Operation Manual

HALion Sonic 7

Premier VST Workstation

steinberg

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This document provides improved access for people who are blind or have low vision. Please note that due to the complexity and number of images in this document, it is not possible to include text descriptions of images.

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Table of Contents

Introduction

This is the **Operation Manual** for Steinberg's HALion Sonic. Here you will find detailed information about all the features and functions in the application.

Typographical Conventions

In our documentation, we use structural and markup elements to present information according to its purpose.

Structural Elements

Prerequisite

Describes any actions or conditions you must have fulfilled before starting a procedure.

Procedure

Lists the steps that you must take to achieve a specific result.

Important

Informs you about serious issues; for example, issues that affect the system, the connected hardware, or that risk data loss.

Note

Informs you about issues or other relevant information.

Tip

Adds further information or useful suggestions.

Example

Provides you with an example.

Result

Describes the result of the procedure.

After Completing This Task

Informs you about actions or tasks that you can perform after completing the procedure.

Related Links

Lists related topics that you can find in this documentation.

Markup

Bold text indicates the name of a menu, option, function, dialog, window, and so on.

EXAMPLE

In the header of the plug-in panel, click the **Preset Management** button next to the preset name field, and select **Load Preset**.

If bold text is separated by a greater-than symbol, this indicates a sequence of different menus to open.

File names and folder paths are shown in a different font.

EXAMPLE

`example_file.txt`

Key Commands

Many of the default key commands, also known as keyboard shortcuts, use modifier keys, some of which are specific to each operating system.

Whenever key commands with modifier keys are described in this manual, the Windows modifier key is indicated first, followed by the macOS modifier key and the key.

EXAMPLE

Ctrl/Cmd-**Z** means: press **Ctrl** on Windows or **Cmd** on macOS, then press **Z**.

How To Contact Us

Click the Steinberg logo in the top right corner of the control panel to open a pop-up menu which includes information on how to contact us and to receive help.

- This menu contains links to various Steinberg web pages. Select a link to open the corresponding page. On the web pages, you can find support and compatibility information, answers to frequently asked questions, links for downloading new drivers, etc.

About the Documentation

The documentation is available online and can be downloaded in PDF format from http://www.steinberg.help.

- To visit steinberg.help, enter **steinberg.help** in the address bar of your web browser or open HALion Sonic, click the Steinberg logo in the top right corner and select **HALion Sonic Help**.

Setting Up

You can use HALion Sonic as a plug-in for a number of host applications. Depending on the host application, you might have to make additional settings, or you might be restricted to a reduced parameter set, number of outputs, etc.

NOTE

HALion Sonic can also be used as a standalone application.

Selecting Outputs

By default, HALion Sonic loads with a stereo output configuration. However, you can use up to 15 additional outputs in the Steinberg DAW. This allows you to route all 16 program slots to a dedicated channel in the **MixConsole**.

PROCEDURE

1. To make the outputs available in the VST instrument, open the **VST Instruments** window.
2. Click the **Activate Outputs** button for the instrument.
3. Activate the outputs that you want to use.

RESULT

The Steinberg DAW automatically adds an output channel for each additional output to the **MixConsole**. You can now route programs or layers to these outputs for further signal processing within the DAW.

Using the Instrument in an AU-Compatible Application

The AU version of HALion Sonic is installed in your AU plug-ins folder and enables you to use HALion Sonic in an AU environment without any performance loss or incompatibilities.

For example, to load HALion Sonic as an AU instrument in Logic Pro, proceed as follows:

PROCEDURE

1. Open the Track Mixer, and select the instrument channel that you want to use.
2. Click in the **I/O** field, and select **AU Instruments** > **Steinberg** > **HALion Sonic**.
3. Select one of the available channel configurations.

Using the Instrument in an AAX-Compatible Application

The AAX version of HALion Sonic is installed in your AAX plug-ins folder and makes HALion Sonic available as an AAX instrument in ProTools.

PROCEDURE

1. To use HALion Sonic as a stereo multichannel plug-in, open the **Track** menu, and select **New** > **Stereo** > **Instrument Track**.
2. On the instrument track, click **Inserts**, and select HALion Sonic from the **multichannel plug-in** > **Instrument** submenus.

Using the Instrument as a Standalone Application

HALion Sonic can be used as a standalone application, independently of any host application. In this case, you can connect the instrument directly to your audio hardware.

RELATED LINKS

Using the Standalone Version of the Plug-in on page 179

Window Overview

The HALion Sonic window is divided into several sections.

1 In the standalone version of HALion Sonic, you find a number of additional functions in an extra section at the top of the application window.

2 If you use the plug-in in a host application, you find the plug-in functions section at the top of the window.

3 Below the functions section on the left, the multi-program loader and the **Slot Rack** are located.

4 On the right, you can find the toolbar above the edit display.

5 The edit display on the right contains the **Edit**, **MIDI**, **Mix**, **Effects**, **Multi**, and **Options** pages.

6 At the bottom of the panel, the performance section is located. It contains the trigger pads, the quick controls, and the performance controls.

7 With the **Show/Hide Load Panel** button on the toolbar, you can expand the window to show the **Load Panel** on the right.

Player View/Editor View

You can switch between two views for the plug-in window: the full-size editor view and the smaller, configurable player view.

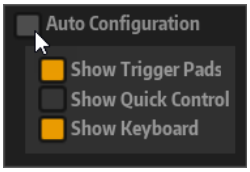
- Click the **Switch between Editor and Player** button on the toolbar to switch between player view and editor view.

  In editor view, the button shows a **p** to indicate that you can use it to switch to the player view. In player view, the button shows an **e**.

In player view, the slot rack is not shown. If multiple programs are loaded in the slot rack, you can switch between them using the **Select Slot** menu at the top of the window.

Player View Configuration Options

To specify the sections that you want to be displayed in player view, click the **Display Options** button next to the **e** button.



- If **Auto Configuration** is activated, the editor shows the sections specified by the manufacturer.
- If **Auto Configuration** is deactivated, you can specify whether you want to add the trigger pads, quick controls, and keyboard section to the player view.

NOTE

If a program does not have a macro page, the standard editor is shown.

RELATED LINKS
Trigger Pads on page 24
Quick Controls on page 18
Performance Controls on page 17

Common Editing Methods

Some common controls and concepts exist throughout the program. For example, presets can be used in several different sections and contexts, but their handling is always the same.

Knobs and Sliders

Knobs and sliders can be unidirectional or bidirectional. Unidirectional values, for example, level values, start at a minimum value and go up to the maximum. Bidirectional controls start from the middle position and go to the left for negative and to the right for positive values.

Most of the editing methods are the same for knobs and sliders.

- Move the mouse over a knob or its parameter name to show the current parameter value.
  You can adjust the value with the mouse wheel or enter a new value manually.
- To adjust a value, click a knob or a slider and drag up and down, or use the mouse wheel.
  If you press **Alt/Opt** when clicking a knob, a small slider appears, allowing you to set the parameter.
- To make fine adjustments, press **Shift**, and move the knob or use the mouse wheel.
- To restore the default value for a parameter, press **Ctrl/Cmd**, and click on the control.

Buttons

HALion Sonic contains two different types of buttons: **On/Off** buttons and push buttons.

On/Off Buttons

These buttons have two states: on and off. If you move the mouse over an **On/Off** button, it changes its appearance to show that you can click it.

Push Buttons

Push buttons trigger an action and then go back to their inactive state. These buttons open menus or file dialogs.

Value Fields

You can enter or edit values in the available value fields using your keyboard or mouse. To enter key ranges or the root key, for example, you can use an external MIDI keyboard.

To set a value, you have the following possibilities:

- Double-click in a value field, enter a new value, and press **Return**.
  If the entered value exceeds the parameter range, it is automatically set to the maximum or the minimum value, respectively.
- Click in the value field, and drag up or down.
- Position the mouse over a value field, and use the mouse wheel.
- Click the up/down triangles next to the field.

- To set the parameter to its default value, **Ctrl/Cmd**-click the value field.
- To use a fader to adjust the value, **Alt/Opt**-click a value field.
- To enter musical values, such as key ranges or the root key, with your MIDI keyboard, double-click the value field, press a key on your MIDI keyboard, and press **Return**.
- To navigate to the next parameter, press **Tab**. To jump backwards to the previous parameter, press **Shift**-**Tab**.

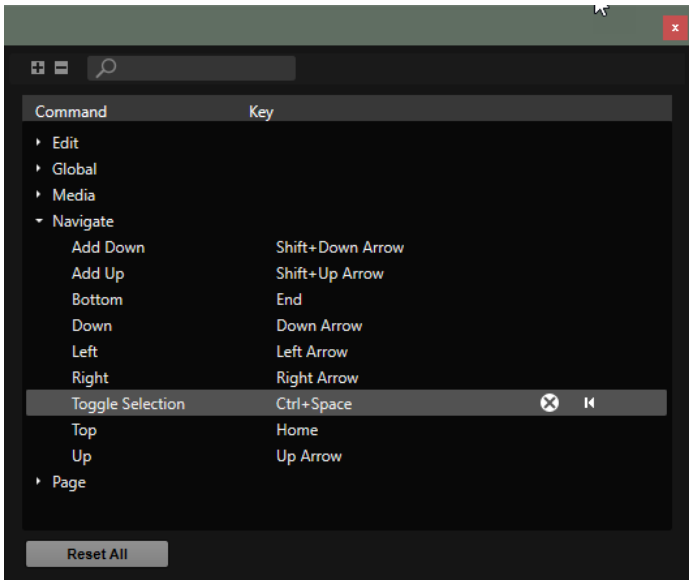
  If no parameter is selected inside the focused view, pressing **Tab** always jumps to the first parameter.

Key Commands Dialog

The **Key Commands** dialog allows you to view and edit key commands for the main menus and functions in HALion Sonic.

To open the **Key Commands** dialog, open the **Options** page, and click the **Key Commands** button in the **Edit** section.

The commands are arranged in a hierarchical folder structure on the left. When you open a category folder, the items and functions are displayed with their currently assigned key commands.



- To set up a key command, select the function in the list, and enter the key command in the **Key** column. If this key command is already used for another function, a warning message is shown.
- To delete a key command, select the function in the list, and click the **Remove Key Command** button.
- To reset a key command to its default, select the function in the list, and click the **Reset Key Command** button.
- To search for a specific function, enter its name or part of the name in the search field at the top of the dialog.

  While you type, the list is updated to show only the matching functions.
- To reset all key commands to their default settings, click **Reset All** at the bottom of the dialog.

Presets

HALion Sonic offers two types of presets: section/module presets and VST presets. Section and module presets store and recall the setup of a specific component on the HALion Sonic panel. VST presets contain all information necessary to restore the complete state of the plug-in.

During setup, the factory presets are installed in a dedicated folder, and a user folder is created for your own presets. The handling of presets is the same throughout the program.

NOTE

Factory presets are write-protected, but may be overwritten when a software update is executed. Presets in your user folder are never changed by the software update.

Handling Section and Module Presets

Many modules and editors come with a range of presets and allow you to save your settings as user presets.

CHOICES

- To save a preset, click **Save**.

  NOTE

  You cannot overwrite factory presets. If you want to save changes made to a factory preset, save the preset under a new name or in a new location.

- To load a preset, click the arrow icon, and select a preset from the list.
- To step through the available presets, click **Previous Preset**/**Next Preset**, if available.
- To delete a preset, click **Delete**.

  NOTE

  You cannot delete factory presets.

Handling VST Presets

VST presets are used wherever you can load programs, multi-programs, or layers in HALion Sonic, that is, in the program header, the multi slot section, the **Slot Rack**, etc.

VST presets have the file name extension `.vstpreset`.

CHOICES

- To load a preset, do one of the following:
  - In the plug-in header, click **Preset Management** to the right of the preset name field, select **Load Preset**, and select a preset.
  - In the multi slot section, click **Load Multi-Program**, and select a preset.
  - In the **Slot Rack**, click the **Load Program** button for a slot, and select a preset.
  - Drag a VST preset from the **MediaBay** or the file browser onto a slot in the **Slot Rack**.

    If the slot already contains a program, this program is replaced.
- To save a preset, do one of the following:

- In the plug-in header, click **Preset Management** to the right of the preset name field, select **Save Preset**, make your settings in the save dialog, and click **OK**.
- In the multi slot section, click **Save Multi-Program**, make your settings in the dialog, and click **OK**.

Global Functions and Settings

In the plug-in functions section, on the toolbar, and on the **Options** page, you can find global functions and settings for HALion Sonic.

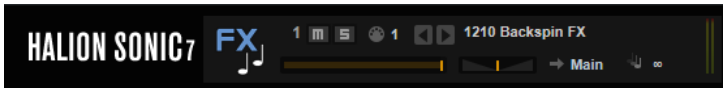
Plug-in Functions Section

The plug-in functions section at the top of the window gives you access to global functions that affect both the currently loaded programs and the general working of the plug-in.

The plug-in functions section contains the multi slot section, the program slot section, the master section, and the performance displays.

Program Slot Section

This section contains a copy of the slot that is selected in the **Slot Rack**, as well as the main parameters of the program.



Program Icon

The program icon indicates the sound category to which the program belongs. It depends on the category and subcategory tags that are specified for a program in the **MediaBay**.

Slot Number

The number of the active slot. You can switch to another slot by clicking the slot number and selecting an entry from the list.

NOTE

Only slots that contain programs are available on the list.

Mute

Deactivates playback of the program.

Solo

Solos the corresponding program. Several slots can be soloed at the same time.

MIDI Activity Indicator

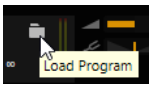
The MIDI symbol starts blinking when incoming MIDI data is detected.

Load Previous Program/Load Next Program

Loads the previous/next program.

The list of programs depends on the **MediaBay** filter that is active for the slot. For example, if you set the filter to show only bass sounds and double-click a sound to load it, you can use the **Load Previous Program/Load Next Program** buttons to step through the filtered list of bass sounds for the slot.

Load Program



Click the **Load Program** icon to the right of the slot to open the **Load Panel**. In the **MediaBay**, double-click a program to load it.

Level

Adjusts the output level of the slot.

Pan

Adjusts the position of the slot in the stereo panorama.

Output

Allows you to define the output destination of the slot signal.

Polyphony

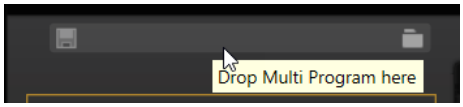
Sets the number of keys that can be played simultaneously.

NOTE

One key can trigger several layers. On the performance meter, you can see how many voices are triggered by your playing.

Multi Slot Section

In the multi slot section on the left, you can load and save multi-programs, manage the default multi-program, and clear the entire plug-in instance.



Load Multi-Program

Opens a window that allows you to load multi-programs.

Save Multi-Program

Opens a window that allows you to save your settings as a multi-program.

Context Menu

Clear Plug-in Instance

Resets the entire plug-in instance to an empty state.

Load Default

Loads the default multi preset.

Save as Default

Allows you to save the current multi as the default multi preset.

This includes the loaded programs, the active page, the current size and position of the plug-in window, etc.

Restore Factory Default

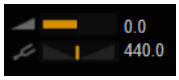
Restores the factory default multi preset.

NOTE

The default preset that can be set in the Cubase plug-in header overrides the default multi preset in HALion Sonic. To use the HALion Sonic multi preset instead, right-click the preset field in the plugin-header, and select **Remove Default Preset** .

Master Section

The master section can be used to set the volume and for the tuning of the plug-in.



Master Volume

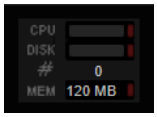
Adjusts the overall volume of the plug-in.

Master Tune

You can set the **Master Tune** slider from 415.3 Hz to 466.2 Hz, which equals -100 cents to +100 cents.

Performance Displays

The meters and text displays indicate the system load of the plug-in.



CPU

This meter shows the processor load during playback. The more voices you play, the higher the processor load. If the overload indicator lights up, reduce the **Max Voices** setting on the **Options** page.

Disk

This meter shows the hard disk transfer load during the streaming of samples or when loading presets. If the overload indicator lights up, the hard disk is not supplying data

fast enough. In such a case, open the **Options** page and adjust the **Disk vs. RAM** slider towards **RAM** or decrease the **Max Voices** setting.

Polyphony

This display indicates the number of samples that are currently played back, to help you trace performance problems. For example, if you have to reduce the **Max Voices** setting on the **Options** page, you can verify your settings by monitoring the number of samples that are currently playing.

Memory

This display indicates the overall amount of RAM that is currently used by the plug-in and the loaded programs. The number refers to the streaming buffer and the preloaded samples. The **MEM** display helps you trace performance problems. For example, if you need to free up memory for other applications, you can adjust the **Disk vs. RAM** slider on the **Options** page toward **Disk**. You can verify your settings by monitoring the **MEM** display.

Plug-in Name and Steinberg Logo

To obtain information regarding the version and build number of the plug-in, click the plug-in logo. This opens the **About** box. To close the **About** box, click it, or press **Esc** on your computer keyboard.

If you click the Steinberg logo in the top right corner of the plug-in interface, a pop-up menu opens. Select one of the options to navigate to Steinberg web pages containing information on software updates, troubleshooting, etc.

Toolbar

The toolbar contains useful global functions.

Global insert, AUX, and FlexPhraser buttons

Use these buttons to switch off all insert effects, AUX effects, and FlexPhrasers for the whole plug-in at once. You can use this to compare sounds with and without effects or to use a preset without the FlexPhrasers, for example.

Lock button

If this button is activated, loading another program or layer does not overwrite the current FlexPhraser and trigger pad settings.

Script Error Indicator/Reset

Lights up if errors occur in a Lua script used by the program. You can click the button to reload and initialize the script. However, if the problems persist, you must repair the script.

MIDI Reset

Click this button to stop playback and reset all MIDI controllers to their default values.

Undo/Redo

To undo or redo a single operation, click the **Undo** or **Redo** buttons. To undo or redo multiple operations, click the arrow next to the button to open the history, and select the step to which you want to return.

Show/Hide Load Panel

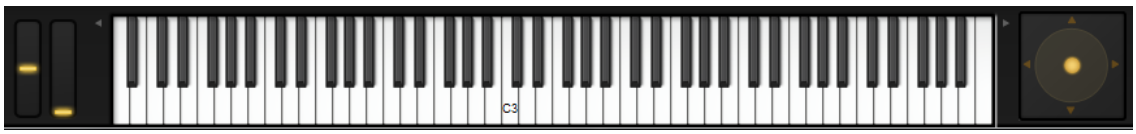
Opens the **Load** panel on the right side of the window.

Editor/Player

This button switches between two views: the full-size editor view (**e**) and the compact player view (**p**).

Performance Controls

The performance controls are located in the lower part of the window.



Wheel Controls

To the left of the internal keyboard, the pitchbend wheel and the modulation wheel are located.

The modulation wheel is hardwired to MIDI controller #1, which is normally used as a source in the modulation matrix, but can be used as a quick control as well.

Keyboard

The virtual 88-note keyboard can be used to trigger MIDI notes. By clicking the keys at different vertical positions you can control the note-on velocity. Furthermore, the keyboard displays keys that are not used to trigger notes but act as key switches. The **Shift Keyboard** buttons to the left and right of the keyboard shift the keyboard range by octaves. This allows you to display key switches that are located on lower keys, for example.

The following color scheme is used for the keys:

- Keys to which a key switch is assigned are shown in yellow.
- Keys to which a remapped key switch is assigned are shown in beige.
- Keys that are assigned to a trigger pad are shown in blue.
- Keys to which a loop trigger note is assigned are shown in green.

Sphere Control

The sphere is a two-dimensional control. It allows you to adjust two parameters simultaneously, by dragging the mouse horizontally (**Sphere H**) and vertically (**Sphere V**). Typically, two parameters that belong together are assigned to the sphere, such as cutoff and resonance.

If parameters are assigned to **Sphere H** and **Sphere V**, triangles for indicating the horizontal and vertical axis are available.

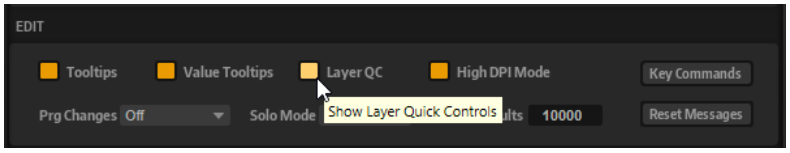
You can reset the sphere to the center position using the corresponding options on the context menu.

- If **Center Horizontal** and/or **Center Vertical** are activated, the sphere returns to the corresponding center position as soon as you release the mouse button.

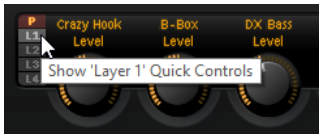
Quick Controls

Quick controls allow you to remote-control any parameter inside the program.

Quick controls can be set up for programs and for layers. For the layer quick controls to be available, **Show Layer Quick Controls** must be activated on the **Options** page. If a layer has no quick controls, the quick controls of the program are used.



- To switch between the quick controls of the program and the layers, use the buttons to the left of the potentiometer controls.



For each program and layer, eight quick controls are available. Furthermore, **Sphere H**, **Sphere V**, and the modulation wheel can also serve as quick controls.

To hear a sound without quick control assignments, you can bypass them temporarily by using the **Bypass** button to the right of the quick controls. This turns off the quick control assignments of the program.

The quick controls can be accessed via the **Quick Control Assignments** editor.

RELATED LINKS
Quick Control Assignments Editor on page 21

Value Tooltips

Parameters that are assigned to a quick control can show a value tooltip. This value tooltip indicates the resulting parameter value and the name of the assigned quick control.

This is useful, because if you use quick controls, the following situations can happen:

- The actual value of a parameter and the value that is displayed in its value field differ.
- A button on the user interface is deactivated, but the corresponding parameter is active.

For example, this can happen if the quick control introduces an offset or if a button is controlled by a quick control.

- To activate/deactivate value tooltips, click **Value Tooltips** in the **Edit** section of the **Options** page.

RELATED LINKS
Edit Section on page 29

Accessing Quick Controls

PROCEDURE

1. Select the program that you want to edit in the **Slot Rack**.
2. Use the buttons to the left of the quick controls to select whether you want to access the quick controls for the program or for one of the layers.

   The quick controls change to the settings of the program or the selected layer.

Assigning Quick Controls

PROCEDURE

1. In the editor for a program, a layer, or an insert effect, right-click the control to which you want to assign a quick control.

   NOTE

   - Parameters of a layer can only be assigned to the quick controls of this layer.
   - If you want to assign the parameters of a layer to the quick controls of a program, you must first assign the parameter to a quick control of the layer, and then assign the quick control of the layer to a quick control of the program.
2. On the **Assign Quick Control** submenu, select the quick control that you want to assign.

RESULT

The assignment is created.

NOTE

You can also assign a quick control as modulation source or modulation modifier in the modulation matrix. This allows you to combine the quick control with other modulation sources.

RELATED LINKS
Modulation Parameters on page 66

Setting the Minimum/Maximum Range

You can set the minimum and maximum range for each assignment separately. This gives you better control over the parameter change.

- Right-click a control, and define the range using the **Set Minimum** and **Set Maximum** commands.
- In the **Quick Control Assignments** editor, enter the values in the **Minimum Value** and **Maximum Value** fields, or click and drag the handles in the curve display.

Trimming the Range

The **Trim Range** function allows you to automatically set the best quick control range, depending on the current parameter value.

PROCEDURE

- In the **Quick Control Assignments** editor, right-click the assignment in the list on the right.
  - To trim the range of a single assignment, select **Trim Range**.
  - To trim the range of all quick controls, select **Trim Range of All Quick Controls**.

RESULT

The minimum and maximum values are set automatically.

NOTE

If you change the original parameter, you have to apply the **Trim Range** function again to ensure the best control range.

Setting the Default Range

PROCEDURE

- In the **Quick Control Assignments** editor, right-click the assignment on the right.
  - To set the default range of a single assignment, select **Set Default Range**.
  - To set the default range of all quick controls, select **Set Default Range of All Quick Controls**.

RESULT

The quick controls are set to their maximum possible range.

NOTE

If you change the original parameter, you must apply the **Set Default Range** function again to ensure the best control range.

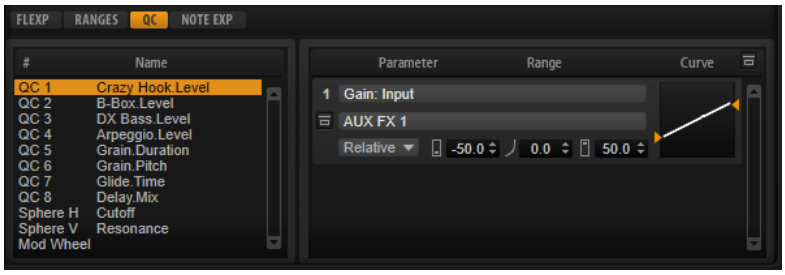
Unassigning Quick Controls

- To remove a quick control assignment, right-click the parameter in the **Quick Control Assignments** editor, and select **Remove Assignment**.
- To remove all assignments of the selected quick control, open the context menu, and select **Remove All Assignments**.
- To remove all quick control assignments for all 8 quick controls, select **Remove All Assignments of All Quick Controls**.

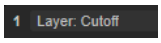
Quick Control Assignments Editor

The **Quick Control Assignments** editor lists the eight quick controls for the selected program or layer on the left. The assignments of the selected quick control are listed on the right. You can edit the parameters for each assignment separately.

- To open the **Quick Control Assignments** editor, right-click a quick control and select **Edit Quick Control**, or open the **Edit** page for a program and select the **QC** tab in the lower part of the page.

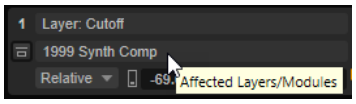


Quick Control Parameter



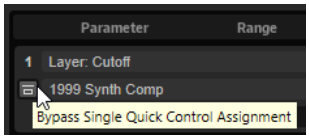
Displays the parameter assignment for the selected quick control.

Affected Layers/Modules



Displays which program, layer, or module is affected by the quick control.

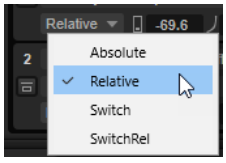
Bypass Single Quick Control Assignment



Bypasses the corresponding quick control assignment.

For example, if a quick control is assigned to several layers, this option allows you to bypass the quick control assignment for only one layer).

Mode



Determines the mode that is used for changing the parameter values.

- **Absolute** remote-controls the parameter values continuously. **Absolute** mode changes the assigned parameters by overwriting them with the current quick control value, that is, parameter changes are overwritten.
- **Relative** remote-controls the parameter values continuously. **Relative** mode changes the values of the assigned parameters without losing their relative settings, that is, parameter changes are still audible.
- **Switch Absolute** switches between the minimum and maximum value. Parameter changes are overwritten.

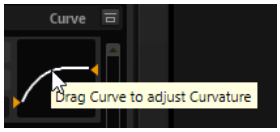
- **Switch Relative** switches between the minimum and maximum value. Parameter changes are still audible.

Minimum Value

Sets the minimum value for the quick control assignment.

Curvature

Sets the curvature. You can also set the curvature by clicking and dragging in the curve display.



Maximum Value

Sets the maximum value for the quick control assignment.

Bypass All Quick Control Assignments

Bypasses all assignments for the selected quick control.

RELATED LINKS
Quick Control Assignment Modes on page 23
Adjusting the Curvature on page 22
Bypassing Quick Controls on page 23

Managing Quick Controls

The **Quick Control Assignments** editor allows you to manage and edit assigned quick controls.

- To rename a quick control, click in the **Name** column, and enter a new name.
- To change the order of quick control assignments, drag an assignment between two other quick controls. When a line is shown, release the mouse button to insert the quick control assignment.
- To replace a quick control assignment, drag it onto another quick control. When a rectangle is shown, release the mouse button to replace the quick control assignment.

Adjusting the Curvature

You can adjust the curvature of each individual assignment in the **Quick Control Assignments** editor.

PROCEDURE

- To adjust the curvature, do one of the following:
  - Select the quick control that you want to edit, and specify a value in the **Curvature** value field.

    Positive values change the curvature towards logarithmic behavior, and negative values change it towards exponential behavior.

- Click and drag the curvature in the display on the right.

Quick Control Assignment Modes

A quick control behaves either like a continuous control or like a switch. In addition, it remote-controls a parameter either in relative or absolute mode. You can specify a mode for each assignment.

You can set the behavior via the context menu for the control itself or via the pop-up menu in the **Quick Control Assignments** editor.

Absolute

Remote-controls the parameter values continuously. **Absolute** mode changes the assigned parameters by overwriting them with the current quick control value, that is, parameter changes are overwritten.

Relative

Remote-controls the parameter values continuously. **Relative** mode changes the values of the assigned parameters without losing their relative settings, that is, parameter changes are still audible.

Switch Absolute

Switches between the minimum and maximum value. Parameter changes are overwritten.

Switch Relative

Switches between the minimum and maximum value. Parameter changes are still audible.

Neutral Setting

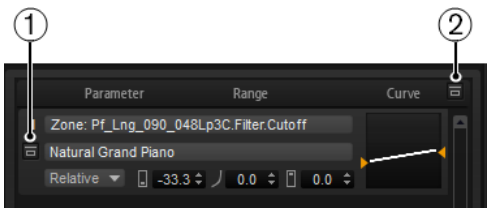
If you adjust the range of a quick control assignment, it can become necessary to change its neutral setting, to prevent the resulting sound from changing.

If you adjust the range of a quick control with a single assignment that uses **Absolute** or **Relative** mode, HALion Sonic automatically adjusts the setting of the quick control so that the sound does not change. Likewise, if you assign multiple parameters to the same quick control, HALion Sonic automatically sets the range of this quick control assignment.

However, if a quick control has multiple assignments and you change the range of one or more assignments, the neutral setting cannot be set automatically. In this case, you can specify the neutral setting manually using the **Set Quick Control to Neutral Setting** command on the context menu for the quick control.

Bypassing Quick Controls

Bypassing quick controls allows you to hear a sound without quick control assignments.



1 To bypass a single assignment for one quick control, click **Bypass Single Quick Control Assignment** in the **Quick Control Assignments** editor.

2 To bypass all assignments for one quick control, select the quick control in the **Quick Control Assignments** editor, and click **Bypass All Quick Control Assignments** in the upper right of the parameter section.

Assigning Quick Controls in the Modulation Matrix

In addition to assigning quick controls directly to parameter controls, you can also assign them as a source or modifier in the modulation matrix. This way, you can combine the quick control with other modulation sources.

PROCEDURE

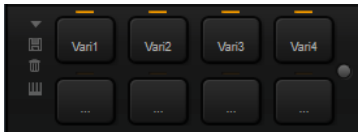
1. Open the layer editor and go to the modulation matrix.
2. On the pop-up menu in the **Source/Modifier** column, open the **Assign Quick Control** submenu, and select the quick control.

   The submenu lists the quick controls of the layer.

Trigger Pads

You can use the trigger pads to trigger single notes or whole chords and to switch between FlexPhraser or arpeggiator variations.

Many of the programs that come with HALion Sonic make use of the trigger pads.



If a note or a chord is assigned to a pad, this pad turns orange. If a pad switches between variations, the line above the pad turns orange.

- To trigger a pad, click on it.

Presets

Pad presets save trigger notes and chord snapshots, but not the FlexPhraser variations. This means that you can exchange trigger notes and chords by loading presets without losing your FlexPhraser variation settings.

Bypass

With the **Bypass Pads** button to the right of the trigger pads, you can bypass the entire pads section. This deactivates any functionality you assigned to the trigger pads.

Assigning Trigger Notes to Pads

You can assign a MIDI note to a pad and trigger the pad by playing this note.

To define the trigger note, do one of the following:

- Right-click a pad, open the **Assign Trigger Note** submenu, and from the further submenus, select the octave and note that you want to assign.
- Open the context menu for a pad, select **Learn Trigger Note**, and play the note on your MIDI keyboard, or click a key on the internal keyboard.

The name of the assigned trigger note is displayed in the top left corner of the pad.

On the internal keyboard, keys that serve as trigger notes are shown in blue. These keys do not play sounds but trigger the corresponding pads instead.

- To remove a trigger note from a pad, right-click the pad, and select **Forget Trigger Note**.

Assigning Chords or Notes to Trigger Pads

PROCEDURE

1. Right-click a pad, and select **Snapshot Chord**.
   The pad starts flashing.
2. Do one of the following:
   - Play a chord or a single note, and then click the pad that is flashing to assign the chord or note to the pad.
   - Drag a chord event from the chord track of your Steinberg DAW onto a trigger pad. This transfers the corresponding MIDI notes to the pad.
     If you first drag a chord event onto the internal keyboard, the corresponding chord is played back. This is useful to verify whether you selected the correct chord.

   If you define a chord that contains a key switch, you can trigger the chord with a specific instrument expression.

   If you add keys to a chord that also work as trigger notes, they trigger the underlying MIDI note instead of the trigger note.

RESULT

Triggering the pad now plays the chord or note.

Default Trigger Note Settings

Assigned trigger notes are saved with each program to allow for maximum flexibility. However, you can save a fixed set of default trigger notes to reflect an existing hardware setup, for example.

- To specify a default set of trigger notes, set up the trigger notes for all pads, right-click a pad, and select **Save Trigger Notes as Default**.
- To activate the default trigger note settings, right-click a pad and select **Use Default Trigger Notes**.
  From now on, changing programs or multi-programs does not change the trigger notes anymore.

If you deactivate **Use Default Trigger Notes**, the last set of trigger notes remains active. To return to the trigger notes that were saved with the program, reload the program.

Assigning Key Switches to Trigger Pads

To use the pads for switching between expressions, assign them to the corresponding key switches.

PROCEDURE

- Right-click a pad, select **Snapshot Chord**, and play the key switch.

Removing Chords or Notes from Trigger Pads

PROCEDURE

- Right-click the trigger pad, and select **Clear Chord**.

Switching between Variations

You can switch between variations using the trigger pads.

Variations are available for the FlexPhraser and the B-Box, for example.

PROCEDURE

1. Right-click the trigger pad that you want to use for switching to the selected FlexPhraser variations.
2. On the menu, select **Snapshot Variations**.

   The line above the pad turns orange to indicate that a FlexPhraser variation is assigned.

RESULT

If you trigger the pad, it switches to the variation that was selected when you made the snapshot.

NOTE

Instead of saving the variation settings themselves, the trigger pad saves only the variations that were selected when you made the snapshot. This allows you to modify variations after creating the snapshot. However, if you replace or add layers, you must first remove the assignment using the **Clear FlexPhrasers** command on the context menu and then take the FlexPhraser variation snapshot again.

RELATED LINKS

Creating FlexPhraser Variations on page 80

Naming Pads

Entering names for pads allows you to obtain a better overview of their functionality, for example.

PROCEDURE

1. Right-click the pad to open the context menu, and select **Rename Pad**.
2. Enter the new name, and press **Enter**.

Creating MIDI parts from Trigger Pads

You can create a MIDI part of the chord that is assigned to the pad by using drag and drop.

PROCEDURE

- Drag a trigger pad outside the **Trigger Pads** section, and drop it in the project window of your Steinberg DAW or another host sequencer.

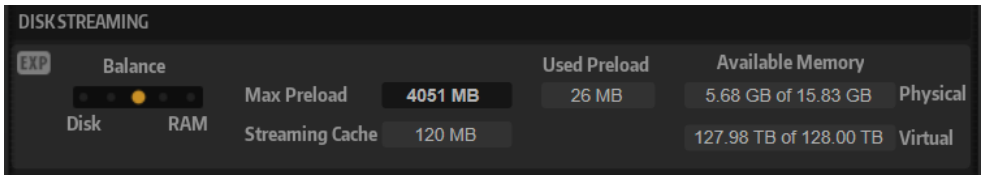
RESULT

A MIDI part containing the chord that is assigned to the pad is created. The length of the part is one bar.

Options Page

The **Options Page** contains global settings regarding performance optimization, global functions, MIDI controllers, etc.

Disk Streaming Section



Some of the programs include up to 1 GB of samples. Due to this substantial amount of data, your computer cannot load all samples completely into the RAM, especially if you are using all slots. Therefore, HALion Sonic only loads the initial milliseconds of each sample into the RAM. You can specify how much RAM to use and how much you want HALion Sonic to rely on accessing the hard-disk.

Balancing Disk vs. RAM

Use the **Balance** slider to balance the hard disk versus the RAM usage.

- If you need more RAM for other applications, drag the slider to the left, towards the **Disk** setting.
- If your hard disk is not supplying data fast enough, drag the slider to the right, towards the **RAM** setting.

NOTE

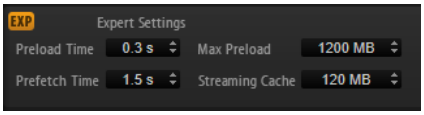
The **Disk** vs. **RAM** setting applies to all plug-in instances. It is not saved with the project.

Max Preload

Determines the maximum amount of RAM that HALion Sonic uses for preloading samples. In most cases, the default values are sufficient. However, it may become necessary to reduce this value, for example, when working with other applications or plug-ins that require a lot of memory.

Expert Mode (EXP)

Activate **Expert Mode** if you want to adjust the **Disk Streaming** settings in greater detail.



- **Preload Time** defines how much of the start of the samples is preloaded into the RAM. Larger values allow for more samples to be triggered within a short period of time.
- **Prefetch Time** determines the read-ahead capacity into the RAM while streaming samples for a voice that is playing. Larger values allow for better transfer rates from disk, and usually for more voices. However, this requires a larger streaming

cache in RAM. If you increase the **Prefetch Time**, we recommend to also increase the **Streaming Cache**.

