and where things are in it — like a quick sonic map of the space.
- **Late Reflections (LR)** – The dense, smooth reverb tail that follows the early echoes. This is what most people think of as “reverb” — the wash of sound that creates atmosphere and a sense of being inside the space.
- **Diffuser** – An extra mini-reverb stage that adds micro-delays and scattering, smoothing out the reflections and making the space feel richer and more three-dimensional.

There is no definite border between ERs and LRs, They blend smoothly.

Temporal & Decay Parameters

- **RT60 / Rev Time** – How long the reverb takes to fade away. The main “size” control — short times feel tight and dry, long times feel grand and lush.
- **Pre-Delay** – The gap between the dry sound and the first reverb. A short gap makes the source feel close to the walls; a long gap pushes it deeper into the room.
- **Diffusion** – How quickly individual reflections blur into a smooth tail. Low values = you can hear distinct echoes; high values = everything melts into a seamless wash.
- **Density (LR)** – How rich or sparse the reverb tail feels — from a few audible echoes to a thick, luxurious cloud.
- **Scatter (ER)** – Adds micro-delay density to early reflections, making them sound more natural and less “calculated.”

Filters & Frequency Control

- **MAT Filter** – Frequency-dependent absorption per reflection (material-based).
- **DCY Filter** – Frequency-dependent decay time (decay-based).
- **Damping (Decay Filters)** – Frequency-dependent decay control; reduces high-frequency energy over time.

Spatialisation & Stereo

- **3D Spatialisation** – Automatic calculation of directional cues for direct and reflected sound based on source/listener geometry.
- **Mid/Side (M/S)** – Stereo encoding where Mid = L+R, Side = L-R.
- **3D Position Display** – 3D wireframe view of the virtual room showing source (S) and listener (L/R) points with interactive camera controls (rotate, pan, zoom). Available on the POS page and in mini form on the MAIN page.

UI & Controls

- **UI** – User Interface (general controls, knobs, sliders, etc.).
- **FAT Mode** – Extended envelope mode allowing custom attack/decay shaping.

1.2 Introduction

REVERSIDE has two parallel distinct engines:

EARLY REFLECTIONS (ER) ENGINE - Simulates initial sound reflections - Provides crucial spatial cues

LATE REFLECTIONS (LR) ENGINE - Simulates late, dense reverberations - Responsible for the sense of space and ambience

The output of engines are mixed together according to ER/LR balance control. You can also turn on/off each engine. Also there is an option to send signal from ER engine processing chain to the input of LR engine. See 5.2.6.6.2 [ER SEND]

Each engines also has additional optional dedicated diffuser which can be treated as an additional layer of reverberation, making it actually a 4-engine reverb.

1.3 Signal Flow

Early Reflections (ER) Engine

ER has two parallel paths that merge at the **D/R BAL** control: - **DIRECT** path: Bypasses processing, only 3D spatialisation - **REFLECTIONS** path: Full processing chain (material filter, diffuser, EQ, stereo, pre-delay)

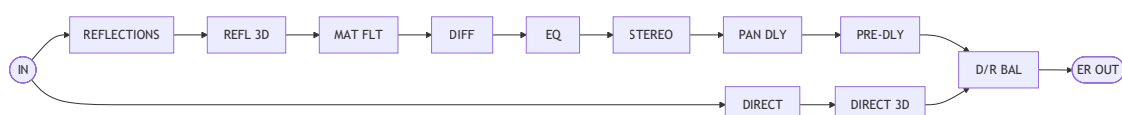


Diagram 1

Late Reflections (LR) Engine

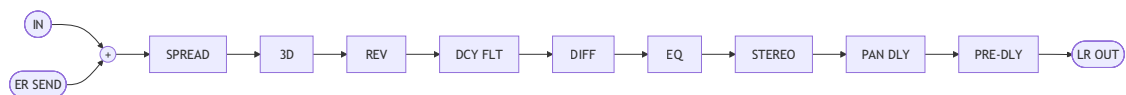


Diagram 2

Final Mix

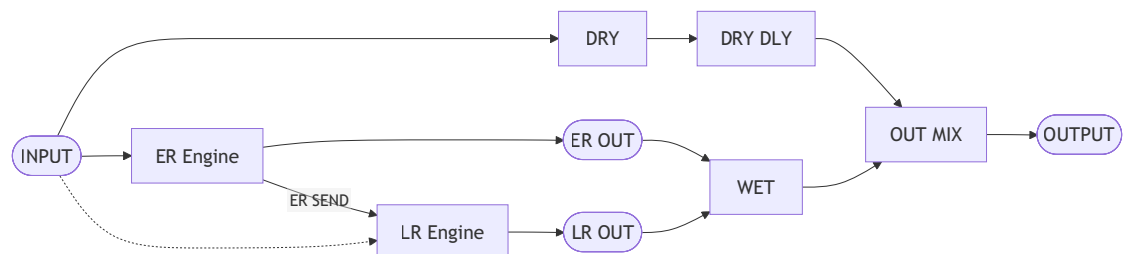


Diagram 3

The **OUTPUT** combines dry input with the wet mix of ER and LR engines.

2. User Interface Controls

2.1 Control Help Tooltips

If you hover the mouse over a control, a help tooltip with brief control designation will show up in the bottom panel area along with current parameter's value. Make sure that the current bottom panel page is set to [HELP] page (click on the leftmost button in bottom panel and select [HELP] in pop-up menu if it's not the case).

≡ 37.6 % | Relative amount of energy absorbed by walls

2.2 Knobs & Sliders

Mouse-drag: Changes the value

Holding SHIFT while dragging: Changes the value slower. Use it to fine-tune the value

CTRL-mouse-click: Resets the control's value to its default value

ALT-mouse-click: Toggles on/off parameter lock mode for this control. When Locked the knob's ring becomes violet and text bolder. See below:



Note: dB gain knobs on MIX sub-pages are auto-latched to 0.5 (0.1 in fine mode with SHIFT key) dB steps.

2.3 Working with Edit Boxes

- **Double-mouse-click:** Opens a system's edit box where you can enter a value
- Pressing **ESC** key will close edit box and discard changes
- **ENTER** key will retain changes
- Clicking outside the edit box will discard changes (except for Preset Browser's)



Editbox supports all system's edit box capabilities: cursor, selection copy/paste etc.
Example of a control with opened edit box.

2.4 Parameter Pages

All REVERSIDE parameters are grouped into 7 pages:

[EASY] This pages contains a set of the most important plug-in parameters

[MAIN] This is a hub page for advanced editing.

[SPACE] Access all ER parameters

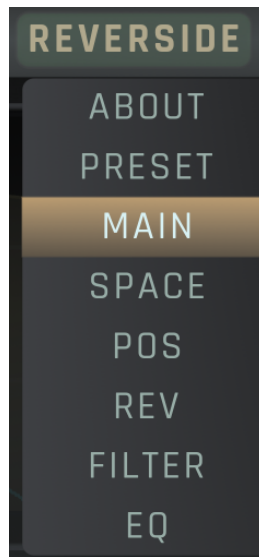
[POS] Access the big position display and all related controls

[REV] Access all LR parameters

[FILTER] Access MAT/DCY filters full editors

[EQ] Access ER/LR EQ filters full editors

You can switch between pages by clicking on [REVERSIDE] button in the top bar and selecting page from menu:



Press backspace key to return to previous page.

There are 3 page navigation buttons in the top bar (from left to right):

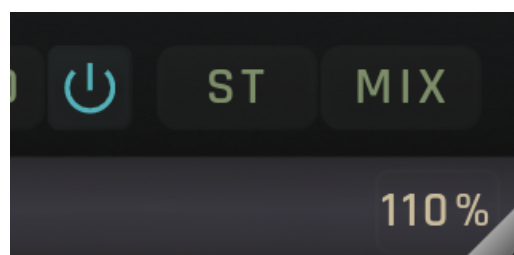
- to go to EASY page (home icon)
- to go to MAIN page (4 circle icon)
- to return to previous page (<- icon)

see below:



2.5 Plug-in Window

You can change the plug-in window size by dragging the window's right-bottom corner (grey triangle area). If you hover mouse close to that corner you will also see a small pop-up button [110%] with current ui scale value. Click on it to access a list of fixed UI scale options.



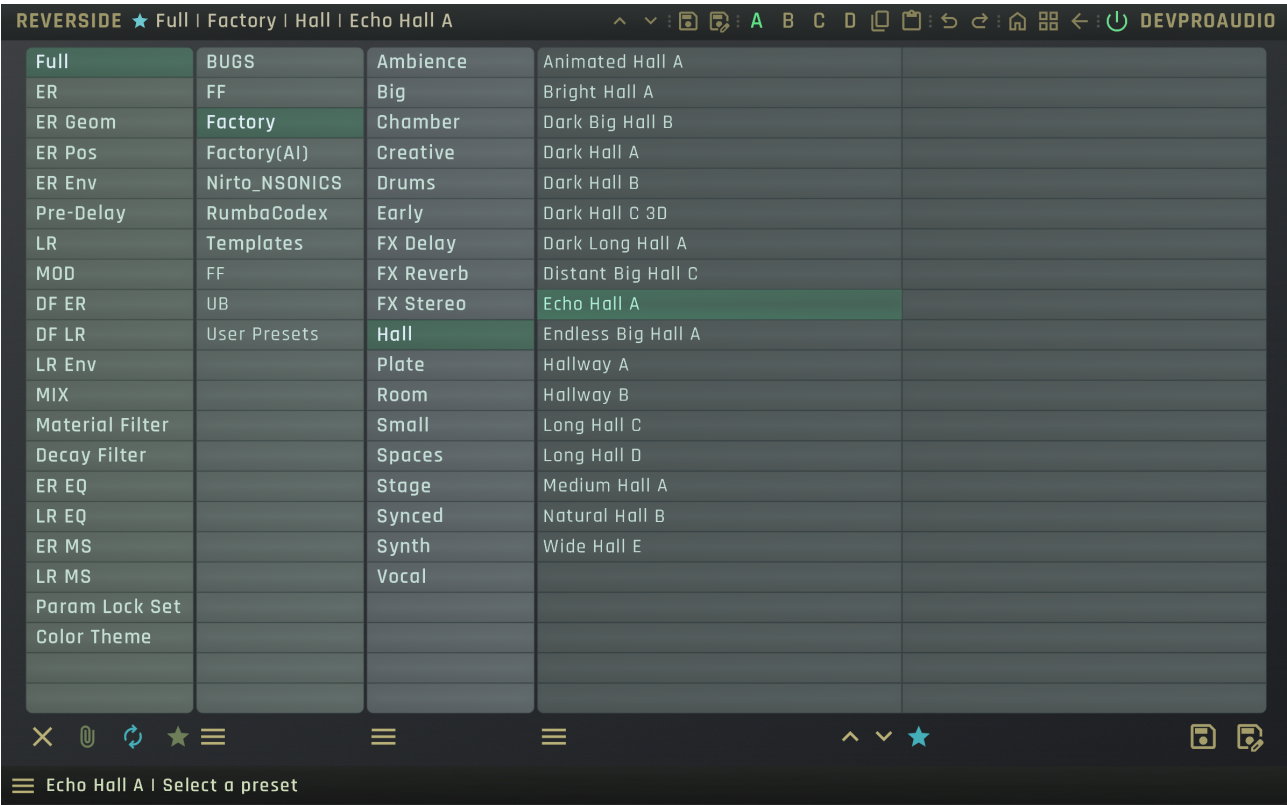
3. Preset Management

3.1 Accessing Preset Browser Panel

Access the preset panel by clicking on the preset info in top bar or by selecting [PRESET] in the page menu.



Note: The star icon in Plug-In Preset Bar will toggle the selected preset favorite status on/off.



3.2 Preset locations

Reverside supports two different preset locations: A) “Shared” shared presets are stored in a shared location accessible to all user accounts on the system. This is where Factory presets are stored and Imported banks are supposed to be located. B) “User” user presets are stored under current user account and thus are accessible only if you are logged into this account

Even though you can store presets in shared location and your folders/presets are preserved on product update it’s **HIGHLY RECOMMENDED TO STORE YOUR OWN PRESETS IN USER LOCATION**

Actual locations are:

macOS

- **Shared (factory):** /Users/Shared/Devproaudio/product/REVERSIDE/preset
- **User:** /Users/{user}/Music/Devproaudio/preset/REVERSIDE

Windows

- **Shared (factory):** C:\ProgramData\Devproaudio\product\REVERSIDE\preset
- **User:** C:\Users\{user}\AppData\Local\Devproaudio\preset\REVERSIDE

3.3 Preset Browser

3.3.1 Overview

Preset Browser is organized into 4 lists (from left to right):

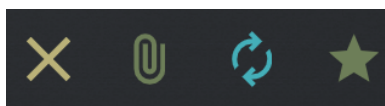
1. Preset sub-type
2. Preset Bank (Factory, User, Imported, etc)
3. Preset Folder (Hall, Room, etc.)
4. Preset file List (2-column view)

The topmost item called 'Full' in preset sub-type list corresponds to a full set of parameters. Other sub-types such as ER, MOD, MIX etc correspond to a specific sub-set of all preset parameters. For example MIX includes only mix related parameters. There are 22 sub-types. The first 20 is reverb sub-sets, while the last 2 sub-types correspond to system settings: P-Lock is a list of locked parameters and Color is a Color Scheme.

Note: In bank list the shared (ie Factory) banks go first then followed by user location presets. The shared location banks/folders/files are displayed using slightly bolder and bigger font to distinguish them visually from user location presets.

3.3.2 Bottom buttons

from left to right:



[X] Closes the panel. You can also close panel by clicking on [preset info] button in top bar just by selecting another page from menu.

[KEEP OPEN] [staple icon] when on, the preset browser will not auto-close on preset selection. You can use it to audition multiple presets.

[AUTO LOAD] [cycling arrows] when on, the selected preset is auto-loaded into DSP. off mode is useful for folder/file actions

[SHOW FAVORITES] [star icon] when on, the preset browser will display only favorite presets. They are displayed with the same Bank/Folder structure so they stay grouped.



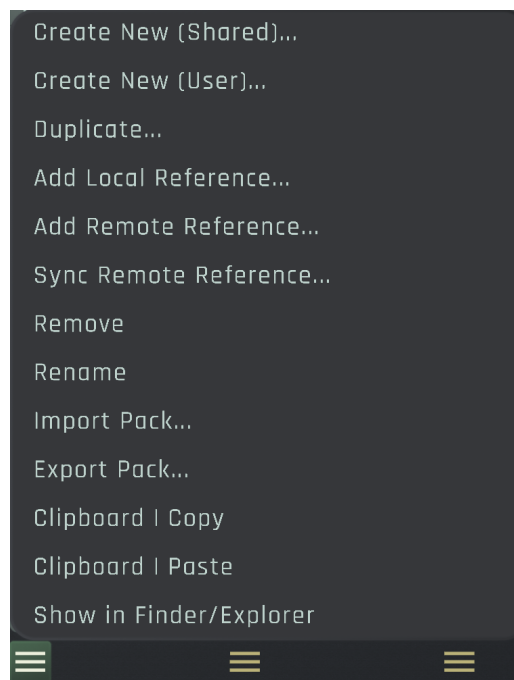
[<][>] buttons will list through presets in selected folder

[RESAVE] (floppy disk icon): Updates currently selected preset with new settings. This button is only available when a preset is selected.

