



d16 group
AUDIO SOFTWARE

TORAVERB2

SPACE MODULATED REVERB



User Manual

Requirements

Software and hardware requirements of the product

Windows PC

OS version	Win 7, Win 8, Win 10
CPU	2.5 Ghz with SSE (Multicore system 2.8 Ghz recommended)
RAM	4 GB (8 GB Recommended)
Software	VST / AAX compatible host application (32bit or 64bit)

Mac OS X

OS version	OS X 10.7 or newer
CPU	Intel based 2.5 Ghz (2.8 Ghz recommended)
RAM	4 GB (8 GB Recommended)
Software	AU / VST / AAX compatible host application (32bit or 64bit)

Overview

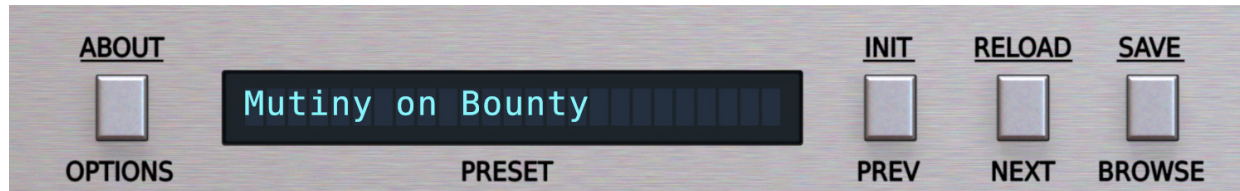
Toraverb 2 is a high quality studio reverb effect unit with a modulated tail.



Toraverb graphical interface

There are two sections to the user interface:

- **Configuration and preset management**



Configuration and preset selection section

- **Signal processing control** section contains all the remaining controls

Signal Flow

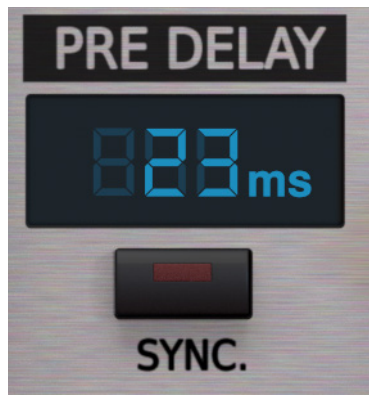
This chapter describes the signal path through **Toraverb 2**. It explains the basic components of the unit and its control parameters.

Basic modules

Internally **Toraverb 2** consists of a few basic components. These correspond to the sections on the graphical user interface.

Pre-delay

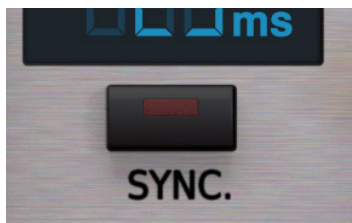
Controls the delay between **Dry** and **Reverberated** signals



Pre-delay section

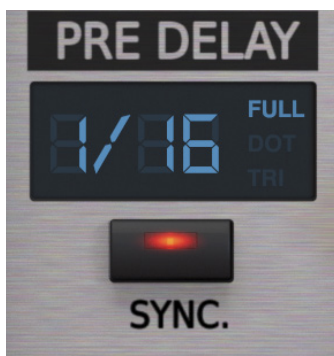
By default **Pre-delay** is expressed in *milliseconds* and controlled in a range of **0** to **500 [ms]** (when **Sync** mode is disabled). The value can be adjusted by dragging the mouse pointer up or down above the digits representing the consecutive decimal positions on the display.

Sync. toggle button:



Sync. button

This activates / deactivates the synchronization of the **Pre-delay** with the host application tempo. When enabled, the delay is represented as a **Rhythmic value** (in tempo-dependent units) consisting of **Note value** and **Rhythmic modifier**. It should be noted that when this mode is active the **Pre-delay** value is controlled in a slightly different manner and the look of the **Pre-delay** display changes.



Pre-delay section while Sync. is active

Note values

The **Pre-delay's Note value** can be adjusted by dragging the mouse pointer up or down while selecting it.

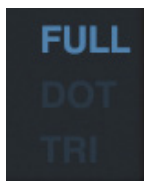


Pre-delay's Note value

We can choose one of following values; 1 Bar, 1/2, 1/4, 1/8, 1/16, 1/32 and 1/64.

Rhythmic modifiers

Clicking one of available **Rhythmic modifiers**, selects it;



Pre-delay's Rhythmic modifier

There are 3 values to choose from:

- **Full** – Effective delay value is equal to set **Note value**.
- **Tri** - Effective delay value is equal to **2/3rds** the duration of set **Note value**.
- **Dot** - Effective delay value is equal to **3/2nds** the duration of set **Note value**.