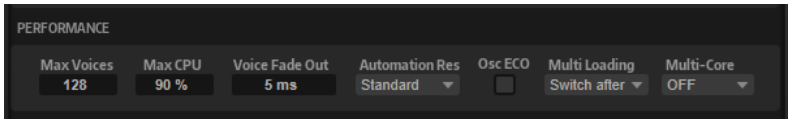
- **Streaming Cache** determines the amount of RAM that is reserved for prefetching. The required size depends on the **Prefetch Time**, the number of voices streamed simultaneously, and the audio format of the samples. For example, higher sample and bit rates need more RAM.

Used Preload and Available Memory

These displays provide information on the memory load in MB, based on the balance slider setting.

Performance Section

The **Performance** section contains settings to optimize the overall CPU performance of the plug-in.



Max Voices

Determines the total number of voices that a plug-in instance can play back. As soon as this limit is reached, HALion Sonic starts stealing voices.

Max CPU

To avoid clicks or audio dropouts from CPU overloads, you can specify a limit for the CPU load of the plug-in instance. HALion Sonic automatically steals voices when this limit is exceeded. With a setting of 100%, this parameter is deactivated.

NOTE

The reaction time of the plug-in may result in CPU peaks that exceed the set limit. This can lead to artifacts, such as audio drop-outs. Therefore, it is good practice to set the **Max CPU** setting to a value slightly lower than actually needed.

Voice Fade Out

Sets the time to fade out voices that need to be stolen because the **Max Voices** setting or the **Max CPU** setting has been reached.

Host Automation Resolution

Allows you to specify the resolution at which incoming automation data is processed. The **Standard** setting provides a good balance between accuracy and performance, **High** increases the resolution by a factor of four. This improves accuracy but increases performance requirements.

NOTE

This parameter only takes effect when working with large audio block sizes, such as 512 or 1024 samples. When working with smaller block sizes such as 256, 128 or below, the quality of the automation processing automatically increases. Larger block sizes are also used for tracks that are played through Cubase **ASIO guard**.

Osc ECO Mode

Activate this option to run the oscillators of synth layers in ECO mode. In ECO mode, the oscillators use less CPU at the cost of producing more aliasing at higher pitches. If this option is activated, you can play more voices with synth layers.

Multi Loading

Normally, when loading multi-programs, the previous multi-program is kept in the RAM until the new multi-program has been loaded completely.

- To clear a multi-program before loading a new one, select **Clear before** from the pop-up menu.

Multi-Core

Via this pop-up menu, you can specify how many of the available CPU cores of your system can be used by the plug-in. This allows HALion Sonic to compute each program on a different core, for example. The best setting depends on multiple factors and varies from system to system and from project to project. A good starting point is to set this value to one core less than the available number of cores.

NOTE

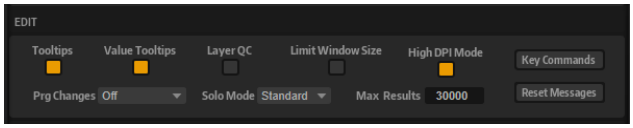
If you encounter any issues, reduce the number of cores, or set the pop-up menu to **Off**, and load multiple instances of HALion Sonic instead. This way, the host application distributes the work load among the available cores.

Edit Section

In the **Edit** section, you find general settings for HALion Sonic.

NOTE

The settings in this section are not saved with a project, but they affect the entire plug-in.



Show Tooltips

If this option is activated, a tooltip is shown when you move the mouse over a control.

Show Value Tooltips

If this option is activated, parameters without a value field display their value in a tooltip when you use the corresponding control.

Show Layer Quick Controls

Allows you to show/hide the quick controls for the layers in addition to those for the program.

- If this option is deactivated, the quick control section only shows program quick controls, and new quick control assignments can only be made for them.
- If this option is activated, the quick control section can show the program quick controls or the layer quick controls. You can switch between those quick controls using the buttons on the left. New quick control assignments can be made for the program or for the layers.

Limit Window Size

Limits the size of the plug-in window to fit in the available screen space. Activate this option if the display of your laptop or your computer monitor cannot fully display the plug-in. With this option activated, a scroll bar is displayed in the plug-in window, which allows you to navigate to areas outside the visible area.

High DPI Mode

If **High DPI Mode** is activated, the plug-in uses high-resolution bitmaps when it is displayed with a scaling of 150% and higher on a high-resolution monitor, such as 4K (UHD), 5K, etc. This allows for sharper images on high-resolution displays.

NOTE

- Windows systems currently only support scaling factors that are multiples of 100. For example, if you use a scaling factor of 150%, in HALion Sonic, the scaling factor used is 200%.

  High DPI Mode may not be compatible with some software and hardware combinations. If you experience display issues with your setup, you can deactivate **High DPI Mode**.

  If **High DPI Mode** is deactivated, the native monitor resolution is used.
- If you use HALion Sonic as a standalone application, the **High DPI Mode** option on the **Options** page is deactivated. Instead, the corresponding option in the **Preferences** dialog is used.

Program Changes

Determines how HALion Sonic handles incoming MIDI program change messages.

- In **GM Mode**, program change messages are used to switch programs in the slots of the **Slot Rack**.
- In **Multi Mode**, program change messages are used to switch between the 128 multi-programs that can be configured on the **Multi** page.
- Select **Off** to ignore incoming controller change messages.

Solo Mode

- In **Standard** mode, you can solo multiple programs or layers to hear them combined.
- In **Exclusive** mode, only one program or layer can be soloed at a time.

Maximum Number of Results in MediaBay/Browser

Specifies the maximum number of results displayed in the results list of the **MediaBay**/**Browser**.

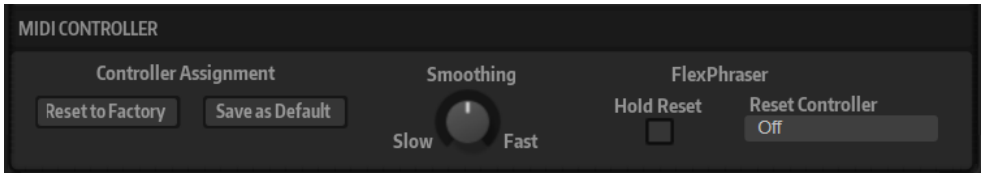
Key Commands

Opens the **Key Commands** dialog, where you can view and assign key commands.

Reset Messages

If you click this button, all message dialogs that have been suppressed with the **Don't Show Again** option are displayed again.

MIDI Controller Section



Controller Assignment

With the two buttons in this section, you can save your customized MIDI controller assignments as defaults or restore the factory MIDI controller assignments.

NOTE

Save as Default does not include any of the MIDI controller assignments of the AUX FX.

The current MIDI controller mapping is also saved with each project. This way, you can transfer your settings to other systems. The project includes the MIDI controller assignments of the AUX FX as well.

MIDI Controller Smoothing

MIDI controllers have a maximum resolution of 128 steps. As a result, if you use a MIDI controller as a modulation source in the modulation matrix or to remote-control a quick control, the parameter change may occur in audible steps, causing an effect often referred to as “zipper noise”. To avoid this, HALion Sonic provides MIDI controller smoothing, so that parameter changes occur more gradually.

- If MIDI controller changes cause audible artifacts, turn the control further to the left. This way, MIDI controller changes do not occur immediately but are spaced over a period of time (in milliseconds).
- If you want more immediate MIDI controller changes, turn the control further to the right. Note, however, that this may introduce audible artifacts.

FlexPhraser Hold Reset

Allows you to send a global hold reset message to all FlexPhraser modules or arpeggiators that are used.

FlexPhraser Reset Controller

Allows you to assign a MIDI controller to the **FlexPhraser Hold Reset** button for remote-controlling it.

RELATED LINKS
Automation on page 86
Preferences Dialog on page 179

Editing Programs and Layers

On the **Edit** page, you can access the parameters and settings for programs and layers. Furthermore, this is where you set up the insert effects.

A program contains up to four layers. Each layer can be edited separately.

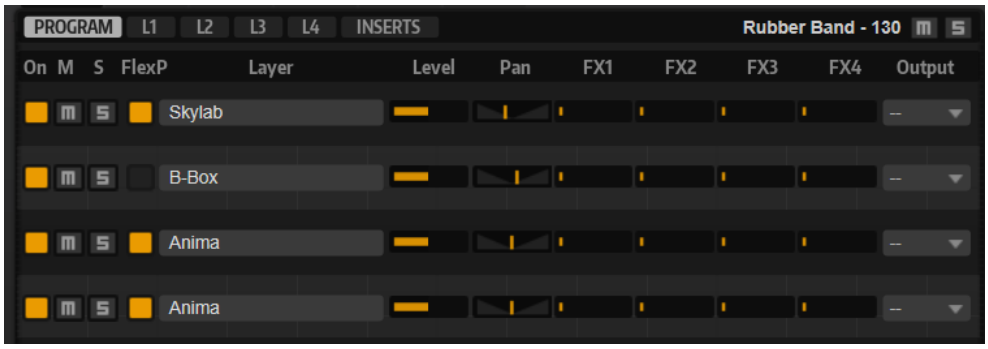
- To edit a program, activate the **Program** button.
- To edit a layer, activate the corresponding layer button (**L1** to **L4**).

  The available parameters and tabs vary depending on the type of layer.
- To set up the insert effects, activate the **Inserts** button.

Program Page Parameters

The **Program** page is divided into two sections. The section at the top serves to load and save layers, and to set up the mix parameters, such as level, pan, and FX sends. The bottom section displays layer ranges, program FlexPhraser editors, quick control assignments, or Note Expression parameters.



On/Off

Activates/Deactivates the corresponding layer. If a layer is deactivated, it does not use any processing power.

Mute

Mutes the corresponding layer.

Solo

Solos the corresponding layer. You can solo multiple layers at the same time.

NOTE

The **Mute** and **Solo** buttons at the top of the page mute the entire program.

FlexPhraser On/Off

Activates/Deactivates the FlexPhraser for a layer.

You can edit the FlexPhraser on the edit page for the corresponding layer.

NOTE

This button is only available for layers that support the FlexPhraser functionality.

Layer Slots

The layer slots allow you to load up to four layers for a program. When you click one of the four layer slots, it gets the focus. You can load a layer preset into the focused slot by double-clicking the preset in the **MediaBay**.

Right-click a slot to open a context menu with the following options:

- **Load Layer** opens the **Load Layer** dialog. Select a layer, and click **OK** to load it into this slot.
- **Save Layer** saves the layer in this slot with the current settings, under the same name.

  NOTE

  To save write-protected content, you must choose a new layer name.

- **Save Layer As** opens the **Save Layer** dialog, where you can save the layer under a new name.
- **Remove Layer** removes the layer from the slot.
- **Init Layer** loads a neutral synth layer.
- **Copy Layer** copies the layer to the clipboard.
- **Paste Layer** pastes the copied layer into the current slot.

Level

Adjusts the loudness of the layer.

Pan

Sets the position of the layer in the stereo panorama.

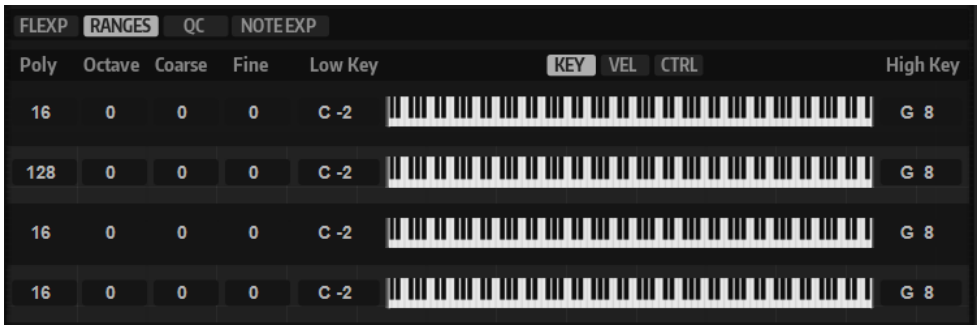
FX1–4 Send Levels

These four sliders adjust the send levels for the global AUX FX busses for each layer.

Output

Sets the output for each layer. If you do not change this setting, the signal is sent to the output that is specified for the program. But you can also select the main output or one of the plug-in outputs.

Ranges Tab



Poly

Specifies how many notes can be played at the same time.

NOTE

Polyphony is part of the layer settings and is therefore restored when you load a layer.

If a layer is monophonic, this setting has no effect.

Octave

Allows you to shift the octave of a layer by ±5 octaves.

Fine

Allows you to detune a layer by ±100 cents.

Key Range (Low Key, High Key)

Allows you to limit the key range for a slot.

Velocity Range (Low Vel, High Vel)

Allows you to limit the velocity range for a slot.

Controller Filter

Allows you to filter out the most commonly used MIDI controllers.

FlexP, QC, and NoteExp Tabs

The **FlexP** (FlexPhraser), **QC** (Quick Controls), and **NoteExp** (Note Expression) tabs are described in their own sections in this documentation.

RELATED LINKS
FlexPhraser on page 75
Quick Controls on page 18
Note Expression on page 177
Editing the Key Range on page 34
Editing the Velocity Range on page 34
Filtering Controllers on page 35

Editing the Key Range

Each slot can be limited to a specific key range.

To show the key range, activate the **Key** button above the range controls.

You can set the key range in the following ways:

- Set the range with the **Low Key** and **High Key** value fields or by dragging the ends of the keyboard range control.
- To move the key range, click in the middle of the range control and drag.
- To set the range via MIDI input, double-click in a value field, and play the note.

Editing the Velocity Range

Each slot can be limited to a specific velocity range.

To show the velocity range, activate the **Vel** button above the range controls.

- Set the velocity range with the **Low Vel** and **High Vel** value fields or by dragging the ends of the velocity range control.

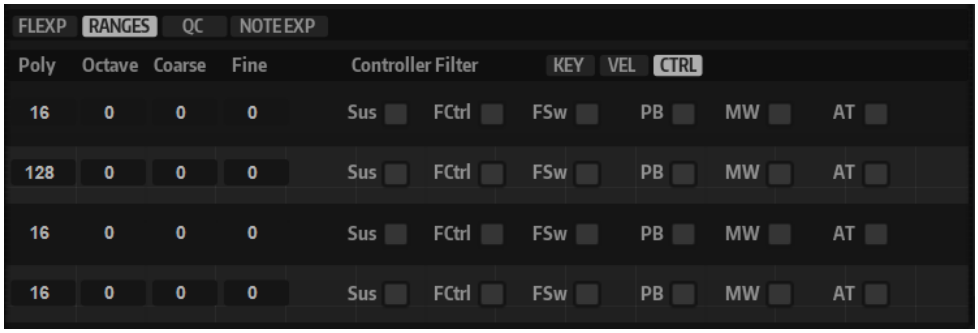
  To move the velocity range, click in the middle of the range control and drag.

Filtering Controllers

You can filter out the most commonly used MIDI controllers for each slot separately.

For example, if you set up a keyboard split with bass and piano playing on the same MIDI channel, both sounds receive the same MIDI controllers. However, you usually do not want the bass to receive the sustain pedal. To avoid that all sounds on the same MIDI channel receive the same MIDI controllers, use the controller filter.

Filtering out control change messages can also be used to avoid unwanted program changes on MIDI channel 10 (drums), for example.



PROCEDURE

1. Activate the **Ctrl** button above the range controls.
2. For each slot, activate the MIDI controllers that you want to filter out.

   You can filter out the following MIDI controllers: Sustain Pedal #64, Foot Controller #4, Foot Switches #65-69, Pitchbend, Modulation Wheel #1, and Aftertouch.

Layer Page Parameters

Which parameters are available on the **Layer** page depends on the selected layer and layer type. Some layers offer their parameters on a dedicated macro page. Other content layers allow you to set up and edit their parameters.

For those layers not using a macro page, you can set up the parameters on the **Voice**, **Pitch**, **Filter**, **Osc**, and **Amp** tabs.

In the lower section of the page, you can set up LFOs, FlexPhrasers, the Modulation Matrix, envelopes, and more.

Voice Tab

Mono

Allows you to switch between monophonic and polyphonic playback.

- Activate **Mono** to switch to monophonic playback. Usually, this allows a more natural sounding performance for solo instruments.
- Deactivate **Mono** to play polyphonically with the number of notes specified by the **Polyphony** control.

Retrigger

This option is only available in **Mono** mode. If **Retrigger** is activated, a note that was stolen by another note is retriggered if you still hold the stolen note when you release the new one.

This way, you can play trills by holding one note and quickly and repeatedly pressing and releasing another note, for example.

Polyphony

Sets the upper limit for the number of notes that you can play if **Mono** is deactivated.

NOTE

If the program has a lower value for polyphony than any of its layers, the maximum number of notes is determined by the program.

Trigger Mode

Defines the trigger behavior for new notes.

- **Normal** triggers a new note when the previous note gets stolen. The sample and the envelope of the new note are triggered from the start.

  To minimize discontinuities, use the **Fade Out** parameter of the zone.
- **Resume** does not always trigger a new note.

  If the new note stays within the same zone, the envelope is retriggered but resumes at the level of the stolen note. The pitch of the zone is set to the new note.

  If the new note plays in a different zone, the sample and the envelope of the new note are triggered from the start.
- **Legato** does not always trigger a new note.

  If the new note stays within the same zone, the envelope keeps running. The pitch of the zone is set to the new note.

  If the new note plays in a different zone, the sample and the envelope of the new note are triggered from the start.

- **Resume Keeps Zone** does not trigger a new note upon note stealing. The envelope resumes at the level of the stolen note, and the pitch of the zone is set to the new note, even if the new note plays in a different zone.
- **Legato Keeps Zone** does not trigger a new note upon note stealing. The envelope keeps running, and the pitch of the zone is set to the new note, even if the new note plays in a different zone.

Voice Mode

Determines which notes are stolen during playback and whether new notes are triggered when the **Polyphony** setting is exceeded.

- **Last Note Priority** – The most recently played notes have playback priority over the notes that were played before them.

  If you exceed the maximum number of notes, the notes that were played first are stolen in chronological order (First in/First Out), and the new notes are triggered.
- **First Note Priority** – Older notes have playback priority over newer notes.

  If you exceed the maximum number of notes while older notes are still being held, no notes are stolen. New notes are only triggered if a free voice is available.
- **Low Note Priority** – Low notes have playback priority over higher notes.

  If you exceed the maximum number of notes by playing a lower note than the ones that are held, the highest note is stolen, and the new note is triggered.

  If you exceed the maximum number of notes by playing a higher note than the ones that are held, no note is stolen, and no new note is triggered.
- **High Note Priority** – High notes have playback priority over lower notes.

  If you exceed the maximum number of notes by playing a higher note than the ones that are held, the lowest note is stolen, and the new note is triggered.

  If you exceed the maximum number of notes by playing a lower note than the ones that are held, no note is stolen, and no new note is triggered.
- **Steal Lowest Amplitude** – New notes have playback priority over notes with a low amplitude.

  If you exceed the maximum number of notes, the note with the lowest amplitude is stolen, and the newest note is triggered.
- **Steal Released Notes** – New notes have priority over notes that enter the release phase.

  If you exceed the maximum number of notes, the oldest note that is in its release phase is stolen, and the new note is triggered.

  If no note is playing in release and you exceed the maximum number of notes, the first played notes are stolen in chronological order, and the new notes are triggered.

Key Poly

With this parameter, you can specify an upper limit for the number of notes that can be played for a key. The notes that were played last have priority. For this parameter to take effect, the **Mono** button must be deactivated.

NOTE

Key Poly is limited by the **Polyphony** setting.

Low Amp

By default, the oldest note is removed first when notes are stolen due to a **Key Poly** limitation. If you want the note with the lowest amplitude to be removed instead, activate **Low Amp**.

Min Low Notes

Defines the number of low notes that cannot be stolen, regardless of the **Voice Mode** setting.

Make sure that the polyphony of the program is high enough for your specific **Min Low Notes** setting and that it allows you to play additional higher notes.

Key On Delay

With this parameter, you can delay the playback of the layer by a specified time or a note value.

If **Sync** is deactivated, the delay is specified in milliseconds. If **Sync** is activated, the delay is specified in fractions of beats.

To synchronize the delay time to the host tempo, activate the **Sync** button and select a note value from the pop-up menu. To change the selected note value to a triplet, activate the **T** button.

Unison

Allows you to trigger multiple voices simultaneously with each note that you play. If you activate **Unison**, the following parameters become available:

- **Voices** determines the number of voices that are triggered simultaneously (max. 8).
- **Detune** detunes the pitch of each unison voice in cents. This produces a fatter sound.
- **Pan** spreads the unison voices across the stereo panorama. The higher the value, the broader the stereo image.
- **Delay** allows you to introduce a small random delay for each unison voice.

  With a value of 0%, all unison voices are triggered at the same time. Values from 1% to 100% add a random delay to each unison voice. The higher the value, the more random the delay. This is especially useful to avoid comb filter effects with two or more slightly detuned samples.

Glide

Allows you to bend the pitch between notes that follow each other. You achieve the best results in **Mono** mode. If you activate **Glide**, the following parameters become available:

- **Time** specifies the time needed to bend the pitch from one note to the other.
- Activate **Sync** to synchronize the delay time to the host tempo. Select a note value from the pop-up menu. To change the selected note value to a triplet, activate the **T** button.
- **Mode** determines the glide time.

  Set this parameter to **Constant Time** to keep the glide time constant and independent from the note interval.

  Set this parameter to **Constant Speed** to change the glide time with the note interval. Larger intervals result in longer glide times.
- **Curve** allows you to select one of three curve types to define the glide behavior.

  With the **Linear** curve, the pitch glides at continuous speed from the start to the end pitch.

With the **Exponential** curve, the pitch starts gliding at higher speed and decelerates towards the end pitch. This behavior is similar to the natural pitch glide produced by a singer.

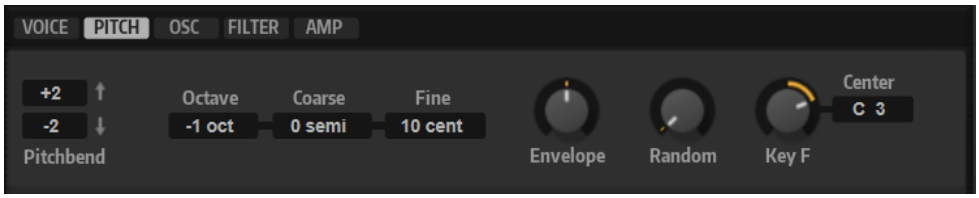
With the **Quantized** curve, the pitch glides in semitones from the start to the end pitch.

- **Fingered** allows you to glide the pitch only between notes that are played legato.

NOTE

If you use **Cutoff Key Follow**, **Level Key Follow**, and **Pan Key Follow**, the corresponding parameters also change with the **Glide** effect.

Pitch Tab



Pitchbend Up/Pitchbend Down

Determines the range of the modulation that is applied when you move the pitchbend wheel.

Octave

Allows you to shift the octave of a layer by ±5 octaves.

Coarse

Allows you to shift the pitch of a layer by ±12 semitones.

Fine

Allows you to detune a layer by ±100 cents.

Pitch Envelope Amount

Determines how much the pitch is affected by the pitch envelope. For example, if this parameter is set to 12, an envelope node can raise/lower the pitch by one octave.

Random Pitch

Allows you to randomly offset the pitch with each played note. Higher values cause stronger variations. At a setting of 100 %, the random offsets can vary from -6 to +6 semitones.

Pitch Key Follow

Allows you to adjust the pitch modulation based on the MIDI note number. With this parameter set to a positive value, the higher you play, the more the pitch is raised. With the parameter set to a negative value, the higher you play, the lower the pitch. At a setting of +100%, the pitch follows the played note exactly.

Center Key

Specifies the MIDI note that is used as the central position for the **Pitch Key Follow** function.

Oscillator Tab

The **Oscillator** tab offers six sound sources: three main oscillators, the sub oscillator, the ring modulation, and the noise generator. To create interesting electronic spectra, you can mix any of these sound sources. The resulting signal is sent to the **Filter** and **Amplifier** tabs for further sound shaping.

The three main oscillators (**OSC 1**, **OSC 2**, and **OSC 3**) offer several wave shapes and algorithms.

- To activate an oscillator, click its **On/Off** button.

OSC 1/2/3 Type

The oscillator type defines the basic sound character of the oscillator. This pop-up menu lists the waveforms **Sine**, **Triangle**, **Saw**, and **Square**, followed by the algorithms **PWM**, **Sync**, **CM** and **XOR**. The combination of waveform and algorithm controls the sound of the oscillator.

The following algorithms are available:

- **PWM** (pulse width modulation) is only supported by the square waveform. The **Waveform** parameter sets the ratio between the high and the low value of the square wave. A setting of 50% produces a pure square wave. With settings below or above 50%, the oscillator produces rectangular waves.
- **Sync** provides different hard-sync oscillators, each of them a combination of a master and slave oscillator. The wave shape of the slave oscillator is reset with each full wave cycle of the master oscillator. This means that a single oscillator can produce a rich sync-sound without using other oscillators. The **Waveform** parameter adjusts the pitch of the slave oscillator, producing the typical sync sound.
- **CM** (cross modulation) provides a combination of two oscillators, where one oscillator is modulating the pitch of another oscillator at the rate of the audio sample. The **Waveform** parameter adjusts the pitch ratio between the two oscillators, resulting in a sound closely resembling frequency modulation.
- **XOR** (exclusive OR) compares two square waveforms with an **XOR** operation. Depending on the outcome of the **XOR** operation, the wave shape of a third oscillator is reset. The **Waveform** parameter adjusts the pitch ratio of the square oscillators, resulting in a sound closely resembling ring modulation of the third oscillator.

Osc 1/2/3 Waveform

Modifies the sound of the oscillator algorithm. Its effect depends on the selected oscillator type.

NOTE

- Except for **PWM**, all algorithms support the **Sine**, **Triangle**, **Saw**, and **Square** wave shapes. **PWM** only supports the **Square** wave shape.

- The **Waveform** parameter for the three main oscillators can be assigned as the modulation destination in the modulation matrix.

OSC 1/2/3 Octave

Adjusts the pitch in octave steps.

OSC 1/2/3 Coarse

Adjusts the pitch in semitone steps.

OSC 1/2/3 Fine

Adjusts the pitch in cent steps. This allows you to fine-tune the oscillator sound.

OSC 1/2/3 Level

Adjusts the output level of the oscillator.

NOTE

Waveform, **Pitch**, and **Level** of oscillators 1, 2, and 3 can be modulated separately in the modulation matrix.

Multi-Oscillator Mode

For the three main oscillators, you can activate **Multi-Oscillator** mode. This allows you to create a richer sound by producing up to eight oscillators simultaneously.

- To activate **Multi-Oscillator** mode, activate the **MO** button.

If **Multi-Oscillator** mode is activated, you can click the **Edit Multi-Oscillator Parameters** button to show the corresponding parameters.

NOTE

If **Multi-Oscillator** mode is active for an oscillator, you can modulate the corresponding parameters in the modulation matrix.

Multi Oscillator Number, Detune, and Spread

- **Number** determines the number of oscillators that play back simultaneously. You can also set fractions of numbers. For example, with a setting of 2.5, you hear two oscillators at full level and a third one at half level.
- **Detune** detunes the oscillators.
- **Spread** narrows or widens the stereo panorama. With a setting of 0%, you create a mono signal, and with 100%, you create a stereo signal.

Sub Oscillator

The pitch of the sub oscillator is always one octave lower than the overall pitch. The overall pitch is determined by the **Octave** setting.

On/Off

Activates/Deactivates the sub oscillator.

Type

Determines the wave shape of the sub oscillator. You can choose **Sine**, **Triangle**, **Saw**, **Square**, **Pulse Wide**, or **Pulse Narrow**.

Level

Adjusts the output level of the sub oscillator.

Ring Modulator

Ring modulation generates sums and differences between the frequencies of two signals.

Ring Modulation Source 1/Ring Modulation Source 2

Determines the sources to be ring modulated. You can select **OSC 1** or **Sub** as **Source 1**, and **OSC 2** or **OSC 3** as **Source 2**.

NOTE

Make sure that the corresponding oscillators are activated when you select them. Otherwise, no sound is heard.

Ring Modulation Level

Adjusts the output level of the ring modulation.

Noise Generator

The **Noise** parameter is used for non-pitched sounds. In addition to standard white and pink noise, there are also band-pass filtered versions of white and pink noise.

Noise Type

The sound color of the noise. You can choose between standard and band-pass filtered (**BPF**) versions of white and pink noise.

Noise Level

Adjusts the output level of the noise generator.

Filter Tab

Filter Mode

The buttons on the left determine the overall filter structure.

- **Single Filter** uses one filter with one selectable filter shape.
- **Dual Filter Serial** uses two separate filters connected in series.

  You can select the filter shapes for each filter independently. The parameters **Cutoff** and **Resonance** control both filters simultaneously. However, you can offset these parameters for the second filter with the parameters **CF Offset** and **Res Offset**.
- **Dual Filter Parallel** uses two separate filters connected in parallel.

  You can select the filter shapes for each filter independently. The parameters **Cutoff** and **Resonance** control both filters simultaneously. However, you can offset these parameters for the second filter with the parameters **CF Offset** and **Res Offset**.
- **Morph 2** morphs between filter shape **A** and **B**.

  Adjust the morphing with the **Morph Y** parameter.
- **Morph 4** morphs sequentially from filter shape **A** to **D**.

  Adjust the morphing with the **Morph Y** parameter.
- **Morph XY** morphs freely between the filter shapes **A**, **B**, **C**, and **D**.

  Adjust the morphing with the **Morph X** and **Morph Y** parameters.

Filter Type

Specifies the basic sound character of the filter.

- **Off** deactivates the filter section.
- **Classic** offers 24 filter shapes with resonance.
- **Tube Drive** adds warm, tube-like distortion. You can set the amount of tube drive with the **Distortion** parameter.
- **Hard Clip** adds bright, transistor-like distortion. You can set the amount of hard clipping with the **Distortion** parameter.
- **Bit Red** (Bit Reduction) adds digital distortion by means of quantization noise. You can adjust the bit reduction with the **Distortion** parameter.
- **Rate Red** adds digital distortion by means of aliasing. You can adjust the rate reduction with the **Distortion** parameter.

- **Rate Red KF** adds digital distortion by means of aliasing. In addition, **Key Follow** is used. The rate reduction follows the keyboard, so the higher you play, the higher the sample rate.
- **HALion 3** offers the five legacy filter shapes from HALion 3.
- **Waldorf** offers 13 filter shapes, including two comb filters.
- **Eco** is a performance-optimized low-pass filter without **Resonance** or **Distortion** parameters. It allows you to adapt the brilliance of samples for different velocity layers of the same key, for example.

NOTE

Filters without distortion use less processing power.

Filter Shape

- LP24, 18, 12, and 6 are low-pass filters with 24, 18, 12, and 6 dB/oct. Frequencies above the cutoff are attenuated.
- BP12 and BP24 are band-pass filters with 12 and 24 dB/oct. Frequencies below and above the cutoff are attenuated.
- HP6 + LP18 and HP6 + LP12 are a combination of a high-pass filter with 6 dB/oct and a low-pass filter with 18 and 12 dB/oct, respectively (asymmetric band-pass filter). Frequencies below and above the cutoff are attenuated. Attenuation is more pronounced for the frequencies above the cutoff.
- HP12 + LP6 and HP18 + LP6 are a combination of a high-pass filter with 12 and 18 dB/oct and a low-pass filter with 6 dB/oct (asymmetric band-pass filter). Frequencies below and above the cutoff are attenuated. Attenuation is more pronounced for the frequencies below the cutoff.
- HP24, 18, 12, and 6 are high-pass filters with 24, 18, 12, and 6 dB/oct. Frequencies below the cutoff are attenuated.
- BR12 and BR24 are band-reject filters with 12 and 24 dB/oct. Frequencies around the cutoff are attenuated.
- BR12 + LP6 and BR12 + LP12 are a combination of a band-reject filter with 12 dB/oct and a low-pass filter with 6 and 12 dB/oct, respectively. Frequencies around and above the cutoff are attenuated.
- BP12 + BR12 is a band-pass filter with 12 dB/oct plus a band-reject filter with 12 dB/oct. Frequencies below, above, and around the cutoff are attenuated.
- HP6 + BR12 and HP12 + BR12 are a combination of a high-pass filter with 6 and 12 dB/oct and a band-reject filter with 12 dB/oct. Frequencies below and around the cutoff are attenuated.
- AP is an all-pass filter with 18 dB/oct. Frequencies around the cutoff are attenuated.
- AP + LP6 is an all-pass filter with 18 dB/oct plus a low-pass filter with 6 dB/oct. Frequencies around and above the cutoff are attenuated.
- HP6 + AP is a high-pass filter with 6 dB/oct plus an all-pass filter with 18 dB/oct. Frequencies around and below the cutoff are attenuated.

X/Y Control

Allows you to adjust two parameters simultaneously.

- For the filter types **Single**, **Dual Serial**, and **Dual Parallel**, the X/Y control adjusts the cutoff frequency on the horizontal axis and the resonance on the vertical axis.

- For the filter types **Morph 2** and **Morph 4**, the X/Y control adjusts the morphing between the filter shapes on the vertical axis. The horizontal axis adjusts the cutoff frequency.
- For **Morph XY**, the X/Y control adjusts the morphing between the filter shapes **AD** and **BC** on the horizontal axis, and **AB** and **DC** on the vertical axis.

Cutoff

Controls the cutoff frequency of the filter.

Resonance

Emphasizes the frequencies around the cutoff. At higher settings, the filter self-oscillates, which results in a ringing tone.

Distortion

Adds distortion to the signal. The effect depends largely on the selected filter type. At higher settings, it creates a very intense distortion effect.

NOTE

This parameter is only available for the filter types **Tube Drive**, **Hard Clip**, **Bit Red**, **Rate Red**, and **Rate Red KF**.

CF Offset

For the dual filters, this parameter allows you to offset the cutoff frequency of the second filter, that is, of filter shape B.

Res Offset

For the dual filters, this parameter allows you to offset the resonance of the second filter, that is, of filter shape B.

Cutoff Velocity

Controls the cutoff modulation from velocity.

Envelope Amount

Controls the cutoff modulation from the filter envelope.

Cutoff Key Follow

Adjusts the cutoff modulation using the note number. Increase this parameter to raise the cutoff with higher notes. At 100%, the cutoff follows the played pitch exactly.

Center Key

Specifies the MIDI note that is used as the central position for the **Key Follow** function.

Amplifier Tab

Level

Controls the overall volume of the sound.

Level Key Follow

Allows you to control the volume depending on the note pitch. Positive values mean that, the higher the notes you play, the more the volume is raised. With negative values, higher notes result in lower volume.

Center Key

Specifies the MIDI note that is used as the center position for **Level Key Follow**.

Pan

Determines the position of the sound in the stereo panorama. At a setting of -100%, the sound is panned hard left, and at +100%, it is panned hard right.

Mode

With this option, you can specify loudness variations across the stereo panorama.

- If this parameter is set to **0 dB**, it works like a balance control.

  Setting the pan control towards the left fades out the right channel and vice versa. At the center position, the loudness is not cut.

- With this parameter set to **-3 dB**, the option uses the cosine/sine pan law.

  The loudness is cut by -3 dB at the center position, but the energy is preserved when moving the source signal across the stereo panorama. The **-3 dB** option sounds more natural. The transition from hard left to hard right sounds much smoother than with the **0 dB** or the **-6 dB** setting.

- With this parameter set to **-6 dB**, this option uses the linear pan law.

  The loudness is cut by -6 dB at the center position, and the energy is not preserved when moving the source signal across the stereo panorama. The **-6 dB** option sounds more synthetic. The transition from hard left to hard right sounds more abrupt than with the **-3 dB** setting.

- With this parameter set to **Off**, no panning is applied.

Random Pan

Allows you to offset the pan position randomly with each played note. Higher values cause stronger variations. At a setting of 100%, the random offsets can vary from fully left to fully right.

Alternate Pan

Allows you to alternate the pan position each time that you play a note. To start panning on the left, use negative values. Use positive values to begin on the right. At a setting of +100%, the first note plays hard right, the second note hard left, and so on.

Reset

The initial pan position is set once, on startup. Subsequently, each note that you play is counted to determine the next pan position. To reset this counter, click the **Reset** button.

Pan Key Follow

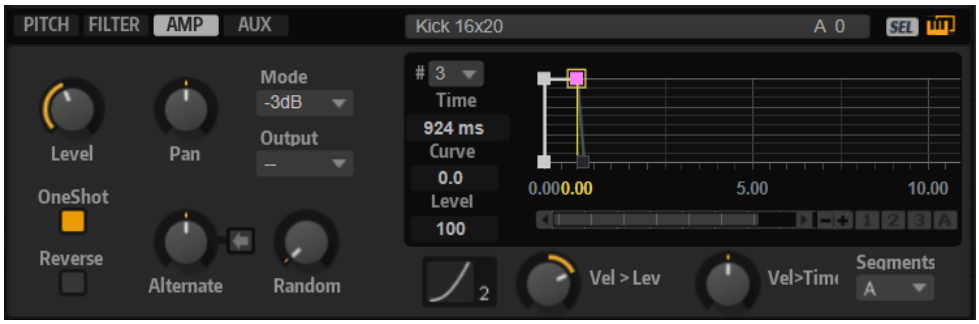
Allows you to adjust the pan modulation via the MIDI note number. Set this parameter to positive values to offset the pan position towards the right for notes above, and towards the left for notes below the center key. Use negative values to offset the pan position towards the left for notes above, and towards the right for notes below the center key.

At the maximum setting of +200%, the pan position moves from hard left to hard right within two octaves: Fully left is reached one octave below, and fully right is reached one octave above the center key.

