

**REALTIME**  
**ONLY**

*Reverbical*

V1.2  
Ease of User Manual  
Rev. 0006

Welcome to the Reverbical V1.2 stereo reverb plugin operation manual. Our software is designed to be self explaining where possible, so that the time learning how to operate it is spent on making music rather than reading. To quickly get started, a help display inside the plugin will provide information about each control. However, you may want to review a specific functionality, know in detail how the knobs and sliders interact, learn how to improve the workflow and get to know not so apparent features. Then this manual is for you, let's dive right in.

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# Getting Help without the manual

By pressing the '?' **button** in the plugin, a help display will be shown on top of the preset grid, that briefly explains the function of each control, when moving the mouse over it (see also the Preferences section).

On the website, several specific questions are answered on the FAQ site at [www.realtimeonly.com/reverbical/faq](http://www.realtimeonly.com/reverbical/faq) .

For further questions, please contact [support@realtimeonly.com](mailto:support@realtimeonly.com) .

# Getting Started

## Installation

Download the appropriate Reverbical installer for your operating system from [www.realtimeonly.com/reverbical](http://www.realtimeonly.com/reverbical) . After unzipping and opening the installer file, you will be guided through the installation. Restart your DAW so the plugin directories are rescanned for the fresh and updated files.

## Demo Mode and Limitations

When you run Reverbical in your DAW for the first time, the plugin will be in demo mode. You have access to all sounds and parameters that the full version of Reverbical has to offer, to be able to evaluate it. The limitations however in demo mode are:

- The output is muted once in a while for some seconds
- Saving presets and exporting to clipboard is disabled

## Activation

If you own a valid license keyfile, which is sent by email to you after a purchase at [www.realtimeonly.com](http://www.realtimeonly.com) , you can activate the installed demo to permanently run without restrictions. There are two possible ways for activation:

1. Open the plugin in your DAW, locate the keyfile on your harddisk with the Explorer/Finder, and **drag and drop the keyfile on the plugin** user interface.

2. Open the plugin in your DAW, **click on the Reverbical logo, then click the Activate button**, and follow the instructions, which will tell you to locate the keyfile on your harddisk.

In both cases, a popup window will inform you about the result of the activation process. Your copy should be activated now.

## Troubleshooting

If the activation fails, please make sure that the **keyfile name ends with either '.keyfile' or with '.txt'**. If not, just rename the file to match this suffix, and start over the activation procedure.

For further help please contact [support@realtimeonly.com](mailto:support@realtimeonly.com) .

## Uninstall

Windows comes with a prebuilt Uninstaller which you can find in the Start Menu entry after installation, in a folder called Reverbical. On OSX, uninstallation can be done by manually removing the installed files. See the chapter File locations where to find these.

# Overall view concept

Reverbical comes in 3 view modes, that all use the same audio engine, just with different interaction possibilities: **Grid view**, **Tweak view**, and **Classic view**. They can be switched within the preferences menu by clicking on the **tool button in the right corner**. Other settings like the **plugin size** and **UI themes** can be selected here as well. See also the preferences section for manually entering a custom value.



## Grid view



This is the view when you open up Reverbical for the first time. It provides straightforward preset access and two big parameter controls (SPACE and DRYWET) to adjust the most important aspects of the sound.

The large area is an X/Y pad – the grid - holding 96 sections or elements. Each grid element represents one preset, meaning one full set of parameters for a distinct sound. The current selected preset is highlighted within the grid, with the name and category type in the lower left corner.

## Tweak view



This view has a preset grid just like in Grid view, but in addition gives access to all the low-level reverb parameters, that make up the sound of the current selected preset.

## Classic view



This view has no grid, and will look more familiar when compared to other reverb plugins. It is reduced in size to save space on the screen, and all presets can be accessed too, just without direct mouse selection and navigation.

# Presets and Preset Grid

## Preset Grid functionality

The Preset Grid holds 96 presets. A full preset grid represents a **preset bank**. The currently active preset is shown in the lower left corner, together with the room category. **Click on a position** on the grid to select the appropriate preset. A small dot will show the exact position that was clicked, which gets important in Morph mode, when automating the grid position, or when using Midi controllers. Alternatively, **click the + and – buttons** to select the next/previous preset on the grid.

## Switching the preset display

With the **right mouse button clicked** into the grid, the display can be switched to **show all preset names** at once, or to **colour** the presets by category, or a combination of that. This setting is stored in the preferences (see Preferences section for details).

Colours are internally mapped to certain names, for example „Stage“, „Chamber“, „Ambience“. This means that your presets will show up with a certain colour, if you set their category to a name that matches with one of the predefined categories.