[SAVE] (rightmost icon): Creates a new preset in current bank/folder

3.3.3 Action Menues

The 3 buttons (with 3 horizontal lines) under Bank/Folder/Preset are used to access action menus. This allows to create banks/folder, rename, remove them, copy between folders ect.



Action menu has the following options:

1. [Create New (Shared)...] Will create a new entry (bank/folder/preset) in the currently selected “shared” location.
2. [Create New (User)...] Will create a new entry (bank/folder/preset) in the currently selected “user” location. Use this to store your own user presets
3. [Duplicate ...] will create a duplicate bank/folder/preset in the same location

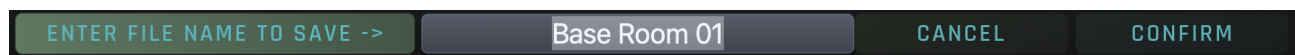
4. [Add Local Reference ...] Will open a system file dialog where you can specify an external bank/folder to be linked. The linked folder will be treated by Preset Browser as if it were inside preset folder. This is useful if you want to keep your presets at specific location in your system and for sharing presets in a network. Note that the referenced folder has to have the proper number of nested folders: 1 for banks and 0 for folders. For example your referenced folder for a bank shall be like: `.../my_bank/.../my_bank/room/room1.yaml` `.../my_bank/hall/hall1.yaml` i.e. if you link a bank, the bank folder must contain sub-folders which in turn contain preset files. and if you like a folder the target folder shall contain preset files only.
5. [Add Remote Reference ...]
6. [Sync Remote Reference ...] 5/6 are not implemented yet
7. [Remove ...] Will remove the selected item. You have to confirm the action by either clicking on [CONFIRM] button or pressing [ENTER] key. (Press ESC key or click on [Cancel] button to discard)
8. [Rename ...] Will allows to rename the selected item in opened edit box. You have to confirm the action by either clicking on [CONFIRM] button or pressing [ENTER] key. (Press ESC key or click on [Cancel] button to discard)
9. [Import ...] Allows to import items from external sources. When selected, a system file dialog where you can specify an external bank/folder/file to be imported. Banks/Folder are imported as zip archives (yes, just a standard zip archive, which you can make by your own). presets could be imported as plain yaml files too. NOTE: the imported zip must have the proper folder structure. If you are importing a bank the zip must contain 1 level of sub-folders, for example: `.../my_bank.zip/.../room/room1.yaml` `.../hall/hall1.yaml` Imports as folder shall contain files only, no sub-folders.
10. [Export ...] will open a system file dialog where you can specify an external bank/folder/file to be exported. Banks/Folder are exported/imported as zip
11. [Clipboard | Copy ...] will copy current bank/folder/file into a clipboard buffer.
12. [Clipboard | Paste ...]. will Paste the clipboard buffer into the current location.

Clipboard Copy/Paste are useful when you want to quickly copy a bank/folder/file to another location. Note: you can copy/paste between shared and user locations.

1. [Show in Finder/Explorer ...]. Will open the currently selected bank/folder/file in Finder (macOS) or Explorer (Windows)

3.3.4 Saving a New Preset

Click on [SAVE] button. You will see a new set of controls at the bottom of the panel:



[ACTION PROMPT] [NAME/ENTRY] [CANCEL] [CONFIRM]

The edit-box with the name is auto-open (you will see a blinking cursor) so you can start typing. Type in a new name and press [ENTER] key to close the edit box and keep changes. or press ESC key or click outside the editbox if you want to discard the changes. To discard changes click on [CANCEL] button or press [ESC] key.

NOTE: If you enter a name that already exists, you will be asked to confirm overwrite.

Alternative a way to enter file name is to hold [SHIFT] button while clicking on the [SAVE] button. It will open a standard system's File Dialog where you can enter file name. Note that selecting different folder will have no effect, the preset will be saved into currently selected location.

3.3.5 Updating existing/current Preset:

If you want to update (resave) a currently selected preset, press [RESAVE...] button, then click [CONFIRM] or press [ENTER] key. Note that in this mode you cannot change the name of the preset.

Creating/Renaming/Deleting Presets/Folders/Banks (from menu actions) is a procedure similar to the above.

4. User Interface Overview

The interface is organized into 3 sub panels (top to bottom):

1. **Top Panel** Presets and navigation
2. **Content Panel** Plug-in parameters and controls
3. **Bottom Panel** Parameter tooltips, System information, User Interface settings, color edit etc

4.1 Top Panel

[DEVPROAUDIO]

Clicking on above logo (or selecting [REVERSIDE] in the page menu) will open the About

page with product information and licensing. Here you can enter your product serial code and check the version information.

The version information also shows plug-in format and the currently used DSP code branch and vector size: NEON/SSE2/AVX2/AVX512 : 4/8/16



Preset Controls:



◁ buttons will load previous/next preset in currently selected folder Clicking on preset info button will open Preset Browser page (which is the same as selecting [PRESET] in the page menu)

Clicking on star icon will toggle the selected preset 'favorite' status on/off

Two floppy disk icons are [Resave] and [Save As]. clicking on any will open Preset Browser page. Note that [Resave] button is available only when you have a preset file selected in the file list. A second click on [Resave] icon will act as pressing [Confirm] button and will also auto-close the Preset Browser page. So you can quickly update current preset just by clicking on [Resave] icon twice (do not confuse it with double-click)

Preset info format is: type | bank | folder | preset [*]

[*] - is added when original preset has been modified

Note that if the info string is too long the leftmost entries are progressively dropped.

A/B Controls



A/B/C/D buttons in top bar let switch between 4 **memory slots**. Pressing on either button twice will switch to the previous slot. this allows to switch between two slots without moving mouse to another button. Two buttons next to A/B/C/D are copy/paste buttons. All 4 states and clipboard buffer are saved in project's state.

Undo Buffers

Two buttons next to copy/paste are Undo and Redo buttons. They allow to undo/redo changes made to plug-in parameters.

Page Navigation

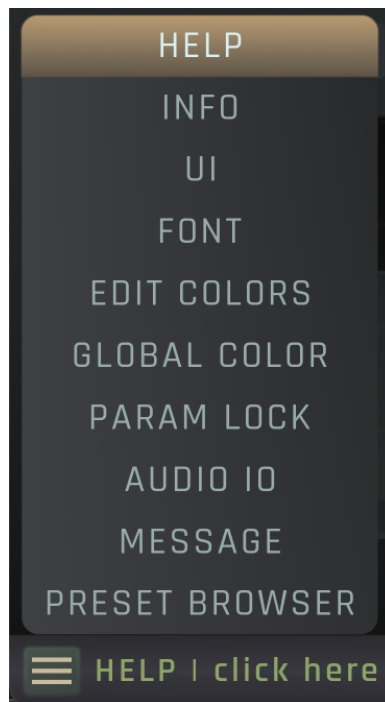
The next two buttons allow to return to previous page and to the home/main page.

[BYPASS] Button:

Enables/disables reverb processing

4.2 Bottom Panel

Click on rightmost button to open Bottom Panel Menu and select which 'bottom' page to display.

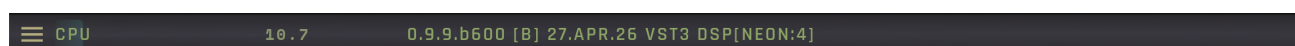


4.2.1 HELP

When selected the bottom bar will display a tooltip info when you hover over a control. The value of currently selected parameter value is displayed at the left side. Format is: param value | help text



4.2.2 INFO



Will display version information and CPU usage of the plug-in. Note that it shows single CPU core's performance, not the overall system CPU usage.

4.2.3 UI (User Interface Preferences)



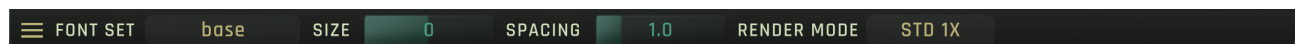
[LANGUAGE] click on button to change UI language. Note that on first run the plug-in will automatically detect your system language and set it as default (if it's supported)

[THEME] click on button to change UI theme

[SKIN] click on button to change UI skin.

NOTE: REVERSIDE supports a full localization of the plug-in's User Interface. It's as easy as just editing some text files in the skin folder and finding font files that support your language. This can be done with the help of AI tools that could do the bulk of translation job. Feel free to contact me for details if you are interested in making plug-in UI in your language.

4.2.4 FONT



Here you can adjust Font Settings:

- [FONT SET] click on button to select font set from menu
- [SIZE] drag the slider to adjust UI font size
- [SPACING] drag the slider to adjust UI font spacing
- [RENDER MODE] select one of 3 available font rendering modes

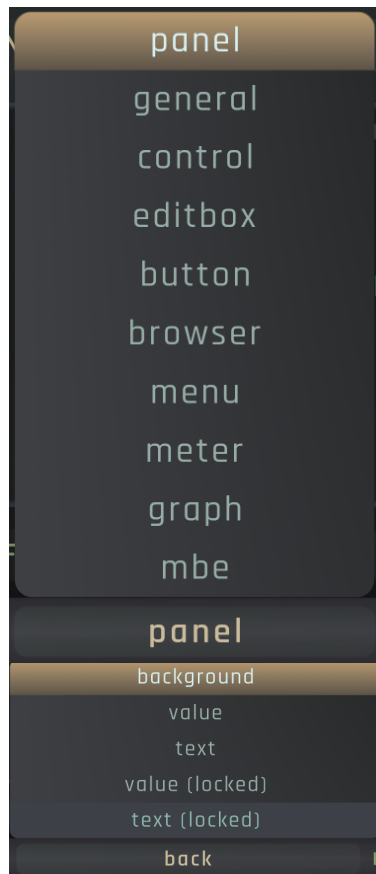
4.2.5 EDIT COLOR SCHEME



Here you can edit color schemes using HSL (Hue/Saturation/Lightness) color model.

First select which UI element you want to edit via two menus:

[UI ELEM TYPE] [SUB TYPE]



for example: [panel] [main panel back]

Then set Hue, Saturation, Lightness and Alpha values. Hue is absolute, S/L/A are relative to values specified in the skin:

- [H] absolute HUE value [0..360]
- [S] edit relative SATURATION value [-80..80]
- [V] edit relative LIGHTNESS value [-50..50]
- [A] edit relative Alpha Channel (Transparency) value [-100..100]

Note!!! Please note that setting Alpha to -100 will make the UI invisible.

You can save the current color scheme as a preset file. Click on [BROWSE] button to open Preset browser. The [Color] preset sub-type will be pre-selected. Now you can save and load color schemes. Current color scheme settings along with global color settings are saved as shared settings and thus are shared between all plug-in instances.

4.2.6 EDIT GLOBAL COLORS



Here you can adjust colors globally. These adjustments are applied to all color themes (though without actually changing them) so if you have any non-zero values here, the loaded color scheme will look different especially if you adjust Hue more than 10%. These

are meant primarily to adjust saturation and lightness to your personal preference without having to change the color scheme.

H(Hue), S(Saturation), L(Lightness), A(Alpha) values are relative to the color scheme base color settings.

Note!!! Please note that setting Alpha to -100 will make the UI invisible.

[SLIDE TIME]

Dynamic color changes in REVERSIDE are applied gradually to make a nice smooth transition effect. Use this slider to adjust the time of the transition.

4.2.7 PARAMETER LOCKS



Parameter locks allow you to prevent specific controls from being changed when switching presets. Note that in locked state you can still change the parameter value.

To lock a parameter:

- Click on a control while holding ALT key. This will toggle the lock
- A locked parameter will change its look (italic font and different color)

The list displays a string of all locked parameters. Click on this list to show all locked parameters in a menu.



Currently locked parameter set can be saved (and loaded back) as a sub-preset.

[ON/OFF] will turn locking on/off (without resetting the locked list) [RESET] clicking on this button will reset all locks

[BROWSE] will open Preset Browser with Param Lock sub-type pre-selected so you can quickly load/save locked param sets

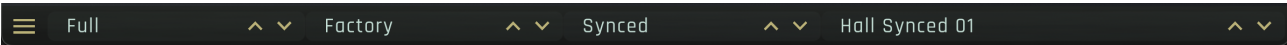
4.2.8 Audio IO

Here you can see information about Host's sample rate and buffer size.

4.2.9 Message

[reserved for future use]

4.2.10 Bottom Panel Preset Browser



This is a mini preset browser. It’s handy if you want to change presets while being able to see the changes in preset parameters. The buttons (from left to right) correspond to: [SUB-TYPE] [BANK] [FOLDER] [PRESET]

Click on these to change the selected Sub-Type/Bank/Folder/Preset or use [<][>] button to go to previous/next preset.

5. Parameter Pages

Reverside parameters control is organized into 3 level hierachy:

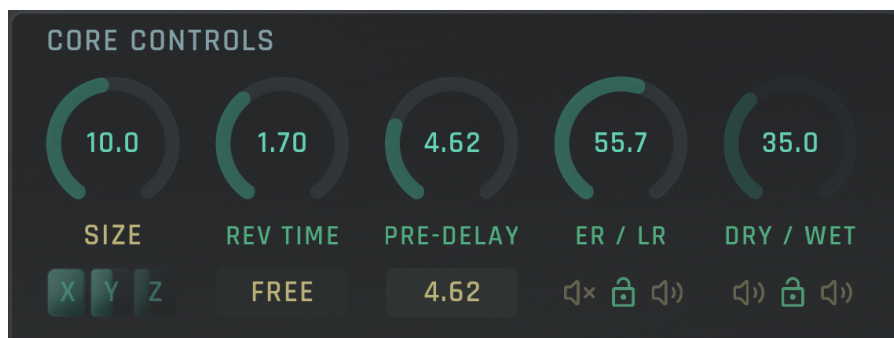
Easy Page, Main Page, Advanced Setting Pages. Easy and Main pages act as hubs.

5.1 EASY

This page hosts a set of the most important plug-in controls



5.1.1 Core controls



5.1.1.1 SIZE



Controls how big the virtual room feels — from a tight vocal booth to a cavernous hall.

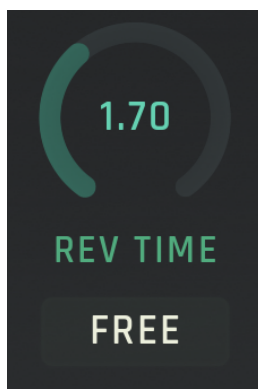
Small values give a close, intimate sound: dry, focused, with quick reflections that stay near the source. Think a small rehearsal room or live room.

Large values push the walls out: reflections take longer to return, the space feels grander, and the reverb develops more slowly. Great for halls, cathedrals, and anything that needs to breathe.

Click the [SIZE] label to toggle between two modes: - **Relative** (default): The knob sets a reference size in meters; the X, Y, Z sliders scale it as percentages. E.g. Ref=10m, X=60% → actual width is 6m. - **Absolute** (shown as [SIZE (M)]): The X/Y/Z sliders directly control dimensions in meters.

Tip: Switch the Position Display to 3D view to see the room dimensions visually.

5.1.1.2 REV TIME



Sets how long the reverb tail lingers — from a tight slap to an endless wash.

Short times (0.5–1.5s): Clean, controlled, and dry-ish. Ideal for rhythm sections, spoken word, or any mix where clarity matters.

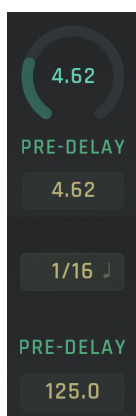
Medium times (1.5–3.5s): Natural room and hall sounds. The tail has room to bloom without overwhelming the source.