Center Key

Specifies the MIDI note that is used as the center position for **Pan Key Follow**.

Additional Parameters for Drum and Loop Layers



One Shot

If this button is activated, any MIDI note-off messages are ignored. The release segments of the envelopes is not played. Instead, the envelopes play until the sustain is reached and remain on that level for as long as the sample plays back. Any loop settings of the sample are ignored.

Reverse

If this button is activated, the sample is played in reverse. Any loop settings the sample may contain are ignored.

Envelopes

On the **Edit** page, you can edit the pitch (**P**), filter (**F**), amp (**A**), and user (**U**) envelopes.

Each of these is a multi-segment envelope with up to 512 nodes. The nodes specify the overall shape of the envelope. The amp, filter, and pitch envelopes are pre-assigned to the amplitude, the filter cutoff frequency, and the pitch of the layer. The user envelope is freely assignable.

All envelopes can be used as sources in the modulation matrix.

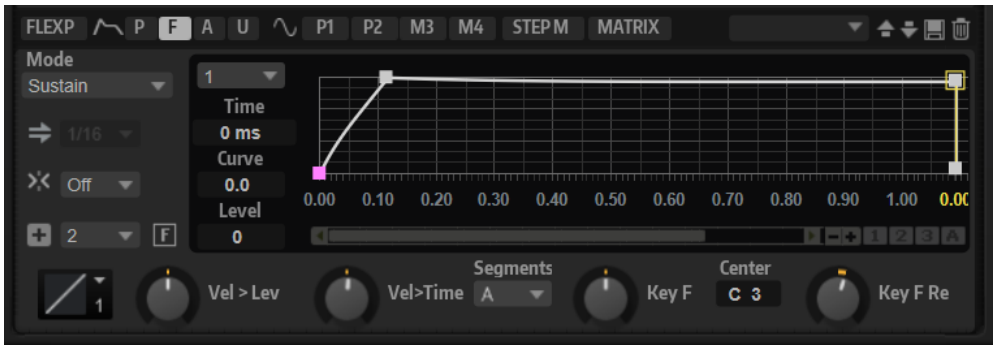
- Click **P** to display the parameters of the pitch envelope.

  The pitch envelope modulates the pitch over time. The pitch envelope is bipolar, which means it allows for negative and positive values to bend the pitch.
- Click **F** to display the parameters of the filter envelope.

  The filter envelope controls the cutoff frequency to shape the harmonic content over time.
- Click **A** to display the parameters of the amplifier envelope.

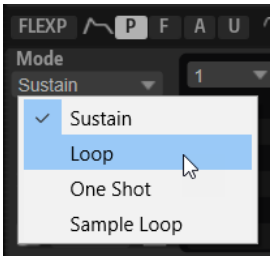
  The amplifier envelope shapes the volume over time.
- Click **U** to display the parameters of the freely assignable user envelope.

  The user envelope is bipolar, which means it allows for negative and positive values, for example, to modulate the pan from left to right.



Mode

Determines how the envelope is played back when it is triggered.



- Select **Sustain** to play the envelope from the first node to the sustain node. The sustain level is held for as long as you play the note. When you release the note, the envelope continues with the stages following the sustain. This mode is ideal for looped samples.
- Select **Loop** to play back the envelope from the first node to the loop nodes. As a result, the loop is repeated for as long as you hold the key. When you release the note, the envelope continues playing the stages that follow the sustain. This mode is ideal for adding motion to the sustain of the envelope.
- Select **One Shot** to play the envelope from the first to the last node, even if you release the key. The envelope has no sustain stage. This mode is ideal for drum samples.
- Select **Sample Loop** to preserve the natural attack of the sample. The decay of the envelope does not start until the sample has reached the sample loop start.

  If you set the second node to the maximum level and use the subsequent nodes to shape the decay during the loop phase of the sample, the envelope only affects the loop phase. The attack of the envelope is still executed.

  NOTE

  Sample Loop mode is only available for sample layers.

NOTE

You can load and play HALion 7 envelope subpresets that use the **Shaper** mode, which is not available in HALion Sonic. However, you do not have full access to all of its editing functions.

Sync to Host Tempo

Allows you to synchronize the envelopes to the tempo of your host application.

Snap to Guide Envelope

If **Snap to Guide Envelope** is activated and you change the position of nodes, they snap to the nodes of the guide envelope that is shown in the background.

NOTE

Pitch envelope nodes also snap to semitone positions.

Fill

Allows you to add multiple envelope nodes after the selected nodes.

Fixed Mode

- With **Fixed Mode** activated, only the selected nodes are moved when you move a node on the time axis.
- With **Fixed Mode** deactivated, all subsequent nodes are moved as well when you move a node.

Level Velocity Curve

You can select the curve type to specify how the incoming velocity translates to the level of the envelope. The characteristics of each curve are displayed by a small icon.

Level Velocity

Determines how the velocity affects the level of the envelope.

The level of the envelope depends on two factors: the setting of this parameter and how hard you hit a key. With positive values, the harder you hit a key, the higher the level of the envelope. With negative values, the harder you hit a key, the lower the level of the envelope.

Time Velocity

Adjusts the influence of velocity on the phases of the envelope. Positive values decrease the length of the phases for higher velocity values. Negative values increase the length of the phases for higher velocity values.

Segments Affected by Time Velocity

Allows you to select the phases of the envelope to be affected by the **Time Velocity** parameter.

- **Attack** – The velocity affects the attack only.
- **Attack + Decay** – The velocity affects all phases up to the sustain phase.
- **Decay** – The velocity affects all phases including the sustain phase, but without the attack.
- **Attack + Release** – The velocity affects the attack and the release phases.
- **All** – The velocity affects all phases.

Time Key Follow, Center Key, and KeyF Rel (Key Follow Release)

With the **Time Key Follow** and **KeyF Rel** parameters, you can scale the envelope phases across the keyboard.

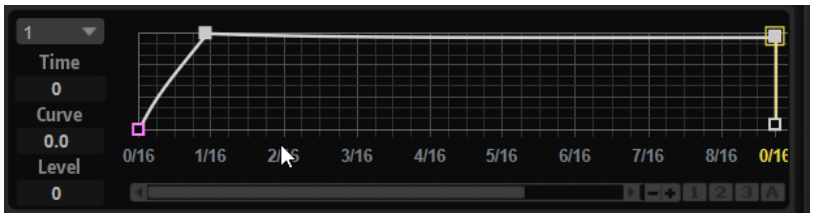
- **Time Key Follow** scales all times before the sustain node.
- **KeyF Rel** scales all times after the sustain node, that is, the release phase of the envelope.

The value that you specify for **Center Key** is used as the central position for the **Time Key Follow** and **KeyF Rel** functions.

The envelope phases depend on the keyboard range in which the note is played and on the corresponding **Time Key Follow** setting:

- Positive values decrease the phase lengths for notes above and increase the phase lengths for notes below the **Center Key**, that is, the higher the notes you play, the faster the envelope.
- Negative values increase the phase lengths for notes above and decrease the phase lengths for notes below the **Center Key**, that is, the higher the notes you play, the slower the envelope.

Envelope Display Controls



Envelope Node

Displays the active envelope node. To switch to another node, click in the value field and select a node from the pop-up menu.

Time

Specifies the period of time between two nodes. Depending on the **Sync** mode, the **Time** parameter is displayed in milliseconds and seconds, or in fractions of beats.

NOTE

The fraction is always reduced to the smallest possible value. 2/16 is displayed as 1/8, for example.

Curve

Allows you to adjust the curvature between two nodes from linear to logarithmic or exponential behavior.

Level

Specifies the amplitude of the envelope at the position set by the **Time** parameter.

Zooming

The vertical axis of the graphical envelope editor displays the level. The horizontal axis displays the time.

- To zoom in or out, click the **+** or **-** buttons to the right of the scrollbar below the graphical editor.
- To zoom in or out at the current position, click in the timeline and drag up or down.
- To toggle between full zoom and the previous zoom setting, click the **A** button to the right of the horizontal zoom slider.
- To zoom to a specific region, hold **Alt/Opt**, click and drag the mouse over the region.

Zoom Snapshots

Zoom snapshots save the zoom factor and scroll position of the editor. These are restored when you load the snapshot.

To the right of the scrollbar, you can find three numbered buttons that allow you to save and load zoom snapshots.

- To save the current state of the editor as a snapshot, **Shift**-click one of the numbered buttons to the right of the scrollbar.
- To load a zoom snapshot, click the corresponding button. The button color changes if a snapshot is active.

NOTE

If you perform any manual zooming or scrolling, the zoom snapshot is deactivated.

Node Editing

You can edit single nodes or multiple selected nodes.

- To add a node, double-click on the envelope curve.
- You can also add nodes by copying and pasting selected nodes.

  When you press **Ctrl/Cmd**, the insert position is indicated by a line. With **Sync to Host Tempo** activated, this insert line is aligned to the note value grid.

  NOTE

  An envelope can consist of up to 512 nodes. If more nodes are copied to the clipboard than can be pasted into the envelope, a warning indicator lights up.

- To delete a node, double-click it, or click it with the **Erase** tool.

  NOTE

  - You cannot remove the first, the last, or the sustain node.
  - All nodes added after the sustain node affect the release phase of the envelope.

- To delete several nodes, drag a selection rectangle around them with the **Erase** tool.

  With **Fixed Mode** activated, the positions of the remaining nodes are not modified. The **Time** value of the node to the right of the deleted selection is automatically adjusted.

  With **Fixed Mode** deactivated, the remaining nodes are moved to the left to fill the gap.
- To change the curvature between two nodes, drag the curve segment up or down, or enter a new value in the **Curve** field.

  Positive values change the curvature towards logarithmic, and negative values towards exponential behavior.

  To reset a curve to linear, **Ctrl/Cmd**-click it.
- To move a node, drag it sideways, or enter a new value in the **Time** field.

  For a higher resolution, hold **Shift** while moving the nodes.

  To limit the movement to the time axis, that is, to change only the horizontal position of a node, hold down **Ctrl/Cmd** while dragging.
- To change the level of a node, drag it up or down, or enter a new value in the **Level** field.

  For a higher resolution, hold **Shift** while moving the nodes.

  To limit the movement to the level axis, that is, to change only the vertical position of a node, hold down **Alt/Opt** while dragging.

Replacing Node Selections

You can replace a selection of nodes with nodes copied to the clipboard or with one of the predefined shapes on the shape selector.

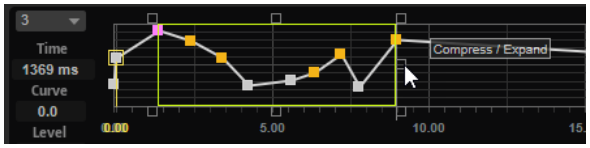
- To replace multiple nodes with a predefined curve, select the nodes, and select the curve from the shape selector.

  The shape is stretched/compressed to replace the exact time range of the selection.
- To replace multiple nodes with a selection of nodes from the clipboard, select the nodes that you want to replace, open the context menu, and select **Replace**.

  The copied nodes are stretched/compressed to replace the exact time range of the selection.

Multi Selection Editing with the Edit Tool

With multiple envelope nodes selected and with the **Edit** tool active, a multi-selection rectangle is shown in the envelope display. It has six handles that allow you to modify the selected nodes.



- To compress the node levels, drag the right or left middle handle down.
- To expand the node levels, drag the right or left middle handle up.
- To tilt the left part of the node selection upwards or downwards, drag the upper left handle.

  To use a shelving curve instead of a linear curve, press **Ctrl/Cmd**.
- To tilt the right part of the node selection upwards or downwards, drag the upper right handle.

  To use a shelving curve instead of a linear curve, press **Ctrl/Cmd**.
- To scale the node levels, drag the upper middle handle.

  To offset all nodes, press **Shift**. To use a bell curve instead of a linear curve, press **Ctrl/Cmd**.
- To scale the overall time of the selected nodes relative to the start node, drag the lower right handle.
- To scale the overall time of the selected nodes relative to the start node, drag the lower left handle.
- To move the time position of all selected nodes, drag the lower middle handle to the left or right.

  To move the nodes in smaller steps, press **Shift**.
- To compress or expand the overall time of the selected nodes relative to the selection center, press **Ctrl/Cmd**, and drag the lower middle handle.
- To change the level and position of all selected nodes, drag one of the nodes.

Selecting Nodes

CHOICES

- To select a node, click on it in the graphical editor.

  The focused node is indicated by a frame. The value fields above the graphical envelope editor display the parameters of the focused node.
- If multiple nodes are selected, you can use the **Selected Envelope Node** value field to set the focus to a different node without losing the current selection.

- To add a node to a selection, **Shift**-click the node. Selected nodes are edited together.
- You can select multiple nodes by drawing a rectangle around the nodes with the mouse.
- If the graphical editor has the focus, you can select the next or the previous node with the **Left Arrow** and **Right Arrow** keys.
- If multiple nodes are selected and the **Edit** tool is active, the multi-selection rectangle is shown, allowing for further editing functions.

RELATED LINKS
Node Editing on page 51

Adding Nodes Using the Fill Function

The **Fill** function allows you to add multiple envelope nodes after the selected nodes.

PROCEDURE

1. On the pop-up menu to the right of the **Fill** button, select the number of nodes that you want to add.
2. In the graphical envelope editor, select the node after which you want to add nodes.

   If several nodes are selected, the new nodes are inserted after the last selected node.

   If **Fixed** is deactivated, the added nodes are placed with the interval specified by the **Time** parameter of the selected node. If multiple nodes are selected, the interval is specified by the focused node.

   By activating **Sync**, you can specify the interval with the **Sync** note value. For example, if 1/4 is selected, new nodes are added at exact quarter note intervals.

   If **Fixed** is activated, the added nodes fill the space between the last selected node and the following one.
3. Click the **Fill** button.

Synchronizing Envelopes to the Host Application

You can synchronize the envelopes to the tempo of your host application. This allows you to set envelope times that relate to musical time intervals, regardless of any tempo changes.

PROCEDURE

1. Activate **Sync to Host Tempo** to activate sync mode for the envelope.

   A grid spaced in fractions of beats is displayed in the graphical envelope editor.
2. From the pop-up menu located to the right of the **Sync** button, select a note value. You can also select triplet or dotted note values.

   This sets the resolution of the grid.

   NOTE

   - Envelope nodes that do not exactly match a note value display the closest note value.
   - Nodes that match a note value exactly are indicated by a red dot inside the handle of the node. This is useful if you switch the grid between triplets and normal note values, for example. The triplet nodes still indicate that they match a note value, even if the grid shows normal note values.
3. You can also enter note values and triplets manually in the value field.

NOTE

The **Time** field of a node displays times in fractions of beats. The fraction is always reduced to the smallest possible value. 2/16 is displayed as 1/8, for example.

Setting Up the Loop

You can set up the envelope to repeat its playback between the selected nodes.

PROCEDURE

1. Set the envelope mode to **Loop**.
2. The loop is indicated by the green region in the graphical envelope editor. Specify the loop start and end by dragging the borders of the region.

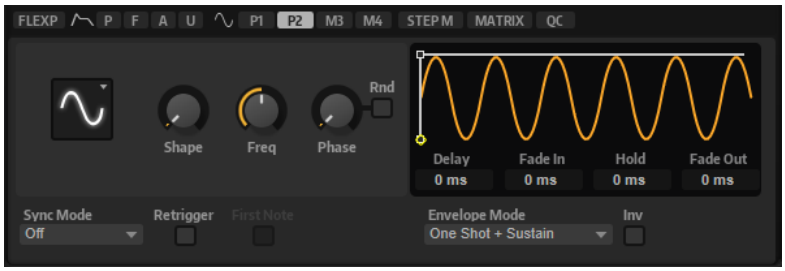
   The loop region can only be set up in the decay phase of the envelope.

LFOs

HALion Sonic offers two polyphonic and two monophonic LFOs. Polyphonic means the LFOs are calculated per voice, allowing for independent modulations with each triggered note. You can use this to create a richer sound, for example, with an independent pitch modulation per note. Monophonic means the LFOs are calculated only once per layer.

The same modulation is sent to all voices simultaneously. The LFOs can be assigned freely in the modulation matrix.

- Click **P1** or **P2** to show the settings for the corresponding polyphonic LFO.
- Click **M1** or **M2** to show the settings for the corresponding monophonic LFO.



You can adjust the times of the envelope in the graphical editor by dragging nodes left or right.

NOTE

How many nodes are available in the graphical editor depends on the selected **Envelope Mode**.

- The first node adjusts the **Delay** time.
- The second node adjusts the **Fade In** time.
- The third node adjusts the **Hold** time.
- The fourth node adjusts the **Fade Out** time.

Parameters for Monophonic and Polyphonic LFOs

LFO Wave Shape

Waveform selects the basic type of waveform. **Shape** changes the characteristics of the waveform.

- **Sine** produces smooth modulation, suitable for vibrato or tremolo. **Shape** adds additional harmonics to the waveform.
- **Triangle** is similar to **Sine**. **Shape** continuously changes the triangle waveform to a trapezoid.
- **Saw** produces a ramp cycle. **Shape** continuously changes the waveform from ramp down to triangle to ramp up.
- **Pulse** produces stepped modulation, where the modulation switches abruptly between two values. **Shape** continuously changes the ratio between the high and low state of the waveform. If **Shape** is set to 50%, a square wave is generated.
- **Ramp** is similar to the **Saw** waveform. **Shape** adds a gradually increasing amount of silence before the sawtooth ramp up begins.
- **Log** produces a logarithmic modulation. **Shape** continuously changes the logarithmic curvature from negative to positive.
- **S & H 1** produces random stepped modulation, where each step is different. **Shape** puts ramps between the steps and changes the **S & H** into a smooth random signal, with the control set fully to the right.
- **S & H 2** is similar to **S & H 1**. The steps alternate between random high and low values. **Shape** puts ramps between the steps and changes the **S & H** into a smooth random signal, with the control set fully to the right.

Sync Mode

Sync Mode is used to synchronize the LFO to the tempo of the host application.

- Select **Off** to adjust the speed of the modulation in Hertz.
- Select **Tempo + Retrig** to adjust the speed of the modulation in fractions of beats. You can also set dotted and triplet note values. The restart behavior of the LFO depends on the **Retrigger Mode**.
- Select **Tempo + Beat** to adjust the speed of the modulation in fractions of beats. You can also set dotted and triplet note values. The LFO restarts with the transport of the host and lines up to the beats of the project. The **Retrigger Mode** setting is not taken into account.

NOTE

The behavior of the **Frequency** parameter changes with the selected option.

Retrigger Mode (Monophonic LFOs)

Determines whether the LFO is restarted when a note is triggered. If this is set to **First Note** or **Each Note**, the waveform starts at the position specified by the **Phase** parameter.

- If this is set to **Off**, the LFO runs freely.
- If this is set to **First Note**, the LFO restarts when a note is triggered and no other notes are held.
- If this is set to **Each Note**, the LFO restarts each time a note is triggered.

Frequency

Controls the frequency of the modulation, that is, the speed of the LFO.

Phase

Sets the initial phase of the waveform when the LFO is retriggered.

Rnd (Random Phase)

If this button is activated, each note starts with a randomized start phase.

NOTE

The **Phase** control cannot be used if **Rnd** is activated.

Additional Parameters for Polyphonic LFOs

Retrigger

Determines whether the LFO is restarted when a note is triggered. The waveform restarts at the position set with the **Phase** parameter.

- If this button is activated, the LFO starts with each triggered note.
- If this button is deactivated, the LFO runs freely.

Envelope Mode

Allows you to specify how the LFO envelope reacts to your playing on the keyboard. The **One Shot** modes do not react to note-off events.

- Select **One Shot** to play the envelope from start to end in the time specified by the **Delay**, **Fade In**, **Hold**, and **Fade Out** parameters.
- **One Shot + Sustain** is similar to **One Shot**. The **Delay** and **Fade In** parameters are always applied when you play a note. The **Hold** and **Fade Out** parameters are not available.
- If **Hold + Fade Out** is selected and you play a note, the **Delay** and **Fade In** parameters are applied. The envelope fades out after the time specified by the **Hold** parameter or when a key is released. Releasing a key during the fade in starts the fade out from the current level.
- If **Sustain + Fade Out** is selected and you play a note, the **Delay** and **Fade In** parameters are applied. The **Hold** parameter is not available. The fade out is applied when releasing the key. Releasing a key during the fade in starts the fade out from the current level.
- If **Sustain** is selected and you play a note, the **Delay** and **Fade In** parameters are applied. The **Hold** and **Fade Out** parameters are not available. Releasing a key during the fade in sustains the current level. This prevents a change in modulation when a key is released.

Inv (Invert Envelope)

If this parameter is activated, the behavior of the LFO envelope is inverted, that is, the LFO modulation starts at its maximum level and decreases to zero in the time specified by the **Fade In** parameter. After the **Hold** time has elapsed, or when the key is released, the modulation increases to its maximum level in the time specified by the **Fade Out** parameter.

Delay

Determines the delay time between the moment you play a note and the moment the LFO takes effect.

Fade In

Determines the time it takes for the LFO to fade in after the note was triggered and the **Delay** time has elapsed.

Hold

Determines the amount of time the LFO is running before the fade out begins.

NOTE

Hold is only available for the envelope modes **One Shot** and **Hold + Fade Out**.

Fade Out

Determines the time it takes for the LFO to fade out after the **Hold** time has elapsed or a note has been released.

NOTE

To deactivate the fade out, use the envelope modes **One Shot + Sustain** or **Sustain**. This ensures that the modulation does not change when a note is released.

LFO Tab for Loop Layers

Loop layers offer a monophonic LFO with adjustable depth for **Pitch**, **Cutoff**, and **Pan**.

For loop layers, the following additional parameters are available:

Pitch

Adjusts how much the LFO affects the pitch of the slices.

Cutoff

Adjusts how much the LFO affects the cutoff of the slices.

Pan

Adjusts how much the LFO affects the pan of the slices.

When using the LFO of loop layers, the following applies:

- The modulation of **Pitch**, **Cutoff**, and **Pan** goes to all slices simultaneously. The modulation depth cannot be set separately per slice.
- The filter must be activated to hear the modulation of the Cutoff.

NOTE

With a Resonance of 100 %, you might hear clicks because the slice ends abruptly, but the filter still produces a sound from self-oscillation. In this case, go to the corresponding FlexPhraser and reduce the **Gate Scale** until the clicks are gone. In addition, you can adjust the amplifier envelope of the slices, for example, to increase the release of the envelopes. Apart from the **Pitch**, **Cutoff**, and **Pan** parameters, all other parameters correspond to the parameters on the LFO pages for sample and synth layers.

Using the Keymap

In the key map at the bottom of the editor, you see the drum instruments or loop slices that are part of the drum or loop layer, and how they are mapped across the keyboard.

- Keys with a drum instrument or loop slice assigned display in normal white and black.
- The names of the drum instruments or loop slices are displayed vertically above the keys.
- Keys with nothing assigned are deactivated and displayed in gray.
- For loop layers, the pitched part of the keyboard is displayed in orange.
- Clicking a key plays and selects the corresponding drum instrument or loop slice.

NOTE

The key map is used for indication and selection only. The mapping of the drum instruments and loop slices cannot be changed.

To edit a drum instrument or loop slice, you must select it first. You can select drum instruments or loop slices by clicking the corresponding keys on the key map or by using your MIDI keyboard.

To select a drum instrument or loop slice with your MIDI keyboard, activate **Select Zones via MIDI** in the top section of the layer editor and press the key that plays the drum instrument or loop slice that you want to adjust.

You can edit the selected drum instrument or loop slice using the parameters on the **Pitch**, **Filter**, **Amplifier**, and **AUX** tabs.

AUX Tab

Each drum instrument and loop slice has individual send levels that feed the four global AUX FX busses. This allows you to add more reverb to the snare drum and less effect to the bass drum, for example.

AUX FX1 – 4

These dials adjust the send levels for the four global AUX FX busses for each drum instrument or loop slice separately.

Expression Controls for Instrument Layers

Instrument layers contain expressions. Typically, an expression is a particular playing style of the instrument. In some cases, it can also be a part of the sound that can be turned on or off, for example, to add realism or to maximize the performance.

The list of expressions is displayed on the left and on the right and in the lower section, you can find the pitch, filter and amplifier settings of the selected expression.

- To load an expression, activate its **On** button.
- To mute an expression, activate its **Mute** button.
- If you want the editor to follow incoming MIDI key switches or MIDI controller values, activate **Select Expression via MIDI**.

The parameters on the **Pitch**, **Filter**, and **Amplifier** sections are the same as on the corresponding tabs for the other layer types.

Filter Env Modifier Section

This section offers parameters to modify the filter envelope of the expression.

Envelope Amount

Controls the cutoff modulation from the filter envelope.

Velocity

Determines how the velocity affects the level of the filter envelope.

The level of the envelope depends on two factors: the setting of this parameter and how hard you hit a key. Positive values increase the level of the envelope the harder you hit a key. Negative values decrease the level of the envelope the harder you hit a key.

Attack

Controls the attack time of the filter envelope.

Decay

Controls the decay time of the filter envelope.

Sustain

Controls the sustain level of the filter envelope.

Release

Controls the release time of the filter envelope.

Amplifier Env Modifier Section

This section offers parameters to modify the amplifier envelope of the expression.

Velocity

Use this parameter to adjust how velocity affects the level of the amplifier envelope.

The level of the envelope depends on two factors: the setting of this parameter and how hard you hit a key. Positive values increase the level of the envelope the harder you hit a key. Negative values decrease the level of the envelope the harder you hit a key.

Attack

Controls the attack time of the amplifier envelope.

Decay

Controls the decay time of the amplifier envelope.

Sustain

Controls the sustain level of the amplifier envelope.

Release

Controls the release time of the amplifier envelope.

RELATED LINKS
Pitch Tab on page 39
Filter Tab on page 43
Amplifier Tab on page 45

Expression Maps

For more realistic performances, many instrument layers use key switches to switch between different expressions, that is, between different articulations and playing styles of the same instrument. These key switches are set to low keys to maximize the playable range and they cannot be changed internally to ensure that performances played by FlexPhrasers always sound the same. However, in some cases you need to shift the key switches into the playable keyboard range to get access to them. You may also want to select the expression using a MIDI controller. You can use so-called expression maps to customize the internal setting.

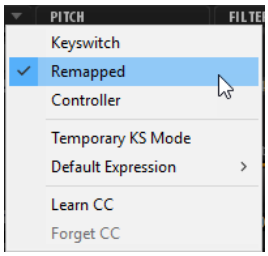
- To specify the expressions that you want to use in your expression map, activate them in the expressions list.

NOTE

Some instrument layers consist of multiple expressions that are not switchable via a key switch. For example, instrument noises typically do not have a key switch assigned. In this case, you can select the individual expressions and edit them, but you cannot apply any key switch functionality.

Expression Map Options Menu

You can define whether you want to use the internal key switches, remap them to other keys, or use a MIDI controller by selecting a mode from the pop-up menu above the expression list.



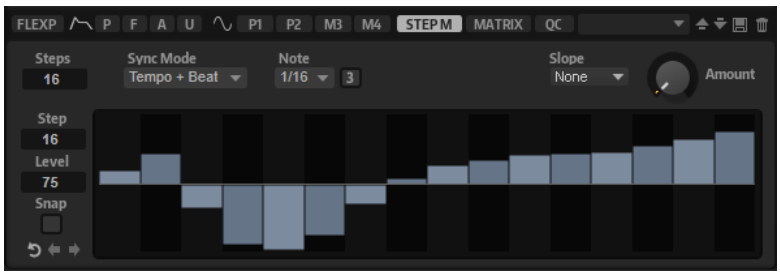
- Select **Keyswitch** to use the internal key switches to switch to an expression.
- Select **Remapped** if you want to remap the original key switches to other keys.
- Select **Controller** to use a MIDI controller to remotely control the internal key switches.

  To assign a MIDI controller, open the menu, select **Learn CC**, and use the controller on your MIDI hardware.
- If you activate **Temporary KS Mode**, expressions other than the default expression are only active for as long as the corresponding key switch is held. This allows you to enter notes with other expressions by pressing a key switch temporarily.
- **Default Expression** sets the default expression for **Temporary KS Mode**. This is also the expression that is active after loading the program or layer.

Step Modulator

Synth and sample layers feature a polyphonic step modulator for creating rhythmic control sequences.

The step modulator can be freely assigned in the modulation matrix.



Steps

Sets the number of steps in the sequence. The maximum number of steps is 32.

Sync Mode

- **Off** allows you to adjust the speed at which the sequence repeats.

  Whether the sequence restarts when you play a note depends on the **Retrigger Mode**.
- **Tempo + Retrig** allows you to adjust the length of the steps in fractions of beats. The speed of the modulation depends on the number of steps, the note value, and the tempo you set in your host application. To use triplet note values, activate **Triplet**.

  Whether the sequence restarts when you play a note, depends on the selected **Retrigger Mode**.
- **Tempo + Beat** allows you to adjust the length of the steps in fractions of beats. The speed of the modulation depends on the number of steps, the note value, and the tempo you set in your host application. To use triplet note values, activate **Triplet**.

The sequence restarts with the transport of the host application and lines up to the beats of the project. **Retrigger Mode** is not taken into account.

Frequency

If **Sync Mode** is set to **Off**, this controls the speed at which the sequence is repeated.

Note

If **Sync Mode** is set to one of the **Tempo** settings, this adjusts the length of the steps in fractions of beats. You can also select triplet values.

Triplets

Activate this button to use triplet note values.

Retrigger Mode

Determines whether the sequence restarts when you play a note. This parameter is only available if **Sync Mode** is set to **Off** or **Tempo + Retrig**.

- If this parameter is set to **Off**, the sequence is not restarted. Instead, it resumes playback at the position where you released the key.
- If this parameter is set to **First Note**, the sequence restarts when a note is triggered and no other notes are held.
- If this parameter is set to **Each Note**, the sequence restarts each time a note is triggered.

Slope

Determines whether the step modulator jumps from step to step or creates ramps between the steps.

- **No Slope** produces hard steps.
- **Slope on Rising Edges** creates ramps for rising edges only.
- **Slope on Falling Edges** creates ramps for falling edges only.
- **Slope on All Edges** creates ramps for all edges.

Amount

If **Slope** is set to **Slope on Rising Edges**, **Slope on Falling Edges**, or **Slope on All Edges**, this parameter determines the time of the ramp between two steps. The higher the setting, the smoother the transitions between steps.

Step

Allows you to select a specific step.

Level

Shows the level of the selected step.

Snap

If **Snap** is activated, the level of each step can only be adjusted in steps of 1/12th.

Shift Pattern Right/Shift Pattern Left

Shift all the steps to the right/left. If you shift the pattern to the left, the first step is moved to the end. If you shift the pattern to the right, the last step is moved to the beginning.

Reverse Pattern

Reverses the pattern, that is, inverts the order of all steps.

Editing Steps

You can adjust the steps separately, but you can also use modifier keys to enter or edit multiple steps simultaneously.

- To set the level of a step, click at the corresponding position in the graphical editor.
- To change the value of a step, drag the step up or down, or enter a new value in the **Level** value field.
- To reset the level of a step to 0%, **Ctrl/Cmd**-click the step.
- To reset all steps, hold **Shift**-**Ctrl/Cmd**, and click in the graphical editor.
- To adjust all steps at the same time, **Shift**-click, and drag a step.
- To draw a ramp with steps, hold down **Alt/Opt**, and draw a line.
- To draw symmetric ramps at the beginning and the end of the sequence, hold down **Shift**-**Alt/Opt**, and draw a line.
- To gradually raise or lower the value of the selected step, use the **Up Arrow** and **Down Arrow** keys.

  By default, the value changes in increments of 1%. Hold **Shift** to use increments of 0.1% instead.
- If the graphical editor has the keyboard focus, you can use the left and right arrow keys to select the previous or the next step.

Producing Modulations in Steps of Semitones

PROCEDURE

1. Activate **Snap**.
2. In the modulation matrix, assign the **Step Modulator** to **Pitch**.
3. Set the **Modulation Depth** to +12.

   Now, the levels of the steps represent semitone intervals.
4. In the **Step Modulator**, adjust each step to the interval that you want to use.

Modulation Matrix

In the modulation matrix, you can interconnect modulation sources, such as LFOs and envelopes, with modulation destinations, such as pitch, cutoff, amplitude, etc.

The modulation matrix offers you up to 32 freely assignable modulations, each with a source, an offset parameter, a modifier, and a destination with adjustable depth. All modulation sources and destinations can be assigned several times. The polarity of each source can be switched

between unipolar and bipolar. An additional modifier and user-definable curves and ranges give you further control over the modulation.

The modulation matrix is divided into two sections. On the left, you can assign modulation sources to destinations and adjust the modulation depth. The section on the right contains settings for the curve and range editor, where you can make further settings for the selected modulation source.

The modulation matrix is divided into two sections. On the left, you can assign modulation sources to destinations and adjust the modulation depth. The section on the right contains settings for the curve and range, where you can make further settings for the selected modulation source.

RELATED LINKS
Modulation Curve and Range on page 67

Creating Modulations in the Modulation Matrix

In the modulation matrix, you create modulation assignments by selecting modulation sources, modifiers, and destinations from the pop-up menus.

PREREQUISITE

You have selected the synth or sample layer that you want to edit.

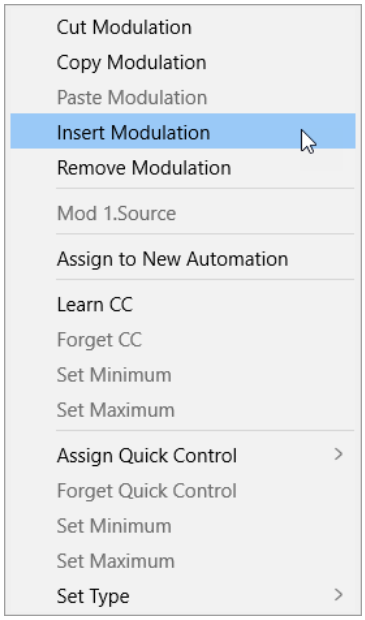
PROCEDURE

1. Click **Show Modulation Matrix**.
2. Select a modulation source and a modulation destination, for example, **LFO1** as the source and **Pitch** as the destination.
3. Use the horizontal fader to adjust the modulation depth.
4. Optional: Click the **Source 2** field, and select a modifier or change the polarity of the source.

   For example, select **Pitch Bend** as the modifier, and set it to unipolar.
5. Optional: Use the curve and range settings on the right to limit the modulation range or to adjust the characteristics of the modulation.
6. Optional: Click **Edit Source 1** or **Edit Source 2** to open the curve and range settings, and limit the modulation range or adjust the characteristics of the modulation.

RELATED LINKS
Modulation Curve and Range on page 67

Modulation Matrix Context Menu



Cut Modulation

Cuts the modulation data from the current slot.

Copy Modulation

Copies the modulation data from the current slot to the clipboard.

Paste Modulation

Pastes the modulation data from the clipboard to the current modulation slot.

NOTE

You can copy and paste modulation rows between different programs and between different plug-in instances.

Insert Modulation

Inserts an empty modulation slot.

Remove Modulation

Removes the modulation slot.

Name of the Assigned Source/Modulator/Destination

Depending on where you click, the assigned modulation source, the modulator, or the modulation destination is shown on the context menu.

Assign to New Automation

Assigns this modulation source as an automation parameter.

Learn CC

Allows you to assign a MIDI controller to the modulation slot.

Forget CC

Removes the MIDI controller assignment from the current slot.

Set Minimum

Allows you to set the minimum value for the MIDI controller that is assigned to the modulation slot.

Set Maximum

Allows you to set the maximum value for the MIDI controller that is assigned to the modulation slot.

Assign Quick Control

Allows you to assign a quick control to the modulation slot.

Forget Quick Control

Removes the quick control assignment of the modulation slot.

Set Minimum

Allows you to set the minimum value for the quick control that is assigned to the modulation slot.

Set Maximum

Allows you to set the maximum value for the quick control that is assigned to the modulation slot.

Set Type

- **Absolute** remote-controls the parameter values continuously.

  Absolute mode changes the assigned parameters by overwriting them with the current quick control value, that is, parameter changes are overwritten.
- **Relative** remote-controls the parameter values continuously.

  Relative mode changes the values of the assigned parameters without losing their relative settings, that is, parameter changes can still be heard.
- **Switch Absolute** switches between the minimum and maximum value. Parameter changes are overwritten.
- **Switch Relative** switches between the minimum and maximum value. Parameter changes can still be heard.

RELATED LINKS
Setting Up Automation on page 86

Modulation Parameters

The modulation parameters in the modulations sections and the modulation matrix are identical.

Source Parameters

Source 1

Shows the modulation source. Click in the field to select a new source.

Source 2

Shows the modulation modifier, a secondary modulation source that manipulates the outgoing modulation signal. For example, you can assign the mod wheel to control the intensity of the modulation.

Polarity: Unipolar/Bipolar

Allows you to set the polarity of a modulation source. The polarity specifies the value range. Unipolar sources modulate between 0 and +1. Bipolar sources modulate between -1 and +1.

This allows you to change the polarity of the **Amp** or **Filter** envelopes from unipolar to bipolar, to map their range to a bipolar parameter, such as **Pan**, for example. However, the envelopes always display their values with their default polarity.

Destination Parameters

Destination

Shows the destination parameter. Click in the field to select a new destination.

Modulation Depth

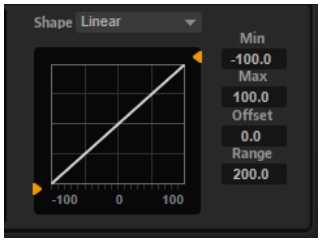
Adjusts the modulation depth, that is, the intensity of the modulation.