These **main categories** are currently available:

Room, Hall, Large, Ambience, Chamber,  
Stage, Experimental, Gate, Plate

**Additional categories** available are:

Drums, Drum Rooms, Vocal, Strings, Large Spaces,  
FX Spaces, Special FX, FX, Ambient, Live, Shimmer Hall

## Sorting presets on the grid

Preset positions can be rearranged, by holding **CTRL** (on Windows) or **CMD** (on OSX), then **click, drag and drop the preset**. This will swap both presets.

## Preset file format

Presets and Preset banks are stored in a human readable format called XML. If you open a preset file in a text editor, you can see all the stored parameters and their values. You can even edit and resave them, but be aware that all values must be kept in the range of 0 to 1, and we would also only encourage you to do so if you are already familiar with each parameters functionality.

## Preset Import/Export

Single presets, or a whole preset bank can be **loaded and saved, reverted to factory** setting or **im/exported using the clipboard** (single presets only). Click on the **button labeled 'P'** to see the following options:

### Save Preset As

Select this menu entry to **save the currently selected preset to disk**. You will be asked to enter a name, a category and the author's name. The preset will be saved to the User Preset location on disk (See also the File location reference). Be aware that if you have one of the two Lock buttons activated, that the value of Space or DryWet will be saved as if it is unlocked. This is to preserve the original preset setting since enabling the Lock is considered as a temporary override of the true preset value.

## **Save Preset Bank**

This entry saves a **complete bank of 96 presets to disk**. In addition to saving all presets with their individual parameter values and the currently clicked grid position, it saves also the two Lock states – below Space and DryWet – and the current global value of Space and DryWet, which is set to override a specific preset value when Lock is enabled.

## **Copy and Import to/from Clipboard**

The currently selected preset can be temporarily copied to the clipboard, and restored from clipboard to overwrite the current selected preset on the grid. This can be a useful option, when you want to share presets in a forum, or if you want to copy a preset from an external preset bank (opened in a text editor) into the plugin, for example.

## **Show user preset directory**

Selecting this menu entry is a shortcut to find the main preset directory on disk, as listed in the File location section. The directory will open in the Explorer (Windows) or the Finder (OSX).

## **Reset Preset (Bank) to factory default**

This will set the current selected preset, or the whole bank to the factory default values, discarding any edits that have been made in the mean time. When the reset to factory bank is selected, the plugin will first look for a factory file called '**Factory.presetbank**', and if this is not found, it will reset to the internal bank that is stored in the plugin itself (see also the section 'Setting a default bank for plugin startup').

## **Loading presets and preset banks**

The lower section of the Preset menu provides access to all currently available presets on the disk, divided into user/factory and preset/bank selectors. Select one of them to load it. A preset will always load to the current selected preset slot on the grid. A preset bank will replace the whole grid of presets. Preset/bank

files must end with .preset or .presetbank in order to be recognized by Reverbicals file loader.

## **Setting a default bank for plugin startup**

The factory bank file can be modified, so that Reverbical will start up with the same **customized and personalized settings** every time. Just save a bank to disk that you want to have as default bank with the name '**Factory**' within the 'Save Bank As' dialog, then move this saved '**Factory.presetbank**' file from the preset User Bank directory **into the FactoryBank directory**, overwriting the original 'Factory.presetbank' file. Restart the plugin, and you're done. Now your new file should automatically load on every plugin startup.

## **Reverting a modified factory file**

Reverting a factory file back to the standard factory bank can be achieved by **simply deleting the factory file** in the FactoryBank folder, then restarting the plugin. The standard 'Factory.presetbank' file will be rewritten automatically.

# Send or Insert?

Before we start using the plugin, we should think about where to put it within the DAW signal chain, as this has much influence on the sound. There are two options, either as an **Insert**, which means we put the reverb into a normal track in our DAW, so that the **source signal of this track is directly going into the plugin**. Or, we set up a separate **Bus** (also called **Send, Return**) and can **feed individual amounts of every track source into this Send**, so the effect is applied to the mix of signals.

With an Insert, the reverb effect always only applies to one signal source – the one of the track. This may be useful if there is a single instrument that needs a distinct space to be applied, different from others.

The more common option though is to use a Send. In this way, we can reuse one reverb for spatialisation, with independent send amounts for each source, and the resulting space is also not conflicting with other spaces cluttering the mix.

With an Insert, DryWet is used to directly control the amount of effect applied. When used as a Send, DryWet should usually be set to be fixed at 100%, and the amount of effect is instead controlled per channel via the Send amount on the DAW mixer.