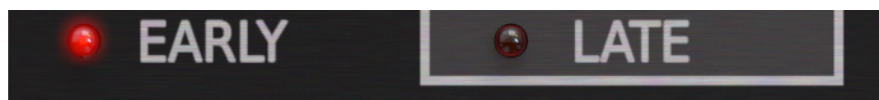
Early / Late reflections section

This section controls the **Early** and **Late** reflections of reverb.



Early / Late section

Switching between **Early** and **Late** tabs gives an access to parameters controlling **Early** and **Late reflections** respectively.



Early and Late tabs

Early reflections tab

This tab controls the **early reflections** of the reverb.



Section controlling Early reflections' tail

The following parameters can be selected:

- **Size** - Size of the room.
- **Bass cut** - Controls the properties of the reflecting surface with respect to bass frequencies. Bass frequencies are cut below the value selected. The range is from **0Hz** to **22kHz**.
- **Crosstalk** - Between the left and right channel delay lines
- **Attenuation** - This parameter changes the characteristic of the reflecting surface - it's damping properties.
- **Diffusion** - - Is the reflecting surface's ability to spread the echoes out. If this parameter is set to **Sharp**, the reflecting surface is perfectly flat and does not distort reflected waves. If this value is set to **Smooth**, the reflecting surface distorts the waves and spreads them out into different directions.

- **Modulation** - This controls the Early reflections' delay lines modulation

Parameters to the right on the tab, ones labeled with orange color, controls single-band parametric EQ, which processes **Early Reflections'** output:



Parametric EQ section

- **Type** – There are three different types of EQ filter available:



- **Gain** - Gain value for a band in range **-24 dB** to **+24 dB**.
- **Freq.** – EQ Frequency.
- **Bandw.** – Band width in range **0.5** to **4** octaves.

Late reflections tab

This tab controls the **Late reflections** of the reverb.



Section controlling Late reflections' tail

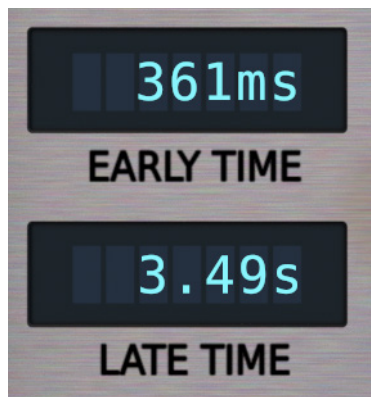
The following parameters can be selected:

- **Size** - Size of the room.
- **Bass cut** - controls the properties of the reflecting surface with respect to bass frequencies. Bass frequencies are cut below the value selected. The range is from 0Hz to 22kHz.
- **Feedback** - Controls how much of wave energy is consumed every reflection. The less value the more energy consumes every reflection, that means the feedback is weaker then.
- **Attenuation** - This parameter changes the characteristic of the reflecting surface - it's damping properties.
- **Diffusion** - Is the reflecting surface's ability to spread the echos out. If this parameter is set to **Sharp**, the reflecting surface is perfectly flat and does not distort reflected waves. If this value is set to **Smooth**, the reflecting surface distorts the waves and spreads them out into different directions.
- **Modulation** - This controls the **late reflections** delay lines modulation

Parameters to the right on the tab, labeled in orange, control the single-band parametric **EQ** which alter the **Late Reflections**. The parameters for the EQ are the same as the parameters in the **Early Reflections** tab.

Early and Late decay times

The **Early time** and **Late time** display shows the decay times of **Early** and **Late** reflections respectively. This is purely for informational purpose.



Early time and Late decay time displays

Early / Late reflections mixer



Early / Late reflections mixer

This controls the mix of the signals coming from the **Early** and **Late Reflections** modules.

The **Gain** knobs set the level for each signal:



Early and Late output levels

The balance knobs in the upper row control the *Left / Right* (panning) or *Mid / Side* balance of the signal leaving the **Early** and **Late** sections.

The **MS Mode** button selects between *Left / Right* or *Mid / Side* mode:



MS Mode toggle button

Master section

This is where global reverb parameters are set:



Master section

- **FX** - Crossfade between **Dry** and reverberated **Wet** signal.