RELATED LINKS
Modulation Curve and Range on page 67

Modulation Curve and Range

You can set up the curve and range of each modulation source (**Source 1**) and modulation modifier (**Source 2**). This allows you to change the characteristics of a modulation.

The modulation curve and range parameters are shown on the right in the modulation matrix.



Curve Shape

In the display at the top, the curve shape is shown. The displayed curve is superimposed on the modulation source. This way, you can change the modulation from linear to exponential or logarithmic, for example.

To select another shape, click the corresponding button on the right.

To create your own user curve, select **Custom Curve** .

You can edit the custom curve in the following way:

- To insert a new node, double-click in the editor.
- To delete a node, double-click it.
- To adjust the basic shape of the curve, drag the nodes to new positions.
- To change the curvature, drag the lines between the nodes up or down.

Minimum Output Value/Maximum Output Value

These values allow you to limit the modulation to a specific range only.

Incoming values below the **Minimum Output Level** are raised to this level before they progress along the selected curve to the **Maximum Output Value**.

Input Value Offset

Allows you to offset the incoming values by a fixed amount. For example, with a value of 100, only the second half of the curve is superimposed on the modulation.

Range

Range allows you to limit the range that is modulated.

Modulation Sources

You set up the modulation source via the **Source 1** pop-up menu.

The following sources are available:

LFO P1/P2

The LFOs 1 and 2 produce cyclic modulation signals.

These LFOs are polyphonic, that is, a new LFO signal is created with each new note.

LFO M3/M4

The LFOs 3 and 4 produce cyclic modulation signals.

These LFOs are monophonic, that is, a single signal is used for all notes.

Amp Envelope

The amplifier envelope. This modulation source is unipolar. The shape of the envelope determines the modulation signal.

Filter Envelope

The filter envelope. The shape of the envelope determines the modulation signal.

Pitch Envelope

The pitch envelope. This modulation source can be unipolar or bipolar, depending on the setting of the **Bipolar** parameter in the **Envelope** section. The shape of the envelope determines the modulation signal.

User Envelope

The user envelope. This modulation source can be unipolar or bipolar, depending on the setting of the **Bipolar** parameter in the **Envelope** section. The shape of the envelope determines the modulation signal.

Step Modulator

The step modulator of the layer. This modulation source is bipolar. It produces cyclic, rhythmically stepped modulation signals.

Glide

The glide signal of the source. This modulation source is unipolar.

Key Follow

This produces an exponential modulation signal derived from the MIDI note number. Exponential means this source works with destinations such as **Pitch** or **Cutoff**. This modulation source is bipolar.

Note-on Velocity

Note-on velocity can be used as the modulation signal. This modulation source is unipolar.

Note-on Vel Squared

The squared version of **Note-on Velocity**. The harder you press the key, the higher the modulation values.

Note-on Vel Normalized

This modulation source transforms the velocity range specified in the mapping to the full range of 0 to 127.

Note-off Velocity

Note-off velocity can be used as the modulation signal. This modulation source is unipolar. Most MIDI keyboards cannot send note-off velocity messages. However, most sequencer software is able to produce such messages.

Pitchbend

The position of the pitchbend wheel can be used as the modulation signal. This modulation source is bipolar.

Modulation Wheel

The position of the modulation wheel can be used as the modulation signal. This modulation source is unipolar.

Aftertouch

Aftertouch can be used as the modulation signal. This modulation source is unipolar. Some MIDI keyboards cannot send aftertouch messages. However, most sequencer software is able to produce such messages.

MIDI Controller

Any of the 127 available MIDI controllers can be used as the modulation signal. You can select the MIDI controller from the corresponding submenu.

In addition, you can select the eight global MIDI controllers **Contr. A**-**Contr. H** that can be used as placeholders in the modulation matrix. These controllers allow you to remap specific MIDI controllers to the placeholder controllers, for example, by using the CC Mapper. This way, you can use the global controllers in several places, and set up the assignment only once.

Quick Control

The quick controls of the layer can be used as the modulation signal. You can select quick control from the corresponding submenu.

Note Expression

This submenu lists the eight Note Expression parameters that can be used as the modulation signals.

Noise

Produces a random modulation signal. This modulation source is bipolar.

Output

The audio output of the layer can be used as the modulation signal. This modulation source is unipolar.

Bus 1–16

Modulations that are sent to one of the 16 busses can be reused as sources. This way, you can combine several modulations to produce more complex signals.

Modulation Modifiers (Source 2)

All modulation sources can also be used as modifiers. A modifier is used to scale the output of the modulation source. A typical example is an LFO as a source and the modulation wheel as the modifier. This allows you to control the intensity of the LFO modulation via the wheel. You can find the modulation modifiers on the **Source 2** pop-up menu.

The **Sample & Hold** modifier is only available on the **Source 2** pop-up menu. It takes a sample of the modulation source whenever it receives a trigger signal. It holds the sampled value until it receives a new trigger. This way, you can quantize a continuous modulation signal.

The following **Sample & Hold** options are available:

Trigger on Note-on

Triggers the **Sample & Hold** modifier manually each time that you hit a key.

Trigger on LFO 1

Triggers the **Sample & Hold** modifier each time that the waveform of LFO 1 crosses the zero line from below.

Trigger on LFO 2

Triggers the **Sample & Hold** modifier each time that the waveform of LFO 2 crosses the zero line from below.

Trigger on Modulation Wheel

Triggers the **Sample & Hold** modifier each time that the modulation wheel passes the center position.

Trigger on Sustain

Triggers the **Sample & Hold** modifier each time that you press the sustain pedal.

Sample until Release

Triggers the **Sample & Hold** modifier each time that you release a key.

Modulation Destinations

Depending on the selected type of zone, the available modulation destinations vary.

Pitch

Modulates the pitch. For example, assign one of the LFOs to create a vibrato effect. If **Pitch** is selected, the modulation depth is set in semitones (-60 to +60).

Cutoff

Modulates the filter cutoff.

For example, to create rhythmic patterns in the spectral timbre, assign the **Step Modulator**.

Resonance

Modulates the filter resonance. Resonance changes the character of the filter.

For example, to increasingly accent the filter the harder you hit a key, assign **Velocity** to **Resonance**.

Distortion

Modulates the filter distortion.

This has no effect on the **Classic**, **HALion 3**, and **Waldorf** filters.

Morph X

Modulates the x-axis of the filter in **Morph XY** mode. Use this to morph between the filter shapes **AD** and **BC**.

Morph Y

Modulates the y-axis of the filter in **Morph 2**, **Morph 4**, or **Morph XY** mode. Use this to morph between the filter shapes **AB** and **DC**, for example.

Cutoff Offset

Modulates the cutoff offset of the second filter in **Dual Filter Serial** or **Dual Filter Parallel** mode. For example, to lower or raise the cutoff of the second filter while playing, assign the modulation wheel.

Resonance Offset

Modulates the resonance offset of the second filter in **Dual Filter Serial** or **Dual Filter Parallel** mode. For example, to lower or raise the resonance of the second filter while playing, assign the modulation wheel.

Level

Adds to the level setting. It can be used to create level offsets using the modulation wheel, for example.

Volume 1

Modulates the gain. This modulation multiplies with the level.

It is ideal for crossfades between layers.

Volume 2

As **Volume 1**. **Volume 1** is multiplied with **Volume 2**. This way, you can build more complex modulations.

Pan

Modulates the position of the layer in the panorama. For example, to move the layer around freely, assign the **User Envelope**.

Sample Start

Modulates the start position of the sample playback. For example, assign **Note-on Velocity** to play back more of the attack of a sample the harder you hit a key. This modulation destination cannot be modulated continuously. The parameter is updated only when you hit a key.

Speed Factor

Modulates the speed factor of the sample.

Formant Shift

Modulates the formant shifting.

Osc 1/2/3 Pitch

Modulates the pitch of the corresponding oscillator.

For example, to detune an oscillator cyclically, assign one of the LFOs.

Osc 1/2/3 Level

Modulates the level of the corresponding oscillator.

For example, to fade an oscillator in and out while you play, assign the modulation wheel.

Osc 1/2/3 Waveform

Modulates the shape and character of the corresponding oscillator.

For example, to change the character of an oscillator over time, assign one of the envelopes.

Osc 1/2/3 Multi Detune

Modulates the **Detune** parameter of the individual oscillator voices that are produced by the multi-oscillator mode.

Osc 1/2/3 Multi Pan

Modulates the pan position of the individual oscillator voices that are produced by the multi-oscillator mode.

Osc 1/2/3 Multi Voices

Modulates the number of oscillator voices that are produced by the multi-oscillator mode.

Sub Osc Level

Modulates the level of the sub oscillator. For example, to fade in the oscillator while you play, assign the modulation wheel.

Ring Mod Level

Modulates the level of the ring modulation effect. For example, to fade in the ring modulation while you play, assign the modulation wheel.

Noise Level

Modulates the level of the noise generator. For example, to fade in the noise generator while you play, assign the modulation wheel.

LFO 1/2 Frequency

Modulates the speed of the corresponding LFO.

For example, to control the speed of a vibrato effect while you play, assign **Aftertouch**.

LFO 1/2 Shape

Modulates the waveform of the corresponding LFO.

For example, to vary the waveform with the playing position on the keyboard, assign **Key Follow**.

Step Mod Frequency

Modulates the speed of the step modulator. For example, assign an LFO to increase or decrease the speed cyclically.

Step Mod Slope

Modulates the shape of the edges of the step modulator if the **Slope** parameter is active. For example, assign the modulation wheel to blend from hard to smooth edges.

Amp Env Attack Time

Modulates the attack time of the amplitude envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Amp Env Decay Time

Modulates the decay time of the amplitude envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Amp Env Sustain Level

Modulates the sustain level of the amplitude envelope. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Amp Env Release Time

Modulates the release time of the amplitude envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Filter Env Attack Time

Modulates the attack time of the filter envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Filter Env Decay Time

Modulates the decay time of the filter envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Filter Env Sustain Level

Modulates the sustain level of the filter envelope. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Filter Env Release Time

Modulates the release time of the filter envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Pitch Env Start Level

Modulates the level of the first pitch envelope node. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Pitch Env Attack Time

Modulates the attack time of the pitch envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Pitch Env Attack Level

Modulates the level of the second pitch envelope node. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Pitch Env Decay Time

Modulates the decay time of the pitch envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Pitch Env Sustain Level

Modulates the sustain level of the pitch envelope. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Pitch Env Release Time

Modulates the release time of the pitch envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Pitch Env Release Level

Modulates the level of the last pitch envelope node. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

User Env Start Level

Modulates the level of the first user envelope node. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

User Env Attack Time

Modulates the attack time of the user envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

User Env Attack Level

Modulates the level of the second user envelope node. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

User Env Decay Time

Modulates the decay time of the user envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

User Env Sustain Level

Modulates the sustain level of the user envelope. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

User Env Release Time

Modulates the release time of the user envelope. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

User Env Release Level

Modulates the level of the last user envelope node. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Bus 1-16

You can send any modulation to one of the 16 busses, for example, to produce more complex modulation signals. Select the bus that you want to send the signals to as a destination. To use the modulation that was sent to a bus, assign the corresponding bus as a modulation source.

Insert Effects

The **Inserts** tab offers you up to four insert effects for the program and for each of its layers.

The insert effects you assign to a layer affect only that layer. The insert effects you assign to the program affect all layers. Typically, you assign effects like EQ or distortion to separate layers, but effects like delay or reverb to the entire program.

Each layer and the program have four slots for assigning insert effects. The handling is the same for all slots and corresponds to the global effect handling.

To the right of the insert slots, you find faders for adjusting the output levels of the program and layers.

RELATED LINKS
AUX Effects on page 118

FlexPhraser

The FlexPhraser is an arpeggio and phrase player.

Each program features up to five FlexPhrasers: one for each layer and one for the program. While the program FlexPhrasers always work with phrases, the functionality of layer FlexPhrasers changes with the layer type. For synth, sample, instrument, or drum layers, a FlexPhraser can play back anything from basic synth arpeggios over dynamic drum phrases to realistic accompaniment phrases for guitar, bass, piano, etc.

You can choose from a great variety of phrases that suit a wide range of musical instruments and styles. Depending on the selected phrase, the FlexPhraser uses your live playing to modify the phrase in real-time. This allows you to re-harmonize phrases by playing different chords, for example.

If you are working with loop layers, the FlexPhraser triggers the slices of the loop with their original timing and order. You can trigger a transposed version of the loop, playing higher or lower in pitch. In addition, you can vary the order with a random function and export the slice sequence to your host sequencer via drag and drop.

NOTE

You can play the individual slices or the entire loop. The lower half of the key range triggers the loop and the upper half is used to play single slices. The loop keys are displayed in green on the keyboard.

Presets

FlexPhraser presets contain the selected phrase, as well as the performance settings of the FlexPhraser, such as **Tempo**, **Tempo Scale**, **Loop**, **Swing**, etc.

NOTE

Presets can only be saved and loaded for phrases, not for sliced loops.

RELATED LINKS
Handling Section and Module Presets on page 11

Loading Phrases

Phrases are sorted into subfolders, according to the type of instrument. Each instrument subfolder contains phrases of different musical styles.

NOTE

Some FlexPhrases make extensive use of key switches to switch between multiple playing styles of an instrument while playing. These phrases can be found on the **Construction Sets** submenu. They work best with the corresponding instrument layers.

PROCEDURE

1. At the top of the FlexPhraser, click in the **Phrase** field.
2. On the pop-up menu, open the submenu for the instrument, and select the phrase that you want to load.

   In general, you can apply any phrase to any type of instrument. However, a phrase for guitar might not be suitable for use with a piano, for example.

FlexPhraser Parameters

Act

Activates the FlexPhraser.

User

Activates the user phrase.

If this button is activated, the **Show Editor Page** button becomes available. Click it to open the user phrase editor.

Phrase

Allows you to select a phrase.

KSOff (Key Switches Off)

Phrases that make use of key switches and noises, such as fret noises for guitar phrases, for example, usually only work with programs for the same type of instrument. Programs without key switches and noises interpret these events as regular notes and include them during playback, which yields unexpected results. To avoid the playback of key switches and noises, activate **KSOff**.

NOTE

KSOff filters out any note events that do not transpose with your playing. Therefore, it is not recommended for use with drum phrases.

NOTE

KSOff is not available for user phrases.

Drag MIDI Phrase to Host Sequencer

Allows you to drag the recorded MIDI phrase to your host sequencer.

Record Output

Allows you to record the MIDI output of the arpeggiator.

Variations

The variation buttons allow you to switch between the available variations.

Loop

Allows you to play the phrase in a loop.

Sync

Synchronizes the phrase to the tempo of your host application.

NOTE

In addition, you can set **Restart Mode** to **Sync to Host**. This aligns the phrase with the beats and measures of your host application.

Mute

Mutes the FlexPhraser. The phrase still plays in the background. If you deactivate **Mute**, playback resumes immediately.

Hold

Allows you to prevent the phrase from stopping or changing when the keys are released.

- If **Off** is selected, the phrase changes as soon as you release a key. The phrase stops immediately when you release all keys.
- If **On** is selected, the phrase plays to the end, even if the keys are released. If **Loop** is activated, the phrase is repeated continuously.
- If **Gated** is selected, the phrase starts to play when the first key is played. It plays silently in the background, even if the keys are released, and resumes playback at the current position when you press any of the keys again. This way, you can gate the playback of the phrase.

Trigger Mode

Determines the moment when the FlexPhraser scans for new notes that you play on the keyboard.

- If this is set to **Immediately**, the FlexPhraser scans for new notes all the time. The phrase changes immediately, in reaction to your playing.
- If this is set to **Next Beat**, the FlexPhraser scans for new notes at every new beat. The phrase changes in reaction to your playing on each new beat.
- If this is set to **Next Measure**, the FlexPhraser scans for new notes at the start of new measures. The phrase changes in reaction to your playing on each new measure.

Restart Mode

- If this is set to **Off**, the phrase runs continuously and does not restart at chord or note changes.
- **New Chord** restarts the phrase on new chords.

  NOTE

  The phrase does not restart upon notes that are played legato.

- **New Note** restarts the phrase with each new note that you play.
- **Sync to Host** aligns the phrase with the beats and measures of your host application each time that you start the transport.

RstVar (Restart on Variation Change)

This option is available for new chords and new notes. If this button is activated, changing a variation restarts the FlexPhraser, even if no new notes or chords were triggered.

Key Mode

Determines if and how the playback of the phrase is affected by the order of the notes, as played on the keyboard.

- If **Sort** is selected, the notes are played in the order of the selected phrase, regardless of the chronological order.
- If **As Played** is selected, the notes are played in the order in which you play them on the keyboard.
- If **Direct** is selected, the phrase creates controller events instead of notes. You hear the notes that you play plus any controller events of the phrase, such as pitch bend, volume, pan, etc.

Vel Mode

- If **Original** is selected, the notes of the phrase play with the velocity that is saved in the phrase.
- If **Vel Controller** is selected, you can choose a velocity controller to generate or modulate the velocities of the notes.
- If **Original + Vel Controller** is selected, the phrase velocity is determined by the combination of the velocity saved in the phrase and the velocity derived from the velocity controller.

Vel Controller

If the **Vel Mode** pop-up menu is set to **Vel Controller** or **Original + Vel Ctrl.**, the **Vel Controller** pop-up menu is available. It allows you to generate or modulate the velocities of the notes using the incoming controller values.

- If **Velocity** is selected, the triggered notes inherit the velocity of the note that you play.
- If **Aftertouch** is selected, the triggered notes receive their velocity from the aftertouch controller.
- If **Poly Pressure** is selected, the triggered notes receive their velocity from the poly pressure controller. This allows you to control the velocity via the keys.
- Selecting **MIDI Controller** opens a submenu, where you can select a MIDI controller.

  The value of this MIDI controller is used as the velocity for the triggered notes.

Fetch

If the **Vel Controller** pop-up menu is set to **Aftertouch**, **Poly Pressure**, or a MIDI controller, you can use the **Fetch** option to change the way that the notes are generated.

- If **Fetch** is activated, the first note that you play defines the initial velocity. As soon as the controller value exceeds this velocity, new notes receive their velocity from the controller.
- If **Fetch** is deactivated, the generated notes receive their velocity from the current controller value.

NOTE

Fetch is not available if the **Vel Controller** pop-up menu is set to **Velocity**.

Tempo

If **Sync** is deactivated, you can use the **Tempo** control to set the internal playback speed of the FlexPhraser. The playback speed of the phrase is specified in BPM.

If **Sync** is activated, the **Tempo** parameter is not available.

Tempo Scale

Defines the rate at which notes are triggered, that is, the speed at which the phrase is running. In addition to the **Tempo** parameter, this gives you further control over the playback speed. You can specify a value in fractions of beats. You can also set dotted and triplet note values.

For example, if you change the **Tempo Scale** setting from 1/16 to 1/8, the speed is cut in half. If you set it to 1/32, the speed is doubled.

Swing

Shifts the timing of notes on even-numbered beats, which results in a “swing feeling”. Negative values shift the timing backward, and the notes are played earlier. Positive values shift the timing forward, and the notes are played later.

Gate Scale

Allows you to shorten or lengthen the notes of the phrase. At a value of 100%, the notes play with their original gate length.

Vel Scale

Allows you to raise or lower the note-on velocities of the phrase. At a value of 100%, the notes are played with their original velocity.

Octaves

Extends the phrase playback to include higher or lower octaves. Positive settings extend the playback to higher octaves, and negative settings to lower octaves. For example, a value of +1 first plays the phrase in the octave range that you originally played. Then, it repeats the phrase one octave higher.

Key Range

The **Low Key** and **High Key** parameters determine the key range that is used to trigger phrase playback.

Velocity Range

The **Low Vel** and **High Vel** parameters determine the velocity range that is used to trigger phrase playback.

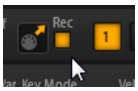
Recording the MIDI Output of the FlexPhraser

The phrases played by the FlexPhraser depend on the notes that are played and can therefore not be exported directly. However, it is possible to generate exportable phrases by recording the MIDI output of the FlexPhraser.

PROCEDURE

1. Click **Record FlexPhraser MIDI Output**.

   The arrow in the **Drag MIDI** field starts flashing to indicate record mode.



2. Play some notes.
3. When you are done, click **Record FlexPhraser MIDI Output** again.

   Recording stops. In the **Drag MIDI** field, the arrow remains lit to indicate that a MIDI phrase can be exported.
4. Click the **Drag MIDI** field, and drag the phrase on a MIDI track in your host sequencer application.

Phrase Playback Types

HALion Sonic features a substantial selection of phrase types, organized in submenus and categorized according to functional descriptions or musical styles, such as **Classic Arp**, **Synth Seq**, **Chord Seq**, **Bass**, etc.

The **Construction Sets** submenu contains phrases made for instrument layers. These phrases use key switches to switch between different playing styles, to increase the realism of your performance. The phrases that can be found in the various other categories use a number of different playback types to allow phrase-specific user interaction while playing.

For example, with drum patterns, pressing any note triggers the same rhythm pattern. Other phrases are played back using only the played note and its octave notes. And if you play back a programmed sequence according to the played chord, the following applies:

- If you press a single key, the phrase is played back using the programmed sequence, which means that notes other than the ones you play are triggered.
- If you are adding notes to those already held, the sequence changes accordingly, for example, the phrase plays back according to the chord you play.

Variations

For each FlexPhraser, you can set up 8 different variations of phrases. You can switch between them with the variation buttons at the top right.

You can remote-control the variation buttons using the trigger pads, which gives you the possibility to switch between variations by playing the trigger keys that are assigned to the trigger pads.

NOTE

To avoid that the variation switches in the middle of a beat or measure, use the trigger modes **Next Beat** or **Next Measure.**

Creating FlexPhraser Variations

PROCEDURE

1. Click one of the variation buttons at the top right of the FlexPhraser.
2. You can either start from scratch or base the new variation on an existing variation.
   - To start from scratch, assign a phrase and edit the FlexPhraser settings.

- To use an existing variation as a base, use the context menu commands **Copy FlexPhraser Variation** and **Paste FlexPhraser Variation**.

RESULT

The variation can now be recalled by clicking the corresponding variation button.

NOTE

The parameters **Loop**, **Sync**, **Hold**, **Trigger Mode**, **Restart Mode**, **Key Mode**, **Vel Mode**, **Low/High Key**, and **Low/High Vel** are not part of the variations. You set them up only once for each inserted FlexPhraser module.

RELATED LINKS

Switching between Variations on page 26

User Phrases

The user pattern of the FlexPhraser has up to 32 steps. Each step has an adjustable velocity, gate length, and transpose value. By setting the steps, adjusting their length, or leaving pauses, you define the rhythm of the user pattern.

You can combine consecutive steps to create longer notes. By selecting a mode, you define how the notes play back. In addition, there are two MIDI control sequences, that is, each step can send two modulation signals.In addition, there are three MIDI control sequences, that is, each step can send three modulation signals.

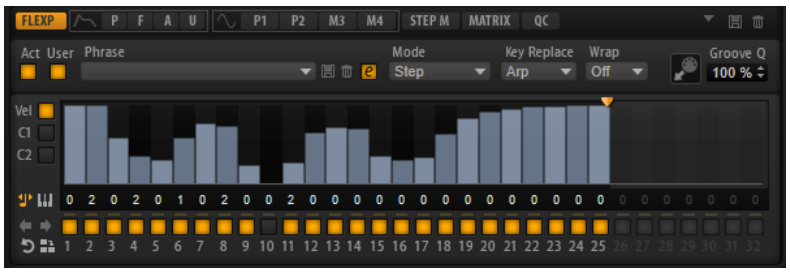
To create your own phrases, activate **User** and **Show Editor Page**.

For user phrases, the regular FlexPhraser parameters are available, except for the **KSOff** button.

User Phrase Editor

In the user phrase editor, you can set up your user phrases.

To open the user phrase editor, click **Show Editor Page** .



You can display the velocity curve or two MIDI controller sequences for the phrase.

Phrase

To load a phrase, select it from the **Phrase** pop-up menu.

NOTE

Saved phrases include the **Mode**, **Key Replace**, and **Wrap** parameters, as well as the steps with their **Level**, **Length**, and **Legato** settings. The selected MIDI controllers or any settings on the main FlexPhraser page are not saved.

Mode

Specifies the playback of the notes.

- If **Step** is selected, the last note that is received triggers a monophonic sequence.
- If **Chord** is selected, the notes are triggered as chords.
- If **Up** is selected, the notes are arpeggiated in ascending order.
- If **Down** is selected, the notes are arpeggiated in descending order.
- If **Up/Down 1** is selected, the notes are arpeggiated first in ascending, then in descending order.
- If **Up/Down 2** is selected, the notes are arpeggiated first in ascending, then in descending order. This mode depends on the set **Key Mode**.

  If **Key Mode** is set to **Sort**, the highest and the lowest note are repeated.

  If **Key Mode** is set to **As Played**, the first and the last note are repeated.
- If **Down/Up 1** is selected, the notes are arpeggiated first in descending, then in ascending order.
- If **Down/Up 2** is selected, the notes are arpeggiated first in descending, then in ascending order. This mode depends on the set **Key Mode**.

  If **Key Mode** is set to **Sort**, the highest and the lowest note are repeated.

  If **Key Mode** is set to **As Played**, the first and the last note are repeated.
- If **Random** is selected, the notes are arpeggiated in random order.

Groove Q

To adapt the timing of a phrase to an external MIDI file, you can drop this MIDI file on the **Groove Quantize** drop field. You can quantize the playback of the user phrase to the timing of a sliced loop by dragging its MIDI file from the **MIDI export** drag field to the **Groove Quantize** drop field.

The **Groove Quantize Depth** parameter to the right of the drop field determines how accurately the phrase follows the timing of the MIDI file.

Key Select

The FlexPhraser scans the keyboard and writes the keys that you press into a note buffer.

Depending on the selected **Key Mode**, this note buffer is sorted either by pitch or in the order in which you play the keys.

Key Select allows you to play back a defined key from the note buffer. You can set up **Key Select** for each step individually, which allows you to create very elaborate phrases.

NOTE

Key Select cannot be used in **Step** or **Chord** mode.

- To access the **Key Select** values of the steps, click **Show Key Values** to the left of the editor.
- To switch between the available **Key Select** values for a step, click the value and drag up/down, or use the scroll wheel.

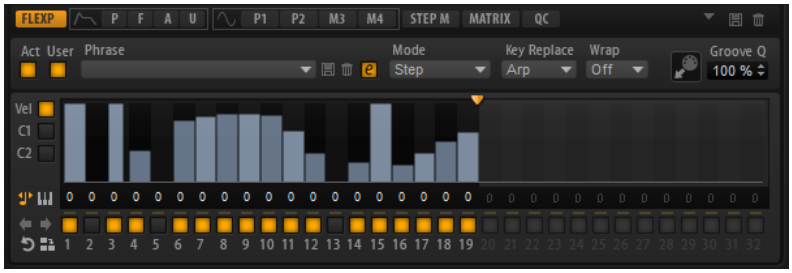
  The following options are available:

  - **P** (Phrase) plays the note of the user phrase, according to the selected mode, for example, **Up**, **Down**, **Up/Down 1**, etc.

- The settings **1 - 8** play the corresponding keys from the note list. Which key is played depends on the **Key Mode** setting. For example, if **Key Mode** is set to **Sort**, the setting **1** plays the lowest key.
- **L** (Last) always plays the last key from the note buffer. Depending on the **Key Mode**, this is the highest note or the last note in the note buffer.
- **A** (All) plays all keys from the note buffer as a chord.

Velocity Curve

- To display the velocity curve, activate the **Vel** button on the left.



Key Replace

With this parameter, you can deactivate the **Key Select** function or specify how to replace missing keys.

For example, if **Key Select** is set to 1 - 2 - 3 - 4 and you play a chord with 3 notes, key 4 is considered missing.

- **Off** deactivates **Key Replace** and **Key Select**. The selected arpeggio plays back without modifications.
- **Arp** replaces the missing keys with the note that the arpeggio would normally play.
- **Rest** does not replace any missing keys. The arpeggio inserts a rest instead.
- **1st** replaces the missing keys with the first note in the note buffer.
- **Last** replaces the missing keys with the last note in the note buffer.
- **All** replaces the missing keys with all notes in the note buffer. The notes are played as a chord.

NOTE

Key Replace can be set for each individual variation.

Wrap

For all modes except **Step** and **Chord**, you can use this parameter to restart the arpeggio after a specified number of steps.

NOTE

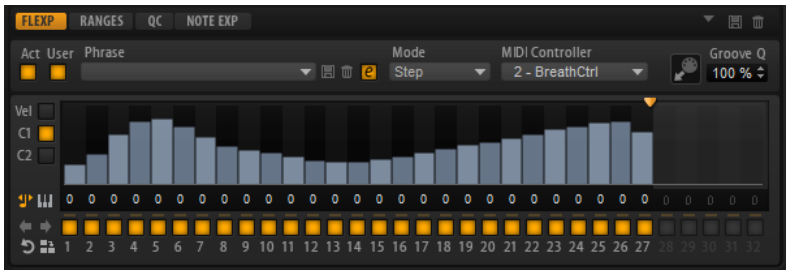
Deactivated steps are taken into account.

In **Step** and **Chord** mode, this parameter only affects the **Octaves** setting.

If the **Octaves** parameter is active, the arpeggio traverses the octaves and restarts from the original octave after the specified number of steps.

Controller Curve

To show a controller curve, click one of the controller buttons on the left.



MIDI Controller

Allows you to select the MIDI controller that you want to use.

Editing User Phrases

You can make detailed settings for the user phrase in the editor for the user phrases.

To set up the phrase, activate the **Vel** button to the left of the step display.

To set up a controller curve for the phrase, activate one of the controller buttons to the left of the step display.

- To specify the number of steps for the pattern, drag the **Number of Steps** handle to the right or left.

Activating Steps

A phrase can contain up to 32 steps. Only the steps that are activated are played.

- To activate a step, click its **On/Off** button below the display.

  This can be necessary if you change the gate length of one step so that it overlaps with the following step, thereby deactivating it.

  NOTE

  If you activate a step that was inactive because of an overlapping previous step, the previous step is shortened.

- To activate all steps, right-click in the step display, and select **Enable All Steps** from the context menu.

Editing Steps

The height of a step represents its value. You can edit the steps in the following ways:

- To activate all steps, select **Enable All Steps** from the context menu.
- To adjust a value, click a step, and drag up or down.
- To adjust multiple steps, click and draw a curve.
- To adjust the velocity of all steps relatively, **Shift**-click and drag.
- To draw a ramp with steps, hold down **Alt/Opt**, and draw a line.
- To draw symmetric ramps at the beginning and the end of the sequence, hold down **Shift**-**Alt/Opt**, and draw a line.
- To transpose a step, click in the field below it, and enter the number of semitones for the transposition.
- To reset the velocity of a step to 127, **Ctrl/Cmd**-click the step.
- To reset the velocity of all steps to 127, hold **Shift**-**Ctrl/Cmd**, and click a step.

- To introduce a legato between two steps, click the number below the first of these steps, so that a small arrow is shown.

  If **Legato** is activated, the **Gate Scale** parameter is not taken into account.

For velocity steps, the width of a step represents its gate length.

- To adjust the gate length of a step, drag its right border.
- To adjust the gate length of all steps, hold down **Shift**, and drag the right border of a step.

  You can only adjust the length this way until a step reaches the next step. If you increase the gate length of a step so that it overlaps with the following step, the latter step is deactivated.
- To reset the length of a step to 1, **Ctrl/Cmd**-click its highlighted right border.
- To reset the length of all steps, hold down **Shift**-**Ctrl/Cmd**, and click on a highlighted right border.
- To fill the gaps between consecutive steps, select **Fill Gap** or **Fill All Gaps** from the context menu.

Each MIDI controller lane can send a MIDI controller. By selecting the same MIDI controller as a source in the modulation matrix, you can modulate any of the destinations with the MIDI controller sequence.

Adjusting the Phrase

- To shift the rhythm of the phrase, click **Shift Phrase Right** or **Shift Phrase Left**.

  If you shift the rhythm of the phrase to the left, the first step is moved to the end. If you shift the phrase to the right, the last step is moved to the beginning.
- To reverse the phrase, click **Reverse Phrase**.
- To duplicate short phrases, click **Duplicate Phrase**.

  NOTE

  The maximum number of steps is 32. Therefore, phrases that contain more than 16 steps cannot be duplicated as a whole.

Automation

You can automate most of the HALion Sonic parameters from within your host application, whether these are parameters of a program or global parameters such as AUX effects.

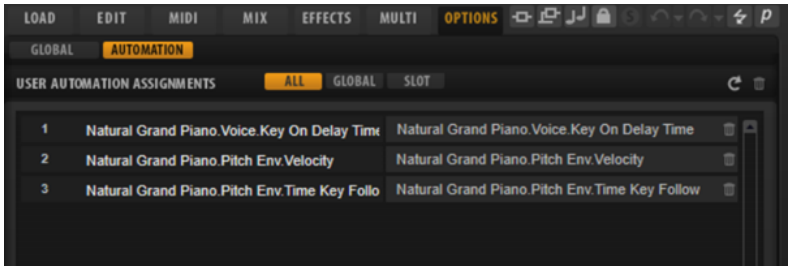
NOTE

- To automate parameters of multiple layers relatively, use quick controls and automate these instead.
- Not all parameters can be automated.

Automation Page

All assigned automation parameters are shown on the **Automation** page.

To access this page, open the **Options** page and activate the **Automation** tab at the top.



With the tabs at the top, you can specify whether you want to show the automation parameters for the slot, the global parameters, or all automation parameters.

On the left, the name of the automation parameter is shown, and on the right, the name of the assigned HALion Sonic parameter is displayed. If multiple HALion Sonic parameters are assigned to one automation parameter, these are listed below each other on the right.

- To remove an automation parameter, click the trash icon to the right of the parameter name.
- To remove all automation parameters, click **Delete All Parameters** at the top of the page.
- To rename an automation parameter, double-click the parameter name, and enter the new name. This name is then used in your host application.

Setting Up Automation

Creating Automation Parameters

- To assign a parameter to an automation parameter, right-click the parameter control, and select **Assign to New Automation**. The automation parameter is created on the first available automation parameter.
- To add a parameter to an existing automation parameter, right-click the control, select **Add to Automation**, and select the automation parameter.
- To remove a parameter from the automation, right-click an automated control, and select **Forget Automation**.

- To assign a parameter to an automation parameter automatically while working in your host application, activate **Automation Read/Write**, start playback, and use the controls on the HALion Sonic interface.

NOTE

If you have assigned automation parameters for a program and then load another program into this slot, it can become necessary to verify the automation settings.

If the new program has the same structure as the previous program, for example, if you exchange a Voltage preset with another Voltage preset, HALion Sonic reconnects the automation parameters correctly, and no manual modifications are necessary. However, if you load a preset with a different structure, for example a Model C preset, the automation parameters cannot be reconnected. In this case, the disconnected automation parameters are still displayed in the automation list.

Managing Your Sounds

You can load, save, and manage different kinds of sound files.

Programs, Layers, and Multi-Programs

HALion Sonic allows you to load Steinberg content, user-generated content, or third-party libraries.

Programs and Layers

A program is a complex instrument or sound that can consist of up to four layers. Often, a program contains a single layer that includes all necessary components, such as the synthesis part or insert effects. However, programs allow you to combine different layers, to build up more complex sounds or to create combinations of sounds that you want to load as a unit. A typical example is a bass/piano split sound or a piano/string layer sound.

Because of the various layer types that come with HALion Sonic, these combinations can do a lot more. For example, think of combining a pulsating synthesizer sequence with a sliced loop completed by a bass on the lower keys, and so on. Finally, adding some effects to individual layers or to the whole program creates a unique sound experience.

Multi-Programs

HALion Sonic is a multitimbral plug-in that can load and combine up to 16 programs. This combination is called a multi-program. You can use multi-programs to layer several programs or to create split sounds by setting several programs to the same MIDI input channel, for example. However, the most common usage is to create sound sets with different instruments set to individual MIDI channels.

VST Sound Instrument Sets

VST Sound Instrument Sets from Steinberg provide additional content for VST instruments based on the HALion technology. They come with their own macro pages that feature a customized look and a collection of controls and parameters. For details, refer to the documentation included with the corresponding VST Sound Instrument Set.

Content Files and Folder Structure

HALion Sonic comes with a large amount of ready-to-use sound content, made up of hundreds of multi-programs, programs, and layers. This content is write-protected. You can edit files while they are loaded, but you cannot overwrite the factory content files.

To save edits to the factory content, save the files under a new name. These files get the file name extension `.vstpreset` and are referred to as user content. They can be searched and categorized in the same way as factory content.

User content is saved in a predefined folder structure on your hard disk. You can create subfolders within this structure to facilitate moving or exchanging content.

RELATED LINKS
Editing Programs and Layers
Included Instruments

Registering VST Sounds

To be able to use the content of VST Sound containers, the containers must be registered in the **MediaBay**.

You register content using the **Steinberg Library Manager**. This is a separate program that is installed together with HALion Sonic and that allows you to manage your VST Sound content. For further information, consult the **Library Manager** documentation on https://steinberg.help/.

Loading Programs and Layers

You can load programs and layers via the **Load Panel**, via drag and drop onto the **Slot Rack**, and via various context menus in different areas of the plug-in.

There are several ways to load programs:

- Via drag and drop from the **Load Panel** or the File Explorer/macOS Finder onto a slot in the **Slot Rack**.

  To load the program into an empty slot, drag it onto an empty slot or onto the empty space below the slots in the **Slot Rack**.