That said, this is only a brief introduction to lay out the options, and your setup may vary or you have even several reverbs connected to each other.

# Reverb Parameters

Before going into the parameter details, we talk about parameter concepts and Automation. Skip over to the individual parameter subchapters if you are looking for a specific parameter.

## Parameter Keyboard Shortcuts

**CTRL + Click** (WIN) or **CMD + Click** (OSX): Reset to default value

**ALT + Click + MoveMouse**: Finetune value

**Double-Click**: Enter value with keyboard

**SHIFT + MouseOver**: Apply multiple Slider values

## Editing and preserving preset parameters

Whenever you turn a knob or move a slider, the parameter takes this value. This is self evident so far, but what happens with this value when you move to another preset, and then come back to this preset?

The common behaviour in many plugins today is, that they 'forget' the edited value, and **switch back to its default or factory setting**, as long as the preset is not explicitly saved. This is also the default behaviour in Reverbical, but with its preset grid it is offering much wider opportunities to edit and switch between presets, so that you may rather want that **all edits that you make are always remembered**. To enable this behaviour, click on the leftmost button in the row.



When the button **shows a red circle**, every parameter edit will be applied so that is remembered when switching presets back and forth. If the button is switched off, the preset values will revert to their last saved state when the preset is left.

## Automation

All parameters shown as **rotary dials or sliders** can be automated.

The **Grid Position** can also be automated, but only for playback or in Morph mode. This means that in normal operation, the grid position does not record automation when moved in the UI, but values can be manually drawn into the automation lane of the DAW. This prevents sending double information to the host when a preset is switched – since both a) all updated parameters would be recorded, and b) the grid position change too, which itself is resulting in updating all parameters. To override this behaviour and to enforce recording automation, the preferences option 'RecordGridAutomation' can be set (see Preferences section).

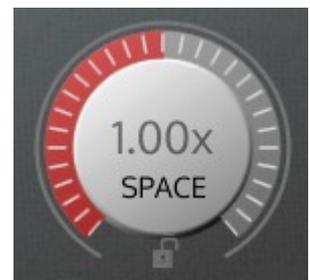
Among the buttons, **Freeze** and **Morph** are the only automatable ones.

## Parameters in Grid View

### Space

The space parameter is a multidimensional parameter and an overall factor of the **perceived size and extension** of the given preset. Think of it in terms of the expanding universe. With a low value, we are at the very early stages of expansion. At high values, the space is huge and expanded in every aspect.

As background information, Space is internally modifying a set of size-related parameters, like EarlySize, Predelay and others, so that shrinking or expanding is possible without losing the overall character of the room.



## DryWet

DryWet controls the **mix between the dry input signal, and the wet effected reverb signal**. With DryWet, the overall intensity of the reverb effect can be set, and it also affects the **perceived distance** to the sound source. With high DryWet values, only little of the direct signal is coming through, and our perception system uses the amount of direct signal as an indicator how far away we are from the sound source.

This applies directly when Reverbical is used as an insert (see 'Send or Insert?' section). When used as a Send, the DryWet value usually should stay fixed at 100%, and the amount of Wetness is controlled via the Send amount on the DAW mixer.



## Lock

With the Lock buttons, the current value of either Space or DryWet can be kept fixed, regardless if the preset is switched. If you want the presets to all sound more **enlarged by the same factor**, activate the Space Lock button, and increase the Space value. In the same way, if you want to **keep your mix balance** between Dry and Wet signal **fixed across the presets**, activate the Lock, and the individual preset values will not be considered, as long as Lock is on. As a general rule in Lock mode, **no preset value is overwritten**, only temporarily overridden. The parameter is not automatable, but is saved within a preset bank.

If you save a preset, it will be saved with the original preset value, so the currently locked value would be ignored.



## Freeze

When some amount of signal has already passed into the reverb network, and freeze is activated, the network will shut down its absorptions and its



inputs, and just **continue to reproduce the recirculating sound** as it is. It's the perfect button for testing out how it sounds instead of reading a description about it in a manual.

The Freeze parameter is automatable, but is not saved within a preset bank, as its sound depends mainly on which signal was on the input when the button was pressed.

## Morph

In Morph mode, the position on the preset grid – the small grey dot – seamlessly **mixes the parameters of the neighbouring four preset values**. The nearer the dot is to the center of a preset, the more similar it is to this preset. In this way, any in-between transition between up to four different presets is possible.



With Morph mode activated, the grid position (X and Y values) can be recorded into the hosts automation.