Long times (3.5s+): Lush, immersive, atmospheric. The sound floats and evolves. Perfect for pads, solos, and cinematic spaces.

Click the button below the knob to change mode: - **FREE**: Manual control. - **AUTO**: Reverb time is calculated from room geometry and absorption — the space itself determines the tail. - **INF**: Infinite sustain — the reverb never dies out. Use for ambient drones and special effects.

See §5.5.1 for full details.

5.1.1.3 PRE-DELAY



Controls the gap between the dry sound and when the reverb tail begins — like adjusting how far the nearest wall is.

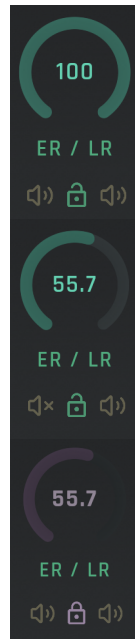
Short or zero delay: The source feels close to the reflective surfaces. The reverb hugs the sound — immediate, present, intimate.

Longer delay: Pushes the source deeper into the space. A gap opens up before the reverb arrives, creating a sense of depth and distance. Classic for vocals where you want the dry attack upfront and the tail arriving after.

Click the button to choose the timing mode: - **Free** — set delay in milliseconds - **Sync** — syncs to your DAW's tempo with note divisions (1/1, 1/2, 1/4, etc.) and duration modifiers (straight, dotted, triplet) - **ER+ Sync** — adds the ER processing time to the sync'd delay for tighter alignment

See §5.2.4 for full details.

5.1.1.4 ER / LR Balance



ER/LR Mix Balance Blends between the early reflection detail and the late reverb tail.

- **0 %** = Only the room's early reflections — clean, detailed spatial cues

- **100 %** = Only the late reverb — smooth, atmospheric tail

Think of it as a fader between “where the room is” (ER) and “how the room feels” (LR).

Mute buttons (speaker icons) — turn ER or LR off independently.

Lock button (lock icon) — prevents the balance from changing when you load a new preset.

5.1.1.5 DRY / WET Balance



DRY/WET Mix Balance Blends between your original dry signal and the processed reverb.

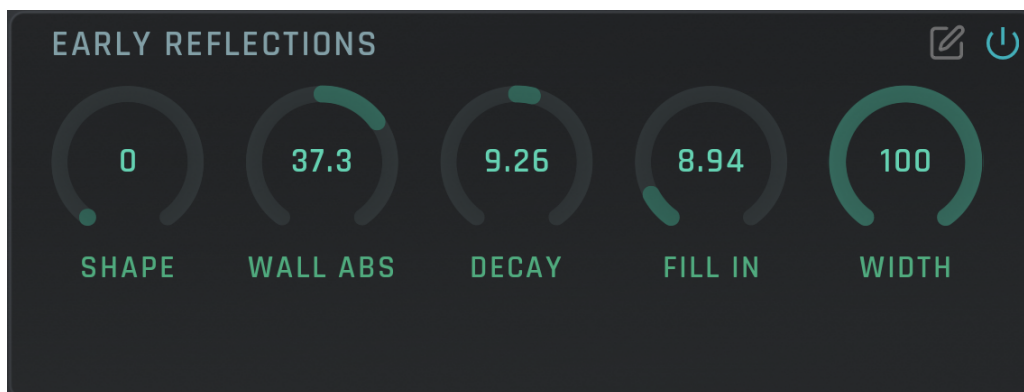
- **0 %** = Original sound only

- **100 %** = Only reverb — use this when spatialising with [DIRECT 3D] to avoid phasing

Mute buttons — toggle DRY or WET independently.

Lock button — keeps the mix from changing when loading presets.

5.1.2 Early Reflections



5.1.2.1 SHAPE

Controls how irregular the room is — from a perfectly square box to a chaotic, organic space.

Low values (0–30%): A clean, symmetrical room. The reflections are orderly and predictable — think a tiled hallway or an empty hall. Can sound slightly resonant or “fluttery” with centered sources.

Mid values (30–70%): A natural-feeling room with some irregularity. Reflections spread more evenly, the space feels less boxy and more “lived-in.”

High values (70–100%): The walls become uneven and asymmetrical. Reflections scatter in all directions, killing standing waves and creating a smooth, diffuse early field. Great for softening harsh rooms or adding natural complexity.

5.1.2.2 WALL ABS

Controls how much the walls drink up the sound — from polished marble to heavy curtains.

Low values (0–30%): Hard, reflective surfaces. Reflections bounce forever — bright, lively, with a long, shimmering decay. Think tiles, glass, or concrete.

Mid values (30–70%): Typical room materials — wood, drywall, carpet. A natural, balanced warmth with smooth decay.

High values (70–100%): Heavily damped — like a room full of curtains, upholstery, or acoustic foam. The reverb darkens and tightens, the space feels smaller and drier.

Negative values: Reverses the effect — reflections *gain* energy over time instead of decaying. Creates reverse-reverb and swelling effects.

5.1.2.3 DECAY

Controls how quickly reflections lose energy as they travel across the room — the air's "thickness" to sound.

Low values: Reflections travel far before fading. The room feels open and airy, with echoes that roam freely.

High values: The air feels thick — reflections die fast as they move away from the source. Creates a denser, more immediate reverb that stays close.

Negative values: Reverses the decay — reflections grow louder with distance. Use for unnatural, reverse-style swells.

5.1.2.4 FILL IN

Simulates how much stuff is in the room — from an empty warehouse to a cluttered attic.

0% (empty): Bare walls, no furniture. Reflections ring clearly, the space sounds hollow and lively.

100% (stuffed): Full of objects, furniture, people — everything scatters and breaks up the sound. Reflections become denser and more diffuse. The effect is more pronounced when [MAT] filters add frequency-dependent absorption (fabric soaks highs, furniture scatters mids).

5.1.2.5 WIDTH

Controls how wide the early reflections spread across the stereo field.

Narrow: Reflections cluster toward the center — focused, direct, mono-compatible.

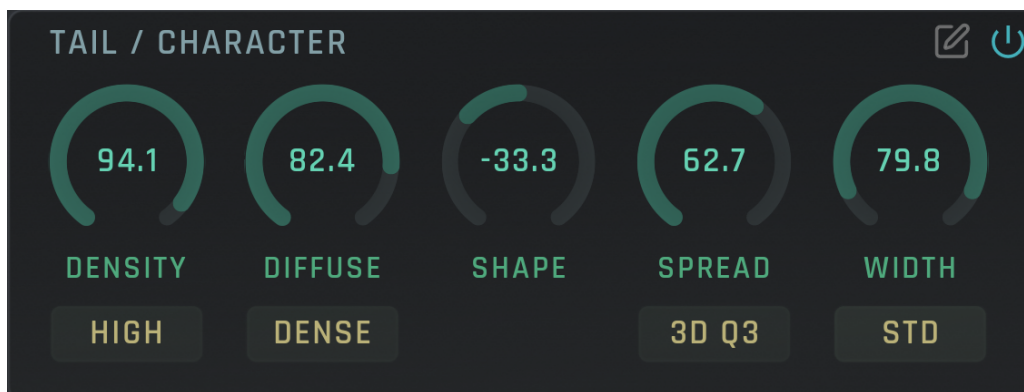
Wide: Reflections spread to the edges — the room feels bigger, more immersive. Great for widening a narrow source or creating an expansive stereo image.

Note: Independent from LR stereo width — you can have tight ERs and wide reverb, or vice versa.

5.1.2.6 Buttons

There are two buttons in the top-right corner of the section: a) edit icon: click on it to go to Full Early Reflections settings. b) power on/off icon: click on it to turn Early Reflections processing On/Off

5.1.3 Tail / Character



5.1.3.1 DENSITY

Controls how thick or sparse the reverb tail feels — from a few distinct echoes to a smooth, seamless wash.

Low values: The tail sounds open and airy. You can hear individual reflections bouncing around — like a large stone room or a hall with hard surfaces. Good for keeping clarity and definition in a busy mix.

High values: The reflections pile up into a dense, luxurious carpet of sound. The tail becomes smooth and continuous — think a concert hall after the music swells, or a plate reverb on a vocal. Rich, enveloping, and immersive.

DENSITY CONFIG

Beneath the [DENSITY] label, a button opens the configuration menu for different density levels:

- **STD** (default): Balanced density for most sources — efficient, musical.
- **HIGH, HIGH+**: Denser networks for a thicker, more complex tail (higher CPU).
- **DLY 1, DLY 2**: Delay-effect modes — not a standard reverb. These produce resonant, echo-like textures at certain settings. Great for creative FX.

Tip: Start with STD and only go higher if you want a noticeably thicker tail. The difference is subtle on short decays and obvious on long ones.

5.1.3.2 DIFFUSE

Controls how smooth or granular the reverb tail sounds — from glassy and reflective to buttery and seamless.

Low values: The tail stays echoic and textured. You hear individual reflections — like a small room with bare walls, or an EMT plate with low diffusion. Can add a metallic or resonant quality that cuts through a mix.

High values: The reflections smear together into a silky, continuous decay. The tail becomes smooth, warm, and unobtrusive — the classic “hall” sound where you feel the space without hearing the mechanics.

Think of DENSITY as the *structure* (how many reflections), and DIFFUSE as the *polish* (how smooth they are).

DIFFUSION MODELS

Beneath the [DIFFUSE] knob, a button opens a menu of 13 diffusion models, each with its own sonic character — from SOFT (gentle and clean) to SWIRL (rotating, phasey motion). See §7.1 for a full description of every model.

5.1.3.3 SHAPE

Control a spread of delays inside reverb, for natural sounding use [-20..+20%] value ranges. Positive values will favor longer delays (and vice versa). Use bigger values if you want to increase a perceivable acoustic space size. Extreme values might sound unnatural. Use them for FX only.

Values in [-100..-50] range could produce a dense, plate reverb like sounding.

This parameter basically allows to control the perceivable acoustic space size of the reverb tail independently from the main SIZE parameter on [SPACE] page.

Typical ranges: DRUMS: [-70..-30] VOCALS & SYNTHS [-30..+20] FX, OPEN, GRANULAR: [+20..+100]

5.1.3.4 SPREAD

Envelopment control. These controls are effective means to increase the enveloping effect of reverb. Its effect is perceived as adding more depth to the space. Higher values will increase the perceived size of the space.

5.1.3.5 WIDTH

Controls stereo width of reverb. NOTE that ER's stereo width is controlled independently.

[STD/WIDE] button switches between normal and wide stereo modes.

WIDE mode adds more depth/externalization to the reverb.

5.1.3.6 Buttons

There are two buttons in the top-right corner of the section: a) edit icon: click on it to go to Full Late Reflections (Reverb) settings. b) power on/off icon: click on it to turn Late Reflections processing On/Off

5.1.4 Displays

If you hover mouse over either display you will see a pop-up icons displayed at the top. Clicking on [] icon will show respective advanced editing page.

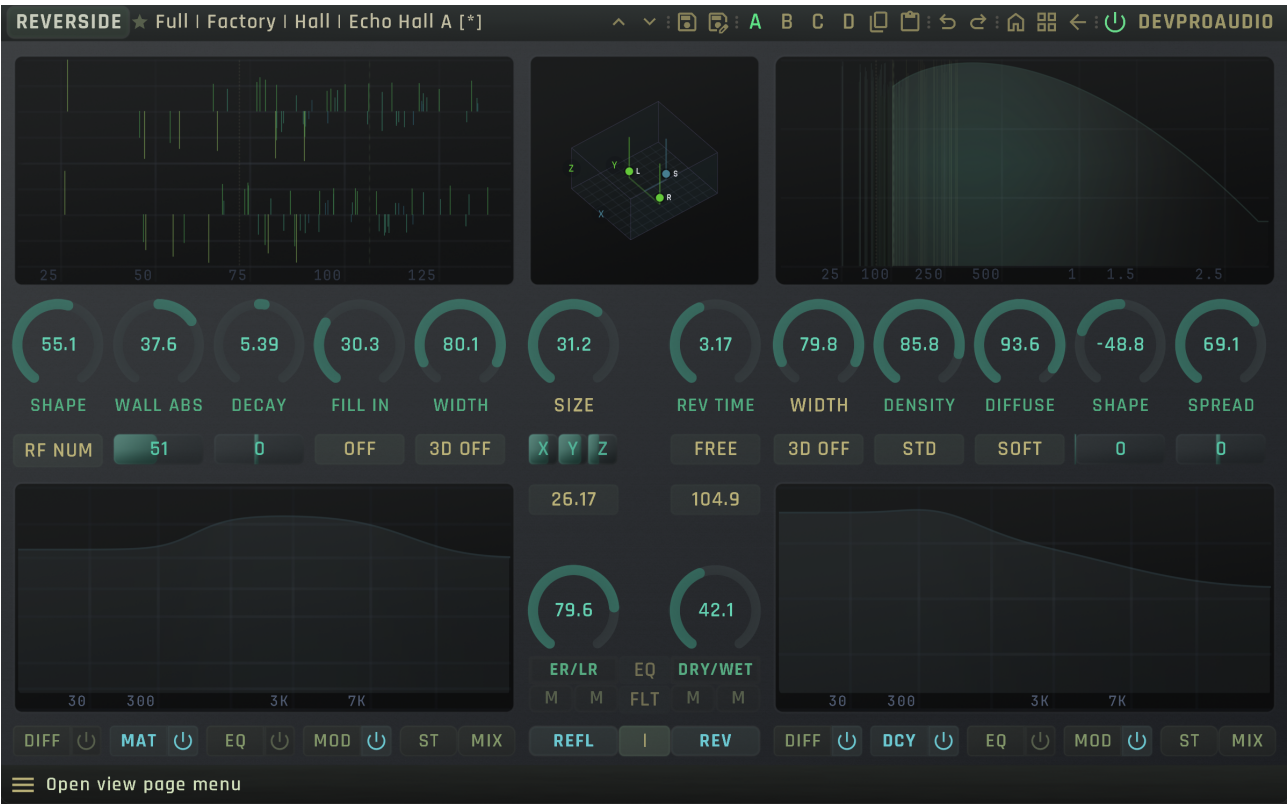
5.1.5 DISPLAYS



Easy page hosts 2 displays: Reverb display and Spatial (or Position) View. These mini displays are identical ones found on the MAIN page.

If you hover mouse over either of displays you will see ‘[]’ style icon. Click on it to go to respective advanced editor page.

5.2 MAIN



5.2.1 Overview

Main page is designed to be a hub for advanced editing.

Layout – The Main page is organized in **three rows**:

- **Top row** – Three mini-display windows:

1. **Reflections mini display** – visualises the Early-Reflection (ER) signal.
2. **Position mini display** – shows the 3-D/2-D spatial layout (source, listeners, room).
3. **Reverb mini display** – visualises the Late-Reflection (LR) signal.

- **Middle row** – Two main control blocks:

- **Left column** – **Early-Reflections panel** (Shape, Wall Absorption, Decay, D/R Balance, Width, Size, etc.).

- **Right column** – **Late-Reflections panel** (Reverb Time, Width, Density, Diffuse, Shape, Spread, etc.).