- **Padlock**

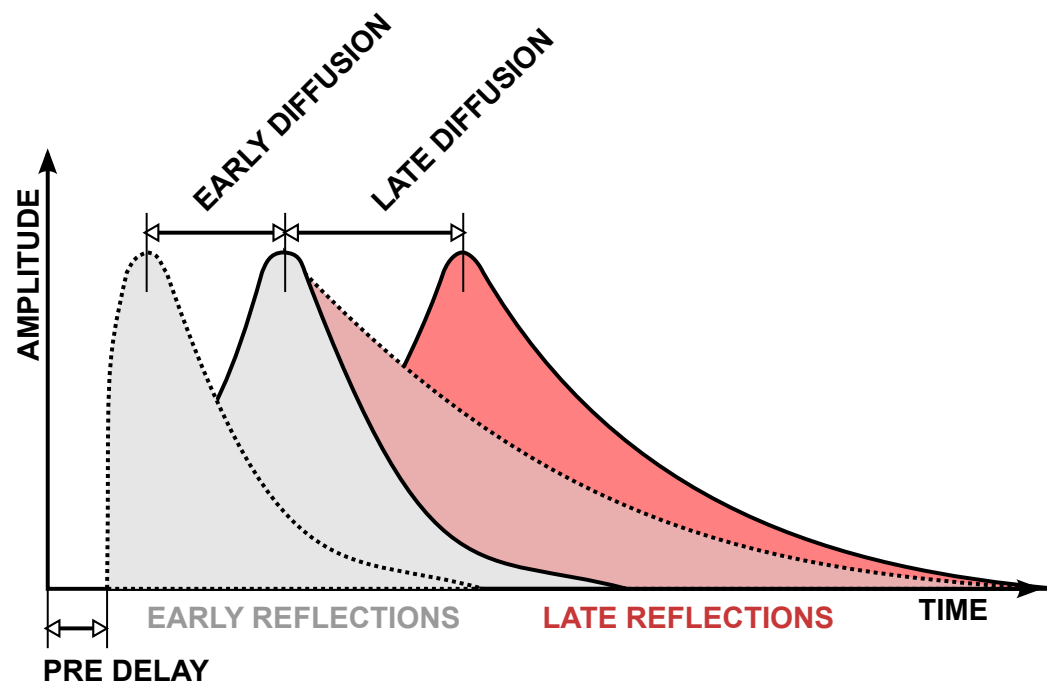


allows the Dry/Wet balance to be locked so that it does not change when loading presets.

- **FX Curve** – Transition characteristics between **Dry** and **Wet** for FX knob
- **Ducking** – Controls the compressor which suppresses the **Wet** signal proportionally to the level of the **Dry** signal. This knob controls the strength of the effect.
- **Att./Rel.** – Adjusts the **Ducking Attack** and **Release** times starting from
 - **2ms** of **attack** and **50ms** of **release** for minimum value up to
 - **16ms** of **attack** and **400ms** of **release** for maximum value.

Reverberation characteristics

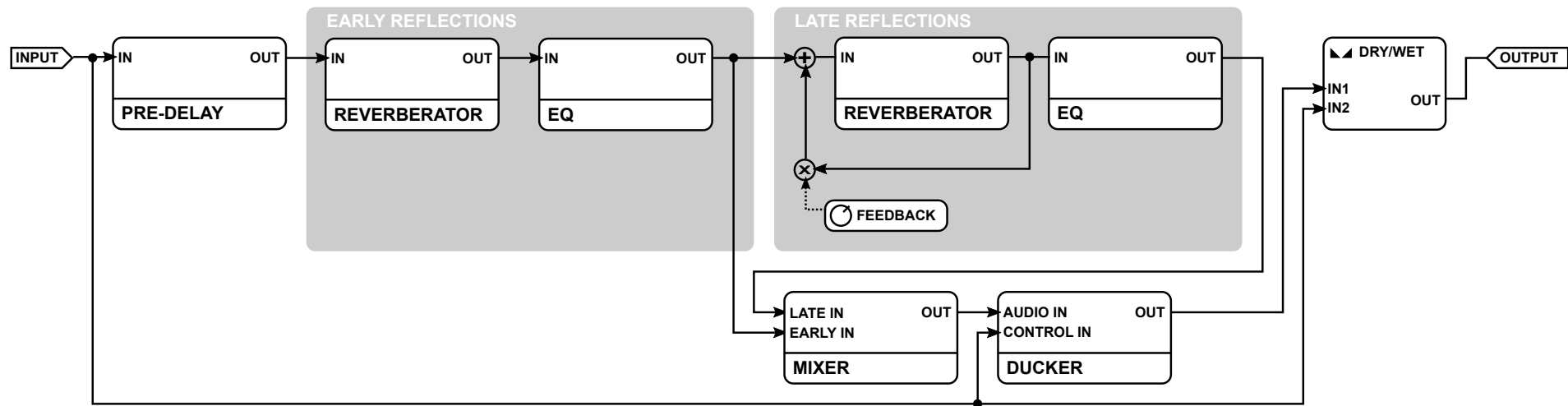
The image below depicts the general characteristics of the reverberation tail within **Toraverb 2**:



Reverberation characteristics

The path of the signal's flow

The picture below shows the signal flow through the plug-in



Signal flow through the plug-in

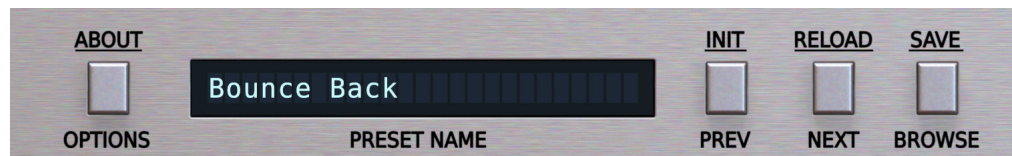
Preset Management

Preset Storage

Presets, both those from the **Factory** content, and **User** ones, are stored as files in proper locations on a disc. Each time the plug-in instance is loaded to the project, these locations are scanned and presets found there are consolidated into one linear structure (list) in the **Preset Browser**.