If you want to change the duration how long it takes for all internal delays to morph to the value corresponding to the selected grid position, please refer to 'MorphDelayInterpolationTimeMilliSec' in the Preferences section below. The default value is 20 milliseconds.

## Reverbical Logo

Click on the Reverbical Logo to go to the about and credits screen. Here it is also possible to activate the plugin using a keyfile, or to send an email to the support team.



## Parameters in Tweak View

Tweak view is an extension of Grid view, so the parameters Space and Drywet, Lock, Freeze and the button row have been covered already in the GridView section.



## Early and Late Reverb sections

The reverb engine is processing sound in two sections: Early Reflections, and Late Reflections. In the UI, the section parameters are grouped, and a third main control section is available for general parameters.

### Early Reflection Parameters



#### Lowpass

Lowpass controls the damping frequency of the early reflection lowpass filter. Higher settings result in a brighter early reflection signal, corresponding to a room with less absorbing wall materials.

#### Diffuse

Diffuse controls the spreading amount of the early reflections, leading to a more random, diffuse, and less directional perception. Looking at real rooms and their physics, we know that reflections can be either specular – with a one to one correspondence between the incident angle and the reflected angle – or they can be diffuse – where the incident sound wave is reflected back in many directions.

With more rough surface materials, the diffusion is higher, resulting in an overall more distributed and random mixture of reflections in the room.

Another interpretation of this parameter is that the diffusion of sound waves is also higher with more objects in the room, since the different reflection path lengths add up to a more complex pattern at the listener position.

## Size

The early reflection room size. With larger rooms, reflected sound waves take longer to travel, and arrive later at the listeners ear. These delay relationships form the basis on how we perceive a room's dimensions, small or large.

## LateFeed

LateFeed controls how much of the output of the early reflection section is routed into the late reflection input, in addition to the input signal. Higher values can have a thickening effect, since more reflections reach the late reflection section. As a hint, less is more, since the late reflections may already be dense enough.

## Early Colour

This set of parameters control the colour and frequency shape of the early reflections. Techn-



Early Colour					
0.61	SRCPOSX	0.51	RCVPOSX		
0.48	SRCPOSY	0.65	RCVPOSY		
0.31	SRCPOSZ	0.36	RCVPOSZ		

ically, imaginary source and receiver (ie. listener) positions – accessible with the X, Y and Z position sliders – are the coordinate points in a room simulation model, which is used to derive anchor values that feed an efficient early reflection network structure.

For illustration purposes it can be helpful to listen to the early reflections in isolation, by setting EarlyLateMix to 0%, finding out how the relation of the coordinates is affecting the sound. In practice though, with EarlyLateMix mix larger than 0%, this is not perceived seperately anymore, but fuses to a whole spatial impression together with the late reflections.

## Late Reflection Parameters



### Decay

Decay sets the time until the reverb tail has decayed below a certain amplitude level. The absolute time may be affected by other parameters, for example the absorption filter settings.

### Hipass

Sets the corner frequency below which bass frequencies are damped.

### ModAmt

The amount of delay length modulation, which is applied to the first four late reflection delays. This can make the room sound more vivid and can also affect brightness, but should be used with caution on tonal instruments, due to its pitch shifting side effects.

### ModFrq

The frequency of delay length modulation, which is applied to the first four late reflection delays.

## Absorption Delays and Filters

With this section, **deep control** to the inner workings of the late reflection network is available, so that each preset can be made sound individually distinctive and characterful.



Late Absorption Delays			
7.2kHz	FILTER 01	53ms	DELAY 01
12.5kHz	FILTER 02	67ms	DELAY 02
12.5kHz	FILTER 03	78ms	DELAY 03
20.3kHz	FILTER 04	89ms	DELAY 04

In a natural room environment excited with sound, each wall results in reflections of the original sound, that gets reflected over and over on the other walls, to finally add up to a whole dense sum at the listeners ears. With each reflection, the sound is **filtered in a very specific way**, depending on the wall characteristics. Soft material like carpet for example will lose about 10 dB at 1 kHz, while hard material like glass reflects sounds with just 1 dB of attenuation in this frequency range.

Now, **each of the 16 delay lines** in Reverbical represents such a reflection path within a room. The filter value affects, **how much will be absorbed per reflection**, and the delay value sets its **path delay**, resulting in a complex and characteristic overall frequency response.

Holding the **SHIFT key** while moving the mouse over the slider allows to quickly **draw values**.

Keep in mind that **only the first four delay lines are modulated**. So make sure these are not entirely dampened, if you want any modulation to have an effect.