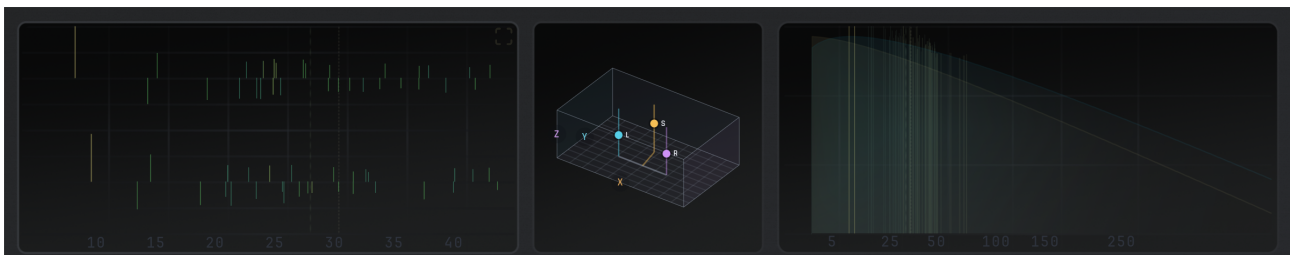
- **Bottom row** – Two independent panes that can be switched to show detailed sub-pages:

- **Left pane** – Early-Reflection sub-pages (Diffuser, Material Filter, EQ, Modulation, Stereo, Mix).

- **Right pane** – Late-Reflection sub-pages (Diffuser, Decay Filter, EQ, Modulation, Stereo, Mix).

This layout gives a quick overview of the whole reverb chain while providing immediate access to the detailed controls for each stage.

TOP ROW DISPLAYS



Top row (from left to right): - Reflections mini display - Position mini display - Reverb mini display

Clicking on the Reflections mini display (or the pop-up [] icon in the top-right corner) will switch to the SPACE (Advanced Early Reflections Editor) page where you can access all Early Reflection parameters. On the SPACE page, click on the display (or the return icon in the top-right corner) to return to the home page.

The same will work for reverb mini display (at right) except that you will be navigated to Advanced Reverb Edit page.

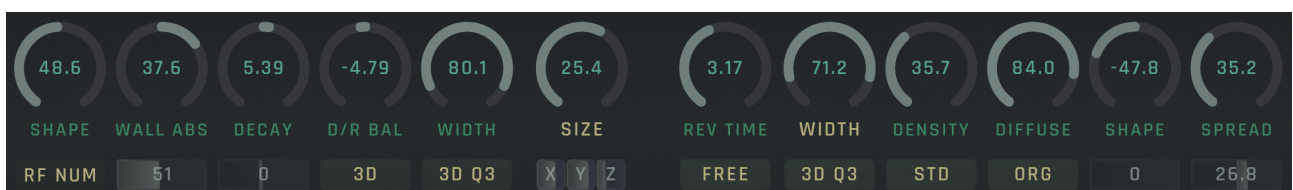
Double-click on the Position mini display to switch to the POS page where you can access all Position parameters. On the POS page, **double-click** on the display to return to the home page. Or you may click on the small icons over the display.



There are 3 icons in the left top row of this display. They switch between 3 different views (from left to right): - A) bare 2D view (XY projection) - B) 2D view with geometry - C) 3D view

Click on Pos mini display and drag the mouse to change X/Y offsets. Use mouse wheel to rotate the scene. In 3D mode use drag to change view projection. Hold mouse key to change X/Y disposition

The Position display has 3 view modes, selectable via icon buttons at the top of the POS page: - **Grid 2D** — The familiar normalized 2D view with draggable source and listener points - **Rect 2D** — A geometry-proportional 2D view showing the true X/Y room proportions - **3D Box** — A 3D perspective wireframe view. Drag to rotate the camera, scroll to zoom, Alt-drag or right-drag to pan the view. The 3D scene shows the room dimensions with labelled Source (S), Listener Left (L), and Listener Right (R) points with floor drop-lines, a floor grid, and a footer text line with room dimensions and mic separation in meters.

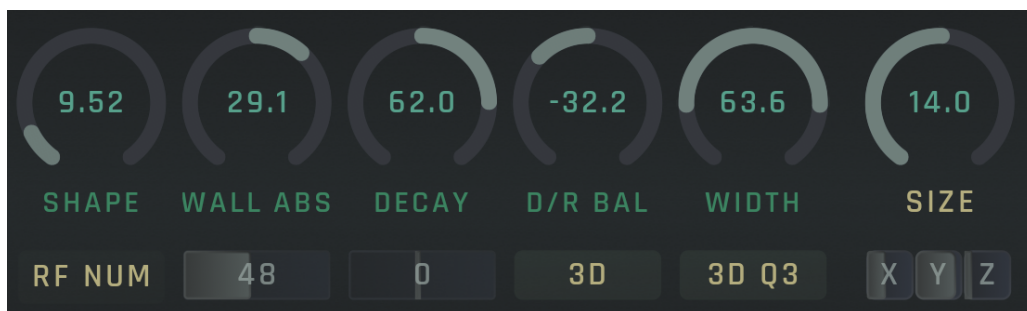


The mid row contains the main plug-in parameters. The left side hosts Early Reflections controls, the right one the Late's (reverb).



The bottom row hosts two independently switchable panes that can display: Diffusion, Filters (Mat/Dcy), EQ, Modulation, Stereo and Mixing settings. Also here you can quickly turn on/off various processing sub-modules (diffuser, filter, eq, mod)

5.2.2 Early Reflections Quick Controls



Top row (knobs): SHAPE, WALL ABSORPTION, DECAY, D/R BAL, WIDTH, SIZE are the same as corresponding params on SPACE page.

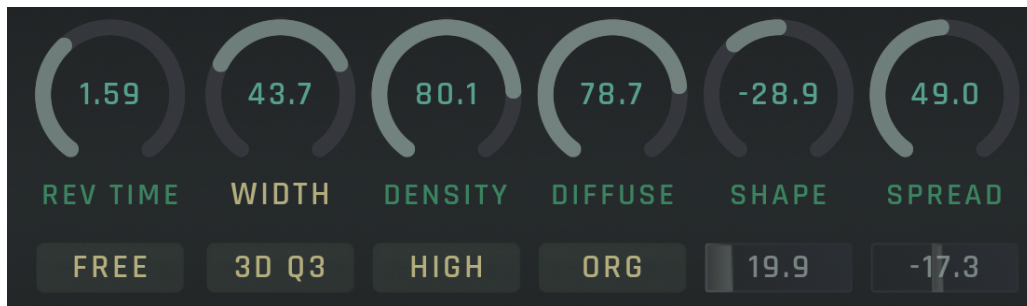


Note: clicking on yellow [SIZE] label will switch between relative and absolute size modes.

Bottom row (buttons and sliders) from left to right: - Reflection Number mode (free or auto)
 - Reflection Number control (in free mode) or display - Direct path spatialiser mode (OFF/ON/3D) - Reflection's spatialiser mode (OFF/Q1/Q2/Q3) - X/Y/Z relative or absolute dimension value

See [5.3] for detailed description of parameters.

5.2.3 Reverb (Late Reflections) Quick Controls

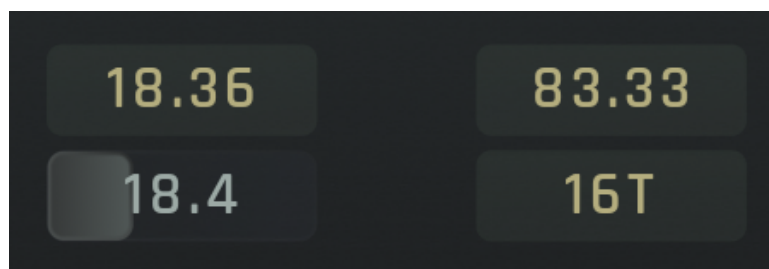


Top row (knobs): REV TIME, WIDTH, DENSITY, DIFFUSE, SHAPE, SPREAD are the same as corresponding params on REV page.

Bottom row (buttons and sliders) from left to right: - Reverb Time Mode (free, auto, inf) - Reverb spatialiser mode (OFF/Q1/Q2/Q3/Q4) - Density config - Diffusion model - Cross-mix - Contour

See [5.5] for detailed description of parameters.

5.2.4 Mid Panel Pre-Delays

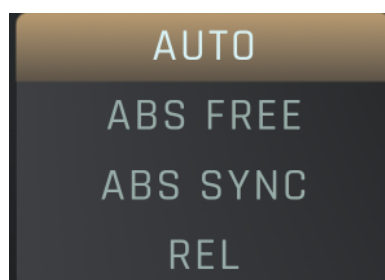


Left controls correspond to Early's and right's to the Late's Pre-Delay settings respectively.

Click on a top value (button) to access different pre-delay modes. ER and LR have different pre-delay modes as follows:

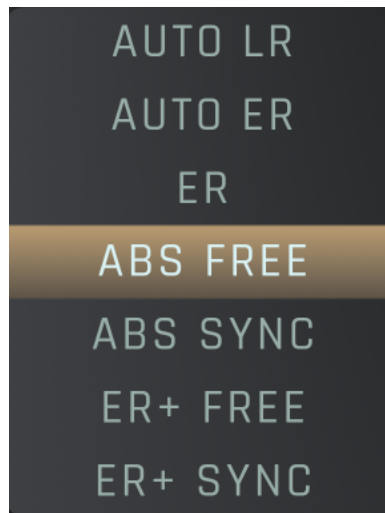
ER PRE-DLY:

- [AUTO] Automatic setting based on ER Geometry's direct path length
- [ABS FREE][ABS SYNC] Manual (Free or Host-synced)
- [REL] Relative to automatic value



LR Pre-Delay:

- [AUTO LR] Automatic setting depending on ER Geometry
- [AUTO ER] Matches ER's [AUTO] value
-
- [ABS FREE][ABS SYNC]: Manual (Free or Host-synced)
-



In [ABS FREE], [REL] and **ER+** modes you will see an additional slider next to sync mode button. This control lets you specify actual value.

In [SYNC] modes you will see two controls next to the mode button: a **note division** menu (1/1, 1/2, 1/4, etc.) and a **duration modifier** button with three note icons (straight, dotted, triplet) that adjusts the selected division's length.



In [AUTO] modes the pre-delay value depends on ER Engine Geometry settings.

Whatever the mode, the actual result pre-delay value is always displayed next to [PRE-DLY].

Hint: Use [AUTO] modes to get the most natural results. Use [ABS SYNC] modes if you want to create host tempo-synced effects.

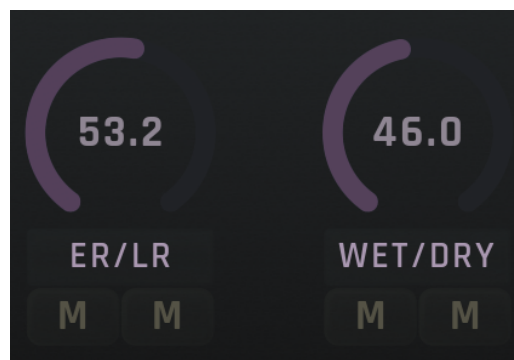
You can also access ER/LR Pre-Delays on [SPACE] and [REV] pages respectively.

5.2.5 Mid Panel Mix Controls



Two knobs represent: - ER/LR Mixing Balance in % - Dry/Wet Mixing Balance in %

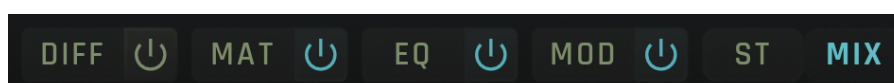
Clicking on [ER/LR] or [WET/DRY] buttons will lock the corresponding controls so that loading presets won't change their values (while you still can change them). In locked mode the knobs become violet. See below:



Clicking on [M] button below will respectively mute: ER, LR, WET or DRY signals.

Clicking on [REFL] button will turn On/Off Early Reflections. Clicking on [REV] button will turn On/Off Late Reflections. The button in between them is material filter mode. See [5.7.1] for details

5.2.6 Early Reflections Bottom Panel



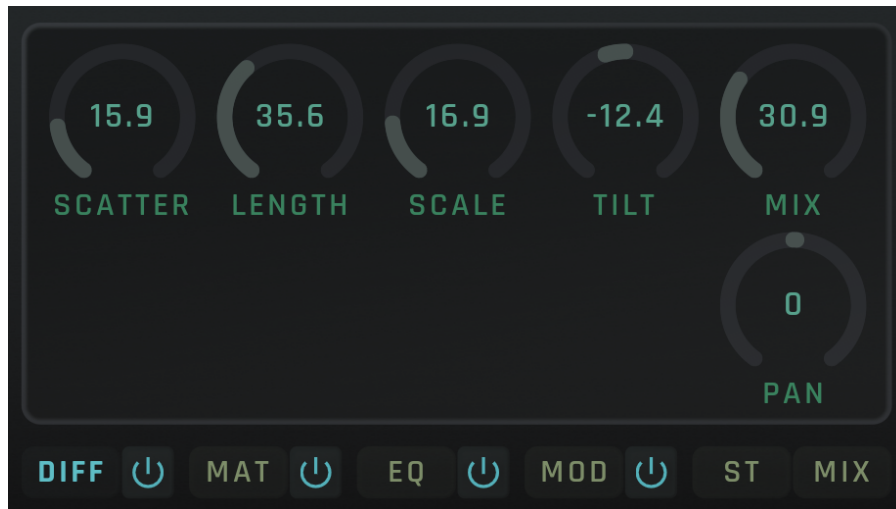
Clicking on tab button will switch to the corresponding sub-page. Naming:

- [DIFF] Early Reflections Diffuser's controls
- [MAT] Early Reflections Material Filter's controls

- [EQ] Early Reflections EQ controls
- [MOD] Early Reflections Modulation controls
- [ST] (short for 'STEREO') Early Reflection Stereo controls
- [MIX] Early Reflection Mix controls.

Click on a (power on) button next to tab's button will turn on/off the corresponding section.

5.2.6.1 Early Reflections Bottom Panel: Diffuser



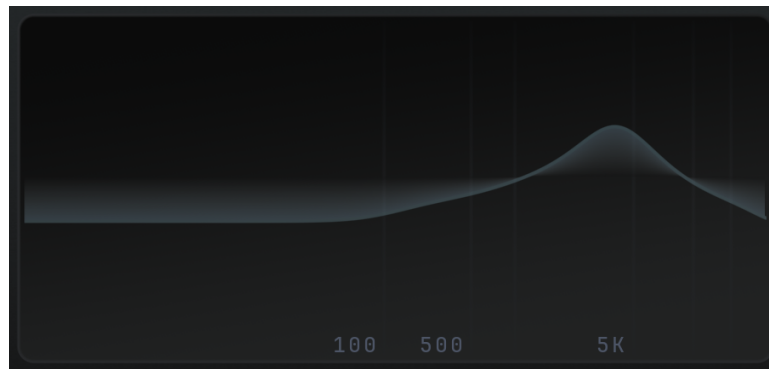
See section [5.6] DIFFUSERS for details

5.2.6.2 Early Reflections Bottom Panel: Material Filter Display



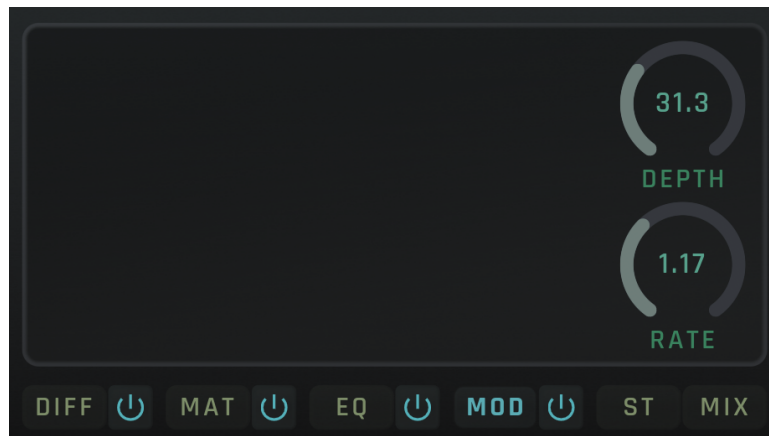
This display will show an effective material filter curve. Hover mouse over the control and you will see a pop-up semi-transparent sliders with values. These represent the 3 filter's band gain. drag them up/down to make quick adjustments. **Double-click** on the display (or click on small pop-up [] icon in the top-right corner of the display) to switch to [FILTER] page where can access a full filter editor. (on [FILTER] page double-click on display once again to return to the main page).

