



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

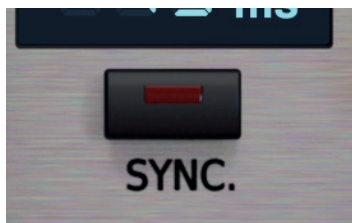
Controls the delay between **Dry** and **Reverberated** signals



Pre-delay section

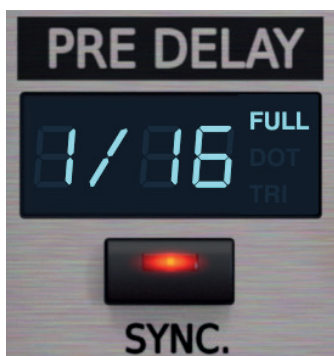
By default **Pre-delay** is expressed in *milliseconds* and controlled in a range of **0** to **500 [ms]** (when **Sync** mode is disabled). The value can be adjusted by dragging the mouse pointer up or down above the digits representing the consecutive decimal positions on the display.

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.

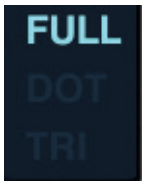


Pre-delay's Note value

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**.

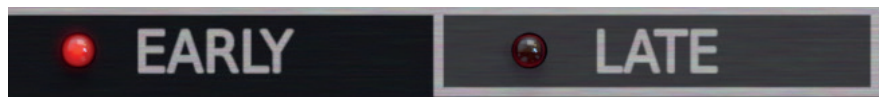
Early / Late reflections section

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.

SIGNAL FLOW • BASIC MODULES

- **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:

-  - *Low-shelf*

-  - *Bell*

-  - *High-shelf*

- **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**

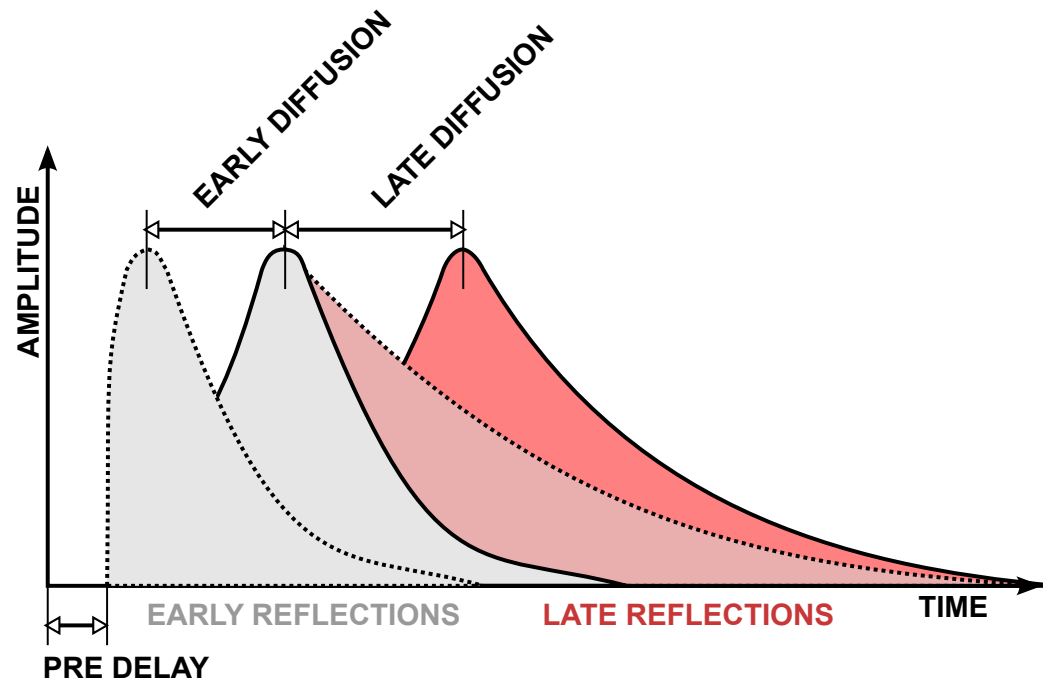


allows the Dry/Wet balance to be locked so that it does not change when loading presets.