Browsing Presets

Presets Configuration and Management section enables quick navigation and browsing the presets structure:

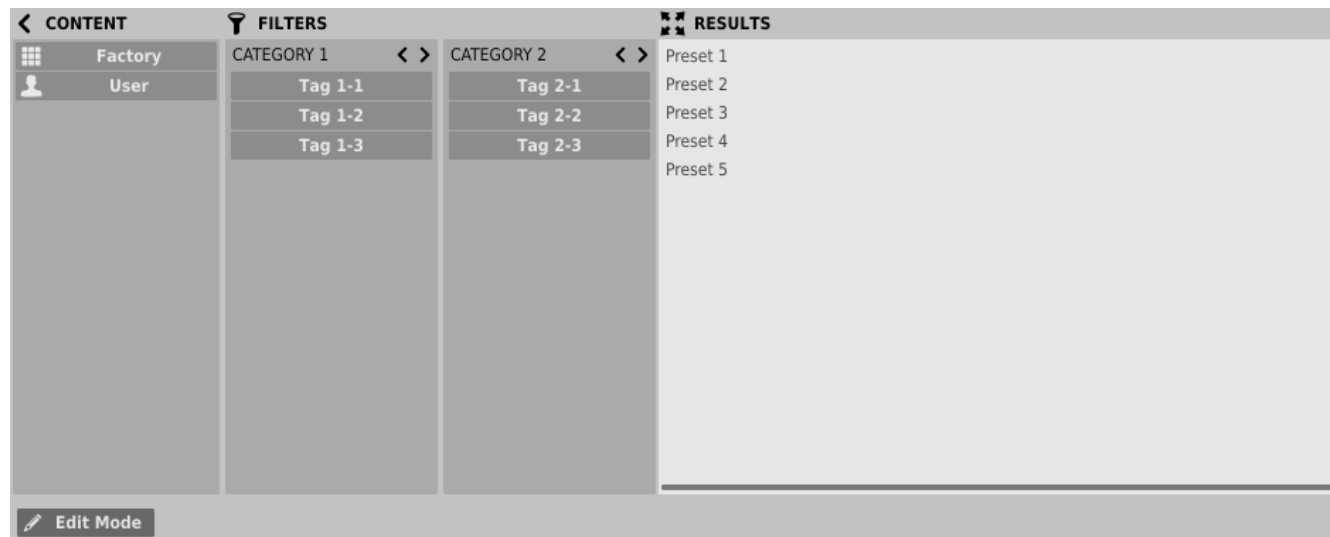


Presets Configuration and Management Section

- **PRESET NAME** – Displays the name of the currently loaded preset.
- **PREV / NEXT** – Buttons that allow for linear browsing of presets list (depending on currently set filters – see sections below).
- **INIT** – Win (**Ctrl**) + **PREV**), Mac (**Cmd ⌘**) + **PREV**) – Restores initial settings of plug-in parameters.
- **RELOAD** – Win (**Ctrl**) + **NEXT**), Mac (**Cmd ⌘**) + **NEXT**) – Reloads a current preset.

- **SAVE** – Win (**Ctrl**) + **BROWSE** , Mac (**Cmd**) + **BROWSE**) – Saves current parameters as a new preset or allows for overwriting of the existing one (see sections below).
- **BROWSE** – Expands the **Preset Browser** panel at the bottom of GUI section.

The **Preset Browser** looks as follows:



Preset Browser

One can see three main sections:

- **Content** – Sources from which presets can be read.
- **Filters** – Configuration of presets **Filters** (non-active by default).
- **Results** – List of presets from resources that meet criteria set by **Filters**.

Resources

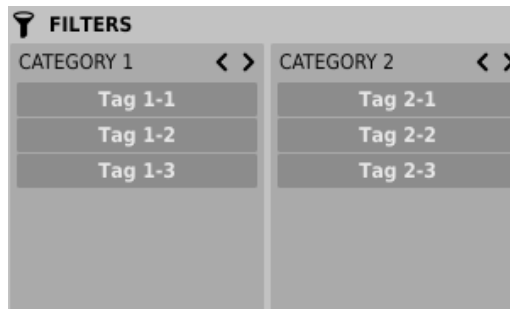
In this section you can choose a resource/resources in which you want to browse presets. There are two resources to choose from:

- **Factory** – Delivered together with the plug-in, cannot be modified (read-only).
- **User** – Created by the user during using the plug-in and can be freely modified, shared with other users etc.

Choosing any of them will cause narrowing the results to the presets from one resource.