  To replace the current program, drag the program onto a used slot in the **Slot Rack**.
- Via drag and drop from the **MediaBay** of your Steinberg DAW onto a slot in the **Slot Rack**.
- By selecting **Load Program** from the slot context menu.
- By clicking the **Load Program** button to the right of the slot and selecting a program in the **Load Panel**.

NOTE

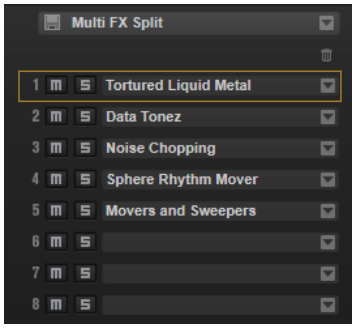
Programs containing lots of sample data may take some time to load.

Loading Layers into Slots

If you load a layer into a slot, HALion Sonic creates a new program.

Slot Rack

The **Slot Rack** has 16 slots. Each slot can contain a program, that is, you can work with 16 programs at the same time.



Once a program is loaded in the **Slot Rack**, it can be played and edited.

Loading Programs into Slots

You can load programs using drag and drop and via the **Load Program** command.

CHOICES

- Drag the program from the **MediaBay** or the File Explorer/macOS Finder onto the **Slot Rack**.

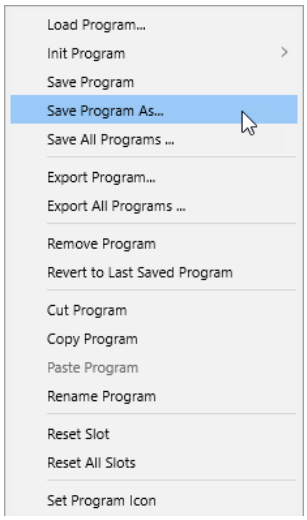
  To load the program into an empty slot, drag it onto this slot. To replace the current program, drag the program onto a used slot.
- Click the **Load Program** button of a slot to open the **MediaBay**, select a program, and double-click it.

  If the slot contains a program, this program is replaced.
- Right-click in the **Slot Rack**, and select **Load Program** from the context menu. In the **MediaBay**, select a program, and double-click it.

  If you right-click a slot to open the context menu, the current program is replaced.

Slot Context Menu

The context menu provides a number of functions for managing programs.



Load Program

Opens the program loader. Double-click a program to load it into this slot.

Init Program

Loads the **Init** program. This contains a neutral synth layer.

Save Program

Saves the program.

NOTE

If you try to overwrite write-protected factory content, a dialog prompts you to save the edited program under a new name.

Save Program As

Allows you to make attribute settings for your program and save it to your user content folder or the specified folder in your system.

Save All Programs

Allows you to save all programs as VST presets.

Export Program

Allows you to change the attributes for your program and save it in a new location.

Export All Programs

Allows you to set up attributes for all programs at the same time and save them in a new location.

NOTE

- Existing attribute values are kept, that is, if a program already contains an attribute value for an attribute that you set up for all programs, this value is not overwritten.
- The preset format of the programs is not modified, that is, if a program contains HALion presets and HALion Sonic presets, for example, these are saved with their respective formats maintained.

Remove Program

Removes the program from the slot.

Revert to Last Saved Program

Discards any changes that you made to the program since the last time it was saved.

Cut Program

Copies the program and removes it from the slot.

Copy Program

Copies the program.

Paste Program

Pastes the copied program into the slot. If the slot already contains a program, it is replaced.

Rename Program

Allows you to rename the program.

Reset Slot

Resets the slot to the default values.

Reset All Slots

Resets all slots to the default values.

Set Program Icon

Allows you to specify a custom icon for your program.

This icon is then displayed in the program slot section at the top of the window instead of the default icon.

NOTE

You can also cut, copy, and paste programs from one plug-in instance to another.

RELATED LINKS

Adding User Icons to Programs on page 92

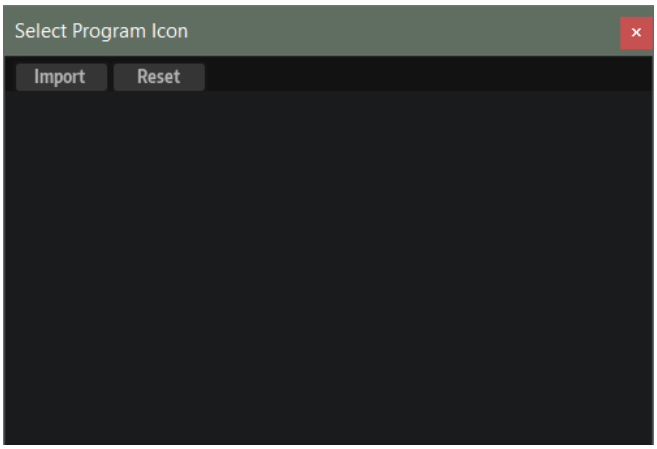
Adding User Icons to Programs

If you do not want to use the generic program icons for your programs, you can assign and use your own icons in HALion Sonic.

PROCEDURE

1. Right-click the program name in the **Slot Rack**, and select **Set Program Icon**.

   The **Set Program Icon** dialog opens. No icons are available, unless you have previously added them.

2. Click **Import** to search your system for user icons.

   The supported file formats are `.jpg`, `.jpeg`, `.bmp`, and `.png`.

3. Select the icon that you want to use, and click **OK**.

   The image is automatically scaled to 50x50 pixels and saved to the **Program Icons** subfolder of your user presets folder. An additional variant with a resolution of 100x100 pixels is also added. This icon is used when working with HiDPI monitors.

4. The **Set Program Icon** dialog now shows your icon. Click on it to assign it to the selected program.

RESULT

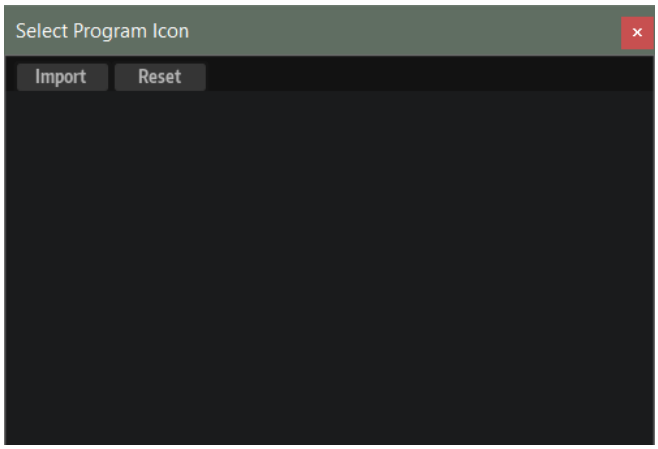
The icon is displayed in the program slot section at the top of the window.

NOTE

If HALion Sonic cannot find the assigned user icon for a program, the default icon is used.

Set Program Icon Dialog

The **Set Program Icon** dialog allows you to import, assign, and remove user icons for your programs.



Import

Opens a dialog where you can select and import a user icon.

The supported file formats are `.jpg`, `.jpeg`, `.bmp`, and `.png`.

Reset

Resets the category-based default icon for the program.

Icon display

Lists the imported user icons.

RELATED LINKS

Adding User Icons to Programs on page 92

Removing User Icons from Programs

If the **Set Program Icon** dialog contains icons that you do not want to use any more, you can remove them.

PROCEDURE

- To remove a user icon, move the mouse over it, and click the **Delete** button in the upper right corner.

RESULT

This deletes the icon file and its HiDPI variant from the user presets folder.

Managing and Loading Files

You can use the **MediaBay** and the **Browser** to manage, navigate to, load, and preview different file types.

You can find the **MediaBay** and the **Browser** on the **Load Panel**.

To open the **Load Panel**, click **Show/Hide Load Panel** on the toolbar.

MediaBay

The **MediaBay** enables you to access presets, such as multi-programs, programs, and layers.

In the top section of the page, you can specify which sounds to look for. The lower section displays the corresponding results.

- To adjust the size of the two sections, drag the divider at the top of the results list.

Reset Filter

Resets all filter settings.

Synchronize Filter Settings with Selected Slot

- If this button is activated, selecting a program from the **Slot Rack** automatically sets the **MediaBay** search filters to the state they were in when the program was loaded. This makes it easier to replace a program with a similar program.

  If you select an empty slot, all search filters are reset.

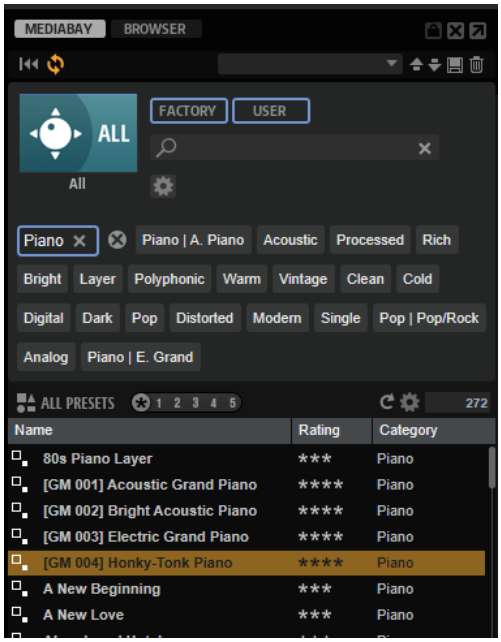
  If no program, layer, or multi was loaded because you loaded the program via the **Browser** or via drag and drop from the File Explorer/macOS Finder, the search settings do not change when you select this slot.
- If this button is deactivated, the filter settings are global for all slots.

Presets

You can save, load, and delete the settings of a **MediaBay** search, which includes both the search mask at the top and the results list. This allows you to create search templates for different search scenarios, for example.

Saving the **MediaBay** with active search filters allows you to create different preset collections that can then be recalled very quickly. These collections are dynamic, that is, any new presets added to your system at a later time also appear in the results list when a new search is performed.

Search Mask and Results List



Select Library

Click the library icon on the left to open the library selector, where you can specify which library to search for content.

Factory

Activate this button to search for presets that are part of commercial or free libraries and that are installed on your system as VST Sound libraries. These libraries can be part of HALion or HALion Sonic, for example, or they can be included in expansion libraries.

User

Activate this button to search for presets that you have created and saved in the **MediaBay**.

Filter Text

In the text search field, you can enter text that is part of the name or an attribute of a preset that you are looking for. For example, if you enter **Piano**, the results list displays all presets whose name contains “Piano”, or presets for which the term “Piano” is used in one of the attributes, such as the **Category** attribute **Piano** or the **Subcategory** attribute **Keyboard | E.Piano**.

Configure Attribute Menus

Allows you to add attribute menus, where you can specify attributes for your search.

The following attribute menus are available:

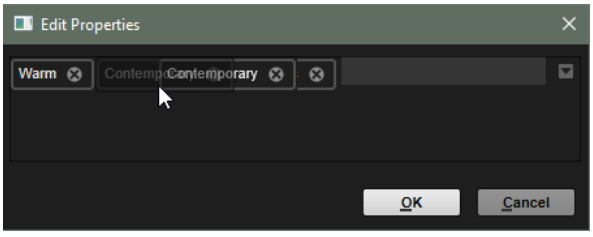
- **Category** opens a tree view that allows you to select a **Category** or a **Subcategory**. **Subcategory** tags are shown together with the corresponding **Category**, in the following way: (Category | Subcategory).
- **Style** opens a tree view which allows to select a **Style** or a **Substyle**. **Substyle** tags are shown together with the corresponding **Style**, in the following way: (Style | Substyle).
- **Properties** opens the **Properties** dialog, where you can add one or multiple **Properties** attributes.

  To search for a **Properties** attribute, enter a text string in the text field, such as **warm**, for example. When you start typing, the available properties are shown and can be selected from the list. If the entered text does not match any of the existing attribute values, all available attribute values are shown in alphabetical order. By adding multiple properties, you can narrow down the results to the ones that match both properties.

  Alternatively, click **Show All Attribute Values** next to the text field to open a list of all **Properties** attributes. You can search for matching attributes by scrolling the list. Press **Return** or click a property to add it.

  To add a new **Properties** attribute, enter the text and press **Return**.

  If you specify multiple attributes, you can change their order using drag and drop.

- **Moods** opens the **Moods** dialog, where you can add one or more **Moods** attributes.

To search for an attribute, enter a text string in the text field, such as **energetic**, for example. When you start typing, the available properties are shown and can be selected from the list. If the entered text does not match any of the existing attribute values, all available attribute values are shown in alphabetical order. By adding multiple properties, you can narrow down the results to the ones that match both properties.

Alternatively, click **Show All Attribute Values** next to the text field to open a list of all attribute values. You can search for matching attribute values by scrolling the list. Press **Return** or click an attribute value to add it.

To add a new **Moods** attribute, enter the text and press **Return**.

If you specify multiple attributes, you can change their order using drag and drop.

- **Articulations** opens the **Articulations** dialog, where you can add one or more **Articulations** attributes.

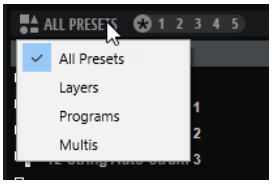
  To search for an attribute, enter a text string in the text field, such as **Decrescendo**, for example. When you start typing, the available articulations are shown and can be selected from the list. If the entered text does not match any of the existing attribute values, all available attribute values are shown in alphabetical order. By adding multiple articulations, you can narrow down the results to the ones that match both articulations.

  Alternatively, click **Show All Attribute Values** next to the text field to open a list of all **Articulations** attributes. You can search for matching attributes by scrolling the list. Press **Return** or click an attribute to add it.

  To add a new **Articulations** attribute, enter the text and press **Return**.

  If you specify multiple attributes, you can change their order using drag and drop.
- **Author** opens a list with all available authors.
- **Key** opens a list with all available keys.
- **Signature** opens a list with all available signatures.
- **Tempo** opens the **Tempo** dialog, where you can select a **Tempo** and specify a **Range** in which the tempo of the result can deviate from the set tempo. Activate the **Half-Time** or **Double-Time** buttons to include presets that use half or double the tempo.

Preset Type Menu



On the **Preset Type** menu, you can specify whether to show all presets in the results list, or whether to display only layers, programs, or multi-programs.

This setting is automatically adapted to the active slot. For example, if the multi loader is active, the **Preset Type** menu is set to display multi-programs.

Rating Filter

Allows you to limit the results list according to the rating of the presets. Use the rating slider to define the minimum rating.

Set up Result Columns

Allows you to select which attribute columns to display in the results list.

RELATED LINKS
Browsing for Files on page 97

Browsing for Files

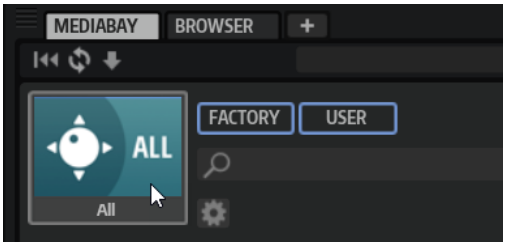
The **MediaBay** allows you to browse for and load files.

PROCEDURE

1. Use the **Factory** and **User** buttons at the top of the window to specify whether you want to browse through the factory content or the content that you created yourself.

   You can activate both buttons to browse through the entire content.

2. When you open the **MediaBay** for the first time, the library selector is shown. If a library is selected, for example, because you open the **MediaBay** for a slot that already contains a program, click the library icon to the left of the **Factory** and **User** buttons to open the library selector.



3. In the library selector, specify where you want to search for files: To select a particular library, click it. To browse through the entire content, select **All Libraries**.

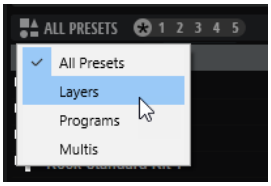
   If the library that you want to use is not shown in the visible part of the selector, use the scroll bar, or enter the library name or part of the name in the search field. For example, enter “LoFi” to reduce the list to all libraries whose names contain “LoFi”.

   NOTE

   If you enter search text, the library selector shows all libraries whose names contain the text, plus all libraries containing files whose names or attributes contain the text.

When you select a library, the text search field is cleared, and the results list shows the files contained in the library.

4. Via the **Preset Type** pop up menu, specify whether you want to search for multi-programs, programs, or layers, or whether you want to browse through the entire content.



5. Above the results list, a list of suggested filter tags is displayed, based on the most frequently used tags. To use a suggested tag as a filter tag, click it. You can activate several filter tags simultaneously.

NOTE

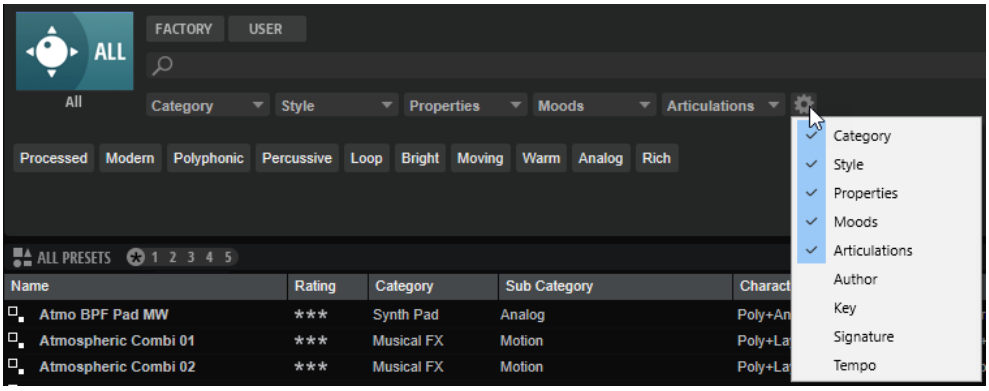
Active filter tags have a blue border and are displayed to the left of the suggestions.

The list of suggested filter tags is updated with every active filter tag.

- To remove a filter tag, click its **Remove Filter** button.
- To remove all tags, click **Remove All Filters** between the filter tags and the suggestions.

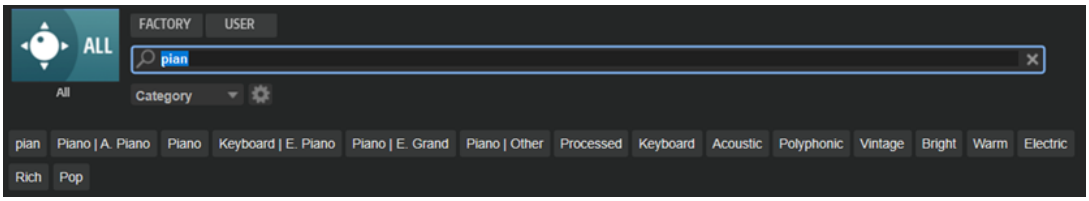
6. Optional: Configure the **MediaBay** to provide multiple attribute menus to search for specific types of presets. To add or remove a menu, click the **Configure Attribute Menus** button, and select/deselect the corresponding attribute.

This allows you to perform a search for a specific instrument or for loop-based presets. For example, when looking for instruments, the **Category**, **Articulations**, and **Properties** attribute menus are particularly useful, whereas when looking for loop-based presets, we recommend to search for **Style**, **Tempo**, and **Signature**.

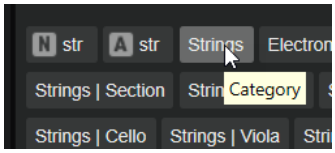


7. To search for files that contain a specific text, either in their name or in any of the attributes, enter this text in the text field.

While you type, the list of suggested filter tags is updated. This allows you to see in how many and in which attributes your search text is used.



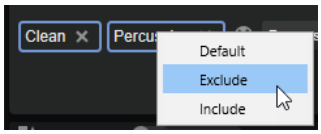
The **Name** N and **All Attributes** A tags are the first suggestions. To show which attribute another suggested filter tag belongs to, hover the mouse pointer over it to view its tooltip.



TIP

Combining tags from different attributes means that both filter criteria need to be matched to create a result. If you add multiple tags for the same attribute, the result only needs to match one of them.

8. Optional: You can set the search parameters so that they include or exclude presets with specific tags. To do so, define the **Mode** for the filter tag by right-clicking it, and selecting an option from the menu.



   - **Default** is the standard behavior. This is indicated by a blue frame.
   - **Include** can list presets, even if the filter tags prevent this. For example, if you specify **Category = Piano**, **Property = Warm** and **Name = Warm Piano (Mode = Include)**, the results list shows presets whose **Category** and **Property** attributes match, in addition to any presets whose names contain “Warm Piano”. **Include** mode is indicated by a green frame around the filter tag.
   - **Exclude** can exclude presets from the results list, even if their attributes match your settings. For example, if you specify **Category = Piano** and **Property = Warm (Mode = Exclude)**, only piano presets for which the **Warm** tag is not set are listed. **Exclude** mode is indicated by a red frame.

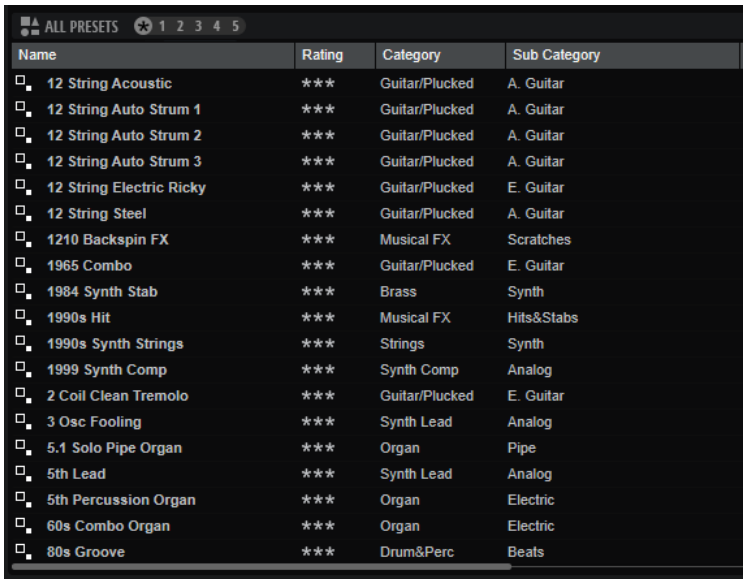
9. In the results list, double-click a file to load it in the selected slot.
10. Play a note on your keyboard, or use the internal keyboard to listen to the selected file.

    If the file is not what you are looking for, try further files in the results list, and listen to them until you find a file that you like.

RELATED LINKS
MediaBay on page 94

Results List

The results list shows all files that have been found based on your filter settings.



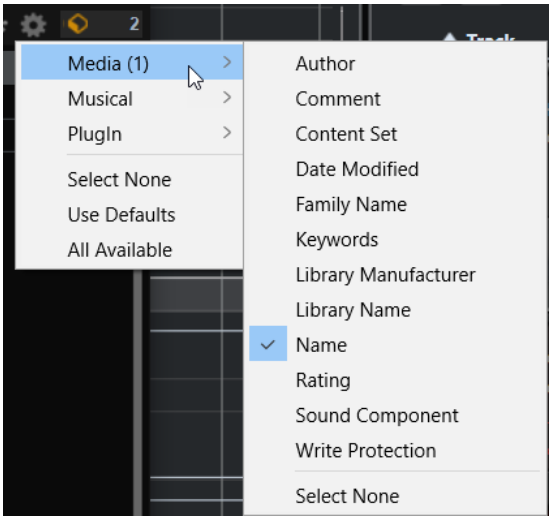
RELATED LINKS
Configuring the Results List

Configuring the Results List

You can specify which file attributes to display in the results list and set up the column order so that these attributes are visible without scrolling. This allows you to quickly find files with particular attributes.

CHOICES

- To define the attributes to be shown in the results list, click **Set up Result Columns** in the upper right corner of the results list, and activate the corresponding entries. New attributes are added at the right of the list.



  - **Select None** deselects all attributes.
  - **Use Defaults** resets the results list to show the default attributes.
  - **All Available** adds columns for all available attributes.

- To reorder the columns in the results list, drag the column headers to another position.
- To change the sorting of the list entries, click the column header. The triangle in the column header shows the sorting direction.

Results List Context Menu

The context menu of the results list offers additional options for managing the selected presets. Different options are available for factory presets and for user presets.

NOTE

Factory content is write-protected and cannot be deleted or renamed.

Factory Presets

Load Program into selected Slot/Load Multi-Program

Loads the highlighted preset.

Select All

Selects all presets in the results list.

Select None

Cancels any selection in the results list.

User Presets

Copy

Copies the selected presets to the clipboard.

Rename

Opens a dialog for renaming the preset.

Delete

Moves the selected presets to the trash of your operating system.

Show in Explorer/Reveal in Finder

Shows the preset in the file browser of your operating system.

Set/Remove Write Protection

Sets/Removes write protection for the selected presets.

Assigning General MIDI Program Change Numbers to Sounds

Assigning General MIDI program change numbers to sounds allows you to use MIDI program change messages to load the sounds into the slot of the corresponding MIDI channel.

PROCEDURE

1. In the **MediaBay**, click **Set up Result Columns** on the title bar of the lower section.
2. Select **Musical** > **GM Sound**.
3. Select the sound to which you want to apply the GM program change number.
4. In the **GM Sound** column for the sound, select the General MIDI program change number that you want to use.

   You can assign the same GM Sound program number several times. If a program number is used more than once, the **Rating** attribute can be used to decide which program to load.

NOTE

Slot 10 ignores any program change messages and keeps the loaded drum set.

NOTE

If you add **GM Sound** attributes to programs in the **MediaBay** and these attributes are used in the current multi, you can update the multi by right-clicking the multi loader and selecting **Update General MIDI Programs**. This exchanges those programs that use the specified **GM Sound** attribute. The other programs remain unaffected.

Loading Programs into Slots

To load a program into one of the slots of the **Slot Rack**, you have the following possibilities:

- Select the slot into which you want to load the program, and double-click the program in the results list.
- Drag a program from the results list to an empty space in the **Slot Rack** to create a new slot.
  If you drag it to an existing slot, the current program is replaced.
- Right-click the program, and select **Load Program into selected Slot** from the context menu.

Importing Presets

You can import program presets from any file location using the File Explorer/macOS Finder.

PROCEDURE

1. Select the preset in the File Explorer/macOS Finder.
2. Drag it to the **MediaBay**.

RESULT

The imported presets are copied to your user folder.

Editing Attributes

Program, layer, and multi-program presets can be described by using a predefined set of attributes.

Attributes can be edited in the following places in HALion Sonic:

- In the **MediaBay** results list.
- In the **Save Program As** and **Save Multi-Program As** dialogs.

PROCEDURE

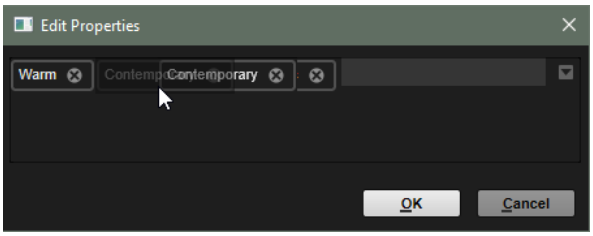
1. To specify or change an attribute value, click in the corresponding field of the **Value** column.
   - For most attributes, such as **Author**, a pop-up menu listing the available options opens when you click in the **Value** column.
     You can also double-click the field and enter a new author manually.
   - Some values, such as **Articulations**, **Properties**, and **Moods**, open a dialog where you can add a number of different attribute values from a list.

You can use the text field at the top to narrow down the list. For example, type “b” to filter the list to show all attribute values starting with “b”. The list is updated as you type. If the entered text does not match any of the existing attribute values, all available attribute values are shown in alphabetical order.

Alternatively, click the selector next to the text field to open a list of all attributes. You can search for matching attributes by scrolling the list. Press **Return** or click an attribute to add it.

To add a new attribute, enter the text and press **Return**.

If you specify multiple attributes, you can change their order using drag and drop.



- For the combined attributes **Category** and **Subcategory** as well as **Style** and **Substyle**, a pop-up panel opens.

  If you switch to a **Subcategory** from another **Category**, the **Category** value is automatically updated.

  At the bottom of the panel, you can create new **Substyle** or **Subcategory** values.
- For the **Rating** attribute, you can click in the **Value** column and drag left or right to modify the setting.
- For the **Tempo** attribute, you can select an available tempo value from the list.

2. Select a value, activate an attribute, or enter text.

   Attribute values are written into the corresponding files.

   NOTE

   If you change the attributes for write-protected factory content files, these changes are only saved in the **MediaBay** database, not in the file.

Deleting User Presets

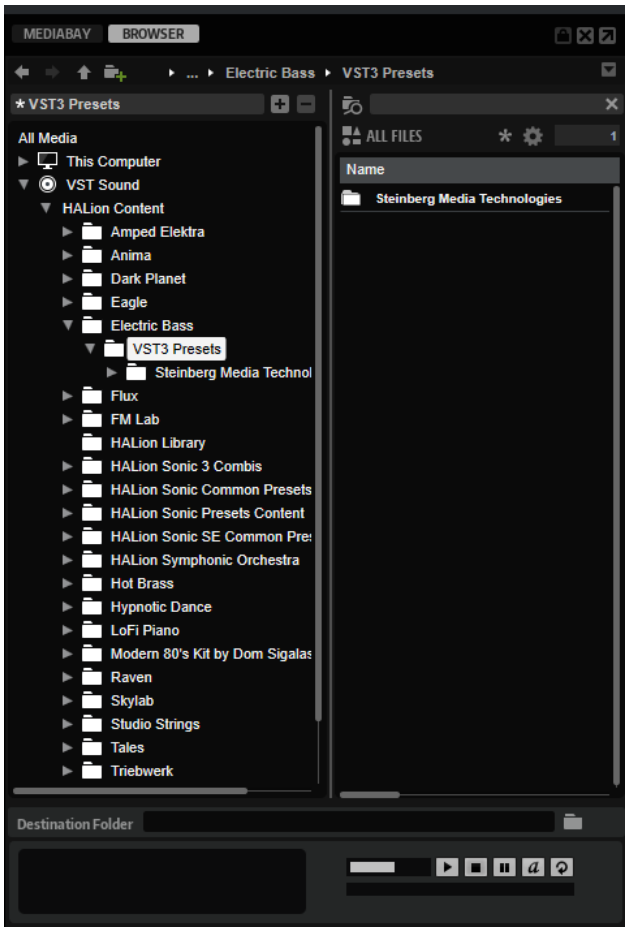
- To delete a user preset, right-click it, and select **Delete** from the context menu.

  NOTE

  Factory presets cannot be deleted.

Loading Files Using the Browser

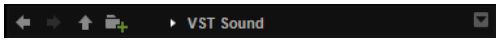
In the **Browser**, you can search your system for files.



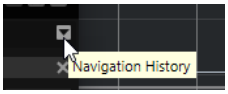
In the **Browser**, you can search and load the following files:

- Samples from the file system or from within loaded programs.
  This also includes program formats from other software and hardware samplers.
- Programs, layers, and multis.
- MIDI files.
  You can load MIDI files onto a MIDI file loader on a macro page via drag and drop.

Path Section

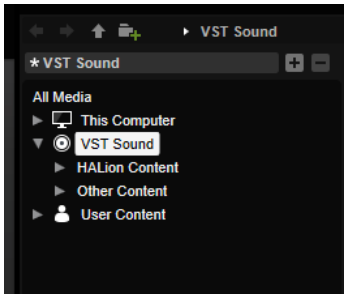


- To step through the recent locations, click the **Previous Browse Location/Next Browse Location** buttons.
- To navigate to the folder one level up in the location tree, click the **Browse Containing Folder** button.
- The path to the current position in the hierarchy is shown on the right. To navigate to one of these folders, click its name.
- To open the history, click the **Navigation History** button on the right.



Location Tree

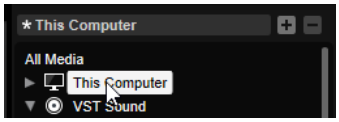
The location tree on the left side of the **Browser** allows you to navigate through the programs, layers, or zones in any folder. You can even access files contained in VST Sound containers and ISO files.



If you select an entry in the tree, the results list shows the corresponding content.

Locations

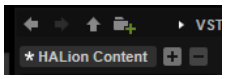
You can save folders or directories in your system as favorite locations for quick access.



The text field above the tree shows the name of the selected folder. If the name is preceded by an asterisk, the folder has not been saved as a location yet.

Location Controls

At the top of the location tree, you can find the location controls.



Previous Browse Location/Next Browse Location

These buttons allow you to step through the recent locations.

Browse Containing Folder

Allows you to navigate to the folder one level up in the location tree.

Create New Folder

Creates a new folder on the current hierarchy level of the tree.

Favorite Location pop-up menu

To open the list of favorite locations, click in the text field.

If you have not created any locations yet, this list is empty.

Add Selected Media Node as Favorite Location

Saves the folder that is selected in the location tree as a favorite location.

Remove Favorite Location

Deletes the selected location from the list of favorite locations.

Results List

The results list shows the files found in the selected folder. It displays all files that HALion Sonic can read, such as VST presets, samples, or third-party sampler programs.

In addition to information like file name and path, the columns in the results list can be configured to show different attributes.

The results list also shows any subfolders of the selected folder, but it does not include the files contained in the subfolders themselves. To see the content of subfolders, you must select the corresponding subfolder.

- To open a folder or location, double-click it in the results list.

You can limit the number of results in the results list using the text search function. This way, you can search for files with specific names, for example. For presets, the search also takes any attributes into account. The value field in the top right corner indicates the number of files that match the search text. To clear the search text, click **Clear Filter Text**.

Toolbar

You can use the tools on the toolbar above the results list to refine your search criteria.

Search Subfolders

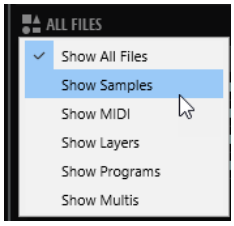
- If this button is activated, the search includes all subfolders of the specified location.

  To automatically perform a new search for files when you switch between folders, activate **Auto Search** a a.
- If this button is deactivated, only the selected location is searched for files.

Text Search field

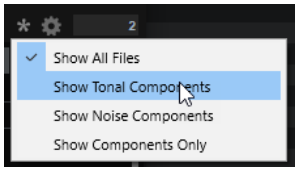
Allows you to enter text that is part of the name or any of the attributes of the file you are looking for.

Filter by Media Type



Allows you to filter the list to show only samples, MIDI files, layers, programs, or multi-programs.

Filter by Sound Component



Allows you to filter the list to show only the tonal or the noise components created by the **Decompose** function, to show both the tonal and noise components, or to show all files.

Set up Result Columns

Allows you to select which attribute columns to display in the results list.

Results Counter

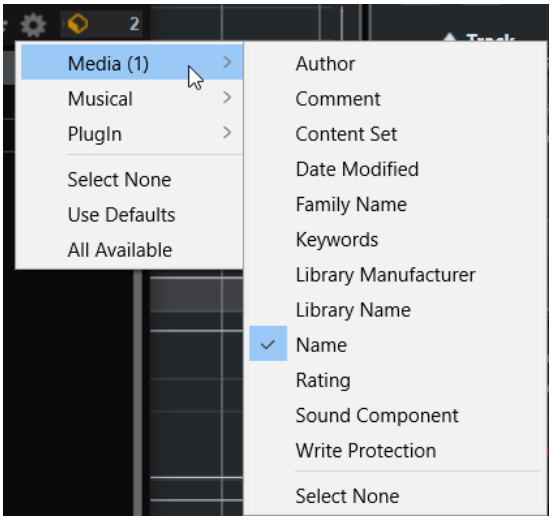
Displays the number of files that match the filter criteria. To stop an active scanning process, click in the value field.

Configuring the Results List

You can specify which file attributes to display in the results list and set up the column order so that these attributes are visible without scrolling. This allows you to quickly find files with particular attributes.

CHOICES

- To define the attributes to be shown in the results list, click **Set up Result Columns** in the upper right corner of the results list, and activate the corresponding entries. New attributes are added at the right of the list.



  - **Select None** deselects all attributes.
  - **Use Defaults** resets the results list to show the default attributes.
  - **All Available** adds columns for all available attributes.
- To reorder the columns in the results list, drag the column headers to another position.
- To change the sorting of the list entries, click the column header. The triangle in the column header shows the sorting direction.

Searching for Files on Your System

Instead of searching the current results list, you can also use the text search to look for files on your hard disks or in VST Sound containers.

PROCEDURE

1. Select the location that you want to use as the starting point for the search.

   The higher up in the hierarchy the location, the longer the search takes.
2. In the top left corner of the results list, click the **Search Subfolders** button, and enter the search text in the text field.
3. Optional: On the **Filter by Media Type** menu, specify whether you want to search for samples, MIDI files, layers, programs, multi-programs, or any content.

4. To start the search, press **Return**, or click **Search/Stop Search**.

   The files that match the search criteria are listed in the results list.

   NOTE

   The maximum of files that can be displayed in the list is set with the **Max Results** parameter on the **Options Page**.

5. Double-click a result to show it in the location tree.

RELATED LINKS
Options Page on page 27

Managing Multi-Programs

Multi-programs, or multis, can load multiple sounds or programs and combine them.

You can use multi-programs to layer several programs or to create split sounds by setting several programs to the same MIDI input channel, for example. However, the most common usage is to create sound sets with different instruments set to individual MIDI channels.

A multi-program contains all plug-in parameters. If you use HALion Sonic as a plug-in in a Steinberg DAW, the multi-programs are listed in the **Preset Management** pop-up menu of the host application. You can drag multis and programs from the **MediaBay** to a slot in HALion Sonic.

If you use HALion Sonic as a plug-in in a different host application, you can use the preset functionality from the host application or the multi management features provided by HALion Sonic.

Loading Multis

- Open the **MediaBay**, and double-click a multi or drag a multi onto the multi slot.

Renaming Multis

PROCEDURE

- To rename a multi, click in the name field, enter a new name, and press **Return**.