- **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

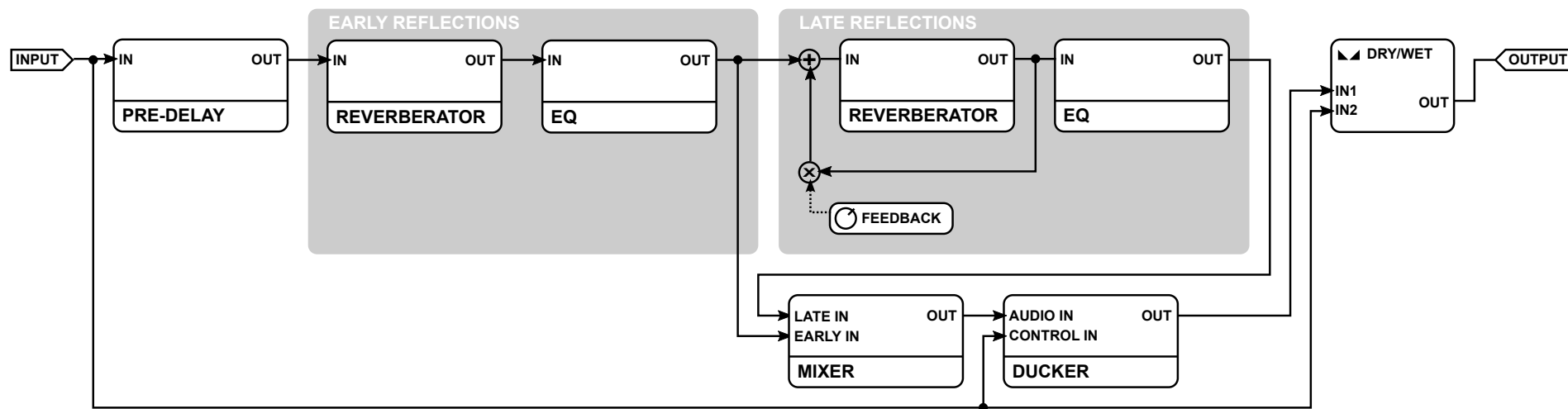
The image below depicts the general characteristics of the reverberation tail within Toraverb 2:



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 in the **Factory** library and those made by the **User** – are stored as files in specific folders on your hard drive. Every time the plugin is loaded, these folders are scanned and the presets they contain are consolidated in a linear structure in the **Preset Browser**.

Browsing Presets

The **Presets configuration and management** section enables easy navigation and browsing of the preset library.



Presets Configuration and Management Section

- **PRESET NAME** – Displays the name of the currently loaded preset.
- **PREV / NEXT** – Step backwards and forwards through the preset list (depending on the currently set filters – see below).
- **INIT** – Win (**Ctrl**) + **PREV**), Mac (**Cmd**) + **PREV**) – Restore all plugin parameters to their initial settings.
- **RELOAD** – Win (**Ctrl**) + **NEXT**), Mac (**Cmd**) + **NEXT**) – Reload the current preset.

- **SAVE** – Win (**Ctrl**) + **BROWSE**), Mac (**Cmd** + **⌘**) + **BROWSE**) – Save the current parameters as a new preset or overwrite the existing one (see below).
- **BROWSE** – Fold the **Preset Browser** panel out from the bottom of GUI.

The **Preset Browser** looks like this:



Preset Browser

One can see three main sections:

- **Content** – The available preset resources.
- **Filters** – View only certain categories or types of presets (inactive by default).
- **Results** – The list of presets that meet the criteria set by the **Filters**.

Content

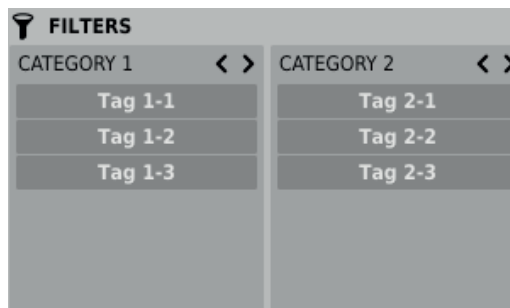
Select preset resources for browsing. There are two resources available:

- **Factory** – The presets that are included with the plugin. **Factory** presets are read-only (ie, they can't be overwritten).
- **User** – Presets created by the user. **User** presets can be freely modified, backed up as files, shared with others, etc.