Preset Filters

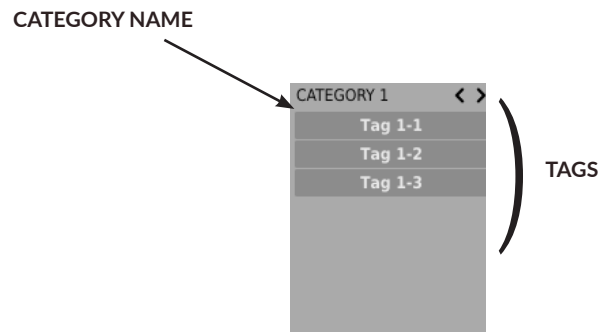
The plug-in enables classification of presets with the use of **Categories** and **Tags** system, whose aim is to facilitate the process of browsing the content by filtering.



Preset Browser Categories Filters

Categories and Tags

Each preset is described by a few common **Categories**. Within each of them there may be one or more **Tags** from a particular set.



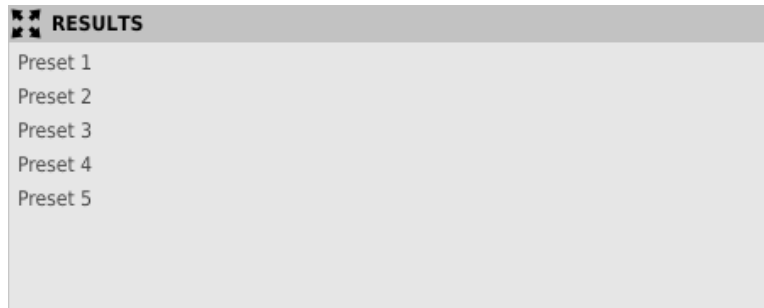
A single category in a filter with a description of its elements

Presets from **Factory** resource were described by **Categories** and **Tags** during the stage of its creation. **Categories** and **Tags** are chosen in such a way so as to describe the content in the best possible way, taking into account the plug-in purpose.

Editing of **Categories** and **Tags** in case of **Factory** content is not possible – it is blocked. **User** presets may be described only with **Categories** and **Tags** from factory content or, alternatively, the users may define their additional **Tags** in order to describe their own presets.

Results

This is a list of presets from chosen resources that meet the filtering criteria. The basic function of this section is browsing and loading presets (in **Browsing Mode** – by default).



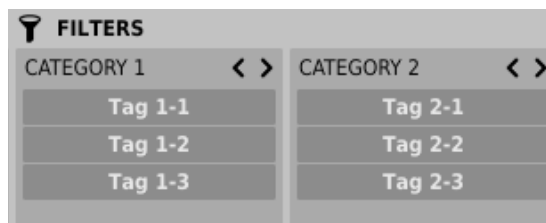
Results Section in Preset Browser

Click any name to choose and load the preset.

Double-click the name to enter preset name edit mode. ▣

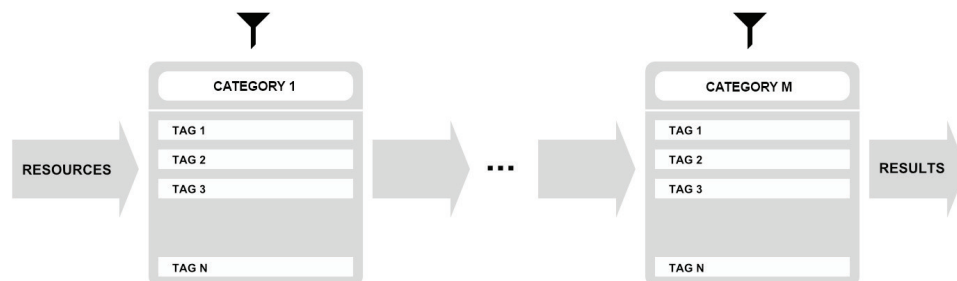
Presets Filtering

Filters section columns represent particular **Categories** – **Category filters**, while rows in each of these columns represent **Tags** available within each **Category**.



Preset Browser Categories Filters

Filtering results have a form of a cascade (columns), from left to right. This means that all presets available in the selected resources are filtered as to presence of **Tags** from the first **Category** (first column from the left), next a set of presets being a result of filtering by the first **Category** is filtered by the **Category** represented by the second column etc., until it is filtered with the last active **Category Filter**.