Removing Multis

- To remove all programs of the current multi, click the **Remove All Programs** button on the toolbar of the **Slot Rack**.

  This also resets all slot parameters and removes effects from the slot busses. However, AUX and Master effects are not removed.

Clearing the Plug-in Instance

- To reset the entire plug-in instance to an empty state, right-click the multi loader, and select **Clear Plug-in Instance** from the context menu.

Saving Multis

PROCEDURE

1. Click the **Save Multi-Program** button.
2. Enter the name of the multi.
3. Assign any attributes that you want to use, and click **OK**.

   If the entered name already exists, a message opens. Click **Make Unique Name** to add a number suffix to the name of the new multi.

Saving a Multi as Default

- To specify a default multi to be loaded with HALion Sonic, use the **Save as Default** command on the context menu for the multi loader.

Creating Subfolders for User-Defined Multis

You can create subfolders inside the user preset folder to organize presets.

- To create a new folder, click the **Create New Folder** icon at the top left of the **Save Multi-Program** dialog.

Navigating Through the Folder Hierarchy

You can move through the folder hierarchy using the three navigation buttons at the top left of the dialog.

These buttons allow you to navigate to the previous or next browse location, or browse the folder one level up in the location tree.

Editing Attributes

You can edit the attribute values that are assigned to the preset.

PROCEDURE

1. Open the **Save Multi-Program** dialog, and navigate to the **New Preset Tags** section.
2. To edit an attribute, click on a value field, and enter the new name or value.
3. Click **OK** to save the preset.

Multi Chains

On the **Multi** page, you can combine up to 128 multis as a multi chain.

You can step through the multis manually or via MIDI control change messages. This feature is particularly useful when performing live on stage. It allows you to set up a list of sounds that follows the order of their appearance during your performance, for example.

NOTE

- To use a hardware controller to switch between the multis, add MIDI controllers to the **Load Previous Multi**/**Load Next Multi** buttons.

- If **Multi Mode** is selected on the **Program Change** pop-up menu on the **Options** page, you can use program change messages to switch between the multis.

Setting Up a Multi Chain

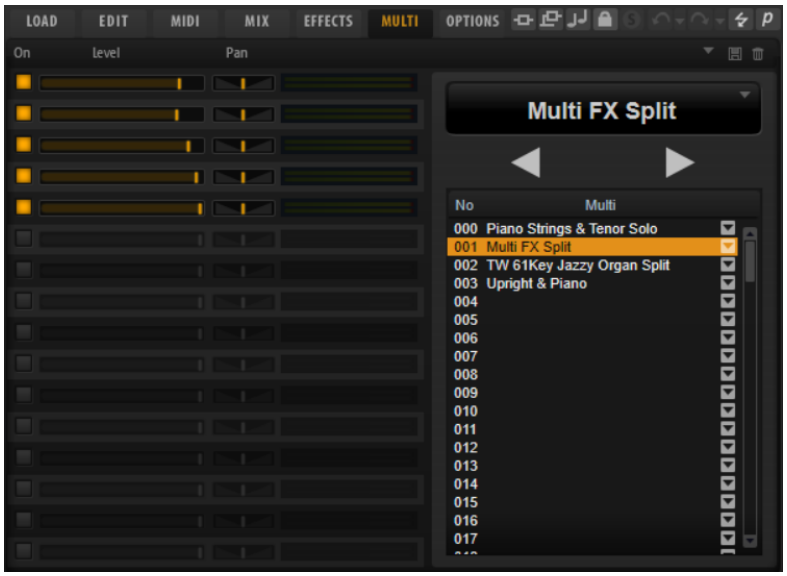
PROCEDURE

1. On the **Multi** page, click the down arrow button for a list entry to open the **Load Multi-Program** dialog.
2. Select a multi and click **OK**.
3. Select the next slot in the list and repeat the procedure.
4. Continue until all multis that you want to add are part of the chain.

AFTER COMPLETING THIS TASK

You can rearrange the order of a chain by dragging an entry to a new position in the list.

Multi Page



The list of multis in your chain is displayed on the right. If you select a multi in this list, its name is displayed in the field above the list, and the corresponding programs are displayed on the left.

- To load the next or the previous multi, use the **Load Previous Multi**/**Load Next Multi** buttons above the list.
- To load a specific multi, select it in the list.

On

Activates/Deactivates the corresponding program.

Level

Sets the level of the corresponding program.

Pan

Sets the pan of the corresponding program.

Active Multi Display

The field at the top op the multi list shows the selected multi.

Click the arrow button on the right to open a pop-up menu with the following options:

- **Clear Multi Chain** removes all multis from all slots in the list.
- **Remove Selected Multi** removes the selected multi from its slot in the list.

Load Previous Multi/Load Next Multi

Use these buttons to step through the multi list.

- To assign a MIDI controller to a button, right-click it, select **Learn CC**, and use a control on your hardware controller.
- To remove an assigned MIDI controller, right-click the button and select **Forget CC**.

Multi List

The multi list contains 128 slots.

To load a multi in a slot, click the arrow button and select a multi.

Assigning MIDI Controllers to the Previous/Next Buttons

For switching through the multi chain, you can also use MIDI controllers, such as a potentiometer, a fader, or the modulation wheel.

You can use the same MIDI controller for **Load Previous Multi** and **Load Next Multi**, or select a different controller for each function.

NOTE

- If the same MIDI controller is assigned to both buttons, the **Load Next Multi** command is triggered by the transition from the center position to the upper range of the control, and the **Load Previous Multi** command by the transition from the center position to the lower range of the control.
- If different MIDI controllers are assigned, any transition from the lower to the upper range of the control triggers the **Load Previous Multi**/**Load Next Multi** command.

PROCEDURE

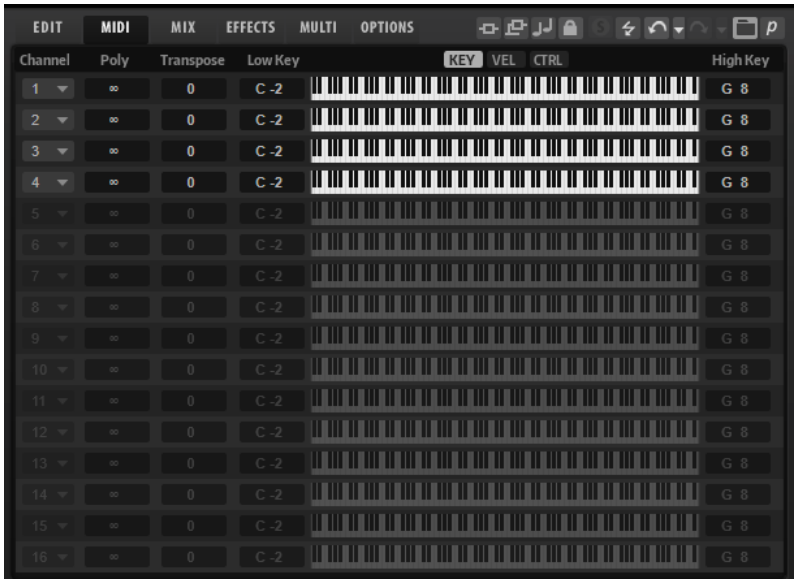
1. Right-click the **Load Previous Multi** button and select **Learn CC**.
2. On your hardware controller, use the control that you want to assign.
3. Right-click the **Load Next Multi** button and select **Learn CC**.
4. On your hardware controller, use the control that you want to assign.

MIDI Editing and Controllers

You can make MIDI and MIDI controller settings on the **MIDI** page and the **Options** page.

MIDI Page

The **MIDI** page gives you access to the MIDI slot parameters of HALion Sonic.



Channel

Allows you to specify the channel and the MIDI port to be used by the slot to receive MIDI signals. You can set multiple slots to the same MIDI channel and trigger them simultaneously with the same note events.

Polyphony

Specifies how many notes can be played at the same time.

NOTE

Programs can contain various layers. Therefore, the resulting number of voices can be much higher than the value that is specified here.

Transpose

Allows you to shift the incoming MIDI notes by ±64 semitones before they are sent to the loaded program.

Key Range (Low Key, High Key)

Allows you to limit the key range for a slot.

Velocity Range (Low Vel, High Vel)

Allows you to limit the velocity range for a slot.

Controller Filter

Allows you to filter out the most commonly used MIDI controllers.

Editing the Key Range

Each slot can be limited to a specific key range.

To show the key range, activate the **Key** button above the range controls.

You can set the key range in the following ways:

- Set the range with the **Low Key** and **High Key** value fields or by dragging the ends of the keyboard range control.
- To move the key range, click in the middle of the range control and drag.
- To set the range via MIDI input, double-click in a value field, and play the note.

Editing the Velocity Range

Each slot can be limited to a specific velocity range.

To show the velocity range, activate the **Vel** button above the range controls.

- Set the velocity range with the **Low Vel** and **High Vel** value fields or by dragging the ends of the velocity range control.

  To move the velocity range, click in the middle of the range control and drag.

MIDI Controllers

You can assign the parameters volume, pan, mute, solo, send FX 1–4, and the quick controls of each slot to a MIDI controller. In addition to the slot parameters, you can also assign the parameters of the AUX FX and most of the edit parameters.

By default, volume, pan, send FX 1–4, and the program quick controls are already assigned. You can customize this factory MIDI controller mapping by assigning your own MIDI controllers. This way, you can adapt the mapping to your MIDI keyboard or controller.

To provide more control, you can set the minimum and maximum range for each assignment separately.

Assigning MIDI Controllers

PROCEDURE

1. Right-click the control that you want to control remotely, and select **Learn CC**.
2. On your MIDI keyboard or controller, use the potentiometer, fader, or button.

   The next time you right-click the control, the menu shows the assigned MIDI controller.

   NOTE

   You can assign the same MIDI controller to different parameters several times. However, you cannot assign different MIDI controllers to the same parameter.

RELATED LINKS
MIDI Controller Section on page 30

Unassigning MIDI Controllers

PROCEDURE

- To remove a MIDI controller assignment, right-click the control, and select **Forget CC**.

Restoring the Factory MIDI Controller Assignment

To restore the factory MIDI controller assignments, open the **Options** page and click **Reset to Factory** in the **MIDI Controller** section.

Setting the Parameter Range

You can set the minimum and maximum values of the parameter for each assignment separately. This gives you more control over the parameter, for example, when you are performing live on stage.

PROCEDURE

1. Set the parameter to the minimum value.
2. Right-click the control, and select **Set Minimum** from the context menu.
3. Set the parameter to the maximum value.
4. Right-click the control, and select **Set Maximum**.

MIDI Controllers and AUX FX

You can assign the parameters of the AUX FX to MIDI controllers.

Unlike the slots, the AUX FX do not have a MIDI port and channel of their own. Instead, they listen to any incoming MIDI controller message, regardless of the MIDI channel. Therefore, if you assign a parameter to a MIDI controller, you should use a controller number that is not already in use by any of the assignments that you made for the slots.

NOTE

If you unload or replace the effect, the MIDI controller assignment of this effect is lost.

Saving a MIDI Controller Mapping as Default

After customizing the factory MIDI controller assignments, you can save them as defaults.

PROCEDURE

- Open the **Options** page,select the **Global** tab and, in the **MIDI Controller** section, click **Save as Default**.

RESULT

Now, each time that you load a new instance of the plug-in, your customized MIDI controller mapping is available as default.

NOTE

- Saving the controller mapping as default does not include the MIDI controller assignments of the AUX FX.

- The MIDI controller mapping is saved with each project. This way, you can transfer your settings to other systems. The project also includes the MIDI controller assignments of the AUX FX.

Automation and Factory MIDI Controller Assignment

Several parameters on the plug-in interface are available for automation from your host software and can be assigned to an external MIDI controller.

The table shows the controller numbers and the names of the default factory MIDI controller assignment. The assigned MIDI controller numbers are the same for all slots. However, the MIDI controllers listen only to the MIDI channels of the corresponding slot.

Parameter	Controller Number	Name
Volume	#7	Volume
Pan	#10	Pan
Expression	#11	Expression Volume
Send FX 1	#91	Effect 1 Depth
Send FX 2	#92	Effect 2 Depth
Send FX 3	#93	Effect 3 Depth
Send FX 4	#94	Effect 4 Depth
Program QC 1	#74	Brightness
Program QC 2	#71	Harmonic Content
Program QC 3	#73	Attack Time
Program QC 4	#72	Release Time
Program QC 5	#75	Sound Controller #6
Program QC 6	#76	Sound Controller #7
Program QC 7	#77	Sound Controller #8
Program QC 8	#78	Sound Controller #9

NOTE

- Send FX 1-4 are only available if the corresponding AUX send effects are loaded.
- You can remote-control any other parameter by first assigning the parameter to a quick control and then to a MIDI controller.

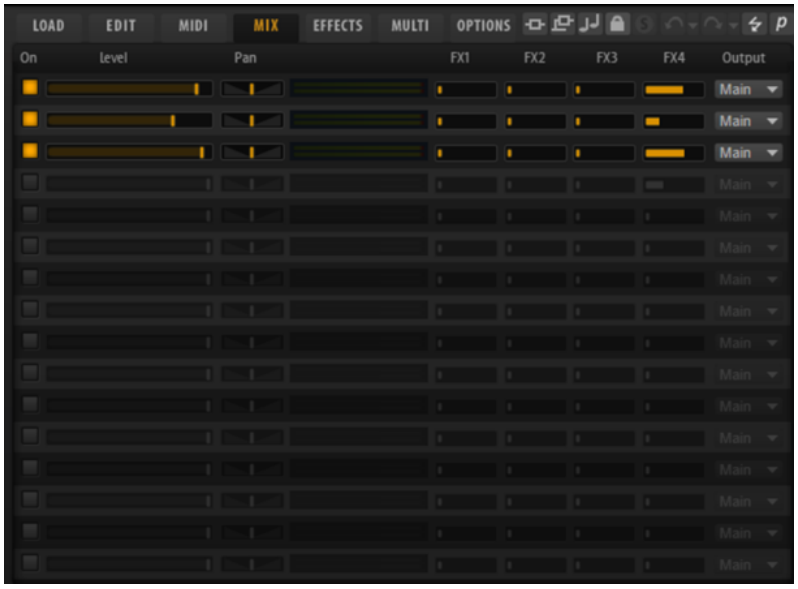
- You can use MIDI controllers inside the modulation matrix of a synth or sample layer to control the cutoff, for example.

Mixing, Routing, and Effect Handling

You cam perform your mixing operations on the **Mix** page.

Mix Page

The **Mix** page gives you access to the audio parameters of HALion Sonic. This comprises the level and pan settings, as well as the AUX effect sends and the output selector. To monitor the output levels, each slot also features a level meter.



On

Activates/Deactivates MIDI input of the slot. If you deactivate a slot, its MIDI communication is interrupted and sounds are no longer processed in the background.

Level

Sets the output level of the slot.

Pan

Sets the position in the stereo panorama.

Meter

Indicates the output level of the slot.

FX 1–4

These controls specify the amount of signal that is sent to the four auxiliary busses that host up to four effects each.

Output

Specifies to which of the 16 plug-in outputs the slot is routed.

Routing

HALion Sonic allows you to route its 16 slot outputs, that is, each loaded program, either to the **Main** output or to one of the 15 additional plug-in outputs.

With the current version of Cubase, changing to one of the additional outputs in HALion Sonic automatically activates this plug-in output in Cubase and adds a mixer channel to the project. In previous Cubase versions or some other host sequencers, you need to activate the plug-in outputs manually.

NOTE

If a mixer channel is routed to an inactive plug-in output, the **Main** plug-in output is used.

AUX Effects

On the **Effects** page, you can set up insert effects for the four AUX busses.

The busses can be routed to the main plug-in output or to one of the individual outputs.

The **Effects** page also provides access to the main output bus which also features four inserts. These can be used to add a global EQ or compressor to the signal chain, for example.

Default Effect Settings

Each effect comes with factory default settings. However, you can save your own default settings for each effect as a preset.

- Set up the effect.
- Click the **Save Preset** button in the title bar of the effect control panel and save the preset under the name “--Default--”.

The preset is saved in the presets folder of the effect and is loaded each time you load the effect.

- To return to the factory default settings, delete your default preset.

RELATED LINKS
Insert Effects on page 74

Using the Insert Effect Slots for the AUX Busses

On the **Effects** page, you can set up insert effects for AUX busses.

Each AUX bus provides four slots for insert effects.

CHOICES

- To assign an insert effect, click the effect slot, and select the effect from the menu.
- To remove an insert effect including its current settings, click the effect slot, and select **None** from the menu.
- To deactivate an effect without removing it, click its **On/Off** button above the slot. This way, you can switch off the effect without losing its settings.
- To bypass an effect, activate the **Bypass** button of the slot. Bypass is active when the button lights up.
- To edit an insert effect, click the **e** button of the corresponding slot. You can edit only one effect at a time. The parameters of the insert effect are displayed in the bottom section.
- To move an effect to another slot, click its drag icon, and drag it to another slot. This replaces any effect loaded in this slot.
- To change the order of the effects, drag their drag icon to a new position between two slots.
- To copy an effect into another slot, **Alt/Opt**-click its drag icon, and drag it onto the new slot. This replaces any effect loaded in this slot.
- To copy an effect and insert it between two effect slots, **Alt/Opt**-click its drag icon, and drag it between two slots.

Effects Reference

HALion Sonic comes with a collection of high-quality studio effects.

Reverb Effects

The **Reverb** submenu contains the reverb effects.

REVerence

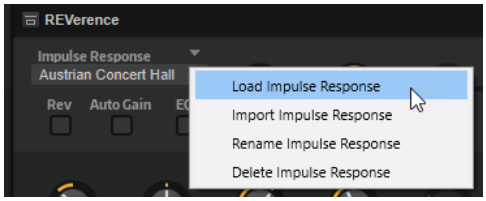
REVerence is a convolution tool that allows you to apply room characteristics (reverb) to the audio.

By recording an impulse in a room, you capture the characteristics of this room. Convolution superimposes these characteristics on the sound. The result is a very authentic reverb.

Included with this effect is a collection of high-quality reverb impulse responses, but you can also import your own files. The selected impulse response determines the basic sound character of the reverb.

Import Impulse Response Pop-up Menu

This menu allows you to load, import, rename, and delete your own impulse response files. If you load a file, it becomes available in your current program. If you import a file, it is added to the impulse response subpresets and becomes globally available.



- **Load Impulse Response** allows you to browse to and select an impulse response file and load it. The supported formats are `.wav` and `.aiff`.

  NOTE

  On saving a program, multi preset, or a project, the reference path to the original impulse response file is saved, too.

- **Import Impulse Response** allows you to import one or multiple impulse response files.

  This creates a subpreset for each impulse response file in the user subpreset folder: `Documents\Steinberg\HALion\Sub Presets\IRPresets\Imported`.

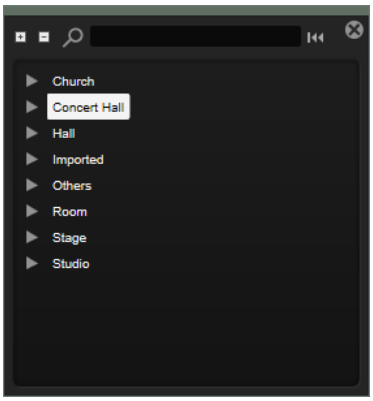
The sample files themselves are copied to the folder “IRSamples” within the subpreset folder. The new subpresets are available on the **Imported** submenu in the impulse response loader, like the factory content.

- **Rename Impulse Response** allows you to rename the impulse response subpreset.

  If you rename a subpreset, the name of the associated sample file is modified accordingly.

  Delete Impulse Response deletes the impulse response subpreset and the associated sample file.

Impulse Response Loader



The loader contains the factory impulse responses and the impulse response files that you imported.

Reverse

Reverses the impulse response.

Auto Gain

Normalizes the level of the impulse response files.

If you work with impulse response files that vary greatly in level, activate **Auto Gain** to ensure that the dry/wet mix sounds as expected.

Equalizer

Activates the built-in three-band equalizer.

Predelay

Determines the amount of time between the dry signal and the onset of the reverb. With higher **Predelay** values, you can simulate larger rooms.

Time

Controls the reverb time. With a setting of 100%, the impulse response is applied with its original length maintained.

Size

Scales the size of the simulated room. With a setting of 100%, the impulse response is applied as recorded in the original room.

Level

Adjusts the level of the impulse response.

Equalizer

Activates the built-in three-band equalizer.

ER/Tail Split

Sets the split point between the early reflections and the reverb tail.

ER/Tail Mix

Sets the balance between the early reflections and the reverb tail. With a setting of 50% the early reflections and the tail have the same volume level. Settings below 50% raise the early reflections and lower the tail. As a result, the sound source moves towards the front of the room. Settings above 50% raise the tail and lower the early reflections. As a result, the sound source moves towards the back of the room.

Reverb

This effect produces a high-quality algorithmic reverb with early reflections and reverb tail.

The early reflections are responsible for the spatial impression in the first milliseconds of the reverb. For emulating different rooms, you can choose from different early reflection patterns and adjust their size. The reverb tail, or late reverberation, offers parameters for controlling the room size and the reverb time. You can adjust the reverb time individually in three frequency bands.

Predelay

Determines how much time passes before the reverb is applied. This allows you to simulate larger rooms by increasing the time it takes for the first reflections to reach the audience.

Early Reflections

Allows you to select an early reflections pattern. The early reflections pattern contains the most important delays that deliver the key information for the spatial impression of the room.

ER/Tail

Sets the level balance between the early reflections and the reverb tail. With a setting of 50%, early reflections and tail have the same volume. Settings below 50% raise the early reflections and lower the tail. As a result, the sound source moves towards the front of the room. Settings above 50% raise the tail and lower the early reflections. As a result, the sound source moves toward the back of the room.

Delay

Delays the onset of the reverb tail.

Room Size

Controls the dimensions of the simulated room. With a setting of 100%, the dimensions correspond to a cathedral or a large concert hall. With a setting of 50%, the dimensions correspond to a medium-sized room or studio. Settings below 50% simulate the dimensions of a small room or a booth.

Main Time

Controls the overall reverb time of the tail. The higher this value, the longer the reverb tail will decay. With a setting of 100%, the reverb time is infinitely long. The **Main Time** parameter also represents the mid band of the reverb tail.

High Time

Controls the reverb time for the high frequencies of the reverb tail. With positive values, the decay time of the high frequencies is longer. With negative values, it is shorter. Frequencies are affected depending on the **High Freq** parameter.

Low Time

Controls the reverb time for the low frequencies of the reverb tail. Positive values result in a longer decay for the low frequencies. Negative values result in a shorter decay.

Frequencies are affected depending on the **Low Freq** parameter.

High Freq

Sets the cross-over frequency between the mid and the high band of the reverb tail. You can offset the reverb time for frequencies above this value from the main reverb time with the **High Time** parameter.

Low Freq

Sets the cross-over frequency between the low and the mid band of the reverb tail. The reverb time for frequencies below this value can be offset from the main reverb time with the **Low Time** parameter.

Show Early Reflections Page/Show Chorusing Page

With these two buttons, you can choose whether to display the early reflections settings or the chorusing settings in the lower left part of the effect panel.

ER Size

Adjusts the length of the early reflections pattern. With a setting of 100%, the pattern is applied with its original length and the room sounds natural to the highest possible degree. With settings below 100%, the early reflections pattern is compressed, and the room is perceived as smaller.

Low Cut

Attenuates the low frequencies of the early reflections. The higher this value, the fewer low frequencies are present in the early reflections.

High Cut

Attenuates the high frequencies of the early reflections. The lower this value, the fewer high frequencies are present in the early reflections.

Shape

Controls the attack of the reverb tail. With a setting of 0%, the attack is more immediate, which is a suitable setting for drums. The higher this value, the less immediate the attack.

Density

Adjusts the echo density of the reverb tail. With a setting of 100%, single reflections from walls cannot be heard. The lower this value, the more audible the single reflections.

Tail High Cut

Attenuates the high frequencies of the reverb tail. The lower this value, the fewer high frequencies are present in the reverb tail.

Width

Adjusts the output of the reverb signal between mono and stereo. With a setting of 0%, the output of the reverb is mono. At 100%, it is stereo.

Mix

Sets the ratio between the dry and the wet signal.

Chorusing

Chorusing allows you to enrich the reverb tail through subtle pitch modulations. To access the chorusing parameters, click the **Show Chorusing Page** button.

Chorusing On/Off

Activates/Deactivates the chorusing effect.

Chorusing Rate

Specifies the frequency of the pitch modulation.

Chorusing Depth

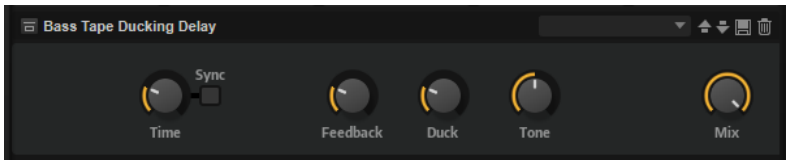
Sets the intensity of the pitch modulation.

Delay Effects

The **Delay** submenu contains the delay effects.

Bass Tape Ducking Delay

Bass Tape Ducking Delay provides a delay that follows the level of the input signal. The effect portion of the signal is then lowered for high input signals and raised for low input signals. This serves to keep the delayed signal rather dry during loud or intensely played passages.



Time

Controls the time it takes for the effect to adapt to changes in the input level.

Sync

Allows you to synchronize the delay time to the host tempo. If **Sync** is activated, you can set the **Delay** value in fractions of beats.

Delay

Sets the delay time in milliseconds.

Feedback

The higher this setting, the more delay repeats are created.

Duck

Works like an automatic mix parameter. If the level of the input signal is high, the portion of the effect signal is lowered, or ducked (low internal mix value). If the level of the input signal is low, the portion of the effect signal is raised (high internal mix value). This way, the delayed signal stays rather dry during loud or intensely played passages.

Tone

Allows you to attenuate the low frequencies.

Mix

Sets the ratio between the dry and the wet signal.

Multi Delay

This effect produces delays, with adjustable time, feedback, and filters.

Delay Mode

- **Stereo** has two delays in parallel, one for the left and one for the right audio channel, each with a feedback path of its own.
- **Cross** has two delay lines with cross feedback, where the delay of the left channel is fed back into the delay of the right channel, and vice versa.
- **Ping-Pong** mixes the left and right input channels and sends the mixed signal to hard-panned left and right delays. This way, the echoes bounce from left to right, like a ping-pong ball, in the stereo panorama.

Delay Time

Sets the overall time for the left and right delay. Use the **Delay L/R** parameter to shorten the time for the left or right delay.

Sync

Allows you to synchronize the delay time to the host tempo. If **Sync** is activated, the time is set as a note value.

NOTE

The maximum delay time is 5000 ms. If the note length exceeds this value, it is automatically shortened.

Delay L/R

Offsets the time of the left or right delay from the overall delay time. At a factor of 1, the right or left delay time has the same length as the overall delay time. At a factor of 0.5, the time is half as long as the overall delay time.

- To offset the left delay time, turn the control to the left.
- To offset the right delay time, turn the control to the right.

Feedback

Sets the overall amount of feedback for the left and right delay. Feedback means the output of the delay is fed back to its input. Set to 0%, you hear only one echo. With a setting of 100%, the echoes are continuously repeated.

Feedback L/R

Offsets the amount of feedback of the left or right delay from the overall feedback. A factor of 1 means that the amount of feedback corresponds to the overall feedback. A factor of 0.5 means that the amount is half the overall feedback.

- To offset the left feedback, turn the control to the left.
- To offset the right feedback, turn the control to the right.

NOTE

This parameter is only available in **Stereo** mode.

High Freq

Attenuates the high frequencies of the delays.

Low Freq

Attenuates the low frequencies of the delays.

Mix

Sets the ratio between the dry and the wet signal.

EQ Effects

The **EQ** submenu contains the equalizer effects.

Studio EQ

Studio EQ is a high-quality 4-band parametric equalizer.

With the four frequency bands, you can shape the tone color, to create a brighter or darker sound, for example. The two mid-range bands act as peak filters, and the low and high bands act as shelving filters. All bands are fully parametric with adjustable gain, frequency, and Q factor. Each frequency band offers the following controls:

Click one of the numbered buttons to show the settings for the corresponding frequency band. The two mid-range bands act as peak filters, and the low and high bands act as shelving filters. Each frequency band offers the following controls:

On/Off

Activates/Deactivates the corresponding frequency band.

Gain

Sets the amount of cut or boost for the corresponding band.

Freq

Sets the frequency that is cut or boosted with the **Gain** parameter.

Q (Quality)

Adjusts the bandwidth of the mid-range peak filters from wide to narrow. By increasing the **Q** value on the low and high shelving filters, you can add a dip to their shape.

- To adjust the **Gain** and **Freq** parameters simultaneously, drag the points in the EQ curve display.

The buttons to the left and the right of the numbered buttons allow you to show the settings for the low-cut and the high-cut filter, respectively. For these filters, the following parameters are available:

Low-Cut On/Off

Activates/Deactivates the low-cut filter.

High-Cut On/Off

Activates/Deactivates the high-cut filter.

Slope

Sets the slope for the filter. You can choose from 6, 12, 24, 36, and 48 dB per octave.

Freq

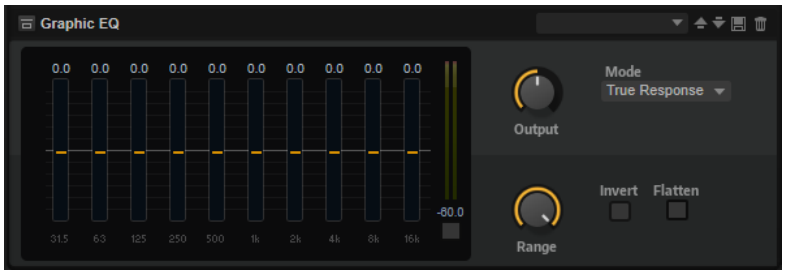
Sets the frequency for the filter.

Output meter

Allows you to monitor the output level. The peak level is shown below the meter.

Graphic EQ

Graphic EQ is an equalizer with ten frequency bands that can be cut or boosted by up to 12 dB. In addition, you can specify the overall range and output of the equalizer.



Output

Controls the overall output level of the equalizer.

Mode

Allows you to add color or character to the equalized output. The following options are available:

- **True Response** mode uses serial filters with accurate frequency response.
- **Classic** mode uses parallel filters whose resonance depends on the amount of gain.

- **Constant Q** mode uses parallel filters whose resonance is raised when boosting the gain.

Range

Adjusts the maximum cut or boost for all frequency bands together.

Invert

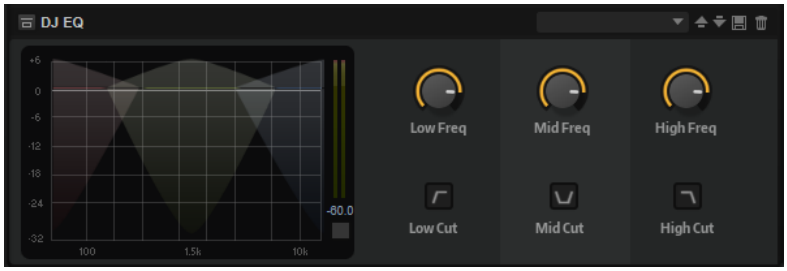
Inverts the EQ curve.

Flatten

Resets all frequency bands to 0 dB.

DJ-EQ

DJ-EQ is an easy-to-use 3-band parametric equalizer that resembles the EQs found on typical DJ mixers. This plug-in is designed for quick sound fixes.



Low Freq/Mid Freq/High Freq

Set the amount of boost or attenuation for the low, mid, and high bands.

You can also click and drag in the display to change these values.

Low Cut/Mid Cut/High Cut

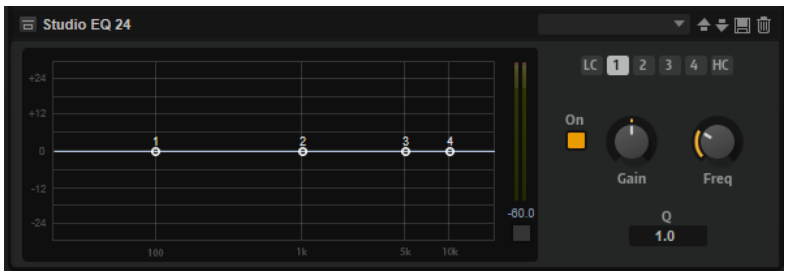
Cut the low, mid, and high bands.

Reset Output Peak Level

Resets the peak level that is displayed in the output meter.

Studio EQ 24

This high-quality 4-band parametric equalizer allows you to shape the tone color, to create a brighter or darker sound, for example. All bands are fully parametric with adjustable **Gain**, **Frequency**, and **Quality** parameters. Furthermore, you can add a high-cut and a low-cut filter and edit their settings.



Click one of the numbered buttons to show the settings for the corresponding frequency band. The two mid-range bands act as peak filters, and the low and high bands act as shelving filters. Each frequency band offers the following controls:

On/Off

Activates/Deactivates the corresponding frequency band.

Gain

Sets the amount of cut or boost for the corresponding band.

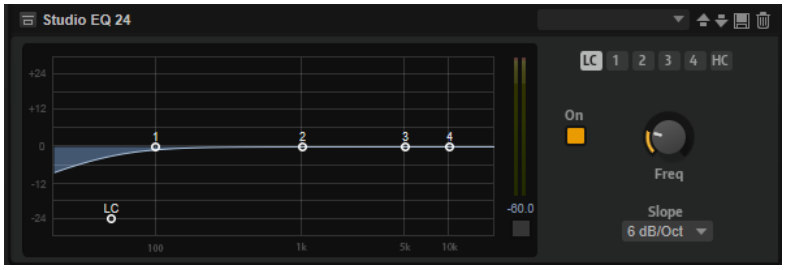
Freq

Sets the frequency that is cut or boosted with the **Gain** parameter.

Q (Quality)

Adjusts the bandwidth of the mid-range peak filters from wide to narrow. By increasing the **Q** value on the low and high shelving filters, you can add a dip to their shape.

The buttons to the left and the right of the numbered buttons allow you to show the settings for the low-cut and the high-cut filter, respectively. For these filters, the following parameters are available:



Low-Cut On/Off

Activates/Deactivates the low-cut filter.

High-Cut On/Off

Activates/Deactivates the high-cut filter.

Slope

Sets the slope for the filter. You can choose from 6, 12, 24, 36, and 48 dB per octave.

Freq

Sets the frequency for the filter.

Output meter

Allows you to monitor the output level. The peak level is shown below the meter.

Filter Effects

The **Filter** submenu contains the filter effects.

Auto Filter

Auto Filter provides two morphable filter shapes with distortion.

Morphing between the two shapes, as well as the cutoff, can be controlled with a manual pedal control, an LFO, or an envelope follower.

Filter Parameters

Filter Shape

- LP24, 18, 12, and 6 are low-pass filters with 24, 18, 12, and 6 dB/oct. Frequencies above the cutoff are attenuated.
- BP12 and BP24 are band-pass filters with 12 and 24 dB/oct. Frequencies below and above the cutoff are attenuated.
- HP6 + LP18 and HP6 + LP12 are a combination of a high-pass filter with 6 dB/oct and a low-pass filter with 18 and 12 dB/oct, respectively (asymmetric band-pass filter). Frequencies below and above the cutoff are attenuated. Attenuation is more pronounced for the frequencies above the cutoff.
- HP12 + LP6 and HP18 + LP6 are a combination of a high-pass filter with 12 and 18 dB/oct and a low-pass filter with 6 dB/oct (asymmetric band-pass filter). Frequencies below and above the cutoff are attenuated. Attenuation is more pronounced for the frequencies below the cutoff.
- HP24, 18, 12, and 6 are high-pass filters with 24, 18, 12, and 6 dB/oct. Frequencies below the cutoff are attenuated.
- BR12 and BR24 are band-reject filters with 12 and 24 dB/oct. Frequencies around the cutoff are attenuated.
- BR12 + LP6 and BR12 + LP12 are a combination of a band-reject filter with 12 dB/oct and a low-pass filter with 6 and 12 dB/oct, respectively. Frequencies around and above the cutoff are attenuated.
- BP12 + BR12 is a band-pass filter with 12 dB/oct plus a band-reject filter with 12 dB/oct. Frequencies below, above, and around the cutoff are attenuated.
- HP6 + BR12 and HP12 + BR12 are a combination of a high-pass filter with 6 and 12 dB/oct and a band-reject filter with 12 dB/oct. Frequencies below and around the cutoff are attenuated.
- AP is an all-pass filter with 18 dB/oct. Frequencies around the cutoff are attenuated.
- AP + LP6 is an all-pass filter with 18 dB/oct plus a low-pass filter with 6 dB/oct. Frequencies around and above the cutoff are attenuated.
- HP6 + AP is a high-pass filter with 6 dB/oct plus an all-pass filter with 18 dB/oct. Frequencies around and below the cutoff are attenuated.

Input

Adjusts the gain before the filter and distortion. This parameter only affects the wet signal.

Cutoff

Specifies the cutoff frequency of the filter.

Resonance

Emphasizes the frequencies around the cutoff. At higher resonance settings, the filter self-oscillates, which results in a ringing tone.

Distortion Type

The following options are available:

- When this parameter is set to **Off**, the filter offers no distortion.

- **Tube Drive** adds warm, tube-like distortion.
- **Hard Clip** adds bright, transistor-like distortion.
- **Bit Red** adds digital distortion by means of quantization noise.
- **Rate Red** adds digital distortion by means of aliasing.

Distortion

Adds distortion to the signal. The effect depends on the selected distortion type. With higher settings, it creates a very intense distortion effect.