Selecting a single **Content** resource narrows the filtered preset list down to presets from that resource only.

Preset Filters

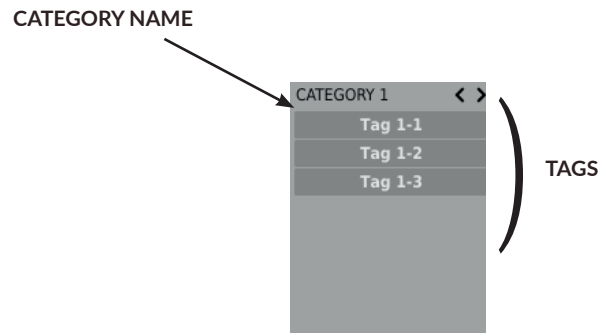
The browser enables classification of presets through the use of **Categories** and **Tags**, in order to facilitate filtering of the **Results** list.



Preset Browser Category Filters

Categories and Tags

Each preset is assigned to one or more of a few common **Categories**. Within each **Category** there may be one or more **Tags**.



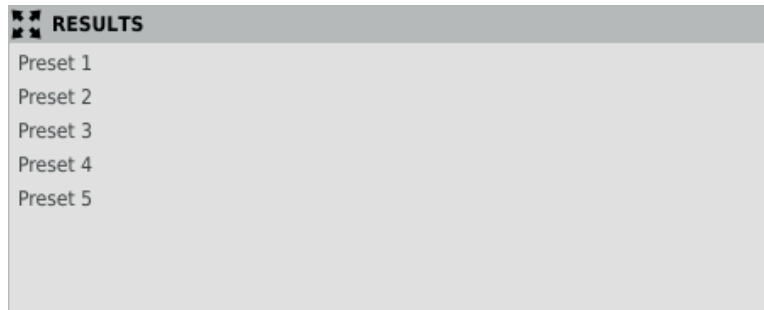
A single Category in a Filter with three Tags

The **Factory** presets come with **Categories** and **Tags** already assigned. These have been chosen to specifically describe the sounds and characteristics of those presets as representatively as possible, taking into account the remit of the plugin.

The **Categories** and **Tags** assigned to the **Factory** presets can't be edited. **User** presets, however, can be given **Categories** and **Tags** from the factory content, and you can also define your own custom **Tags**.

Results

The list of presets from the selected **Content** resources that meet the filtering criteria is displayed in the **Results** section. This is where the actual browsing and loading of presets is done (in the default **Browsing Mode**).



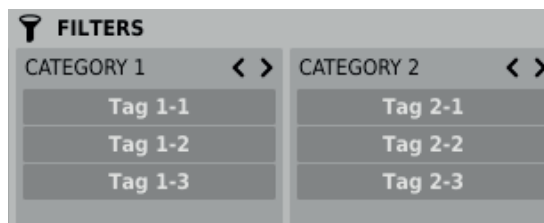
The Results section in the Preset Browser

Click the name of a preset to select and load it.

Double-click a preset to enter preset name edit mode. ▶

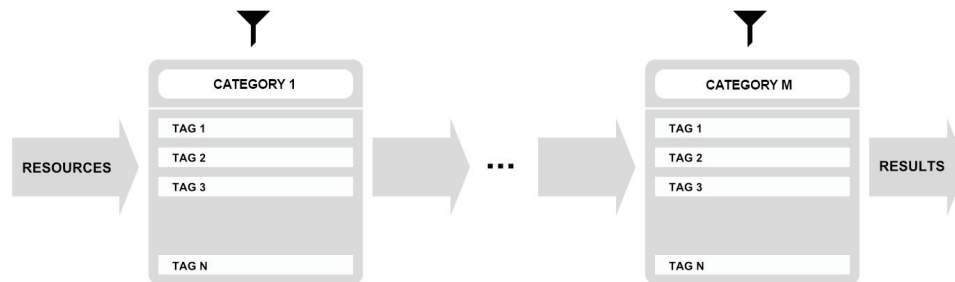
Presets Filtering

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



Preset Browser Category Filters

The **Filters** cascade through the columns, from left to right: all presets in the selected Content resources are filtered according to the **Tags** in the first **Category** (the first column from the left), the remaining presets are then filtered by the **Category** represented by the second column, etc, up to the last active **Category Filter**.