## Main controls



### PreDelay

PreDelay sets the **delay time between** the input signal and the begin of the early reflections. This is an important parameter to control the **perceived size of the room**, since higher predelays occur in nature when the distance to the walls is larger, as it is in larger rooms.

In the mix, predelay can be a **useful tool** to set the input signal slightly apart from the reverb effect, so that it is not masked by the reflections.

Also, predelay can be just **used in a creative way** to apply a distinct delay before the effect is dropping in.

### LatePreDelay

This parameter puts an **additional delay time between** the begin of the early and the late reflections, to further enhance perceived size and distance, and for more creative effects. The late predelay is always **adding up to an already set PreDelay** value, so that the relation between early and late part is solely controllable with the LatePreDelay parameter, without affecting the main PreDelay.

## EarlyLateMix

Both the output of early and of the late reflection sections is summed up before it is routed to the main output. This parameter controls the mix amount between the two sections. A low value sets the focus on the early reflections, which results in low perceived distances to the source signal and a low envelopment perception, and vice versa.

## Stereo

Controls the stereo perception and the wideness of the image, both for early and late reflections.

## DryGain

DryGain controls the level of the input signal. This level is applied BEFORE the main DryWet parameter, so that an individual proportion between Dry and Wet gain can be set.

## WetGain

WetGain controls the level of the effect signal. This level is applied BEFORE the main DryWet parameter, so that an individual proportion between Dry and Wet gain can be set.

## Shimmer

Shimmer enriches reverb tails with octave harmonics, which adds up to a beautiful finish and shimmering glance inside the space. The effect can go from subtle high-frequency enhancements to drastic choral-like harmonizing sounds.

Shimmer works best with **clean or harmonic** signals (Synth pads, clean E-Guitars, etc.). Since Shimmer is a feedbacking signal, it is good advise to watch your input/output levels, to **avoid signal distortion**. The **LatePredelay** control can be used to control the quickness of the effect response.

# Preferences

Reverbical stores information about the state of the plugin in a preferences file (see also section File locations). The preferences file allows to, for example, remember the view mode in which the plugin was last used, to open up the next time again in this mode. While most settings can be accessed through controls within the plugin (eg. the preferences menu), the values can also be manually edited.

Here is a reference to the available values. If a value does not show up in your preference file, this setting has not yet been used or clicked within the plugin, so just use it once from within the UI, and it will show up.

## Preferences entry

## Possible values

RememberParameterEdits	[0, 1]
RecordGridAutomation	[0, 1]
DisplayHelpText	[0, 1]
PluginView	[Grid, Tweak, Classic]
ViewSize	[1.0 – 2.0]
UiTheme	[Graphite, StoneTemple, Vector, Arctic, Egypt]
DisplayAllPresetNames	[0, 1, 2, 3, 4]
0:	Display Preset Names Off
1:	Display Preset Names In White
2:	Display Preset Names Coloured
3:	Display Preset Names White, Coloured Background
4:	Display Preset Names Off, Coloured Background
MorphDelayInterpolationTimeMilliSec	[0 – 5000]
MidiMapController (Experimental)	[Launchpad, Push, MpkMini]

# File locations

As a reference, these are the locations of **plugin files, presets** and **preferences** on the harddrive:

## Factory Presets and User Presets

Shortcut to the preset directory:

In the plugin, click on the P button → Show user preset directory

Presets are sorted into the four subfolders

- UserPreset
- UserBank
- FactoryPreset
- FactoryBank

which can be found here:

**OSX:**

~/Library/Audio/Presets/RealtimeOnly/Reverbical

**WIN:**

C:\Users\[username]\AppData\Roaming\  
RealtimeOnly\Reverbical\Presets

## Preferences file

**OSX:**

~/Library/Application Support/RealtimeOnly/reverbical.settings

**WIN:**

C:\Users\[username]\AppData\Roaming\  
RealtimeOnly\reverbical.settings

## **Plugin files (VST)**

**OSX:**

/Library/Audio/Plug-Ins/VST

**WIN:**

The location that was specified during installation

## **Plugin files (AudioUnit)**

**OSX:**

/Library/Audio/Plug-Ins/Components

**WIN:**

AudioUnit is not available on Windows

## **Plugin files (AAX)**

**OSX:**

/Library/Application Support/Avid/Audio/Plug-Ins

**WIN (32-bit plug-ins):**

C:\Program Files (x86)\Common Files\Avid\Audio\Plug-Ins

**WIN (64-bit plug-ins):**

C:\Program Files\Common Files\Avid\Audio\Plug-Ins