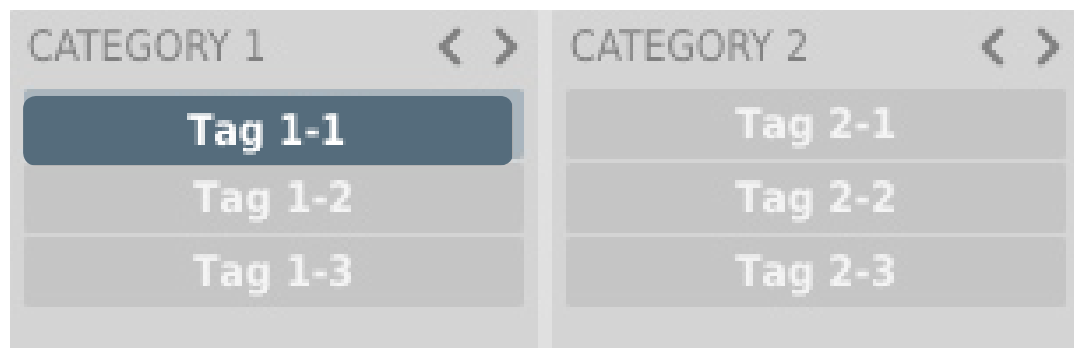
Presets Filtering with the use of Categories Tags

The result of a cascade filtering process (presets that meet the criteria of each filter) is listed below, in the **Results** section.

Basic Actions on Filters

Tag buttons in **Filters** work in toggle mode. Click to activate/deactivate **Tag** (Grey color means that the **Tag** is inactive, teal blue means that the **Tag** is active). If at least one **Tag** in a column (**Category**) is active, then the **Filter** also becomes active.

For example, if the first column represents **Category 1** **Category** with a set of the following **Tags**: {*Tag 1-1*, *Tag 1-2*, *Tag 1-3*}, clicking the **Tag 1-1** **Tag** will activate the **Category Filter** **Category 1** and narrow down a list of presets to the items in case of which the *Tag 1-1* **Tag** appeared in the **Category 1** **Category**.



Enabling Tag 1-1 tag in Category 1 Category

If you click the *Tag 1-1* item again, you will deactivate the **Filter**, so all presets from the content will be displayed again.

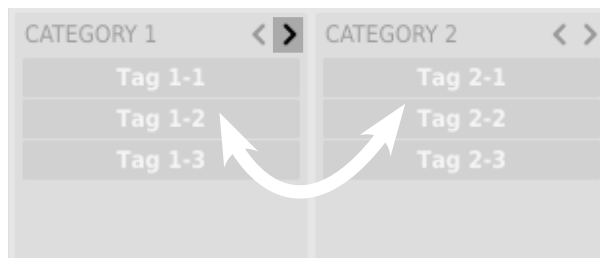
Reordering Categories

To the right of the **Category Filter** header there are buttons with arrow icons:



Filter reordering

They enable moving the **Category** to the left or right in a cascade. Clicking the right arrow replaces the current **Category** with the **Category** on the right. Clicking the left arrow replaces the current **Category** with the **Category** on the left.



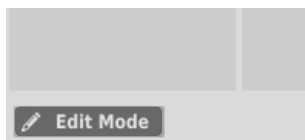
Presets Filtering with the Use of Categories Tags

Clicking the left arrow for the **Category** located on the far left does not change anything. The same is true for the **Category** located far to the right and right arrow (as the column has no predecessor/successor with which it could be replaced).

Presets Editing – Edit Mode

An active **Edit Mode** in **Preset Browser** changes its function (enables the change of presets names, edition of **Categories** or **Tags**, deletion of presets as well as their export or import. One should bear in mind, however, that these operations are not allowed in case of **Factory** presets, but only for the **User** presets.

Edit Mode can be activated with a button located in the bottom left-hand corner (click again to deactivate):



Edit mode button

In this mode **Preset Browser** slightly changes its appearance (not only function):



Preset Browser in Edit mode

1. The **Filters** section changes into the **Edit Tags** section, whose appearance is almost identical, but the function is different. The section is used not as a filter, but as an editor of **Categories** and **Tags** of chosen presets.
2. The role of the **Results** section is to choose presets for edition (edition is possible only for user presets).
3. At the bottom of the screen there are **Delete**, **Export** and **Import** buttons used respectively to delete or export selected **User** presets as well as to import a set of presets to the **User** resources.
4. The choice of the resource in the **Content** section does not work, as edition is possible only for user presets.

Selection of Presets for Editing

You can edit both single preset and a set of presets. Using the functionality of the **Results** section, you can choose a preset or a set of presets in the following way:

- **Click the preset** – Choose the preset from the list,
- **Win** (**Ctrl**) + **Click the preset**), **Mac** (**Cmd**) + **Click the preset**) – Add another preset to an already chosen preset or a set of presets,
- **Shift** + **Click the preset** – Select a part of a list of presets from the last chosen preset to the item clicked together with **Shift** key.

Tags Edition

Change of Tags status in Presets

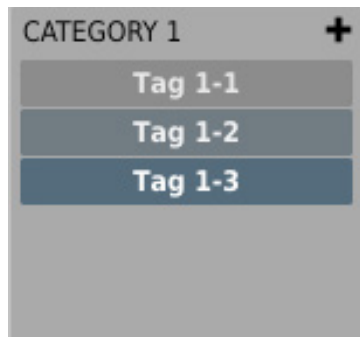
Tag buttons work in toggle mode, similarly as in case of filtering. Clicking them you can respectively set **Tag** or erase them from chosen presets.