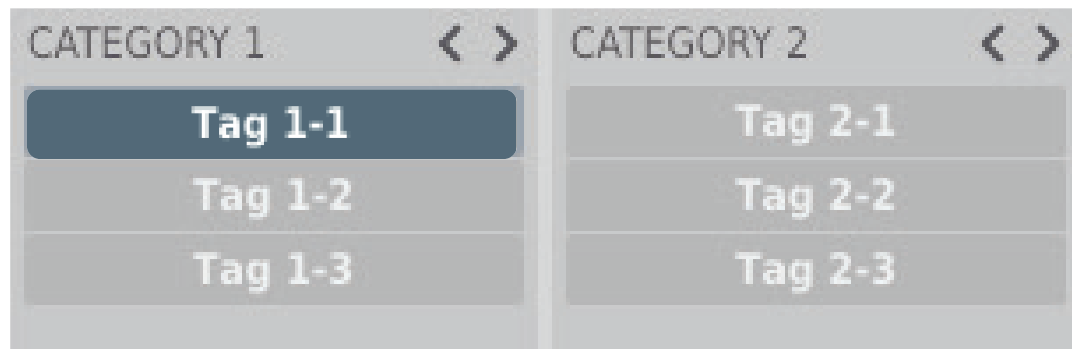
Preset Filtering with Category Tags

The result of this cascaded filtering process – ie, only the presets that meet the criteria of every active filter – is listed below, in the **Results** section.

Basic Actions on Filters

The **Tag** buttons in a **Filter** toggle between active and inactive when clicked: a grey **Tag** is inactive, and a teal blue **Tag** is active. A **Filter** is only active when at least one **Tag** in a column (**Category**) is active.

For example, if the first column in the illustration below represents the *Category 1 Category*, containing the *Tag 1-1*, *Tag 1-2* and *Tag 1-3 Tags*, clicking the *Tag 1-1 Tag* will activate the **Category Filter Category 1**, and narrow the preset list down to only the presets assigned the *Tag 1-1 Tag* in the *Category 1 Category*.



Enabling the 'Tag 1-1' Tag in the 'Category 1' Category

Clicking the *Tag 1-1 Tag* again deactivates the **Filter**, so that all presets from the selected **Content** resources are displayed again.

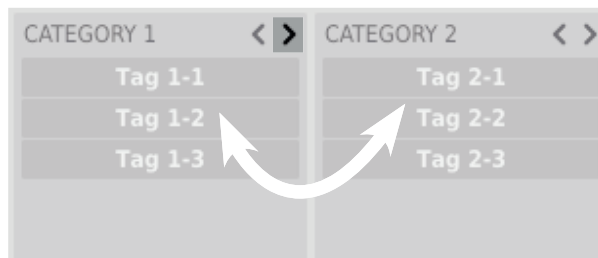
Reordering Categories

To the right of the **Category Filter** header are two arrow buttons:



Filter reordering

These move the **Category** left or right in the cascade. Clicking the right arrow swaps the current **Category** with the **Category** to the right; clicking the left arrow swaps the current **Category** with the **Category** to the left.



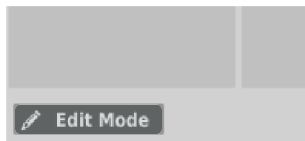
Presets Filtering with the Use of Categories Tags

Clicking the left arrow for the left-most **Category**, or the right arrow for the right-most category, does nothing, as the column has no predecessor/successor with which to swap.

Presets editing – Edit Mode

Activating **Edit Mode** in the **Preset Browser** enables the editing of preset names, **Categories** and **Tags**, as well as the deletion, export and import of presets. Note that these operations are only permitted for **User** presets, not **Factory** presets.

Enter and exit **Edit Mode** using the button in the bottom left-hand corner



The Edit Mode button

In **Edit** mode, the **Preset Browser** changes in appearance and function:



The Preset Browser in Edit Mode

1. The **Filters** section changes becomes the **Edit Tags** section, which looks almost identical but is used to change – rather than operate – the **Categories** and **Tags** of the selected presets.
2. Presets (**User** only – not **Factory**) are selected for editing in the **Results** section.
3. The **Delete**, **Export** and **Import** buttons at the bottom of the interface are used to delete or export selected **User** presets, and import a set of presets to the **User Content** resource.
4. The resource selection in the **Content** section can't be changed, as editing is only possible for user presets.