NOTE

This parameter is not available if **Distortion Type** is set to **Off**.

Output

Adjusts the gain after the filter and distortion. This parameter only affects the wet signal.

Mix

Sets the ratio between the dry and the wet signal.

LFO Section

LFO Wave Shape

Waveform selects the basic type of waveform. **Shape** changes the characteristics of the waveform.

- **Sine** produces smooth modulation, suitable for vibrato or tremolo. **Shape** adds additional harmonics to the waveform.
- **Triangle** is similar to **Sine**. **Shape** continuously changes the triangle waveform to a trapezoid.
- **Saw** produces a ramp cycle. **Shape** continuously changes the waveform from ramp down to triangle to ramp up.
- **Pulse** produces stepped modulation, where the modulation switches abruptly between two values. **Shape** continuously changes the ratio between the high and low state of the waveform. If **Shape** is set to 50%, a square wave is generated.
- **Ramp** is similar to the **Saw** waveform. **Shape** adds a gradually increasing amount of silence before the sawtooth ramp up begins.
- **Log** produces a logarithmic modulation. **Shape** continuously changes the logarithmic curvature from negative to positive.
- **S & H 1** produces random stepped modulation, where each step is different. **Shape** puts ramps between the steps and changes the **S & H** into a smooth random signal, with the control set fully to the right.
- **S & H 2** is similar to **S & H 1**. The steps alternate between random high and low values. **Shape** puts ramps between the steps and changes the **S & H** into a smooth random signal, with the control set fully to the right.

Freq

Determines the frequency of the cutoff modulation.

Sync

Allows you to synchronize the effect to the host application. If **Sync** is activated, you can set the **Freq** parameter in fractions of beats.

Depth

Determines the output level of the LFO modulation signal.

Cutoff

Determines the modulation intensity of the LFO on the filter cutoff.

Morph

Determines the modulation intensity of the LFO on the filter morph.

Envelope Follower Section

The Envelope Follower traces the input signal with an adjustable attack and release time and delivers a modulation signal representing the level envelope of the signal.

Sensitivity

All input signals are mixed down to mono before they are sent to the Envelope Follower. This parameter sets the optimum input level for the Envelope Follower.

Attack

Adjusts the attack time, that is, the time the Envelope Follower needs to approach increasing input levels.

Release

Adjusts the release time, that is, the time the Envelope Follower needs to approach decreasing input levels.

Depth

Determines the output level of the modulation signal of the Envelope Follower.

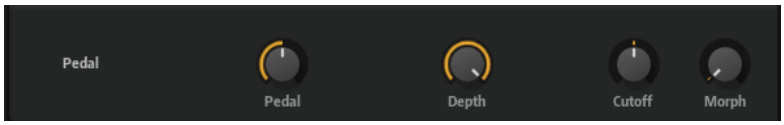
Cutoff

Determines the modulation intensity of the Envelope Follower on the filter cutoff.

Morph

Determines the modulation intensity of the Envelope Follower on the filter morph.

Pedal Section



Pedal

Sets the position of the pedal.

Depth

Determines the output level of the pedal modulation signal.

Cutoff

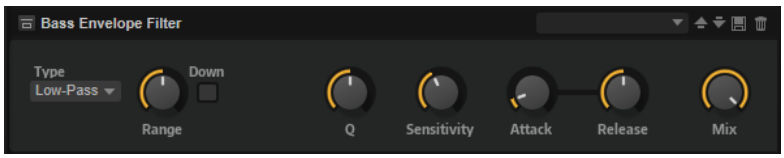
Determines the modulation intensity of the pedal on the filter cutoff.

Morph

Determines the modulation intensity of the pedal on the filter morph.

Bass Envelope Filter

Bass Envelope Filter allows you to filter out the high, low, or middle frequencies of the audio. The effect has an adjustable **Attack** and **Release** time and delivers a modulation signal representing the level envelope of the signal that is used to control the filter cutoff frequency.



Type

Sets the filter type. You can choose between **Low-Pass**, **Band-Pass**, and **High-Pass**.

Range

Determines the frequency range.

Down

Inverts the direction of the envelope filter modulation, that is, higher levels lower the filter cutoff.

Q-Factor

Sets the intensity of the envelope filter effect.

Sensitivity

Determines how sensitively the effect reacts to the instrument level.

Attack

Determines how quickly an effect reacts to the input signal.

Release

Determines how quickly the effect fades out after the input signal stops.

Mix

Sets the ratio between the dry and the wet signal.

Morph Filter

Morph Filter allows you to mix low-pass and high-pass filter effects, allowing for creative morphings between two filters. You can specify the filter shapes for filter shape A and B individually.

Filter Shape B

Allows you to choose from several high-pass and band-rejection filter shapes.

Filter Shape A

Allows you to select a low-pass or a band-pass filter shape.

Morph

Allows you to mix the output between the two selected filters.

Cutoff

Adjusts the cutoff frequency of the filters.

NOTE

You can also set the **Cutoff** and **Morph** parameters simultaneously by clicking in the display and dragging.

Resonance

Emphasizes the frequencies around the cutoff frequency. For an electronic sound, increase the resonance. At higher resonance settings, the filter self-oscillates, which results in a ringing tone.

Resonator

The Resonator effect comes with 14 predefined filter shapes that determine the basic sound character. In addition to this, three LFOs can be used to modulate each filter individually, which allows for adding extra motion to the sound.

The sound of the human voice or of acoustic instruments is characterized by distinctive formant regions, that is, by resonances in the frequency spectrum that are typical for a particular sound. For example, the vowel “ah” (as in father) sung by a male singer has three characteristic formants: F1 = 570 Hz, F2 = 840 Hz, and F3 = 2410 Hz. The Resonator effect allows you to induce such formant regions to a sound by using three filters that are connected in parallel. You can specify the positions and levels of the formant regions by adjusting the **Cutoff**, **Resonance**, and **Gain** parameters of the filters.

Resonator Shape

Defines the basic sound character of the effect. Each shape is a unique combination of different filter types for the low, mid, and high frequency bands.

Option	Filter Low/Mid/High
Low-Pass 1	LP6/LP6/LP6
Low-Pass 2	LP12/LP12/LP12
Band-Pass 1	BP12/(-1)BP12/BP12*
Band-Pass 2	BP12/BP12/BP12
High-Pass 1	HP6/HP6/HP6
High-Pass 2	HP12/HP12/HP12
Peak 1	LP6/(-1)BP12/HP6*
Peak 2	LP6/BP12/HP6
Bat 1	HP12/BP12/LP12
Bat 2	HP6/BP12/LP6
Wings 1	LP6/BR12/HP6
Wings 2	HP12/BR12/LP12
Wings 3	LP6/(-1)BR12/HP6*

Option	Filter Low/Mid/High
Wings 4	HP12/(-1)BR12/LP12*
	*(-1) means that the phase is inverted

Mix

Sets the ratio between the dry and the wet signal.

Cutoff Spread

Spreads the cutoff frequencies between the channels of the effect.

For example, if the effect is used in stereo, positive **Cutoff Spread** values shift the cutoff down on the left channel and up on the right channel.

Filter Page

Cutoff

Adjusts the cutoff frequency of the filter, that is, the center frequency of the formant region.

Resonance

Adjusts the resonance of the filter. The resonance determines how much the formant region is emphasized. With higher settings, the filter self-oscillates, which results in a ringing tone.

Gain

Adjusts the input gain of the filter. The gain determines the level of the formant region.

LFO Modulation Source

Allows you to select the LFO that modulates the cutoff.

LFO Modulation Depth

Adjusts the cutoff modulation of the LFO.

LFO Page

LFO Wave Shape

Waveform selects the basic type of waveform. **Shape** changes the characteristics of the waveform.

- **Sine** produces smooth modulation, suitable for vibrato or tremolo. **Shape** adds additional harmonics to the waveform.
- **Triangle** is similar to **Sine**. **Shape** continuously changes the triangle waveform to a trapezoid.
- **Saw** produces a ramp cycle. **Shape** continuously changes the waveform from ramp down to triangle to ramp up.
- **Pulse** produces stepped modulation, where the modulation switches abruptly between two values. **Shape** continuously changes the ratio between the high and low state of the waveform. If **Shape** is set to 50%, a square wave is generated.
- **Ramp** is similar to the **Saw** waveform. **Shape** adds a gradually increasing amount of silence before the sawtooth ramp up begins.
- **Log** produces a logarithmic modulation. **Shape** continuously changes the logarithmic curvature from negative to positive.
- **S & H 1** produces random stepped modulation, where each step is different. **Shape** puts ramps between the steps and changes the **S & H** into a smooth random signal, with the control set fully to the right.
- **S & H 2** is similar to **S & H 1**. The steps alternate between random high and low values. **Shape** puts ramps between the steps and changes the **S & H** into a smooth random signal, with the control set fully to the right.

Spread

For each channel of the effect, there is a separate LFO signal. This parameter spreads the phase of the LFO signals across the different channels.

For example, if the effect is used in stereo, positive values shift the LFO phase forward on the left channel and backward on the right channel.

Sync

Allows you to set the **Freq** parameter in fractions of beats.

Freq

Determines the frequency of the cutoff modulation.

WahWah

WahWah is a variable slope band-pass filter modeling the well-known analog pedal effect.

You can specify the frequency, width, and the gain for the low and high pedal positions. The crossover point between the low and high pedal positions lies at 50.

Pedal

Controls the filter frequency sweep.

Low Band

- **Freq** determines the frequency of the filter for the low pedal position.
- **Width** determines the width (resonance) of the filter for the low pedal position.
- **Gain** determines the gain of the filter for the low pedal position.

High Band

- **Freq** determines the frequency of the filter for the high pedal position.
- **Width** determines the width (resonance) of the filter for the high pedal position.
- **Gain** determines the gain of the filter for the high pedal position.

Slope

Allows you to choose between two filter slope values: 6 dB or 12 dB.

Distortion Effects

The **Distortion** submenu contains the distortion effects.

Amplifier

This effect emulates the sound of an amplifier with speakers.

There are different amplifiers and speaker models you can combine.

Amp Model

Specifies the amplifier type. The sound character of the overdrive changes with the amplifier. To bypass the amp modeling, select **No Amplifier**.

Speaker Model

Determines the speaker model type. Each model colors the sound in a unique way. To bypass the model, select **No Speaker**.

Drive

Adjusts the amount of overdrive.

Bass

Adjusts the tone color of the low frequencies.

Middle

Adjusts the tone color of the mid frequencies.

Treble

Adjusts the tone color of the high frequencies.

Presence

Adjusts the brightness of the sound.

Low Damp

Attenuates the low frequencies of the speakers.

High Damp

Attenuates the high frequencies of the speakers.

Channel Mode

Defines which output channels of the amplifier deliver a distorted signal. You can set it to **L** (Left), **R** (Right) or **L/R** (Both). When set to **L** or **R**, the other channel provides a clean signal.

Output

Controls the output level of the amplifier.

Bass DI Driver

Level

Sets the output level.

Drive

Sets gain and overdrive.

Blend

Blends between normal and tube emulation circuitry.

With **Blend** at 0, **Drive** and **Presence** are not active.

Bass

Boosts or attenuates low frequencies.

Treble

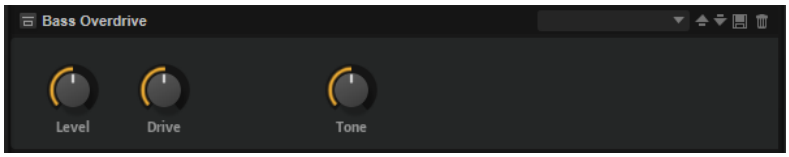
Boosts or attenuates high frequencies.

Presence

Boosts or attenuates upper frequencies and attacks.

Bass Overdrive

Bass Overdrive creates a tube-like overdrive effect.



Level

Adjusts the output level.

Drive

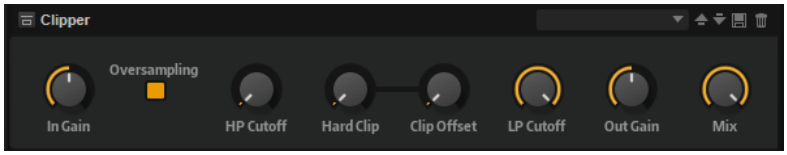
The higher this value, the more harmonics are added to the output signal of this effect.

Tone

Acts as a filter effect on the added harmonics.

Clipper

This effect adds bright, harmonic distortion to the sound.



Input Gain

Adjusts the input level of the distortion.

Oversampling

Increases the accuracy of the effect.

High-Pass Cutoff

High-pass filter with 6 dB/oct. Frequencies below the cutoff are attenuated.

Hard Clip

Adds distortion to the signal.

Hard Clip Offset

Allows you to produce odd harmonics and even harmonics. The higher the setting, the more even harmonics are produced.

Low-Pass Cutoff

Low-pass filter with 6 dB/oct. Frequencies above the cutoff are attenuated.

Output Gain

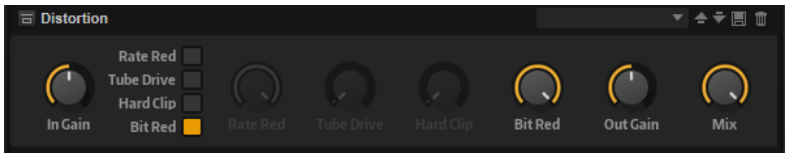
Adjusts the output level of the distortion.

Mix

Sets the ratio between the dry and the wet signal.

Distortion

This effect offers the whole range of distortion, from low fidelity, digital distortion to high fidelity, analog sounding distortion. The available distortion types (**Rate Red**, **Tube Drive**, **Hard Clip**, and **Bit Red**) can be freely combined.



In Gain

Adjusts the input level of the sound.

Rate Red (Rate Reduction)

Rate reduction distorts the sound by means of aliasing. Enable the **Rate Red** option to activate the control that adjusts the amount of aliasing. The lower the setting, the more aliasing is added.

Tube Drive

Adds warm, tube-like distortion to the sound. Enable the **Tube Drive** option to activate the control that adjusts the amount of distortion. The higher the setting, the more distortion is added.

Hard Clip

Adds bright, transistor-like distortion to the sound. Enable the **Hard Clip** option to activate the control that adjusts the amount of distortion. The higher the setting, the more distortion is added.

Bit Red (Bit Reduction)

Bit reduction distorts the sound by means of quantization noise. If **Bit Red** is activated, you can adjust the amount of quantization noise. The lower the setting, the more quantization noise is added.

Out Gain

Adjusts the output level of the sound.

Mix

Sets the ratio between the dry and the wet signal.

VST Amp

This effect emulates the sound of an amplifier with speakers. There are different amplifiers and speaker models you can combine.

Amp Model

Specifies the amplifier type. The sound character of the overdrive changes with the amplifier. To bypass the amp modeling, select **No Amplifier**.

Speaker Model

Specifies the speaker model type. Each model colors the sound uniquely. To bypass the speaker modeling, select **No Cabinet**.

Drive

Adjusts the amount of overdrive.

Bass

Adjusts the tone color of the low frequencies.

Treble

Adjusts the tone color of the high frequencies.

Presence

Adjusts the brightness of the sound.

Mic Type

You can choose between two microphone types. If this control is set to 0%, a large-diaphragm condenser microphone is used. At 100%, you obtain a dynamic microphone. Settings in between allow you to fade between the characteristics of these two microphones.

Microphone Position

Allows you to choose from seven positions to place the microphone. These positions result from two different angles (center and edge) and three different distances from the speaker, as well as an additional center position at an even greater distance from the speaker.

Channel Mode

Determines in which way the two input channels are distorted.

- **L** applies the effect to the left input channel only. The right channel remains clean and unprocessed.
- **R** applies the effect to the right input channel only. The left channel remains clean and unprocessed.
- **L+R** sums the two input channels into a mono signal and applies the effect to this signal.
- **Stereo** applies the effect to the two input channels.

NOTE

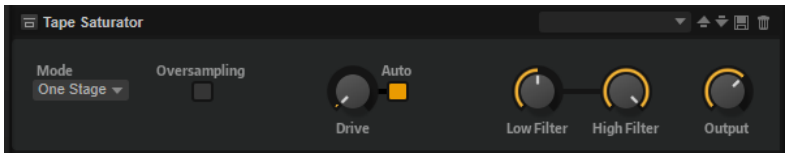
The **L** and **R** modes allow you to use two instances of the effect to process the left and the right channel individually using different effect settings.

Output

Controls the output level of the amplifier.

Tape Saturator

Tape Saturator simulates the behavior of classic tape recorders. These machines produced a specific saturation when recording higher input levels, which led to a compressed signal with light distortion.



Mode

Allows you to choose between the effect of a single tape machine (**One Stage**) or two cascaded tape machines (**Two Stage**).

Two Stage mode leads to higher saturation and compression.

Oversampling

Increases the accuracy of the effect by oversampling.

NOTE

If this parameter is activated, the effect requires more processing power.

Drive

Determines the level of the input signal and thus the amount of saturation.

Auto Gain

Results in automatic level compensation.

Low Filter

Allows you to adjust the low frequency range below 1000 Hz by +/- 3 dB.

High Filter

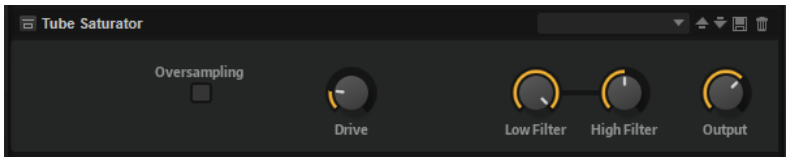
Allows you to attenuate the high frequency range. This high-cut filter works with a slope of 24 dB/octave.

Output

Determines the level of the output signal.

Tube Saturator

This effect enriches the sound by adding the characteristic harmonics of a saturated tube to the audio signal.



Oversampling

Increases the accuracy of the effect by oversampling.

NOTE

If this parameter is activated, the effect requires more processing power.

Drive

Determines the level of the input signal and thus the amount of saturation.

Low Filter

Allows you to reduce the low frequency range by up to 6 dB before saturation.

High Filter

Allows you to adjust the high frequency range by -/+ 6 dB before saturation.

Output

Determines the level of the output signal.

VST Bass Amp

This bass amplifier comes with six different amplifier emulations and four different speaker cabinet emulations that you can freely combine.

You can select your amplifier/cabinet combination using the **Amp Model** and **Speaker Model** pop-up menus.

Amp Model

The amplifiers available on the **Amp Model** pop-up menu are modeled on real-life amplifiers. Each amp features settings typical for bass recording, such as gain, equalizers, and master volume. The sound-related parameters bass, low mid, high mid, and treble have a significant impact on the overall character and sound of the corresponding amp.

- **Valve Amp 300** is a famous tube amplifier from the 70s. It is suitable for rock playing styles.
- **Greyhound** is well known for its typical growl. It is suitable for several playing styles.
- **Green T** is a classic amplifier from the 80s. It is suitable for funk and rock playing styles.
- **Paradise** is an amplifier from the 90s with a hifi-like clear tone that makes it applicable for several styles.
- **Tweed** is a classic vintage amplifier from the 50s with a characterful and bright tone.
- **iTech** is a modern amplifier with a universal sound.

Speaker Model

The cabinets available on the **Speaker Model** pop-up menu simulate real-life combo boxes or speakers.

- **4x10** emulates four 10" speakers. These speakers provide a punchy, clear sound that is suitable for “slap” bass and regular playing styles.
- **8x10** emulates the sound of eight 10" speakers.
- **4x12** emulates the sound of four 12" speakers. These speakers provide a mellow and full sound, making them a good choice between 10" and 15" speakers.
- **1x15** emulates the sound of a 15" speaker. These speakers provide more low frequencies, compared to the other models. They are suitable for rock and vintage-oriented styles.

Shape 1/Shape 2

Offer predefined tone shaping.

Gain

Sets the amount of boost for the amp.

Bass

Allows you to raise or lower the low frequency part of the signal.

Low Middle Frequency

Allows you to raise or lower the low-mid frequency part of the signal.

Low Middle Gain

Sets the amount of boost for the low-mid frequency part of the signal.

High Middle Frequency

Allows you to raise or lower the high-mid frequency part of the signal.

High Middle Gain

Sets the amount of boost for the high-mid frequency part of the signal.

Treble

Allows you to raise or lower the high frequency part of the signal.

Microphone Mix

Set this control entirely to the left or right to use either microphone 1 or microphone 2, or choose a position in between to blend the two types together.

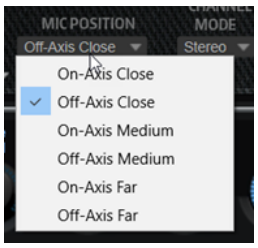
Microphone 1 Type/Microphone 2 Type

On these pop-up menus, you can choose from different microphone types.

- **57** is a dynamic microphone with cardioid pickup pattern.
- **121** is a ribbon microphone with figure-8 pattern.
- **409** is a dynamic microphone with supercardioid pickup pattern.
- **421** is a dynamic microphone with cardioid polar pattern.
- **545** is a dynamic microphone with cardioid pattern that minimizes feedback.
- **5** is a dynamic microphone with cardioid pickup pattern.
- **30** is a reference and measurement microphone with omnidirectional polar pattern.
- **87** is a condenser microphone with omnidirectional pattern.

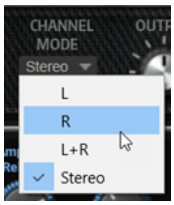
Microphone Position

Allows you to choose between off-axis and on-axis microphone positions at three different distances from the speaker.



Channel Mode

Allows you to select the channel configuration for the effect.



- **L** applies the effect to the left input channel only. The right channel remains clean and unprocessed.
- **R** applies the effect to the right input channel only. The left channel remains clean and unprocessed.
- **L+R** sums the two input channels into a mono signal and applies the effect to this signal.
- **Stereo** applies the effect to the two input channels.

NOTE

The **L** and **R** modes allow you to use two instances of the effect to process the left and the right channel individually using different effect settings.

Output Level

Sets the overall output level of the effect.

Pitch Shift Effects

The **Pitch Shift** submenu contains the pitch shifting effects.

Bass Octaver

Bass Octaver allows you to create an additional voice that follows the original voice an octave below. This effect is best suited for monophonic signals.

Direct

Adjusts the level of the original signal. A value of 0 means only the generated and transposed signal is heard. By raising this value, more of the original signal is heard.

Octave

Adjusts the level of the signal that is generated one octave below the original pitch. A setting of 0 means that the voice is muted.

Tone

Changes the sound character of the generated signal.

Octaver

Octaver allows you to create two additional voices that follow the original voice an octave below and above. This effect is best suited for monophonic signals.

Direct

Determines the level of the input signal.

Octave 1

Determines the level of the signal that is produced an octave below the original voice.

Octave 2

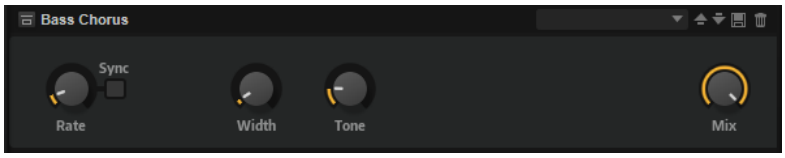
Determines the level of the signal that is produced an octave above the original voice.

Modulation Effects

The **Modulation** submenu contains the modulation effects.

Bass Chorus

This effect thickens and broadens the sound by means of pitch modulation.



Rate

Allows you to specify the frequency of the pitch modulation in Hertz.

Sync

Allows you to synchronize the effect to the host application. If **Sync** is activated, you can set the **Rate** value in fractions of beats.

Width

Determines the depth of the chorus effect. Higher settings produce a more pronounced effect.

Tone

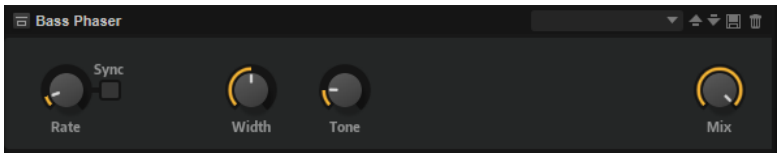
Allows you to attenuate low frequencies.

Mix

Sets the ratio between the dry and the wet signal.

Bass Phaser

Bass Phaser thickens and broadens the sound by means of phase modulation.



Rate

Allows you to set the sweep rate. This parameter can be synchronized to the project tempo.

Sync

Allows you to synchronize the effect to the host application. If **Sync** is activated, you can set the **Rate** value in fractions of beats.

Width

Determines the width of the modulation effect between higher and lower frequencies.

Tone

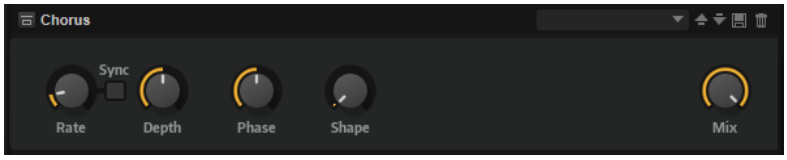
Allows you to attenuate the low frequencies.

Mix

Sets the ratio between the dry and the wet signal.

Chorus

Chorus thickens and broadens the sound by means of pitch modulation.



Rate

Allows you to specify the frequency of the pitch modulation in Hertz.

Sync

Allows you to set the **Rate** value in fractions of beats.

Depth

Sets the intensity of the pitch modulation.

Phase

Widens the sound image of the effect from mono to stereo.

Shape

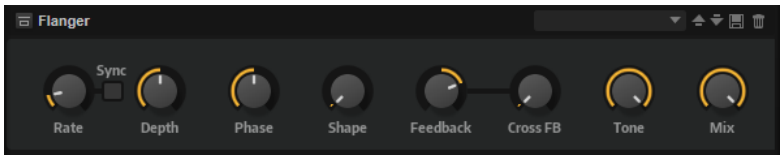
Adjusts the characteristics of the modulation. With a setting of 0%, the pitch changes continuously, producing a steady modulation. With a setting of 100%, the pitch does not change all the time, producing a less steady modulation.

Mix

Sets the ratio between the dry and the wet signal.

Flanger

This effect thickens and broadens the sound by means of pitch modulation.



Rate

Allows you to specify the frequency of the pitch modulation in Hertz.

Sync

Allows you to set the **Rate** value in fractions of beats.

Depth

Sets the intensity of the pitch modulation.

Phase

Widens the sound image of the effect from mono to stereo. This parameter also changes the characteristics of the **Cross FB** parameter.

Shape

Adjusts the characteristics of the modulation. This is particularly noticeable when **Feedback** is activated. With a setting of 0%, the sound sweeps linearly up and down. With a setting of 100%, the sound sweeps exponentially up and down.

Mix

Sets the ratio between the dry and the wet signal.

Feedback

Adds resonances to the effect. This allows for jet-like sweeps of the sound.

Cross FB

Mixes the feedback of the left channel with the right channel, and vice versa. The effect of this parameter is influenced by the **Phase** parameter.

NOTE

This parameter only takes effect if the **Feedback** parameter is set to a value above 0%.

Tone

Adjusts the tone color of the feedback. At lower values, the feedback is less bright.

Step Flanger

The Step Flanger expands the Flanger with a “sample and hold” section that divides the modulation signal into a definable number of steps.

Rate

Allows you to specify the frequency of the pitch modulation in Hertz.

Sync

Allows you to set the **Rate** value in fractions of beats.

Depth

Sets the intensity of the pitch modulation.

Phase

Widens the sound image of the effect from mono to stereo. This parameter also changes the characteristics of the **Cross FB** parameter.

Shape

Adjusts the characteristics of the modulation. This is particularly noticeable when **Feedback** is activated. With a setting of 0%, the sound sweeps linearly up and down. With a setting of 100%, the sound sweeps exponentially up and down.

Mix

Sets the ratio between the dry and the wet signal.

Feedback

Adds resonances to the effect. This allows for jet-like sweeps of the sound.

Cross FB

Mixes the feedback of the left channel with the right channel, and vice versa. The effect of this parameter is influenced by the **Phase** parameter.

NOTE

This parameter only takes effect if the **Feedback** parameter is set to a value above 0%.

Tone

Adjusts the tone color of the feedback. At lower values, the feedback is less bright.

Type

Defines the length of the delay line that is modulated. **Short** produces a sharper flanger effect, and **Long** produces a less defined, more blurred flanger sound.

S&H Mix

Blends the normal modulation signal with the stepped modulation signal. At 100%, only the stepped modulation is used.

Smooth

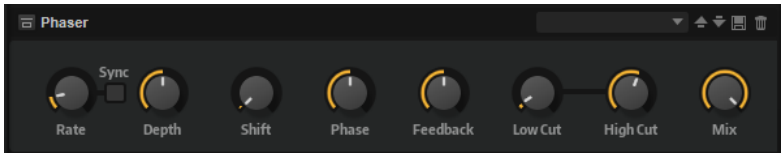
Creates ramps between the steps. This way, the stepped modulation signal sounds smoother.

Steps

Determines into how many steps the modulation signal is divided. You can use up to 32 steps.

Phaser

The Phaser effect thickens and broadens the sound by means of phase modulation.



Rate

Specifies the frequency of the phase modulation.

Sync

Allows you to set the **Rate** value in fractions of beats.

Depth

Sets the intensity of the phase modulation.

Shift

Shifts the phase modulation upwards to higher frequencies of the spectrum.

Phase

Widens the sound image of the effect from mono to stereo.

Feedback

Adds resonances to the effect. Higher settings produce a more pronounced effect.

Low Cut

Attenuates the low frequencies.

High Cut

Attenuates the high frequencies.

Mix

Sets the ratio between the dry and the wet signal.

Tremolo

This effect produces amplitude modulation, that is, cyclic modulation of the level of the sound.

Rate

Determines the frequency of the amplitude modulation.

Sync

Allows you to set the **Rate** value in fractions of beats.

Depth

Sets the intensity of the amplitude modulation.

Phase

Widens the sound image of the effect from mono to stereo.

Output

Sets the output level of the effect.

Ring Modulator

This effect provides a sine oscillator that is multiplied with the input signal. This creates metallic, or bell-like, frequencies.

The integrated LFO modulates the frequency of the sine oscillator to vary the created frequencies over time. In addition, an envelope follower is available, which can be used to modulate the frequency of the sine oscillator, depending on the level of the input signal.

LFO Waveform and Shape

Waveform selects the basic type of waveform. **Shape** changes the characteristics of the waveform.

- **Sine** produces smooth modulation. **Shape** adds additional harmonics to the waveform.
- **Triangle** is similar to **Sine**. **Shape** continuously changes the triangle waveform to a trapezoid.
- **Saw** produces a ramp cycle. **Shape** continuously changes the waveform from ramp down to triangle to ramp up.
- **Pulse** produces stepped modulation, where the modulation switches abruptly between two values. **Shape** continuously changes the ratio between the high and low state of the waveform. If **Shape** is set to 50%, a square wave is produced.

- **Ramp** is similar to the **Saw** waveform. **Shape** adds a gradually increasing amount of silence before the sawtooth ramp up begins.
- **Log** produces a logarithmic modulation. **Shape** continuously changes the logarithmic curvature from negative to positive.
- **S & H 1** produces random stepped modulation, where each step is different. **Shape** puts ramps between the steps and changes the **S & H** into a smooth random signal, with the control set fully to the right.
- **S & H 2** is similar to **S & H 1**. The steps alternate between random high and low values. **Shape** puts ramps between the steps and changes the **S & H** into a smooth random signal, with the control set fully to the right.

LFO Freq

Allows you to specify the frequency of the LFO for modulating the frequency of the sine oscillator.

Sync

Allows you to set the **LFO Freq** value in fractions of beats.

LFO Depth

Sets the intensity of the LFO modulation of the sine oscillator frequency.

Frequency

Determines the frequency of the sine oscillator.

Mix

Sets the ratio between the dry and the wet signal.

Envelope Follower

Traces the input signal with an adjustable attack and release time and delivers a modulation signal representing the level envelope of the signal.

Sensitivity

All input signals are mixed down to mono before they are sent to the Envelope Follower. The **Sensitivity** parameter sets the optimum input level for the Envelope Follower.

Attack

Adjusts the attack time, that is, the time the Envelope Follower needs to approach increasing input levels.

Release

Adjusts the release time, that is, the time the Envelope Follower needs to approach decreasing input levels.

Depth

Determines the output level of the modulation signal of the Envelope Follower.

Frequency Shifter

A frequency shifter shifts each frequency of the input signal by a fixed amount.

Unlike pitch shifters, which shift the frequencies by a factor, maintaining the harmonic relations, a frequency shifter alters the harmonic relations. Therefore, a larger frequency shift usually results in a disharmonic sound. Furthermore, a frequency shifter alters the frequencies by adding an offset, while a pitch shifter multiplies the frequencies by a factor. The frequency shifter alters lower frequencies more than higher frequencies. For example, if the input signal has the frequencies 100 Hz, 1000 Hz, and 10000 Hz and you shift the frequency by +100 Hz, the resulting frequencies are 200 Hz, 1100 Hz, and 10100 Hz.

Freq Coarse

Sets the amount of frequency shift.

Freq Fine

Allows you to fine-tune the amount of frequency shift.

L/R Coarse

Sets an offset for the left and right channels.

- Positive values shift the right channel upwards and the left channel downwards.
- Negative values shift the left channel upwards and the right channel downwards.

L/R Fine

Allows you to fine-tune the offset between the left and right channels.

- Positive values shift the right channel upwards and the left channel downwards.
- Negative values shift the left channel upwards and the right channel downwards.

Mod Coarse

Sets the maximum amount of frequency shift via modulation from LFO and Envelope Follower.

Mod Fine

Allows for fine-tuning of the amount of frequency shift via modulation from LFO and Envelope Follower.

Feedback

Sets the amount of feedback, that is, the amount of signal that is sent from the output of the effect back to its input. The sound is similar to that of a phaser. You can control the direction and the speed of this effect with the **Freq Fine** parameter.

Notches

Sets the number of notches the phaser effect produces when you use larger amounts of Feedback.

LFO Section

LFO Wave Shape

Waveform selects the basic type of waveform. **Shape** changes the characteristics of the waveform.

- **Sine** produces smooth modulation, suitable for vibrato or tremolo. **Shape** adds additional harmonics to the waveform.
- **Triangle** is similar to **Sine**. **Shape** continuously changes the triangle waveform to a trapezoid.
- **Saw** produces a ramp cycle. **Shape** continuously changes the waveform from ramp down to triangle to ramp up.
- **Pulse** produces stepped modulation, where the modulation switches abruptly between two values. **Shape** continuously changes the ratio between the high and low state of the waveform. If **Shape** is set to 50%, a square wave is generated.
- **Ramp** is similar to the **Saw** waveform. **Shape** adds a gradually increasing amount of silence before the sawtooth ramp up begins.
- **Log** produces a logarithmic modulation. **Shape** continuously changes the logarithmic curvature from negative to positive.
- **S & H 1** produces random stepped modulation, where each step is different. **Shape** puts ramps between the steps and changes the **S & H** into a smooth random signal, with the control set fully to the right.
- **S & H 2** is similar to **S & H 1**. The steps alternate between random high and low values. **Shape** puts ramps between the steps and changes the **S & H** into a smooth random signal, with the control set fully to the right.

Freq

Specifies the frequency of the LFO in Hertz.

Sync

Activate this to set the **Freq** parameter in fractions of beats.

Depth

Determines the direction and amount of frequency shift from the LFO modulation signal.

Envelope Follower

The Envelope Follower traces the input signal with an adjustable attack and release time and delivers a modulation signal representing the level envelope of the signal.

Sensitivity

All input signals are mixed down to mono before they are sent to the Envelope Follower. This parameter sets the optimum input level for the Envelope Follower.

Attack

Adjusts the attack time, that is, the time the Envelope Follower needs to approach increasing input levels.

Release

Adjusts the release time, that is, the time the Envelope Follower needs to approach decreasing input levels.

Depth

Determines the direction and amount of frequency shift from the envelope follower modulation signal.

NOTE

The maximum frequency shift via modulation from LFO or the Envelope Follower is determined by the parameters **Modulation Range Coarse** and **Modulation Range Fine**.

Mix

Sets the ratio between the dry and the wet signal.

Rotary

Rotary emulates the sound of a vintage rotary speaker including amplifier, horn, drum, and cabinet.

By emitting the sound via a rotating horn and drum, the rotary speaker produces a Doppler effect that thickens the sound. The horn and drum rotate at variable speeds, producing different amounts of the Doppler effect. The amplifier of the rotary speaker adds a warm sounding distortion, and the horn, drum, and cabinet color the sound in a unique way. The horn and drum are recorded via (virtual) microphones that can be set to different angles to broaden the sound image. Typically, rotary speakers are used with electric organs.

Rotation Speed

Changes the rotation speed of the horn and drum. When set to **Fast**, the Doppler effect is stronger. When set to **Stop**, there is no Doppler effect because the drum and horn do not rotate. Because the horn and drum accelerate and decelerate at different speeds, the transition from **Slow** to **Fast** and vice versa generates highly interesting sounds.

Distance

Sets the distance between the microphones and the horn and drum. The amplitude modulation of the sound decreases with the distance of the microphones. Set this to higher values for less amplitude modulation.

Cabinet

The horn and drum sound different when recorded through the louvers of the cabinet. Use this parameter to color the horn and drum with the sound of the cabinet. With a setting of 100%, you obtain the full sound of the cabinet.

Balance

Adjusts the balance between the horn and drum microphones. With a setting of 0%, you hear only the drum. With a setting of 100%, you hear only the horn.

Slow

Adjusts the slow speed of the horn and drum at the same time.

Fast

Adjusts the fast speed of the horn and drum at the same time.

Accel

Adjusts the acceleration time for raising and lowering the rotation speed of the horn and drum.