5.2.6.3 Early Reflections Bottom Panel: EQ Filter Display



This display will show an effective ER's EQ filter curve. **Double-click** on the display (click on small pop-up [] icon in the top-right corner of the display) to switch to [EQ] page where can access a full EQ editor. (on [EQ] page double-click on display once again to return to the main page)

5.2.6.4 Early Reflections Bottom Panel: Modulation



[DEPTH] ER Modulation depth in % [RATE] ER Modulation rate in Hz

5.2.6.5 Early Reflections Bottom Panel: Stereo Controls



5.2.6.5.1 [IN WIDTH]

Controls the **input stereo width** fed into each reverb engine.

- 0% : Full stereo input

- 100% : Collapses to mono
- -100% : Isolates the Side (L-R) component

Useful for emphasizing ambient content or reducing phase issues.

5.2.6.5.2 PAN/BAL

Pans the ER's stereo image left/right (or mid/side).

- -100% = fully left/mid
- +100% = fully right/side

5.2.6.5.3 BLEND/ROTATE

Switches between two spatial manipulation modes:

- **[BLEND]**: Knob controls blend between **stereo (0%)** and **Mid/Side (100%)** processing.
- **[ROTATE]**: Knob rotates the stereo field from **-45° to +45°**, useful for aligning reverb with source panning.

5.2.6.5.4 DLY PAN

Adds a small delay to one channel (L or R), enhancing directionality.

5.2.6.5.5 CROSS

This is ER's cross control. see [5.3.10]

5.2.6.6 Early Reflections Bottom Panel: Mixing Controls



Input gain in dB. Click on [INPUT] label to toggle input mute on/off

5.2.6.6.1 [ER/LR/OUT]

ER/LR mix balance controls. These 4 controls work in the same way as WET/DRY as 2 linked pairs, ie changing ER/LR will change ER/LR Balance and OUT. ER = ER output gain in dB LR = LR output gain in dB OUT = total reverb signal output gain in dB

5.2.6.6.2 [ER SEND]

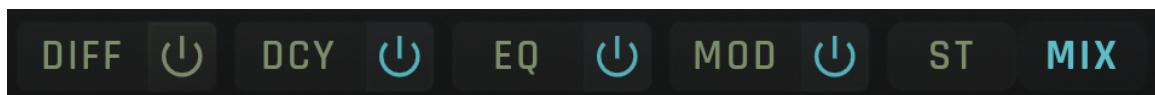
Amount of ER output to be sent to LR engine input. Click on a button below to select the pick-up point in ER signal chain. There are 6 points available. Note that [ER OUTPUT] includes the ER Pre-Delay (pre-delay is implemented at the end of the chain).

Sending some amount of ER to LR results perceptually in increased space depth, though high send amounts (>60%) might sound somewhat unnatural/metalic.

5.2.6.6.3 VU Meters

Left pair of VU Meters corresponds to Plug-In Input (pre-input gain), the right to Early Reflections Output. The upper readout value is the peak level in dB (green color in default color scheme), the lower's is the RMS level in dB (violet color).

5.2.7 Reverb Bottom Panel

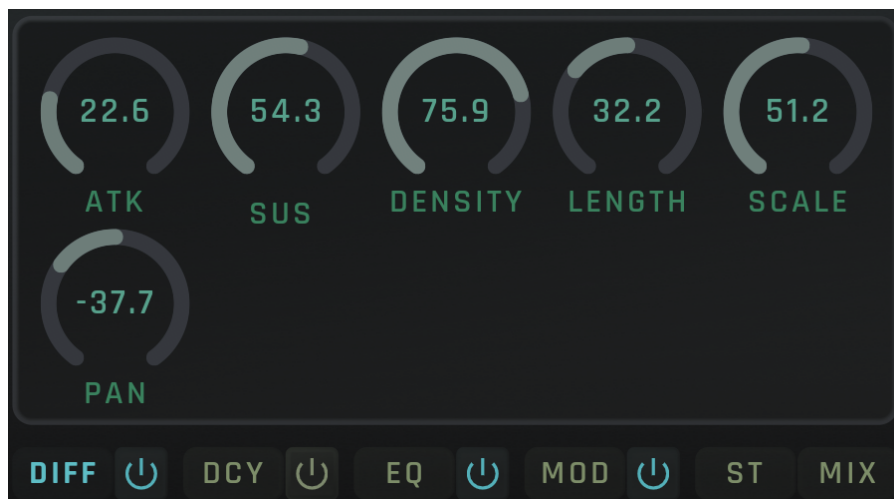


Clicking on tab button will switch to the corresponding sub-page. Naming:

- [DIFF] Late Reflections Diffuser's controls
- [DCY] Late Reflections Decay Filter's controls
- [EQ] Late Reflections EQ controls
- [MOD] Late Reflections Modulation controls
- [ST] (short for 'STEREO') Late Reflection Stereo controls
- [MIX] Late Reflection Mix controls.

Click on a (power on) button next to tab's button will turn on/off the corresponding section.

5.2.7.1 Late Reflections Bottom Panel: Diffuser



See section [5.6] DIFFUSERS for details

5.2.7.2 Late Reflections Bottom Panel: Decay Filter Display



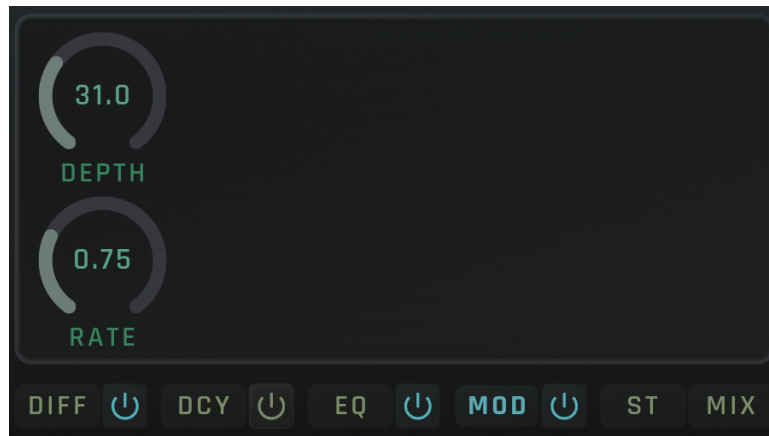
This display will show an effective decay filter curve. Hover mouse over the control and you will see a pop-up semi-transparent sliders with values. These represent the 3 filter's band gain. drag them up/down to make quick adjustments. **Double-click** on the display (click on small pop-up [] icon in the top-right corner of the display) to switch to [FILTER] page where can access a full filter editor. (on [FILTER] page double-click on display once again to return to the main page)

5.2.7.3 Late Reflections Bottom Panel: EQ Filter Display



This display will show an effective LR's EQ filter curve. **Double-click** on the display (or click on small pop-up [] icon in the top-right corner of the display) to switch to [EQ] page where can access a full EQ editor. (on [EQ] page double-click on display once again to return to the main page)

5.2.7.4 Late Reflections Bottom Panel: Modulation



[DEPTH] LR Modulation depth in % [RATE] LR Modulation rate in Hz

5.2.7.5 Late Reflections Bottom Panel: Stereo Controls



These controls act similar to Early Reflections's Stereo Controls: see [5.2.6.5]

5.2.7.6 Late Reflections Bottom Panel: Mixing Controls



5.2.7.6.1 [INPUT]

Input gain in dB. Click on [INPUT] label to toggle input mute on/off

5.2.7.6.2 [WET/DRY/OUT]

Dry/Wet mix balance controls. There are TWO ways to control the mix of dry and wet signals:

1. Either via DRY/WET pair (direct gains in dB)
2. Or via MIX/OUT pair (relative mix and output gain in dB)

ER = ER output gain in dB LR = LR output gain in dB OUT = total reverb signal (ie wet) output gain in dB

[MIX] is a mix balance in percent (0 = fully DRY, 100 = fully WET) you can access it as [Wet/Dry] Balance control in the mid panel.

If you change DRY/WET, MIX/OUT will be re-calculated automatically and vice versa.

5.2.7.6.3 [DRY DLY]

Delays the dry signal by specified amount in milliseconds.

5.2.7.6.4 VU Meters

Left pair of VU Meters corresponds to Late Reflections Output, the right to Plug-In Output. The upper readout value is the peak level in dB (green color in default color scheme), the lower's is the RMS level in dB (violet color).

5.3 SPACE



Here you can set up your virtual acoustic space geometry.

5.3.1 REFLECTIONS DISPLAY

Displays time/gain distribution of reflections.

- X axis: ms/s
- Y axis: in % to absolute gain

Click on the display (or 'return' small icon in the top-right corner) to return to the main page. A **Pos page shortcut icon** next to it lets you jump directly to the POS (Position) page.

To the right of the main tap display there are two **Angle Displays** showing the directional distribution of reflections:

- **Left display** — Azimuth (horizontal direction) of reflections, shown as a polar/ray plot. Rays pointing to the right indicate reflections arriving from the right, and vice versa.
- **Right display** — Elevation (vertical direction), with upward rays indicating reflections from above (ceiling) and downward rays from below (floor).

These displays help you understand how 3D spatialisation and room geometry affect the directional character of early reflections. Stronger, brighter rays correspond to more prominent reflection directions. They respond to changes in source/listener positioning, room shape, and 3D spatialiser settings.

There are two dashed vertical lines on the display: - long-dashed one: the LR position offset (or start). This is where Late Reflections actually start in the reflection patterns. Note that this is not the LR Pre-Delay. They match only in [AUTO] mode only. - short-dashed one: this is the Reverb 3D Offset. See [5.5.13] 3D Spatialiser for details.

5.3.2 Size Controls

Sets the physical dimensions of your virtual room — width (X), depth (Y), and height (Z). These affect both ER and LR engines.

Small room: Tight, focused sound. Reflections return quickly, the reverb stays close to the source. Think a practice room or small live room.

Large room: Grand, expansive. Reflections take longer to return, the space breathes. Think a concert hall or church.

Tall vs. wide: A tall, narrow room sounds different from a short, wide one — experiment with proportions to shape the character. A high ceiling adds vertical dimension; a wide room spreads reflections laterally.

Click [SIZE] to toggle mode: - **Relative** (default): Set a reference size in meters, then scale X/Y/Z as percentages. E.g. Ref=10m, X=50% → width=5m. - **Absolute**: X/Y/Z directly control dimensions in meters.

5.3.3 SHAPE

Warp the room from a perfect rectangle to an irregular, organic space — changes the *character* of the reflections, not just their timing.

Low (0–30%): The room is clean and rectangular. Reflections arrive in orderly patterns — can sound resonant or “fluttery” with centered sources. Positioning controls (GEOM PAN, DIS X/Y) are most precise here.

Mid (30–70%): A natural, irregular room. The reflections lose their predictable grid and start to scatter naturally — the space sounds more “real” and less synthetic.

High (70–100%): The walls are uneven, the geometry chaotic. Reflections scatter in all directions, killing standing waves and creating a smooth, diffuse early field. Note: precise positioning becomes less effective at high SHAPE values — the randomness takes over.

5.3.4 WALL ABS

Controls how reflective or absorbent the walls are — from polished marble to heavy acoustic foam.

Low values: Hard, bright surfaces. Reflections bounce for a long time, the room sounds lively and shimmering.

High values: Soft, damped surfaces. Energy is absorbed quickly — the reflections darken and die fast, the room feels smaller and tighter.

Negative values: Reversal effect — reflections gain energy with each bounce. Creates reverse-reverb swells and unnatural builds.

5.3.5 DECAY

Controls how quickly reflections lose energy as they travel through the space — like the air itself absorbing the sound.

Low values: Reflections travel far before fading. The space feels open, airy, and transparent.

High values: The air feels thick — reflections die fast as they move away from the source. Creates a denser, more focused reverb that stays close to the source.

Negative values: Reverses the decay — reflections gain energy with distance. Unnatural, swelling effects.

5.3.6 TIME WARP

Stretches or compresses the timing of reflections — like bending the fabric of time inside the room.

At 0: Natural timing — reflections arrive as they would in a real space.

Positive values: The time axis stretches — reflections are pushed apart, creating a more spacious, open feel.

Negative values: The time axis compresses — reflections bunch together, creating a denser, more intense sound.

5.3.7 FILL IN

Simulates how much furniture, objects, or people are in the room — from an empty warehouse to a crowded hall.

0% (empty): Bare walls — reflections ring clearly, the space sounds hollow and lively.

100% (stuffed): Full of objects — everything scatters and breaks up the sound. Reflections become denser, more diffuse. The effect is stronger when [MAT] filters add frequency-dependent damping.

5.3.8 RF NUM

Controls how many individual early reflections are calculated — from a sparse handful to a dense swarm.

Low (5–20): Fewer reflections, lower CPU. The space sounds simpler and cleaner — good for tight rooms and when the ER Diffuser is doing the heavy lifting.

Medium (20–50): A good balance for most rooms. Enough reflections for a natural sound without excessive CPU.

High (50–200): Maximum detail. The reflections approach a near-continuous field. High CPU cost — use only when you need extreme realism.

Below the knob: click the button to switch between **AUTO** (number calculated from geometry + absorption + diffuser) and manual **RF NUM** mode.

5.3.9 WIDTH

Controls how wide the early reflections spread across the stereo image.

Narrow: Reflections cluster toward center — focused, direct, mono-compatible.

Wide: Reflections spread to the edges — the space feels larger and more immersive.

Note: Independent from LR stereo width. Even at WIDTH=0, an asymmetrical source/listener placement can still produce a natural stereo image (the 3D engine creates interaural differences).

5.3.10 CROSS

Cross-feeds left and right reflection paths — a subtle way to thicken the stereo image and add depth.

At zero, each channel is independent. As you increase CROSS, the channels bleed into each other inside the reflection network, creating a more unified, anchored stereo image. The effect is subtle — think “gluing” the stereo field rather than panning.

Tip: Increasing CROSS blends signals between the L and R channels, which can help tighten and center the stereo image.

5.3.11 Surface Bounce Types



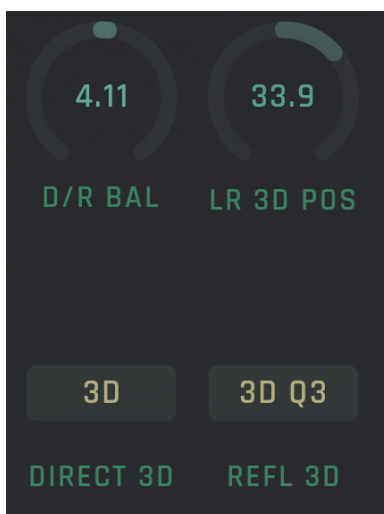
Controls whether reflections bounce off surfaces like hard tile (phase flip) or soft material (phase preserved).