Selection of presets for editing

You can edit presets one at a time or in groups. Select one or more presets in the **Results** section using the following procedure:

- **Click a preset** – Choose the preset from the list,
- **Win (ctrl + Click a preset), Mac (cmd ⌘ + Click the preset)** – Add another preset to the selection.
- **shift + Click a preset** – Select a contiguous series of presets from the last one selected to the one clicked.

Editing Tags

Changing the Tags assigned to the selected preset(s)

With one or more presets selected, click a **Tag** button to assign it, or unassign it if already assigned.

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

Filters' tags

Selecting multiple presets with **Tags** assigned enables those **Tags** to be edited. If a particular **Tag** is assigned to *all* selected presets, it's marked with an intense teal blue color.

When a particular **Tag** is only assigned to *some* of the selected presets, it's given a pale teal blue colour.

All **Tags** that don't appear in *any* of the selected presets are coloured grey.



Colouring of Tags by status for selected presets

Changing the **Tag** status for one selected preset changes it to the same status for *all* selected presets. The change of status is indicated by an asterisk (*) to the left of the **Tag** buttons.



Notification of changes to the Tag status of selected Presets

User edits don't have to be confirmed. They're indicated by asterisks next to the edited **Tag**.

Preset name editing

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

Deleting presets

Selecting one or more presets invokes the **Delete** button at the bottom left corner. Click this to delete the selected presets.

Preset export and import

Use the **Export** and **Import** buttons at the bottom of the **Preset Browser** to export the presets selected in the **Results** section as a package, or import a previously exported  package into the Preset library.

Saving the current settings as a preset

To save the current plugin parameter settings as a **User** preset click **BROWSE** in the **Configuration and Presets Browsing** section while holding -Win (**Ctrl** + **BROWSE**), Mac (**Cmd** + **BROWSE**) in **Configuration** and **Presets Browsing** section. The **Preset Browser** will automatically open in **Edit Mode**.



Saving the settings as a preset

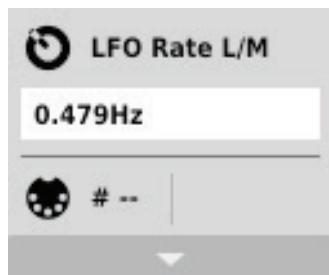
Enter a name for your newly created preset in the text field at the bottom, then confirm it by clicking **Save**, or back out of the process by clicking **Cancel**.

As the **Preset Browser** automatically enters **Edit Mode**, you can immediately categorize the preset using the **Edit tags** functions before saving it.

Configuration

Parameter settings

Right-click any plugin parameter to open its contextual menu.



Closed contextual menu

Using this, you can:

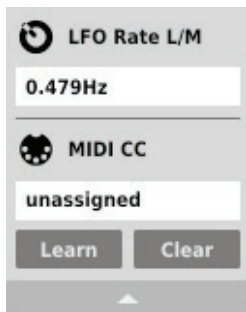
- Check the name and current value of a parameter,
- See whether or not the parameter has been assigned a MIDI CC number, and if so, which one,
- Link the parameter to a MIDI CC number.

Clicking the arrow strip at the bottom of the menu expands it to display all available options. Right-clicking the parameter again or left-clicking outside the menu area closes the contextual menu.

MIDI Learn

The **MIDI Learn** function enables quick assignment of physical MIDI controllers to plugin parameters. An assignment is made by following this procedure:

1. Right-click the parameter you want to assign to your hardware MIDI controller. The contextual menu opens.
2. Click the arrow strip at the bottom to expand the contextual menu.



Expanded contextual menu

3. Click the **Learn** button to put the plugin into a pending state, awaiting MIDI CC input from your hardware MIDI controller
4. Move the relevant knob or slider on your MIDI controller to make the assignment
5. Click **OK** to save the change or **Cancel** to restore the previous setting

MIDI Unlink

To delete the MIDI CC assignment for a plugin parameter:

6. Open the contextual menu by right-clicking the parameter in question
7. Expand the menu by clicking the arrow strip at the bottom
8. Click the **Clear** button
9. Confirm with **OK** button

Current settings

The **Current settings** are applied separately to each instance of the plugin but initialized with the **Default settings** when the plugin is loaded (see next chapter).