User	Tag 1-1	Tag 2-1
	Tag 1-2	Tag 2-2
	Tag 1-3	Tag 2-3

Filters' tags

Choosing a greater number of presets, in which the tags were already defined, enables their re-edition. Consequently; in case when a specific **Tag** appeared in all selected presets, it will be marked with an intensive teal blue color.

When a specific **Tag** is set only in a part of chosen presets, then it is codified with a pale teal blue. The **Tag** that does not appear in any of the presets is marked with grey colour:



Notification about Tags Status in Chosen Presets

The change of the **Tag** status for one or more chosen presets sets or erases this **Tag** in all these presets. The status change is signaled with an **Asterisk** located to the left of the **Tag** buttons .



Notification about Changes in Tags Status in Chosen Presets

Elements/**Tag** buttons highlighted with pale teal blue colour (meaning different values of a particular **Tag** buttons for the highlighted presets) work in a three-state system; erasing the **Tag** (grey colour), setting of the **Tag** (intensive teal blue colour) or no changes (pale teal blue) for all selected items.

Changes introduced during edition do not have to be confirmed, they are signaled by asterisks located by **Tag** changed for particular presets

Presets Names Editing

Double-click the name of a preset to enter name editing mode.

Deleting Presets

Selection of one or more presets activates **Delete** button at the bottom left corner. It can be used to delete the selected presets.

Presets Export and Import

The use of **Import** or **Export** buttons at the bottom part of the **Preset Browser** enables a proper import of presets package (exported before) or export to the presets package ▣ the presets selected in the **Results** section.

Saving the current settings as Preset

To save plug-in parameters settings as a user preset use the -Win (**Ctrl** + **BROWSE**), Mac (**Cmd** + **BROWSE**) in **Configuration** and **Presets Browsing** section. This action automatically opens the **Preset Browser** with an active **Edit Mode**.



Saving the Settings as Preset

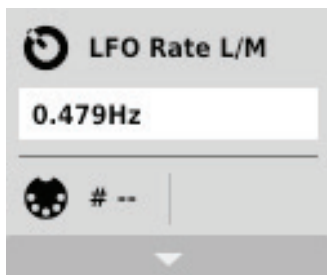
Additionally, at the bottom there will be a textbox into which you should enter a name of a newly created preset, and then confirm it by clicking **Save** or cancel by clicking **Cancel**.

As the **Preset Browser** is in the **Edit Mode** before confirmation of the newly created setting as preset, we can straightaway categorize a particular setting, using functionality of the **Edit tags** section, even just before saving it as **Preset**.

Configuration

Parameter settings

Right-click any plug-in parameter to open the context menu



Closed Context Menu

It allows for:

- Checking the name and current value of a parameter,
- Checking if the parameter is attributed to MIDI CC controller, and if it is – to which number,
- Linking the parameter to MIDI CC controller.

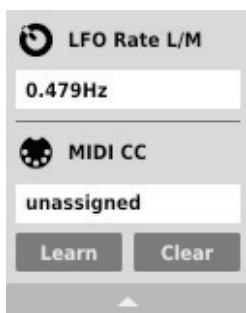
Clicking the arrow in any area of the menu expands it and displays all available options.

Next right-click on the parameter or left-click outside the menu area closes it automatically.

MIDI Learn

MIDI Learn function enables a quick assignment of physical controllers (from MIDI controller) to plug-in parameters. The assignment can be divided into a few steps:

1. Right-click the parameter which you want to attribute to physical MIDI controller in order to expand the context menu.
2. Click arrow at the bottom in order to expand the context menu.



Expanded Context Menu

3. Click the **Learn** button to put the plug-in into a pending state until you move any MIDI CC controller.
4. Click **OK** to save the change or click the **Cancel** button to restore the previous setting.

MIDI Unlink

You can also delete MIDI CC code attributed to plug-in parameter from the context menu:

5. Open the context menu, right-clicking the parameter attributed to a particular MIDI CC
6. Expand the menu, using the arrow at the bottom
7. Click the **Clear** button
8. Confirm with **OK** button

Plug-in's current settings

Current settings are relevant to a specific instance of a plug. They are initialized with the **Default settings**, when the plug-in is loaded (see the next chapter):

At the bottom of UI there is a status bar that enables the change of **Current settings**.



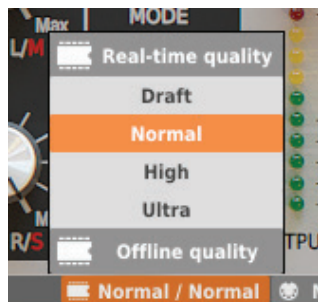
Current Settings in a Status Bar

From left to right there are:

- The setting of **Current processing path quality** for the **Offline** mode and the **Real-time** mode
- Saving/Loading the **MIDI CC Map**

Processing Path Quality

Clicking the item expands the menu that allows to select the **Current quality** of generated sound for **Real-time** or **Offline** modes. In a case of Repeater the quality setting doesn't affect the delay loop, but audio clipper only.