- **OFF (soft bounce):** Phase is preserved — the reflection sounds smooth, coherent, and natural. Think carpet, curtains, or acoustic treatment.
- **ON (hard bounce):** Phase is inverted — the reflection sounds sharper, more directional, with a slightly different tonal character. Think tile, glass, or concrete.

Four buttons let you set the bounce type per surface: - **Wall** — side walls - **Floor** — bottom surface - **Ceiling** — top surface - **Random** — randomizes per bounce for unpredictable textures

Tip: Hard bounces give reflections more edge and presence. Soft bounces keep the sound smooth and integrated. Mixing different surfaces (hard floor + soft ceiling) creates more natural, complex spaces.

5.3.12 [DIRECT 3D]



Controls how the direct sound (the path straight from source to listener) is handled:

- **OFF:** No direct path — only reflections. The source is heard entirely through the room.
- **ON:** Direct path is included but not spatialised — the source stays centered as in a traditional reverb.
- **3D:** The direct path is spatialised — the source moves in 3D space. The listener hears the source from a specific direction, not just the center.

⚠ When ON or 3D is active, set MIX to 100% WET to avoid phasing between the internal direct path and your DAW's dry signal. The direct path replaces the input — it doesn't layer on top of it.

Note: Since the direct path is part of the ER engine, the ER/LR balance affects it. Even with D/R BAL at 100% (no reflections), you still need ER/LR < 100% LR to hear the direct signal.

5.3.13 [REFL 3D]

Enables 3D positioning for the early reflections — they arrive from specific directions based on the source/listener geometry, not just as a stereo spread.

- **OFF:** Traditional stereo reflections.
- **Q1:** Basic directional cues, low CPU. Reflections have a general sense of direction.
- **Q2:** Balanced quality — good spatial definition without excessive CPU.
- **Q3:** Highest spatial accuracy — reflections feel precisely placed in 3D space. Higher CPU.

⚠ Q3 can be CPU-intensive, especially with high RF NUM. Start with Q1 or Q2.

5.3.14 [D/R BAL]

Blends between the direct signal (no processing, just 3D positioning) and the reflections (the full ER processing chain).

-100% (full DIRECT): You hear only the direct signal — clean, unprocessed, just spatially positioned. The source feels close and immediate.

0% (equal blend): Direct signal and reflections sit side by side — a natural balance of clarity and space.

+100% (full REFLECTIONS): Only the processed reflections — no direct signal. The source is heard entirely through the room.

Tip: Use this instead of Wet/Dry to control the direct-vs-space balance. Set Wet/Dry to 100% to avoid phasing.

5.3.15 [LR 3D POS]

Offsets the 3D position of the late reverb relative to the early reflections — shifts where in the space the tail feels like it's coming from.

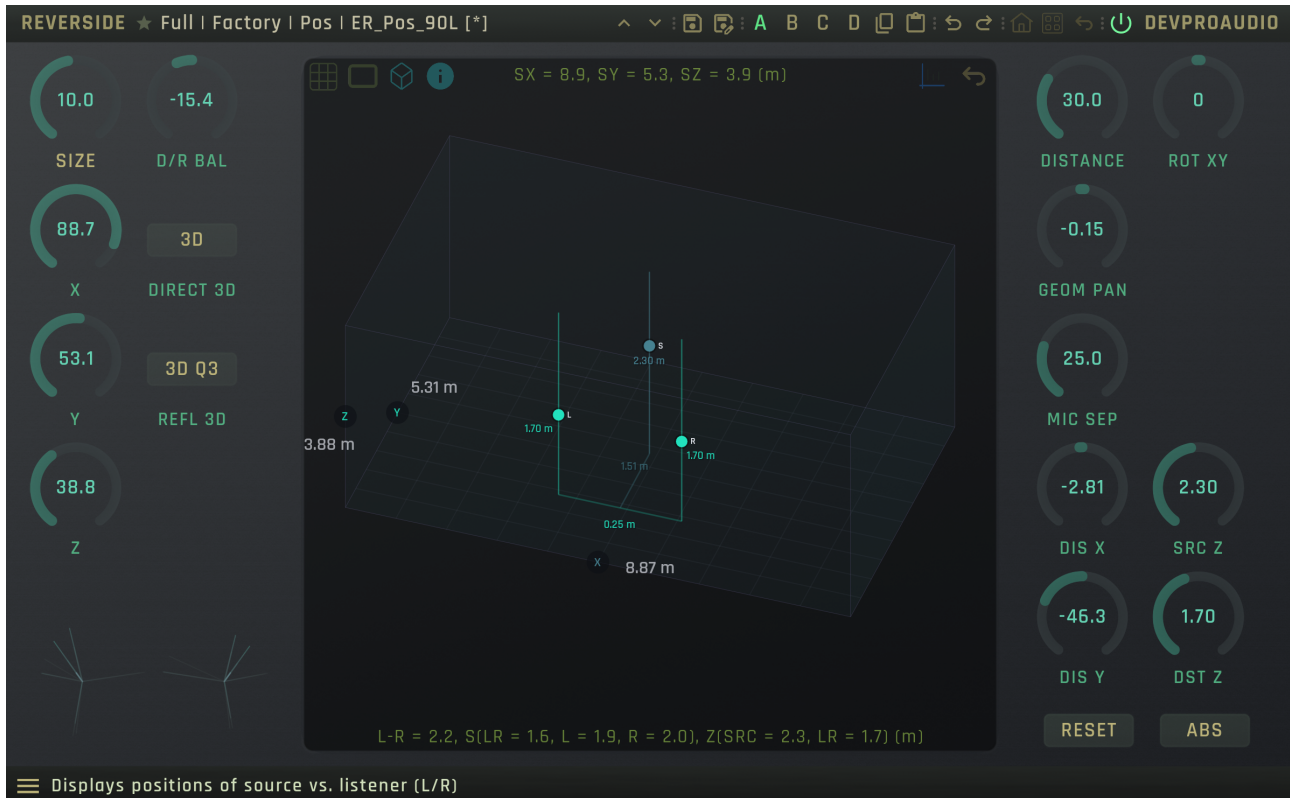
- **-100%:** The reverb's 3D center shifts toward the start of the reflections — the most pronounced 3D effect.
- **0%:** Natural alignment with the reflection pattern.
- **+100%:** The reverb's 3D center shifts toward the end of the tail.

See §5.5.13 for details. The current position shows as a short-dashed vertical line in the Tap Display.

5.3.16 NOTES

1. Reflection patterns ALSO affect the sounding of Reverb (LR) section.
2. To get the most out of 3D spatialisation use both direct path and reflections 3D modes. Add some variation to the arrangement either by using asymmetrical positions or by using stereo width. 3D spatialisation also works the best if there is some, even little reverb (LRs) signal present, while at the same time high levels of LR might obscure the effect.

5.4 POS (POSITION)



Here you can arrange your virtual sources/mics in a 3D space.

5.4.1 Understanding Positioning

In REVERSIDE you can place three points inside the acoustic space:

- Two listener points (L and R), which can be thought of as virtual microphones too.
- One sound source.

Because the layout is symmetric, you can alternatively interpret this setup as two sound sources and a single listener — the behavior is equivalent, just viewed from a different perspective.

5.4.2 POSITION DISPLAY

Shows positions of the listener's L and R points (two yellow circles) and the sound source (green circle) in X/Y — a bird's-eye view of the acoustic space.

- X axis: horizontal distance (room width)
- Y axis: depth (room length)

The position display now offers **3 view modes**, selected via icon buttons at the top-left of the POS page:

- **Grid 2D** (grid icon) — Fully normalized 2D view (both axes to 1.0). Drag to move positions, mouse wheel to rotate.
- **Rect 2D** (rectangle icon) — Geometry-proportional 2D view preserving the actual X:Y room ratio, useful for visualizing true spatial proportions.
- **3D Box** (3D cube icon) — A 3D perspective wireframe view of the room. Features:
 - Labelled **S** (Source, green), **L** (Listener Left, yellow), and **R** (Listener Right, yellow) points
 - Vertical drop-lines from each point to the floor plane
 - A floor grid matching the 2D display style
 - A guide line connecting L↔R with a perpendicular line to the source
 - X/Y/Z axis labels with room dimensions
 - **Mouse controls:** Left-drag to rotate the camera, Alt-drag or right-drag to pan, scroll wheel to zoom
 - **Note:** The 3D view is also available in the mini display on the MAIN page, slightly smaller and positioned lower to avoid overlapping the top-row icons
- **INFO** ((i) icon) — Turns on/off displaying metric information. Top info shows room size in meters. bottom display format is: S(LR, L, R): (S) Source-to. (LR) midpoint of a line from L to R. This basically corresponds to distance control's representation in meters. (L)/(R) a distance from L or R to the source in meters. Z(SRC/DST) src/dst height in meters

Tip: Double-mouse click to return to the main page (or single click on 'return' small icon in the top-right corner). A **Refl page shortcut icon** next to it jumps directly to the SPACE (Early Reflections) page. Click on the bars-like icon to quickly navigate to the SPACE/REFL page.

5.4.3 DISTANCE

Controls a distance between a line connecting listener's L and R points and sound source.

Tip: To see actual distance in meters either turn on showing metric info (see above) or switch to 3D view.

5.4.4 GEOM PAN

Displacement (from symmetric mid position) of sound source in relation to listener's L and R points. Any values other than 0 will result in asymmetrical disposition.

5.4.5 MIC SEP

Controls a distance (in X/Y plane) between L and R points. Tip: To see actual distance in meters either turn on showing metric info (see above) or switch to 3D view.

5.4.6 DIS X

Displacement (from symmetric mid position) of both listener and sound source in X direction.

5.4.7 DIS Y

Displacement (from symmetric mid position) of both listener and sound source in Y direction.

With displacements you can put listener and sound source close to walls. Any values other than 0 will most probably result in asymmetrical disposition.

Note that you can drag the display to easily control both displacements. (In 3D view mode you'd have to hold Alt key as dragging is reserved to 3D View rotation)

5.4.8 ROT XY

Rotation (in XY plane over center) of both listener and sound source. Any values other than 0 will most probably result in asymmetrical disposition.

5.4.9 SRC/DST Z POS

Z position of sound source and listener.

There are two modes: [REL] and [ABS]

- **REL:** Z position is relative to effective space height
- **ABS:** Z position is absolute position in meters

As most of acoustic setups place sound source and listener in [0.5..3] meters range regardless of acoustic space size, the most natural is to use ABS mode.

5.4.10 RESET

Click on this button to reset all geom position controls to their default values.

5.4.11 POSITIONING QUICK START (DIRECT + REFLECTIONS 3D)

- Room: set Width/Depth/Height and SHAPE; adjust WALL ABSORPTION and DECAY for realism.
- Place: set DISTANCE, GEOM PAN, MIC SEP, DIS X/Y, ROT XY; set SRC/DST Z POS (ABS recommended).
- Direct path: set [DIRECT] → [3D]; set MIX to 100% WET; use [D/R BAL] to taste.
- Reflections: set [REFL 3D] → [Q2] (Q3 for max quality, more CPU).

- Timing: keep ER PRE-DLY in [AUTO] for physically plausible timing.
- Stereo: ER WIDTH and CROSS shape the stereo field of reflections independently from LR width.
- Tip: if geometry is perfectly symmetrical and ER WIDTH = 0, ER output can become mono; use slight asymmetry or width for stronger cues.

EXAMPLE — ORCHESTRAL PLACEMENT AROUND THE LISTENER

Goal: stage sections around the listener with a shared acoustic.

1. Use the same REVERSIDE room on several tracks (one per section). Keep room size/shape, WALL ABSORPTION and DECAY consistent across instances for a coherent space.
2. For each section, choose a different position:
 - Front-left strings: moderate DISTANCE; GEOM PAN slightly left; optional small ROT XY.
 - Front-right woodwinds: mirror of strings, slight right pan/rotation.
 - Rear brass: increase DISTANCE; use ROT XY to place behind; consider higher WALL ABSORPTION to soften early splash.
 - Percussion: farther DISTANCE and/or TIME WARP for longer early paths.
3. Enable [DIRECT] → [3D] and [REFL 3D] → [Q2] on each instance; set MIX to 100% WET and use [D/R BAL] per track for presence vs envelopment.
4. Keep ER PRE-DLY in [AUTO] for natural onset alignment; use LR pre-delay to control tail separation if needed.
5. Use similar LR RT60 and DIFFUSE across instances to “glue” the hall; vary ER settings for distance and placement cues.

5.5 REV (Late Reflections)



These controls shape the Late Reflections (aka 'Diffuse field' or just 'Reverb')

TIME DISPLAY

The display will show a distribution over time of 1) Early reflections (blue) 2) Late reflections initial cluster (green) 3) Late reflection decay curves (for each channel)

Note that the above include the respective pre-delay values. Click on the display or on the 'return' small icon in the top-right corner to return to the previous editing page.

If Direct Path is enabled, set to ON or 3D you will see it. as two yellow solid vertical lines. The dashed lines correspond to: - long-dashed: LR offset into Reflections - short-dashed: LR 3D offset into Reflections

5.5.1 REV TIME

Sets how long the reverb tail lasts before fading to silence.

Short (< 1.5s): Tight and controlled. The reverb gets out of the way quickly — great for drums, rhythm guitars, or any busy mix where you want a sense of space without clutter.

Medium (1.5–3.5s): Natural and musical. The tail has room to bloom and fill out the space. Works well on vocals, acoustic instruments, and as a general-purpose hall or room.

Long (> 3.5s): Lush and atmospheric. The sound lingers and evolves — think epic ballads, ambient pads, orchestral swells, or cinematic soundscapes. At extreme settings, the reverb becomes a layer of its own.

5.5.2 REV TIME MODE

Below [RT PAN] button there a reverb mode button. click on it to access 3 mode: free, auto and inf. When AUTO is selected the reverb time is calculated automatically based on space geometry and absorption. Select INF for **infinity** mode.

5.5.3 REV TIME PAN

This knobs allows to decrease effective reverb time for either left/mid or right/side channel. See [5.5.15] for details.

5.5.4 DENSITY

Controls how dense or sparse the reverb tail feels — from a few audible echoes to a thick, seamless cloud.

Low values: The tail is open, airy, and transparent. You can hear individual reflections — like a large stone hall with spaced-out echoes. Good for keeping things clear in a dense mix.

High values: The tail fills in and becomes a smooth, continuous wash. Reflections overlap and merge, creating a rich, luxurious reverb that wraps around the source. Think high-end halls and room algorithms where the space feels solid.

5.5.5 DENSITY CONFIG

Beneath [DENSITY] label you can find a button to access density configurations.

This configs sets a baseline density of the reverb. Higher values will result in a denser and more complex reverb (and use more CPU). For most of the cases STD config is enough.

DLY 1 and DLY 2 are for delay FX. They will not produce a dense reverb and might even sound resonant (naturally) at some settings.

NOTE: Changes made to Contour/Spread/Config are reflected in Time Display

5.5.6 DIFFUSE

Polishes the reverb tail — from a rough, textured echo to a glassy, seamless sustain.

Low values: The tail stays grainy and articulate. Reflections remain distinct — think a reflective chamber or a gated reverb with the gate off. Adds a slightly metallic, resonant character that can help the reverb cut through.

High values: Everything smears into a smooth, continuous tail. No edges, no individual echoes — just a warm, enveloping glow. This is the classic “expensive hall” sound where you feel the space, not the reflections.

The key difference vs. DENSITY: DENSITY is *how many* reflections; DIFFUSE is *how smooth* they are.