The **Current settings** are adjusted in the status bar at the bottom of the interface.



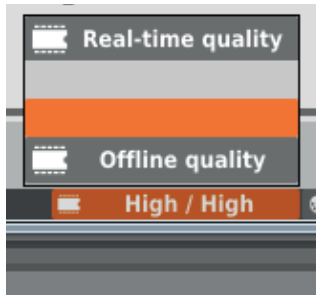
The Current settings in the status bar

From left to right, they comprise:

- The **Current processing path quality** for **Offline** and **Real-time** modes
- Saving/Loading of the **MIDI CC Map**
- A choice of two **GUI** sizes

Processing Path Quality

Set the **Current quality** of the plugin's generated output for **Real-time** and **Offline** modes.

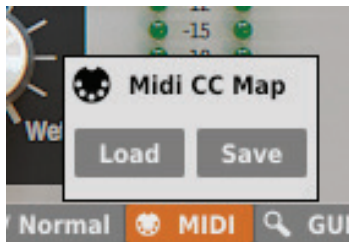


Choosing the plug-in interface size

There are few quality levels available for each mode.

MIDI CC Map

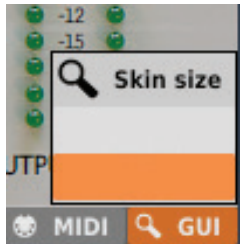
Save all current MIDI CC parameter assignments as a MIDI Map file, or load an existing MIDI Map file into the plugin.



Saving/loading the MIDI CC Map

GUI size

Switch the graphical user interface between few different sizes.



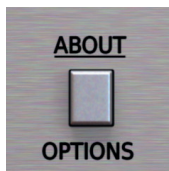
Choosing the plug-in interface size

Default settings

Change the **Default settings** of the plugin in the **Options** panel. The **Current settings** of every new instance of the plugin are initialized to the **Default settings**.

The **Default settings** are stored in a configuration file. This file is updated every time you close the **Options** window

Open the **Options** panel by clicking the **Options** button:



Options button

The **Options** panel is made up of four sections, only one of which can be expanded at a time.

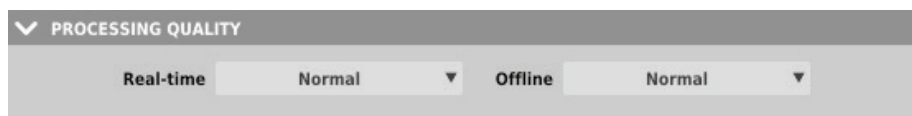


Options Panel

The four sections are:

- **Processing Quality** - The default Processing Path quality
- **Presets** - The preset loading warning dialog status
- **MIDI** - The default MIDI CC Map
- **User Interface** - The default GUI size

Processing Quality



Processing Quality Choice Section

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

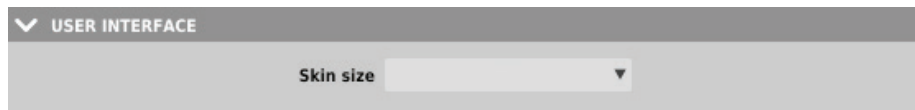
MIDI



Default MIDI Map Choice Section

Set the path to a default **MIDI Map** file. Clicking the **MIDI CC Map** checkbox 'unlocks' the **Browse** button and activates the selected MIDI Map.

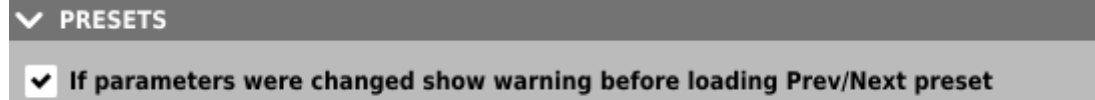
User Interface



Processing Quality Choice Section

Choose one of several default GUI sizes to best match the plugin to the resolution of your computer monitor.

Presets



Displaying confirmation dialog option

With the box checked, clicking the **Prev** or **Next** preset button after the parameters of the current preset (or previously initialized state) have been changed pops up a confirmation dialog to prevent accidental loss of those changes.

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