Horn Mic Angle

Adjusts the stereo spread of the horn microphones. With a setting of 0°, the sound image is mono. With a setting of 180°, the sound image is fully stereo.

Drum Mic Angle

Adjusts the stereo spread of the drum microphones. With a setting of 0°, the sound image is mono. With a setting of 180°, the sound image is fully stereo.

Input

Adjusts the gain before the rotary and drive.

Drive

Adjusts the distortion of the amplifier.

Output

Adjusts the gain after the rotary and drive.

Color

Alters the sound of the Rotary effect by changing the timbre, which leads to the rotation of the horn and the drum being perceived with greater depth.

Bass

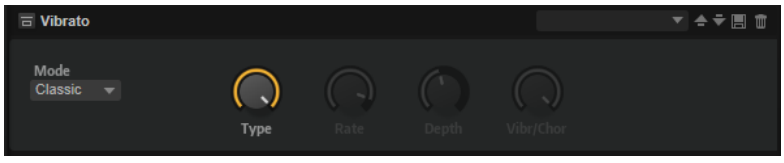
Adjusts the tone color of the low frequencies.

Treble

Adjusts the tone color of the high frequencies.

Vibrato

Vibrato emulates the chorus and vibrato effects of vintage organs. It thickens the sound by means of pitch modulation.



The effect provides direct access to the classic chorus and vibrato settings. In addition, there is a **Custom** mode that allows you to freely adjust the amount of chorus or vibrato.

Mode

Allows you to select between **Classic** and **Custom** mode.

- **Classic** allows you to choose from several predefined chorus and vibrato settings.
- **Custom** allows you to freely adjust the chorus and vibrato settings with the **Rate**, **Depth**, and **Vibr/Chor** controls.

Type

Allows you to switch between three classic predefined chorus and vibrato settings (**C1**, **C2**, **C3**, and **V1**, **V2** and **V3**, respectively).

Rate

Sets the frequency of the pitch modulation.

Depth

Sets the intensity of the pitch modulation.

Vibr/Chor

Controls the mix between the vibrato and the chorus signal. At 100%, you only hear the chorus effect.

Vintage Ensemble

This effect emulates the sound of classic ensemble modulation effects. It is based on a delay with LFO-modulated delay times. A secondary LFO with higher frequencies is used to produce the so-called shimmer.

Rate

Sets the frequency of the LFO.

Sync

Allows you to set the **Rate** value in fractions of beats.

Depth

Sets the intensity of the delay time modulation by the LFO.

Shimmer

Sets the intensity of a secondary faster delay time modulation.

Shimmer Rate

Determines the relation between the speed of the primary and the secondary delay modulation. For example, at a value of 10, the secondary modulation is 10 times faster.

Low Cut

Applies a low-cut filter to the signal. Only frequencies above the set frequency are sent to the effect.

High Cut

Applies a high-cut filter to the signal. Only frequencies below the set frequency are sent to the effect.

FX Level

Allows you to adapt the effect signal level to compensate for level reductions caused by the low-cut and high-cut filters.

Mix

Sets the ratio between the dry and the wet signal.

Dynamics Effects

The **Dynamics** submenu contains the dynamics effects.

The Compressor, Limiter, Brickwall Limiter, Expander, Gate, and Maximizer effects work with an internal look-ahead function to ensure the best possible audio quality.

However, this look-ahead function introduces a small amount of latency. Usually, this is not noticeable, but in some cases, it might introduce unwanted side effects. For example, if you work with parallel compression where signals are sent to an AUX bus and being returned to the rest of the mix, this might lead to unwanted flanging effects.

If you are faced with latency issues, you have the following possibilities:

- For the Compressor, Expander, and Gate effects, activate the **Live** button to use the effects without look-ahead functionality.
- For the Limiter, Brickwall Limiter, and Maximizer effects, send the signals to one of the plug-in outputs and add the corresponding effect directly in the DAW, to make use of the host's delay compensation.

Compressor

Compressor reduces the dynamic range of a sound. This way, the sound gains headroom. You can use this extra headroom to make the overall sound louder again.

The graphical control to the left indicates the compression curve. You can edit the **Threshold** and **Ratio** values with the handles of this control. The input and output VU meters indicate the level before and after the compression. The Gain Reduction meter indicates the current attenuation of the level.

Threshold

Sets the threshold. Sounds that are louder than the threshold are reduced in gain. Sounds below the threshold remain unchanged.

Ratio

Sets the amount of gain reduction for sounds that are louder than the threshold. The higher the ratio, the more the output is lowered. For example, if the ratio is set to 2:1 and the amplitude of the sound is 4 dB above the threshold, the output is lowered by 2 dB. If the amplitude is 8 dB above the threshold, the output is lowered by 4 dB.

High Ratio

If this parameter is activated, **Ratio** is automatically set to the maximum value.

This allows you to use the effect as a limiter, for example.

Soft Knee

If this button is deactivated, signals above the threshold are instantly compressed, according to the set ratio. If **Soft Knee** is activated, the onset of the compression is more gradual, producing a less drastic result.

Make-Up

Raises the overall sound. This can become necessary if too much gain reduction is introduced by the **Threshold** and **Ratio** parameters. You can see the amount of gain reduction in the Gain Reduction (**GR**) meter.

NOTE

This parameter is not available if the **Auto** button is activated.

Auto Make-Up Gain

Sets the **Make-Up** value automatically, depending on the current **Threshold** and **Ratio** settings.

Attack

Determines how fast the effect reacts to sounds that exceed the threshold. The longer the **Attack** time, the longer it takes to reduce the gain. With longer **Attack** times, the onset of sounds exceeding the threshold passes through unprocessed.

Hold

Sets the time period during which the compression is applied after the sound exceeds the set threshold.

Release

Determines how fast the Compressor effect reacts to sounds that fall below the threshold. The longer the **Release** time, the longer it takes to return to the original level.

NOTE

This parameter is not available if **Auto Release** is activated.

Auto Release

Allows you to set the release time automatically. The Compressor analyzes the input sound continuously to find the optimal setting.

Peak/RMS

Determines whether the input signal is analyzed based on **Peak** or **RMS** values or a mixture of both. With a setting of 0%, the compressor uses **Peak** sensing only, and at 100%, **RMS** sensing only. **Peak** means that the compressor senses the peak level of the sound. **RMS** means that the compressor senses the average power of the sound. **Peak** sensing responds faster than **RMS** sensing. Typically, **Peak** sensing is used for transient sounds and **RMS** sensing for sustained sounds.

Live

If this button is activated, the look-ahead feature of the effect is disengaged. Look-ahead results in more accurate processing, but adds a certain amount of latency as a trade-off. If **Live** mode is activated, there is no latency, which is better for live processing.

Vintage Compressor

Vintage Compressor is modeled after vintage type compressors.

This compressor features separate controls for **Input** and **Output** gain, **Attack**, and **Release**. In addition to this, there is a **Punch** mode, which preserves the attack phase of the signal, and a program-dependent **Auto** feature for the **Release** parameter.

In/Out Meters

Show the highest peaks of all available input and output channels.

GR Meter

Shows the amount of gain reduction.

Input

Determines the compression amount. The higher the input gain, the more compression is applied.

Ratio

Sets the amount of gain reduction for sounds that are louder than the threshold. The higher the ratio, the more the output is lowered.

Attack (0.1 to 100 ms)

Determines how fast the compressor responds. If the attack time is long, more of the initial part of the signal passes through unprocessed.

Punch

If this is activated, the early attack phase of the signal is preserved, retaining the original punch in the audio material, even with short **Attack** settings.

Release (10 to 1000 ms or Auto mode)

Sets the time after which the gain returns to its original level. If **Auto Release** is activated, the plug-in automatically finds the best release setting for the audio material.

Output (-48 to 24 dB)

Sets the output gain.

Tube Compressor

This versatile compressor with integrated tube-simulation allows you to achieve smooth and warm compression effects. The GR meter shows the amount of gain reduction. Tube Compressor features an internal side-chain section that allows you to filter the trigger signal.

In/Out Meters

Show the highest peaks of all available input and output channels.

GR Meter

Shows the amount of gain reduction.

Input

Determines the compression amount. The higher the input gain, the more compression is applied.

Limit

Increases the ratio of the compressor for a limiting effect.

Drive (1.0 to 6.0)

Controls the amount of tube saturation.

Attack (0.1 to 100 ms)

Determines how fast the compressor responds. If the attack time is long, more of the initial part of the signal passes through unprocessed.

Release (10 to 1000 ms or Auto mode)

Sets the time after which the gain returns to its original level. If **Auto Release** is activated, the plug-in automatically finds the best release setting for the audio material.

Output (-12 to 12 dB)

Sets the output gain.

Mix

Sets the ratio between the dry and the wet signal, preserving the transients of the input signal.

Side-Chain

Activates the internal side-chain filter. The input signal can then be shaped according to the filter parameters. Internal side-chaining is useful for tailoring how the gate operates.

Monitor

Allows you to monitor the filtered signal.

Filter Type (Low-Pass/Band-Pass/High-Pass)

If **Side-Chain** is activated, these buttons allow you to set the filter type to low-pass, band-pass, or high-pass.

Center

If **Side-Chain** is activated, this sets the center frequency of the filter.

Q-Factor

If **Side-Chain** is activated, this sets the resonance or width of the filter.

Limiter

Limiter prevents the sound from exceeding the set output level. This can be used to avoid clipping in subsequent effects, for example.

The input and output meters indicate the level before and after the Limiter. The Gain Reduction meter in the middle indicates the current attenuation of the level.

Input

Adjusts the input level of the sound. By increasing the input level, you can drive the sound more and more into limiting.

Output

Sets the maximum output level of the sound.

Release

Sets the time that the gain needs to return to its original level. The longer the release time, the longer it takes to return to the original level.

NOTE

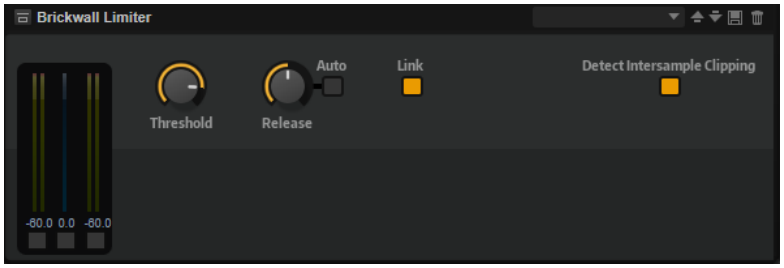
This parameter is not available if the **Auto** button is activated.

Auto

Sets the release time automatically. The Limiter continuously analyzes the input sound to find the optimal setting.

Brickwall Limiter

Brickwall Limiter ensures that the output level never exceeds a set limit.



Due to its fast attack time, Brickwall Limiter can reduce even short audio level peaks without creating audible artifacts. However, this plug-in creates a latency of 1 ms. Brickwall Limiter features separate meters for input, output, and the amount of limiting.

Threshold (-20 to 0 dB)

Determines the level where the limiter kicks in. Only signal levels above the set threshold are processed.

Release (ms or Auto mode)

Sets the time after which the gain returns to the original level when the signal drops below the threshold. If the **Auto** button is activated, the plug-in automatically finds the best release setting for the audio material.

Link Channels

If this option is activated, the plug-in uses the input from the channel with the highest level. If the option is deactivated, each channel is analyzed separately.

Detect Intersample Clipping

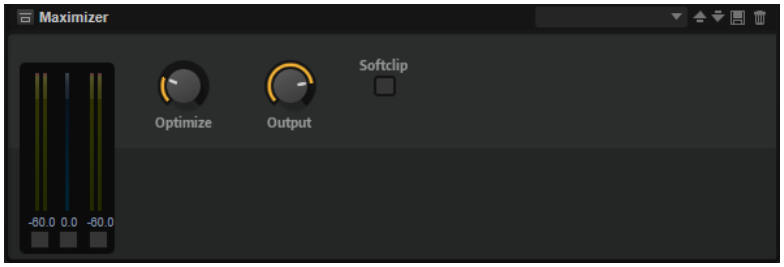
If this option is activated, the plug-in uses oversampling to detect and limit signal levels between two samples to prevent distortion when converting digital signals into analog signals.

NOTE

Brickwall Limiter is designed for the reduction of occasional peaks in the signal. If the Gain Reduction meter indicates constant limiting, try raising the threshold or lowering the overall level of the input signal.

Maximizer

The Maximizer plug-in raises the loudness of audio material without the risk of clipping.



Optimize

Determines the loudness of the signal.

Output

Sets the maximum output level.

Soft Clip

If this button is activated, **Maximizer** starts limiting or clipping the signal softly. At the same time, harmonics are generated, adding a warm, tube-like characteristic to the audio material.

Expander

The Expander reduces the output level in relation to the input level for signals below the set threshold. This is useful to enhance the dynamic range or reduce the noise in quiet passages.

The graphical control to the left shows the expansion curve. You can edit the **Threshold** and **Ratio** values with the handles of this control. The input and output meters indicate the level before and after the expansion. The Gain Reduction meter indicates the current attenuation of the level.

Threshold

Sets the threshold. Sounds that are softer than the threshold are reduced in gain. Sounds above the threshold remain unaffected by the process.

Ratio

Sets the amount of gain reduction for sounds that are softer than the threshold. The higher the ratio, the more the output is lowered. For example, if the ratio is set to 2:1 and the amplitude of the sound is 4 dB below the threshold, the output is lowered by 2 dB. If the amplitude is 8 dB below the threshold, the output is lowered by 4 dB.

Soft Knee

- If this button is deactivated, signals above the threshold are compressed instantly based on the set ratio.
- If this button is activated, the onset of the expansion is more gradual, producing a less drastic result.

Attack

Determines how fast the Expander reduces the gain when the sound falls below the set threshold. The longer the attack time, the longer it takes to reduce the gain.

Hold

Sets the time period during which the expansion is applied after the sound falls below the set threshold.

Release

Determines how fast the Expander effect raises the gain after the sound exceeds the set threshold. The longer the release time, the longer it takes to raise the gain.

NOTE

This parameter is not available when the **Auto Release** button is activated.

Auto

Activate this to set the release time automatically. The Expander analyzes the input sound continuously to find the optimal setting.

Peak/RMS

Determines whether the input signal is analyzed based on **Peak** or **RMS** values or a mixture of both. With a setting of 0%, the expander uses **Peak** sensing only, and at 100%, **RMS** sensing only. **Peak** means that the expander senses the peak level of the sound. **RMS** means that the expander senses the average power of the sound. **Peak** sensing responds faster than **RMS** sensing. Typically, **Peak** sensing is used for transient sounds and **RMS** sensing for sustained sounds.

Live

If this button is activated, the look-ahead feature of the effect is disengaged. Look-ahead results in more accurate processing, but adds a certain amount of latency as a trade-off. If **Live** mode is activated, there is no latency, which is better for live processing.

Gate

The Gate effect passes sound only to its output if the input sound exceeds the set threshold. Sounds below the threshold are silenced.

An internal side-chain filter allows you to analyze a filtered version of the input sound instead. This way, the gate detects only certain frequencies of the input sound.

Threshold

Determines the level that activates the gate. Signal levels above the set threshold trigger the gate to open, and signal levels below the set threshold close the gate.

Filter

Activates the internal side-chain filter. If this button is activated, the input sound is filtered before it is analyzed. The gate opens only if the filtered sound exceeds the set threshold. When the **Filter** button is deactivated, the filter controls are not available.

Filter Type

Sets the filter type for the side-chain filter. Select high-pass (**HP**) to detect high frequencies, band-pass (**BP**) to detect mid frequencies, and low-pass (**LP**) to detect low frequencies only.

Monitor

Allows you to listen to the sound of the side-chain filter. The gate is inactive when the **Monitor** button is activated.

Center

Sets the center frequency of the side-chain filter.

Q-Factor

Adjusts the bandwidth of the filter from wide to narrow.

Attack

Determines how fast the gate opens when the sound exceeds the set threshold. The longer the attack time, the longer it takes for the sound to fade in.

Hold

Sets the time period during which the gate is applied after the sound falls below the set threshold.

Release

Determines how fast the gate closes after the sound falls below the set threshold. The longer the release time, the longer it takes for the sound to fade out.

NOTE

This parameter is not available when the **Auto** button is activated.

Auto

Sets the release time automatically. The gate continuously analyzes the input sound to find the optimal setting.

Peak/RMS

Determines whether the input signal is analyzed based on **Peak** or **RMS** values or a mixture of both. With a setting of 0%, the gate uses **Peak** sensing only, and at 100%, **RMS** sensing only. **Peak** means that the gate senses the peak level of the sound. **RMS** means that the gate senses the average power of the sound. **Peak** sensing responds faster than **RMS** sensing. Typically, **Peak** sensing is used for transient sounds and **RMS** sensing for sustained sounds.

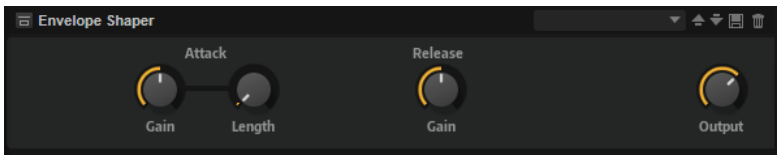
Live

If this button is activated, the look-ahead feature of the effect is disengaged. Look-ahead results in more accurate processing, but adds a certain amount of latency as a trade-off. If **Live** mode is activated, there is no latency, which is better for live processing.

Envelope Shaper

The Envelope Shaper effect can be used to attenuate or boost the gain of the attack and release phase of audio material.

Be careful with levels when boosting the gain and, if needed, reduce the output level to avoid clipping.



Attack - Gain

Changes the gain of the attack phase of the signal.

Attack - Length

Determines the length of the attack phase of the signal.

Release - Gain

Changes the gain of the release phase of the signal.

Output

Sets the output level.

Spatial and Panner Effects

The **Spatial + Panner** submenu contains the stereo panorama effects.

Stereo Pan

This effect allows you to set the stereo position and width of the signal.

Input Swap

Swaps the stereo channels.

Pan

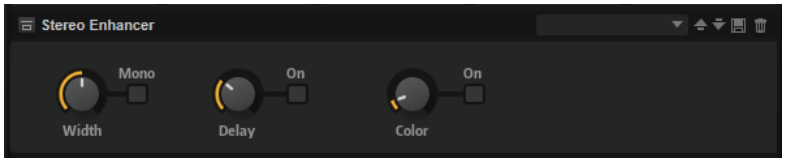
Sets the pan position of the signal. The panning is available for mono and stereo input signals.

Width

Adjusts the stereo width of the signal from stereo to mono.

Stereo Enhancer

The Stereo Enhancer effect expands the stereo width of stereo audio material. It cannot be used with mono files.



Width

Controls the width or depth of the stereo enhancement. Turn clockwise to increase the enhancement.

Delay

Increases the amount of differences between the left and right channels to further increase the stereo effect.

Color

Generates additional differences between the channels to increase the stereo enhancement.

Mono

Switches the output to mono, to check for unwanted coloring of the sound, which can occur when enhancing the stereo image.

Legacy Effects

The **Legacy** submenu contains legacy effects that were used in HALion 3.

HALion 3 Legacy Effects

The HALion 3 effects on this menu are added to ensure compatibility with older projects.

Amp Simulator

Amplifier modeling effect.

Model
The type of amplifier model. This changes the tone character.

Mode
Mono/Stereo operation. Mono saves CPU, and in some cases sounds more solid.

Drive
Overdrive amount.

Feedback
Feedback amount. The result depends on the input signal.

Treble
Treble boost. Optionally in or out of phase for different tones.

Mix
Wet/dry mix.

Bit Reduction

Digital, lo-fi, quality degradation.

Mode
Determines whether the bit depth is fixed (**Linear**) or depends on the signal level (**Companding**).

Rate
Simulated sample rate.

Depth
Sample bit depth.

Slew Rate
Maximum rate of change of output waveform, for a soft, wooly distortion.

Mix
Wet/dry mix.

Chorus

A straightforward chorus effect that can be used to widen sounds.

Rate
The modulation rate.

Depth
The amount of pitch modulation.

PreDelay
The initial delay, to vary the tightness of the chorused voices in relation to the dry signal.

Mix
Wet/dry mix.

Compressor

A simple compressor effect.

Threshold
Compression threshold.

Ratio
Compression amount.

Attack
Attack time.

Release
Release time.

Output
Output level trim.

Delay

A simple mono-in/stereo-out delay.

Time
Delay time.

Sync
If **Sync** is activated, you can set the delay time in fractions of beats.

Feedback
Controls the number of delay repeats.

Balance
Ratio of left delay time to right delay time.

Damp
High-cut filter to soften delay repeats.

Distortion

Hard clipping distortion.

Drive
Distortion amount.

Bias
Adjusts the balance between even and odd harmonics, that is, the character of the distortion.

Tone
Distortion tone.

Out
Output level trim.

Mix
Wet/dry mix.

Early Reflections

A short, dense reverb for simulating small acoustic spaces and to thicken or blur sounds.

Time
Length of reverb tail. It also allows you to change the sound from dense early reflections to a trashy, grainy 80's-type reverb.

Low EQ
Low-cut EQ.

High EQ
High-cut EQ.

Mix
Wet/dry mix.

Enhancer

Psycho acoustic spectrum shaping.

High Depth
High frequency boost, combined with mid cut.

High Tune
High/mid tune.

Low Depth
Low frequency boost.

Low Tune
Low frequency tune.

Ensemble

Chorus with a more complex modulation waveform for a lively thickening effect.

Rate
The modulation rate.

Depth
The amount of pitch modulation.

Shimmer
Creates a more complex modulation effect.

Width
Stereo width adjustment.

Mix
Wet/dry mix.

Flanger

A classic flanger effect.

Rate
Sweep rate.

Depth
Sweep depth.

Feedback
Feedback amount. Increase for a more intense flanging effect.

PreDelay
Initial delay. Adjusts the minimum delay time/maximum flange frequency.

Mix
Wet/dry mix.

Gate

Simple gate effect.

Threshold
Gate threshold.

Range
Level reduction when gate closed.

Attack
Attack time.

Release
Release time.

Output
Output level trim.

Hall Reverb

A simple reverb with adjustable pre-delay and damping.

PreDelay
Delays the wet signal to simulate larger acoustic spaces or to create a slap-back effect.

Time
Length of reverb tail.

Damp
Progressive damping of high frequencies.

Low EQ
Low-cut EQ.

High EQ
High-cut EQ.

Mix
Wet/dry mix.

Limiter

Hard level limiting.

Drive
Input signal drive.

Attack
Attack time.

Release
Release time.

Output
Output level trim.

Long Delay

This effect provides the same parameter set as the Delay effect, except that longer delays of up to four seconds can be set.

Modulate L/R

This effect features three modes of signal distortion, where one side of a stereo signal is used to modulate the other.

Mode

- **Ring Mod**: Ring modulation.
- **Env Mod**: The signal level of the right channel is modulated by the level of the left channel.
- **Duck**: The signal level of the right channel is reduced when the level of the left channel increases.

Thru
Defines which input signals are used as the dry signal for the Mix.

Smooth
Smoothing of modulation.

Drive
Level trim.

Mix
Wet/dry mix.

Multiband

Three-band compressor.

Drive
Input signal drive (increase for more density).

Lo/Hi
Balance of low and high frequency bands.

Mid
Level of mid frequency band.

Attack
Attack time.

Release
Release time.

Output
Output level trim.

Non-Linear Reverb

A gated reverb with a sharp cutoff.

Time
Length of reverb tail. It also allows you to change the sound from dense early reflections to a trashy, grainy 1980's-type reverb.

Low EQ
Low-cut EQ.

High EQ
High-cut EQ.

Mix
Wet/dry mix.

Overdrive

Softer distortion with a gradual onset.

Drive
Overdrive amount.

Bias
Overdrive character. Adjusts the balance between even and odd harmonics.

Out
Output level trim.

Mix
Wet/dry mix.

Pan & Tremolo

Autopan and Tremolo effect as used in vintage electric pianos.

Rate
Sweep rate.

Phase
Relative phase of left and right channel amplitude modulation, to vary from tremolo to autopan.

Shape
Shape of modulation waveform from thin pulse, through sine, to fat pulse.

Mix
Wet/dry mix.

Parametric EQ

Two-band parametric equalizer.

Gain 1/2
Cut/boost amount for the two bands.

Freq 1/2
Sets the center frequency for the two bands.

Width 1/2
Sets the bandwidth for the two bands (Q).

Output
Output level trim.

Phaser

A four pole phaser for subtle phasing effects.

Rate
Sweep rate.

Depth
Sweep depth.

Feedback
Feedback amount. Increase for a more pronounced effect.

Stereo
Offset between left and right modulation.

Center
Sets the center frequency around which the modulation occurs.

Mix
Wet/dry mix.

Rotary Speaker

Simulation of a rotary speaker cabinet with high and low rotors.

Rate
Master speed control: Stop, Slow, Fast.

Dirt
Amount of overdrive.

LoHi
Crossover frequency between low and high rotors.

Width
Stereo width.

Tone
Adjusts the tone of the overdriven signal.

Low/High Speed
Speed of the high and low rotors.

Low/High Acceleration

Acceleration of the high and low rotors.

Mix

Wet/dry mix.

Shelf EQ

Simple tone control.

Output

Output level trim.

Bass

Low frequency cut/boost.

Treble

High frequency cut/boost.

Stereo Delay

A stereo-in/stereo-out delay.

Time

Delay time.

Feedback

Controls the number of delay repeats. For minimum feedback, set the slider to the mid position. By moving the slider to the left or right, cross delay is applied, where left output feeds back into right input or vice versa.

Sync

If **Sync** is activated, you can set the delay time in fractions of beats.

Balance

Ratio of left delay time to right delay time.

Damp

High-cut filter to soften delay repeats.

Stereo Width

A stereo width enhancer with 4 modes.

Mode

- **Adjust** mode adjusts the existing width of the stereo signal.
- **Swap** mode adjusts the existing width of the stereo signal and additionally swaps the left and right channels.
- **Comb** mode applies a stereo comb filter effect.
- **Haas** mode synthesizes the stereo width by delaying one channel.

Delay

Delay time (not used in **Adjust** and **Swap** modes).

Width

Overall width adjustment.

Low/Mid/High
Width adjustment for the low, mid, and high frequencies.

Output
Output level trim.

TalkBox

Modulated vowel formant filter.

Rate
LFO modulation rate.

Depth
LFO modulation depth.

Vowel
In center setting, vowels are produced when there is no modulation.

Env Mod
Amount of vowel modulation by input signal level.

Env Att
Rate of response to a rising input signal level.

Env Rel
Rate of response to a falling input signal level.

Mix
Wet/dry mix.

Tape Delay

Simulation of a vintage 4-head analog tape delay.

Time
Delay time.

Sync
If **Sync** is activated, you can set the delay time in fractions of beats.

Feedback
Controls the number of delay repeats.

Vintage
Amount of vintage color and tape flutter.

Mix
Wet/dry mix.

Head 1
Delay level 1 (the output is panned left).

Head 2
Delay level 2 (the output is panned right).

Head 3
Delay level 3.

Head 4

Delay level 4.

Pan 3+4

Varies the panning of delays 3 and 4 from center to hard left/right.

Vol 3+4

Varies the volume of delay outputs 3 and 4.

Wah Pedal

An auto-wah effect.

Rate

Modulation rate.

Depth

Modulation depth.

Pedal

Adjusts the filter frequency.

Mode

- **Auto Wah**: Envelope controlled wah effect.
- **Pedal Wah**: No modulation. The **Pedal** parameter sets the frequency.
- **Mod Wah**: LFO modulation. The **Rate** parameter controls the modulation rate.

Resonance

Sets the amount of filter resonance.

Tracking

Adjusts the envelope tracking speed in **Auto** mode, and the envelope rate modulation in **Mod** mode.

Mix

Wet/dry mix.

Note Expression

Steinberg's Note Expression technology was developed for creating realistic instrument performances. Note Expression allows you to create automated modulations for each note. HALion Sonic supports Note Expression for volume, pan, and tuning.

If you use a Steinberg DAW that supports Note Expression, you can automate the Note Expression parameters for any program in HALion Sonic per note.

Furthermore, in programs that give you access to the modulation matrix, you can assign up to eight Note Expression controllers to the available modulation destinations. These are applied in addition to the preassigned pitch, pan, and level modulations.

NOTE

The Note Expression controllers of a program are shared by all its layers. This means that the controller data affects all layers simultaneously. Depending on how the Note Expression controllers are set up, each layer can react differently.

NOTE

If you use HALion Sonic with host applications that do not support Note Expression, the **Note Expression** editor page and the Note Expression controllers in the modulation matrix are visible, but they do not have any influence on the program.

Note Expression Editor

The editor shows the Note Expression controllers on the left and the assigned modulation destinations on the right. This gives you a quick overview of how the Note Expression controllers are routed in the modulation matrix and what their influence on the sound will be.

- To open the **Note Expression** editor, open the **Edit** page and select the **Program** tab.

NOTE

A Note Expression controller can be assigned to several destinations.

Name

If you assign a Note Expression controller for the first time, it assumes the name of the modulation destination that it is assigned to. Any further assignments do not change the name. You can manually specify a name by entering it in the **Name** field.

Bypass Note Expression Controller

To deactivate the effect of the controller, click the **Bypass Note Expression Controller** button. It is linked to the **Bypass** button of the corresponding modulation destination in the modulation matrix.

Depth

This slider adjusts the intensity of the Note Expression modulation. It is linked to the **Depth** slider of the corresponding modulation destination in the modulation matrix.

Using the Standalone Version of the Plug-in

You can use HALion Sonic independently of a host application.

If you use HALion Sonic as a standalone application, an additional section is available at the top of the control panel. In this section, you can define key commands, set up audio and MIDI interface routings, adjust the master volume, and access the integrated MIDI scratch pad, which allows you to record your musical ideas without having to start a MIDI sequencer application. It can also be used to play multitrack arrangements that trigger the different programs.

Preferences Settings

You can configure the standalone version of HALion Sonic via the **Plug-in Preferences** dialog.

- To open the **Plug-in Preferences** dialog, click the **Open Preferences** button to the right of the audio output field, or right-click in the topmost section of the control panel, and select **Plug-in Preferences** from the context menu.

Preferences Dialog

The **Plug-in Preferences** dialog has several pages on which you can make settings.

MIDI Page

MIDI Input Ports

Use this pop-up menu to specify a MIDI input.

Channel Filter

Determines whether MIDI events are recorded on all MIDI channels, or only on one specific channel.

Filter 'All Notes Off' Controller

Activate this parameter to avoid unwanted "All Notes Off" messages. Such messages are sent by some keyboards when the last key is released. This causes HALion Sonic to stop playback, even when the sustain pedal is still in use.

Outputs Page

You can use the **Audio Output Ports** pop-up menus to assign different audio outputs. You can assign different audio outputs for each channel.

- To map an output to a channel, select it from the pop-up menu.
- To set the front and rear channels to incrementing audio output ports, hold down **Shift**, and select an audio output.
- To assign the audio outputs to the front and rear channels in pairs, hold down **Alt/Opt**-**Shift**, and select an audio output.

Metronome Page

On the **Metronome** page, a number of settings can be made regarding the use of a metronome.

Mode

Activates/Deactivates the metronome or sets it to **Count In** mode.

Accent

Accentuates the first beat of each bar.

Level

Adjusts the volume of the metronome.

Connections

Allows you to select a separate stereo output for the metronome.

General Page

Don’t prompt for confirmation when quitting HALion Sonic

If you want the plug-in to close without prompting when you quit the program, activate **Don’t prompt for confirmation when quitting HALion Sonic**.

High DPI Mode

- If **High DPI Mode** is activated, the plug-in uses high-resolution bitmaps when it is displayed with a scaling of 150% or higher on a high-resolution monitor, such as 4K (UHD), 5K, etc. This allows for sharper images on high-resolution displays.

  NOTE

  Windows systems currently only support scaling factors that are multiples of 100. For example, if you use a scaling factor of 150%, in HALion Sonic, the scaling factor is set to 200%.

  High DPI Mode may not be compatible with some combinations of software and hardware. If you experience display issues with your setup, you can deactivate **High DPI Mode**.

- If **High DPI Mode** is deactivated, the native monitor resolution is used.

ASIO Driver Page

From the **ASIO Driver** pop-up menu, you can select your audio hardware driver.

Release Driver when Application is in Background

Activate this option if you plan to use several audio applications simultaneously.

Input Latency/Output Latency

The input and output latency values for your audio hardware are displayed. Latency is the amount of time it takes for your system to respond to any messages that are sent to it. High latency results in a noticeable delay between pressing a key and hearing the sound.

You can change the latency via the **Buffer Size** parameter in the control panel for your driver, which you open by clicking the **Control Panel** button on the **Advanced** tab.

Sample Rate

Below the latency values, you can set the sample rate for the connected audio hardware.

Audio Priority

Determines which of the HALion Sonic processes gains priority when accessing processor resources on your computer.

- In **Normal** mode, non-audio processes and audio playback get roughly equal priorities.
- In **Boost** mode, audio precedes MIDI in priority. Try this mode if audio playback problems occur when playing back MIDI and audio material.

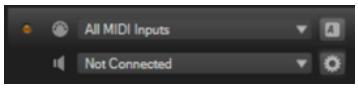
Activate Steinberg Audio Power Scheme

If this option is activated, all power safe modes that have an impact on real time processing are deactivated. Note that this is only effective for very low latencies, and that it increases the power consumption.

Advanced Page

Once you have selected the driver, you can specify which inputs and outputs to use and name these on the **Advanced** page. Click the **Control Panel** button to open the control panel for the audio hardware, and adjust the settings as recommended by the audio hardware manufacturer.

Selecting the MIDI Input and the Audio Output



The MIDI input pop-up menu lists all MIDI devices that are installed on your system.

- Select the MIDI device that you want to use from the **Main MIDI Input Port** pop-up menu.

  The MIDI activity LED in the top left corner of the control panel indicates incoming MIDI messages via the selected MIDI input. The LED lights up on receiving note-on and controller messages. This way, you can check if HALion Sonic and your MIDI keyboard are connected to the same MIDI device input.

The Audio output pop-up menu lists all outputs of the selected ASIO device.

- To select an audio output for the main stereo channel of the plug-in, open the **Audio Output Ports** pop-up menu.

RELATED LINKS
ASIO Driver Page on page 180

Scratch Pad

The scratch pad allows you to record and play back MIDI files in Standard MIDI File format (SMF). You can load existing MIDI files, and you can record your own files and save them.

Info icon

Hover over the info icon in the top left corner of the scratch pad to display the name of the loaded MIDI file.

Song position indicator

The song position indicator shows the position of the transport cursor. Above the song position indicator, the position is displayed as a number.

- To move the transport cursor, drag the song position indicator to a new position.
- To switch the time format between **Time** and **Bars**, click **Select Time Format** in the top right corner of the display.

Transport controls

- Click **Play** to start playback of the MIDI file.
- Click **Stop** to pause the MIDI file at the current position. Click the button twice to reset the song position to the start.
- Click **Record** to start recording.
- Activate **Loop** to play the entire MIDI file in a loop.

Tempo

- Set this parameter to **Track** to follow the original tempo of the MIDI file.

  With the **Adjust Tempo** parameter, you can scale the playback relatively to the original tempo of the MIDI file.
- Set this parameter to **Fixed** to enter the tempo manually. You can either enter the value directly in the value field, or you can enter a tempo by repeatedly clicking the **Tap to set Tempo** field next to the value field.

The scratch pad and the metronome use the **Tempo** setting.

Time Signature

Determines the time signature. You can enter a new time signature in fractions of beats.

Load MIDI File

Allows you to load a MIDI file. The scratch pad can play back multi-track MIDI files sending notes on all 16 MIDI channels. It also sends MIDI program change messages when a MIDI file is loaded.

Save Recording as MIDI File

Allows you to save the MIDI file.

Record Mode

Determines when to start recording after you click **Record**.

- To start recording immediately, select **Direct**.
- To start recording with the first MIDI note, select **MIDI**.
- To start the recording after a count-in of one bar, select **Count In 1**.
- To start the recording after a count-in of two bars, select **Count In 2**.

Metronome

Allows you to activate a metronome that you can use for recording and practicing.

Metronome Volume

Sets the level for the metronome click.

RELATED LINKS
Using the Metronome on page 183

Recording Your Performance

PROCEDURE

1. Click the record symbol below the **Record** button to select a record mode.
2. Click the **Record** button to start recording.

   To indicate that the recording is running, the song position indicator moves from left to right.
3. When you are done recording, click the **Stop** button.

RELATED LINKS
Scratch Pad on page 181
Saving a MIDI File on page 183

Using the Metronome

PROCEDURE

- To select the playback mode of the metronome, click **Metronome**, and select one of the options from the pop-up menu:
  - If **On** is selected, the metronome is activated and plays continuously.
  - If **Count In** is selected, the metronome plays only during the count-in of a recording.
  - To deactivate the metronome, select **Off**.

Loading a MIDI File

You can load MIDI files in Standard MIDI File format (file name extension `.mid`).

PROCEDURE

1. Click the **Load MIDI File** button below the transport buttons.
2. In the file dialog, select the file that you want to use.
3. Click **Open** to load the MIDI file.

MIDI Channel Filter

If a multi-track MIDI file is loaded, you can play back all MIDI events or only the events of a specific MIDI channel.

- To specify events for playback, click the **MIDI Channel Filter** field to the right of the info icon, and select an option from the pop-up menu.

Saving a MIDI File

PROCEDURE

1. Click the **Save Recording as MIDI File** button below the transport buttons.
2. In the file dialog, specify a location and a file name.

3. Click **Save** to save your recorded performance as a MIDI file.

Master Volume

Use the volume control on the right to set the master volume of the outputs of the standalone version of HALion Sonic.

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