5.5.7 DIFFUSION MODELS

Click on a button beneath [DIFFUSE] label. It will show a menu with available diffusion models.

see section [7.1] for detailed description.

NOTE 1: [Soft] model is internally modulated which adds liveliness to the sound. NOTE 2: The difference in sounding of models is more audible at long tails NOTE 3: Do not confuse this diffuse control with ER/LR Diffusers. They serve independent purposes.

5.5.8 WIDTH

Controls how wide the reverb tail spreads across the stereo field.

Narrow: The tail stays centered — focused, mono-compatible.

Wide: The tail expands to the edges — the space feels larger, more immersive.

The [STD/WIDE] button toggles: - **STD:** Standard stereo width. - **WIDE:** Extra width with more depth and “outside-the-speakers” externalization.

Note: Independent from ER stereo width — you can have narrow early reflections with a wide reverb tail (or vice versa).

5.5.9 CROSS

Feeds left channel into right and vice versa inside the reverb network — a subtle way to glue the stereo image and add depth.

At zero, the left and right reverbs are independent. As CROSS increases, they start to blend: the stereo image becomes more cohesive and anchored in the center, with a subtle increase in perceived density. Useful for tightening a wide reverb that feels disconnected from the source.

5.5.10 SHAPE

Shifts the internal delay balance of the reverb — from tight and plate-like to wide and cavernous — independent of the room SIZE.

Negative values (-100 to -20%): Shorter delays dominate. The tail becomes denser, tighter, closer — think plate reverbs or small rooms. The lower you go, the more “springy” or “metallic” it can get. Excellent for drums and percussion.

Neutral (-20 to +20%): Natural, balanced reverb character. The delays sit where they’d be in a real room.

Positive values (+20 to +100%): Longer delays take over. The perceived space grows — the tail feels bigger, more open, almost cavernous. Extreme settings sound unnatural (great for creative FX).

Typical ranges: - Drums: -70 to -30% - Vocals & synths: -30 to +20% - FX, pads, granular: +20 to +100%

5.5.11 CONTOUR

Shapes the attack of the reverb tail — how quickly it swells in after the dry sound.

Negative values: The reverb takes its time to build. The tail swells in gently — like a large hall where the sound has to travel far before reflecting back. Creates a smooth, cinematic rise.

Positive values: The reverb hits fast and hard. The tail is immediate, almost percussive — can resemble early reflections. Good for tight, punchy spaces where you want reverb presence without lag.

5.5.12 SPREAD

Controls how much the reverb wraps around the listener — from a flat wall of sound to a 3D immersive halo.

Low values: The reverb stays centered and contained. It feels like the sound is coming from in front of you — more like a traditional stereo reverb.

High values: The reverb spreads out to the sides and behind you. The space becomes more enveloping, wrapping around the listener. Great for adding depth, dimension, and a “you are inside the room” feeling.

Think of it as the difference between looking at a painting (low spread) and standing inside the scene (high spread).

5.5.13 3D Spatialiser

Adds directional positioning to the late reverb tail — instead of just washing around the stereo field, the tail comes from specific directions based on the room geometry.

Click the button below [SPREAD] to select quality: - **OFF**: Traditional stereo reverb — no spatialisation. - **Q1–Q4**: Higher = more spatial detail, more CPU. Q2 is a good balance.

The bipolar knob above [REV 3D] shifts *where* in the tail the 3D effect is strongest: - **-100%**: Offset toward the start of the tail — the most noticeable 3D effect. - **0%**: Natural position — the 3D follows the reflection geometry. - **+100%**: Offset toward the end of the tail — more subtle.

Note: LR's 3D effect is less pronounced than ER's because the late tail is already diffuse — but it adds a subtle depth and realism that traditional stereo reverb can't match.

5.5.14 Envelope Controls

Shapes the overall contour of the reverb tail — from a natural exponential fade to a custom-shaped swell and sustain.

Click the button below [ENV CV] to select:

- **STD (Standard)**: A natural exponential decay — what you'd hear in a real room. The reverb hits and fades naturally. The [CV/DCY] controls are not available in this mode.
- **FAT (Extended)**: Gives you control over the attack and decay shape. Use this to add more body and energy to the reverb — especially useful for hall simulations where you want a slow, powerful build before the decay. The effect is visible in the Time Display.
 - **CV**: Slows the attack — the reverb swells in gradually.
 - **DCY**: Blends between faster-than-exponential (tight) and slower-than-exponential (loose, lingering) decay.

💡 FAT mode is great for making a reverb feel “bigger” without actually increasing the room size. It adds CPU cost, so use it when you need it.

5.5.15 Understanding Panning Controls

Some of reverb parameters have corresponding PAN controls. These controls allow to split the base parameter value into two values acting on L and R (or Mid/Side depending on STEREO control settings) channels.

Positive Pan values will scale down base value for R channel, and negative values the L's respectively.

For example let's take RevTime / RT Pan pair.

If RevTime = 2s, and RT_Pan = -100, the Left channel's rev time will be around 0.2s, and Right's remain 2s. The actual amount/depth of scaling down depends on particular control.

The list of parameters that have Pan controls are:

1. [RT PAN] Reverb Time
2. [CV PAN] Envelope CV Pan
3. [DCY PAN] Envelope DCY Pan

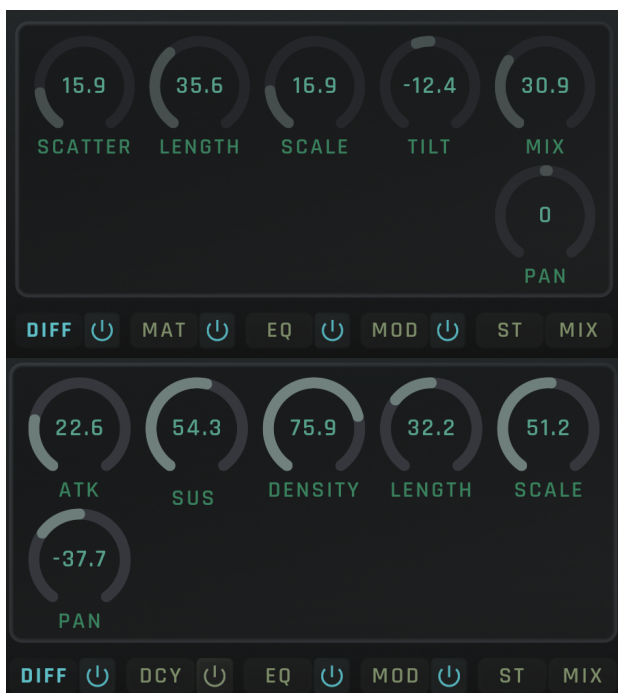
The result panning curves (except RT PAN) are displayed in TIME display.

[CV/DCY PAN] allows to create different decay profiles for left/mid and right/side channels. For example you can set reverb MID channel to decay slower than reverb SIDE channel.

Pan controls are also available in [FILTERS].

The lower values of Pans can be used to add more spectral stereo variations to reverb. Higher values are meant for creative FX. The most interesting use cases are when panning is used with stereo controls. For example in Mid/Side mode.

5.6 DIFFUSERS



5.6.1 Overview

Diffusers add an extra layer of micro-reflections on top of the main reverb — like scattering sound through a second, smaller space before it reaches your ears. The result is a richer, more natural, and more three-dimensional sound.

There are two diffusers, one for each engine: - **ER Diffuser** — adds density and presence to early reflections. Makes the room feel more “real” and less calculated. - **LR Diffuser** — smooths and shapes the reverb tail’s attack. Useful for fattening up the onset of the decay.

5.6.2 Early Reflections (ER) diffuser

The primary function of the ER diffuser is to add additional diffuse reflections to the Early Reflections (ER) section. More diffuse reflections will result in a more natural and spacious sound as they correspond to having more reflective surfaces in the space. They add that **sense of presence**.

5.6.2.1 [ER DIFF] SCATTER

Controls how much the early reflections get broken up and smeared — from clean, distinct echoes to a soft, cloudy wash.

Low (10–30%): The early reflections stay clean and directional. The room feels precise and defined — good for intimate spaces, acoustic instruments, or any time you want clarity.

Medium (40–60%): A natural balance. The reflections start to blur slightly, adding richness without losing definition.

High (70–100%): The early reflections dissolve into a soft, atmospheric haze. The room feels less like a geometric space and more like a sonic environment. Great for vocals, pads, and cinematic textures.

5.6.2.2 [ER DIFF] LENGTH

Controls how long and complex the diffuser’s effect is.

Low values: A quick, subtle diffusion that barely touches the sound — the reflections stay close to their original shape.

High values: More diffuser stages activate, stretching and smearing the reflections further. The attack softens, the density increases, and the space feels more complex. Great for turning a dry room into a lush, ambient space.

5.6.2.3 [ER DIFF] SCALE

Controls the time-span of the diffuser's internal delays — how spread out the micro-reflections are.

Low values: Tight, compact diffusion — the reflections stay bunched together. Sounds dense and focused.

High values: The micro-reflections stretch apart. The diffuser sounds sparser and more open — individual echoes become more audible.

5.6.2.4 [ER DIFF] TILT

Tilts the energy distribution of the diffuser — whether the reflections are front-loaded or back-loaded.

Negative values: The diffuser emphasizes the early part of its output — more energy hits sooner. The sound feels more immediate.

Positive values: Energy shifts later in the diffuser's tail — the effect swells in gradually rather than hitting all at once.

5.6.2.5 [ER DIFF] MIX

Blends the diffuser's output with the dry reflections.

- **0%:** Diffuser is off — clean, unprocessed reflections.
- **100%:** Full diffuser — maximum smoothing and smearing.

Start low and bring it up until the room sounds “real” rather than artificial. A little goes a long way.

5.6.2.6 [ER DIFF] PAN

Shifts the diffuser's output across the stereo field.

Center: The diffused energy stays evenly spread.

Left/Right offset: Tilts the diffusion toward one side — useful for creating asymmetrical spaces or adding motion.

With Mid/Side mode active: Pan shifts between Mid and Side channels instead of L/R.

5.6.3 Late Reflections (LR) diffuser

The LR diffuser gives you extra control over the *beginning* of the reverb tail — how quickly it swells and how thick it feels at the onset.

Even with the FAT envelope engaged, there's a limit to how slow the attack can be. The LR diffuser extends that range: it can stretch the attack further while simultaneously making it denser. The result is a deeper, more gradual "bloom" into the reverb — think of the difference between a door slamming (no diffuser) and a curtain slowly drawing open (heavy diffusion).

5.6.3.1 [LR DIFF] ATK

Controls how quickly the LR diffuser engages — from an instant hit to a slow fade-in.

Low values: The diffuser kicks in fast. The reverb tail starts dense right away.

High values: The diffuser takes time to build. The tail starts thinner and gradually thickens — like the sound of a large room filling up.

Works together with LENGTH and SCALE to shape the overall onset character.

5.6.3.2 [LR DIFF] SUS

Controls how long the diffuser's effect sustains after it reaches full level.

Low values: The diffuser peaks quickly then fades — the effect is felt mostly at the attack.

High values: The diffuser stays active longer, maintaining the thickened, dense character throughout more of the tail.

5.6.3.3 [LR DIFF] DENSITY

Controls how tightly packed the micro-reflections are inside the LR diffuser.

Low (20–40%): A light diffusion layer — preserves the original transient clarity while adding a subtle halo.

Medium (50–70%): A balanced enhancement — the tail feels thicker without losing definition.

High (80–100%): A lush, cloud-like onset. The reverb blooms with a dense, velvety character — think strings, vocals, or cinematic pads floating into the mix.

Unlike the main DENSITY parameter (which controls the core reverb network), this only affects the diffuser stage — so you can add extra thickness without changing the fundamental reverb character.

5.6.3.4 [LR DIFF] LENGTH

Controls how many diffuser stages are active — from a quick subtle layer to a long, complex diffusion tail.

Low values: Short, unobtrusive diffusion — the tail stays close to its unprocessed character.

High values: More stages engage, stretching the diffuser's effect further into the tail. The attack softens, the density builds.

5.6.3.5 [LR DIFF] SCALE

The time-span of the diffuser's internal delays — how spread out or bunched together the micro-reflections are.

Low values: Tight and dense — the diffusion feels compact, focused.

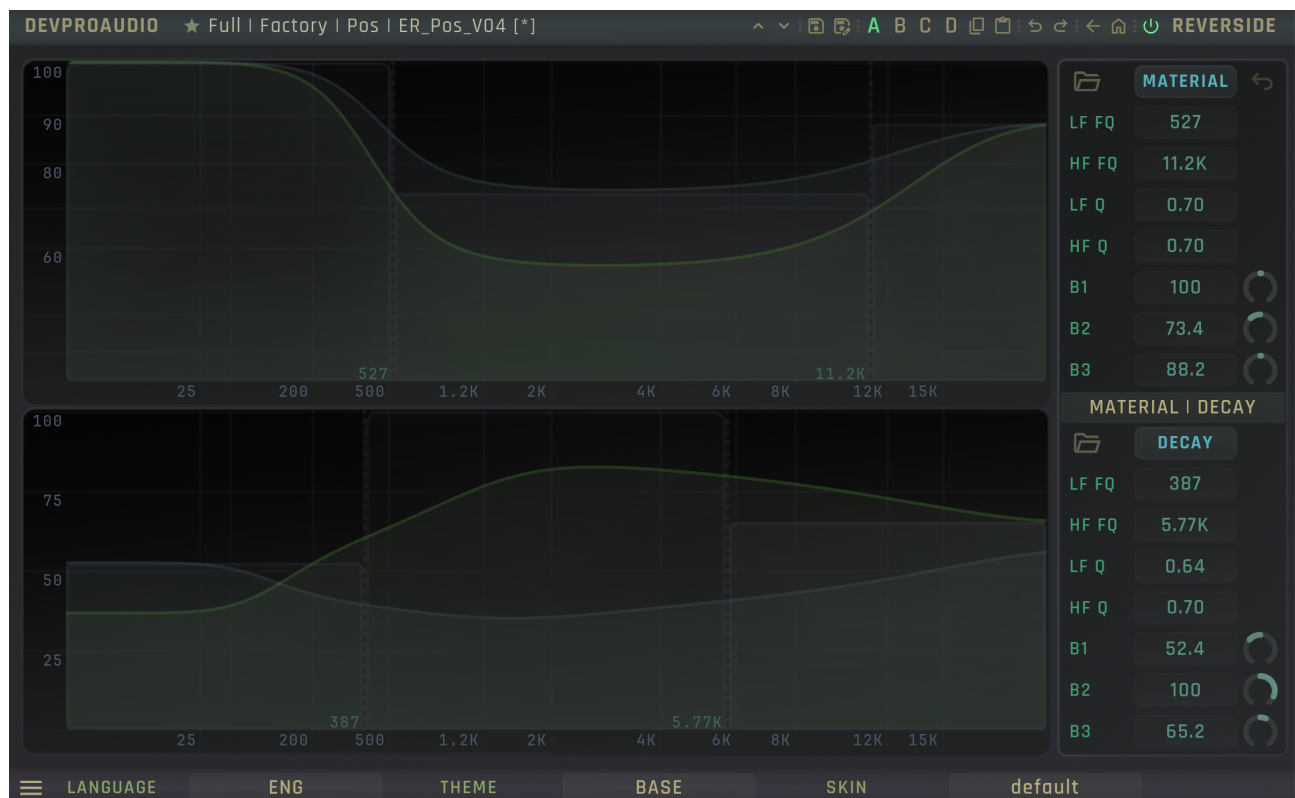
High values: Spread and sparse — the diffusion unfolds more slowly, with a wider, more open character.