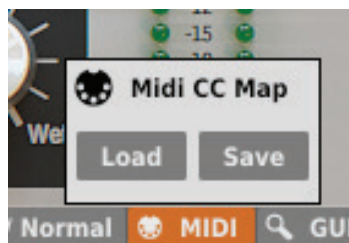


Processing Path Quality Settings

We can choose from four available grades for each mode.

Saving/Loading the MIDI CC Map

This item enables to save current parameters of MIDI CC codes as MIDI Map in a file or to load them.



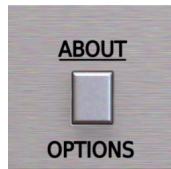
Saving/Loading the MIDI CC Map

Plug-in's default settings

The **Options** panel allows us to change the **Default settings** of the plug-in. Every time the plug-in is loaded in the host application (new instance is created) a **Default settings** are used for initialization of the **Current settings**.

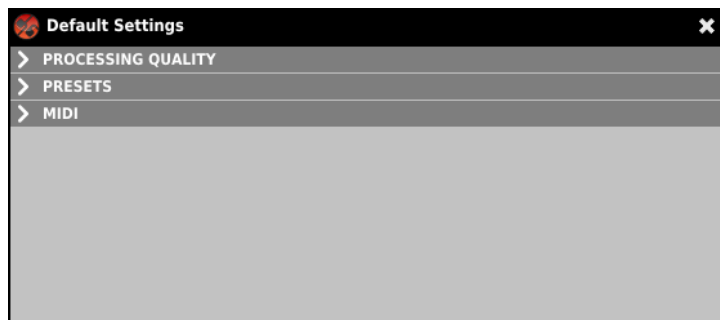
Default settings are stored within a configuration file of the plug-in. This file is updated at the moment of unloading any of active plug-in instances from the host application.

Use the **Options** button on GUI to open the panel:



Options button

The **Options** panel operates as an accordion where you can click a specific section to expand it:

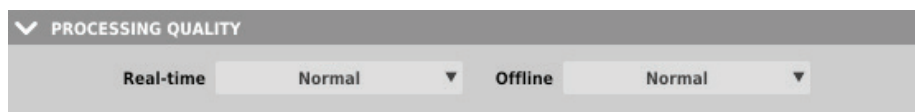


Options Panel

There are 4 sections:

- **Processing Quality** - Default Processing Path Quality
- **Presets** - Presets loading settings
- **MIDI** - Default MIDI CC Map
- **User Interface** - Default UI size

Default Processing Path Quality



Processing Quality Choice Section

In this section you can configure a default quality of the processing path for the **Real-time** mode and the **Offline** mode.

Default MIDI CC Map



Default MIDI Map Choice Section

This section allows for setting of a path to a file with a default **MIDI Map** that was prepared before. Clicking **MIDI CC Map** check box activates load of **MIDI Map** and the possibility of pointing it (**Browse** button).

Default size of UI



Processing Quality Choice Section

In the **User Interface** you can choose a default size of the UI.

Preset loading settings



Displaying confirmation dialog option

If you do a change to any of the plug-in's parameters after you load a preset or started with initial parameter setting, and you'll try to load another preset using **Prev** / **Next** buttons. The plug-in will try prevent against unintentional losing the changes you've made and will show a dialog confirmation window.

This checkbox allows to choose whether this dialog will be shown or not.

Requirements.....	2	Reordering Categories.....	25
Overview	3	Presets Editing – Edit Mode.....	25
Signal Flow	5	Selection of Presets for Editing	27
Basic modules.....	5	Tags Edition	27
Pre-delay.....	5	Change of Tags status in Presets	27
Note values.....	7	Presets Names Editing	29
Rhythmic modifiers	7	Deleting Presets	29
Early / Late reflections section.....	8	Presets Export and Import	29
Early reflections tab	9	Saving the current settings as Preset.....	30
Late reflections tab.....	12	Configuration	31
Early and Late decay times	13	Parameter settings.....	31
Early / Late reflections mixer	14	MIDI Learn.....	32
Master section.....	15	MIDI Unlink.....	33
Reverberation characteristics	17	Plug-in's current settings.....	33
The path of the signal's flow	18	Processing Path Quality.....	34
Preset Management.....	19	Saving/Loading the MIDI CC Map	34
Preset Storage	19	Plug-in's default settings	35
Browsing Presets	19	Default Processing Path Quality.....	36
Resources.....	21	Default MIDI CC Map	36
Preset Filters	21	Default size of UI	37
Categories and Tags.....	22	Preset loading settings	37
Results	22		
Presets Filtering.....	23		
Basic Actions on Filters	24		