5.6.3.6 [LR DIFF] PAN

Shifts the LR diffuser's output within the stereo field, independent of the main reverb pan.

Useful for widening the perceived space or placing the diffused layer asymmetrically for creative effect.

5.7 FILTERS



5.7.1 Overview

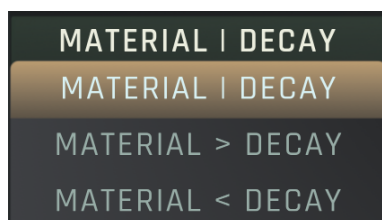
REVERSIDE features two types of frequency-dependent filters that simulate how different surfaces absorb sound across the spectrum:

- **MAT (Material) Filter:** Simulates the **frequency-dependent absorption of room surfaces** (walls, floor, ceiling). It controls how much energy is removed *per reflection cluster*, based on material properties like wood, carpet, or concrete.
 - Applied primarily to **Early Reflections (ER)**
 - Gain is expressed as **% of signal level**
- **DCY (Decay) Filter:** Simulates how **reverb time varies by frequency band**—for example, bass lingering longer than treble in a room.
 - Applied primarily to **Late Reverb (LR)**
 - Gain is expressed as **% of RT60 decay time**

Key Difference:

- **MAT** changes how bright/dull each reflection is
- **DCY** changes how long each frequency band sustains

You can link the two using the `[FLT MODE]` menu. click on it:



- `[MATERIAL | DECAY]` : Each filter is controlled independently (maximum flexibility)
- `[MATERIAL > DECAY]` : MAT settings control LR decay — useful for simulating real-world materials consistently
- `[MATERIAL < DECAY]` : DECAY filter settings influence ER filtering — ideal for traditional reverb design where tonality follows decay

This switch is also available on main page between `[refl]` and `[rev]` buttons. The values are displayed as `[|]` `[>]` `[<]` which correspond to the options above.

Small knobs next to B1/B2/B3 controls are Band's Gain Pan controls which allow to specify different frequency profiles for left/mid and/or right/side channels allowing to create interesting spatial effects.

💡 Tip: Use `[ER→LR]` mode when designing realistic spaces. Use `[LR→ER]` for creative tonal shaping.

💡 Tip: In Mat/Dcy Filter Editor you can change Q factor by a mouse wheel.

💡 Tip: Click on folder icon to display a mini preset browser (with respective filter type) at the bottom so you can quickly try filter presets.

5.7.2 Using Multi-Band Filter Editor

Decay/Material filters in REVERSIDE are organized as 3-band controls where you can control the 2 frequency split points between bands, 3 band's gains and 2 transition steepness between splits.

Essentially this 3-band scheme is implemented as two shelving filters in series with corresponding frequency, gain and Q factor controls. In addition to that there are 3 band gain's pan controls.

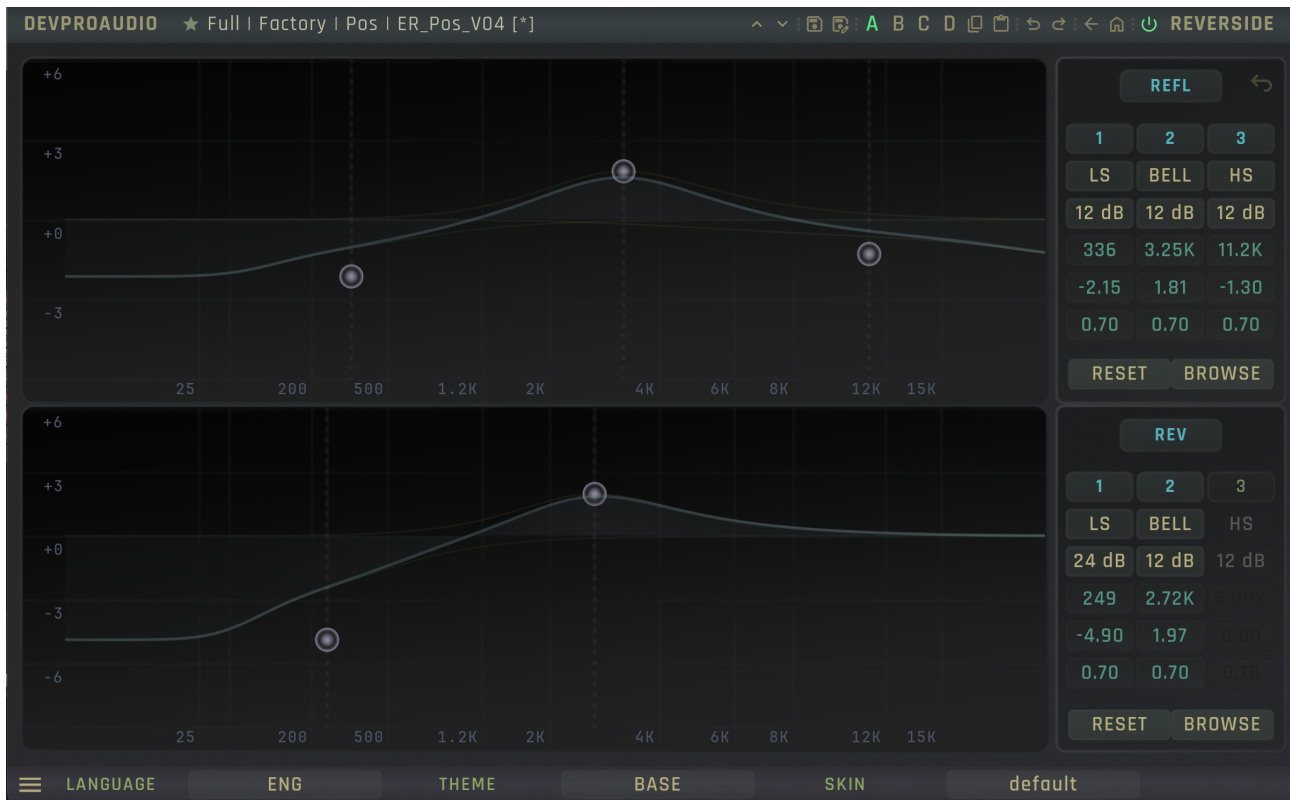
1. move mouse close to band's top. mouse cursor will change to vertical bidirectional arrow. now you can drag the band up/down. In this mode only band gain will change.
2. move mouse close to band's split line (dashed line). mouse cursor will change to horizontal bidirectional arrow. now you can drag the band split line left/right. In this mode only band split point will change. Note: you can move one split point post another to swap them.
3. if you move a mouse close to band's intersection point (but above both bands tops) mouse cursor will change to diagonal bidirectional arrow. If you drag it the filter's Q will follow.
4. (simple mode) you can simply drag a band (at any point), in this mode the X direction will change the band's freq range, while Y direction will change the band's gain. The mouse cursor changes to 'hand' in this mode
5. mouse wheel will change filter's Q factor

NOTE 1: The actual result filter is depicted as CURVE.

NOTE 2: If any of filter pans are not zero separate curves for L and R are displayed.

Double-click on either display or single-mouse-click on 'return' icon in the top-right corner of the page to return to previous editing page.

5.8 EQ



Output EQs for ERs (top) and LRs (bottom).

EQ filter is organized as a series of 3 filter (nodes). Each node has on/off switch, filter type, slope (12/24/36/48 dB/Oct), frequency, gain and Q.

You can turn on/off ER EQ by clicking on [REFL] button. You can turn on/off LR EQ by clicking on [REV] button. Clicking on [1][2][3] buttons will turn on/off filter's nodes.

FILTER TYPES

The following filter types are available: 1) Low/High Shelving 2) Low/High Cut 3) Bell/peaking 4) Notch 5) Band-Pass

Interaction: A) click and drag a node (circle) along the display to change its frequency and gain. As you approach the display's top or bottom, the filter's display magnitude axis will auto-scale accordingly B) use mouse wheel to change the filter's Q value

💡 Tip: Click on folder icon to display a mini preset browser (with respective filter type) at the bottom so you can quickly try filter presets.

Click on three line icon to reset the filter to its default state.

6. Glossary

- **ER** — Early Reflections
- **LR** — Late Reflections

- **RT60** — Reverb Time (time for reverb to decay by 60 dB)
- **MAT** — Material Filter (frequency-dependent absorption per reflection)
- **DCY** — Decay Filter (frequency-dependent decay time)
- **D/R BAL** — Direct/Reflections Balance
- **FAT** — Extended envelope mode (custom attack/decay shaping)
- **RF NUM** — Reflection Number (number of individual early reflections)
- **M/S** — Mid/Side stereo encoding

How to choose quickly

- Subtle spatial cue w/o wash: Ambience.
- Natural studio vibe or vintage vocal: Chamber or Plate (depending on metallic vs colored).
- Tight, realistic acoustic: Room (choose small/medium/large).
- Lush musical decay: Hall.
- Massive, ancient feel: Church / Cathedral.
- Vintage amp texture: Spring.
- Punchy, dramatic drums: Gated.
- Ethereal/ambient pads: Shimmer or Modulated Hall.
- Real space accuracy: Convolution IR.

7. Details

7.1 Diffusion models

SOFT

Sound:

smooth, gentle diffusion that stays out of the way; blends quickly into the tail without obvious texture.

Best for:

vocals, acoustic instruments, dialogue, ambient beds, “natural room” feel.

Suggested use:

Works well even at short rev_time. Keep RevDiffuse low–mid (≈ 0.15 – 0.55) for a clean, unobtrusive space.

If you want slightly more richness without coloration, raise RevDiffuse modestly.

Watch-outs:

At high RevDiffuse it can still sound smooth but may begin to mask detail; switch to BALANCED if you want more clarity.

BALANCED**Sound:**

even, stable spread with minimal coloration; “studio neutral” reverb character.

Best for:

general-purpose use across most sources; a safe default.

Suggested use:

Use when you want space without personality. RevDiffuse mid (≈ 0.3 – 0.7) usually gives the best balance.

Takes EQ well—great for shaping the tail.

Watch-outs:

If you need obvious texture or motion, switch to ORGANIC/FLOW/SWIRL.

ORGANIC**Sound:**

irregular, lively diffusion with subtle movement; less “mathematical” feel.

Best for:

guitars, pianos, strings, acoustic ensembles; organic rooms.

Suggested use:

Medium RevDiffuse (≈ 0.3 – 0.65) gives the most natural character.

Pairs well with moderate rev_time and gentle damping.

Watch-outs:

At very high RevDiffuse it can start to “thicken” too much; DENSE may be smoother if you want a wash.

DENSE**Sound:**

thick, smooth, quickly “clouding” tail; lush and immersive.

Best for:

pads, cinematic washes, ambient textures, long tails.

Suggested use:

Shines with longer rev_time and higher RevDiffuse (≈ 0.6 – 0.95).

Reduce damping if you want more sheen; increase for velvet-like tails.

Watch-outs:

Can swallow transients if the mix is busy—consider SOFT/BALANCED for clarity.

WIDE**Sound:**

broad stereo spread; airy and open without strong motion.

Best for:

stereo widening, synths, backing vocals, open plates.

Suggested use:

Medium RevDiffuse (≈ 0.35 – 0.75) gives width without excess blur.

Works well with moderate rev_time for a “wide room” feel.

Watch-outs:

If you want more texture or movement, choose FLOW or SWIRL.

CLUSTER**Sound:**

grouped reflections; “blocky” structured diffusion with audible texture.

Best for:

percussion, rhythmic sources, sound-design accents.

Suggested use:

Mid RevDiffuse (≈ 0.3 – 0.7) makes clusters audible without overwhelming the source.

Try shorter rev_time for punchy spaces.

Watch-outs:

May feel “patterned” on exposed vocals; switch to ORGANIC or BALANCED if it feels too structured.

LOCAL**Sound:**

tight, localized diffusion; preserves direction and definition.

Best for:

small rooms, close mics, percussive sources, tight mixes.

Suggested use:

Lower RevDiffuse (≈ 0.15 – 0.45) keeps transients crisp.

Great for short/medium rev_time where clarity matters.

Watch-outs:

Can feel too dry or narrow if you want a bigger space—try WIDE or DENSE.

FLOW**Sound:**

smooth, continuous motion; liquid tail without obvious modulation.

Best for:

pads, sustained strings, evolving atmospheres.

Suggested use:

Mid–high RevDiffuse (≈ 0.4 – 0.85) brings out the flow.

Works well with long rev_time but also gives subtle movement on medium settings.

Watch-outs:

On sharp transients it may blur attack; use LOCAL or ORGANIC for definition.

SPREAD**Sound:**

layered, network-like diffusion; structure becomes more audible as it builds.

Best for:

electronic sources, creative textures, layered reverbs.

Suggested use:

Higher RevDiffuse (≈ 0.5 – 0.9) emphasizes the network character.

Great for adding “dimension” without strong coloration.

Watch-outs:

May feel slightly “geometric” on natural instruments; use BALANCED for realism.

CHARACTER**Sound:**

colored, comb-like texture; strong personality and tone.

Best for:

synths, guitars, FX hits, creative reverb coloration.

Suggested use:

Moderate RevDiffuse ($\approx 0.35\text{--}0.75$) gives musical coloration; push higher for bold effect.
Try less damping if you want more metallic edge.

Watch-outs:

Can mask pitch detail on vocals or strings—use SOFT/BALANCED if clarity is needed.

MODAL**Sound:**

structured “modal grid” diffusion; coherent, resonance-friendly.

Best for:

pads, chords, strings, harmonic material.

Suggested use:

Medium RevDiffuse ($\approx 0.35\text{--}0.7$) keeps it musical and organized.
Works especially well with longer rev_time.

Watch-outs:

If it feels too orderly/clean, switch to ORGANIC or RES for more texture.

RES**Sound:**

sparse resonator clusters; metallic/plate-like hints with gaps.

Best for:

metallic plates, percussion, creative ambience.

Suggested use:

Mid–high RevDiffuse ($\approx 0.45\text{--}0.9$) adds sparkle and resonant flavor.
Try slightly longer rev_time for a sustained, shimmering tail.

Watch-outs:

Can sound “effecty” on exposed vocals; reduce RevDiffuse or use BALANCED.

SPARSE**Sound:**

sparse shuffle of paths; crisp scatter and clearly structured reflections.

Best for:

drums, plucks, arps, dub-style spaces.

Suggested use:

Audible even at short `rev_time`. Keep `RevDiffuse` moderate (≈ 0.2 – 0.6).

Great when you want the reverb to have a *patterned* character.

Watch-outs:

At high `RevDiffuse` it can become sharp or “steppy” on delicate sources—reduce or switch to `SOFT`.

SWIRL**Sound:**

swirling/phasey motion, evolving tail with a subtle rotational “whoosh”; can feel like a moving space rather than pure diffusion.

Best for:

pads/drones, synth leads, guitars, cinematic ambiences, long tails where you want movement without an LFO.

Suggested use:

Shines with mid–high `RevDiffuse` (≈ 0.35 – 0.85).

If you only notice it at very long `rev_time`, keep `rev_time` long **or** increase `RevDiffuse` and reduce damping a bit so the motion survives.

Watch-outs:

Can add audible coloration on very percussive sources; in dense mixes it can be perfect, but in sparse arrangements it may feel “effecty” (reduce `RevDiffuse` or use a smoother model).