HALION SONIC SE₃

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This PDF provides improved access for vision-impaired users. 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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Introduction

Conventions

In our documentation, we use typographical and markup elements to structure information.

Typographical Elements

The following typographical elements mark the following purposes.

Prerequisite

Requires you to complete an action or to fulfill a condition before starting a procedure.

Procedure

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

Important

Informs you about issues that might affect the system, the connected hardware, or that might bring a risk of data loss.

Note

Informs you about issues that you should consider.

Tip

Adds further information or useful suggestions.

Example

Provides you with an example.

Result

Shows 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, etc.

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.

Key Commands

Many of the default key commands, also known as keyboard shortcuts, use modifier keys, some of which are different depending on the operating system.

When key commands with modifier keys are described in this manual, they are indicated with the Windows modifier key 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**.

Program Versions

HALion Sonic SE comes in two versions: one is installed together with a Steinberg DAW, the other can be downloaded for free from the Steinberg web site.

The version that comes with the DAW contains content, that is, programs, layers, presets, etc. and can be used out of the box.

The free version does not contain any content. This version can be used to load Steinberg content, user-generated content and 3rd party libraries without a Steinberg DAW. Furthermore, it can be used as a plug-in in any VST 3, VST 2, AU, and AAX compatible host and as a stand-alone application.

How You Can Reach Us

Click the Steinberg logo in the top right corner of the control panel to open a pop-up menu containing items for getting additional information and 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 steinberg.help.

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

Setting Up

You can use the free version of HALion Sonic SE as a plug-in in different host applications.

NOTE

HALion Sonic SE can also be used as a standalone application.

Using the Instrument in an AU-Compatible Application

The AU version of HALion Sonic SE is installed in your AU plug-ins folder and lets HALion Sonic SE work in an AU environment without any performance loss or incompatibilities.

For example, to load HALion Sonic SE as an AU instrument for 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 SE**.
3. Select one of the available channel configurations.

Using the Instrument in an AAX-Compatible Application

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

PROCEDURE

1. To use HALion Sonic SE as 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 SE from the **multichannel plug-in** > **Instrument** submenus.

Using the Instrument as Standalone Application

The free version of HALion Sonic SE 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

Window Overview

The HALion Sonic SE window is divided into several sections.

- In the standalone version of HALion Sonic SE, you find a number of additional functions in an extra section at the top of the application window.
- If you use the plug-in in a host application, you find the plug-in functions section at the top of the window.
- The slot rack on the left.
- The toolbar above the edit display.
- The edit display on the right. It contains the **Load**, **Edit**, **MIDI**, **Mix**, **Effects**, and **Options** pages.
- The performance section at the bottom. It contains the trigger pads, the quick controls, and the performance controls.

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 **p** button on the toolbar to switch from player view to editor view. The button changes to **e** to indicate that editor view is active. Click the button again to return to player view.

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 arrow button next to the **e** button.
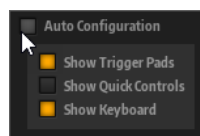
- If **Auto Configuration** is activated, the editor shows the sections specified by the manufacturer.

- 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.

Common Editing Methods

Buttons

HALion Sonic SE 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 Enter.

  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-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.

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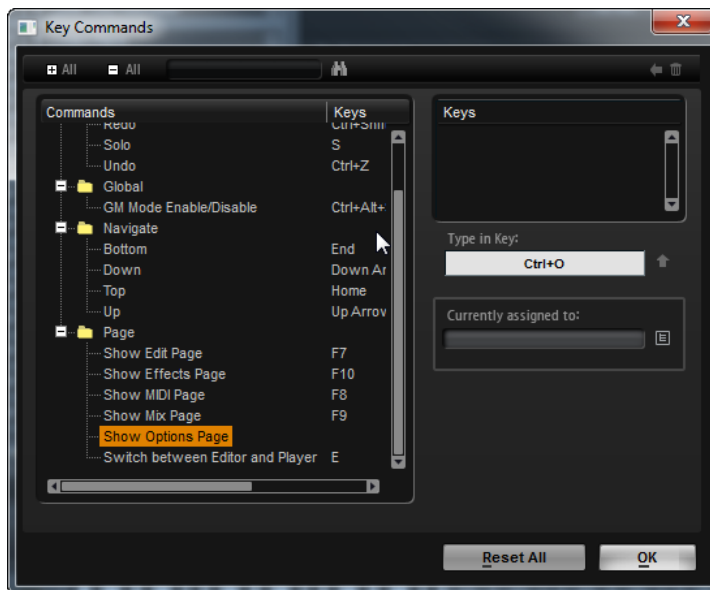
- To open the **Key Commands** dialog, open the **Options** page and click the **Key Commands** button in the **Global** section.

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 any currently assigned key commands.

- To set up a key command, select the function in the list, enter the key command in the **Type in Key** field and click the **Assign** ▣ button to the right of the field. If this key command is already used for another function, this is displayed in the field below.

- To delete a key command, select the function in the list, select the key command in the **Keys** list and click the **Delete** 🗑 button.

- To search for a specific function, enter its name in the search field at the top of the dialog and click the **Start/Continue Search** 🔍 button.

NOTE

You can set up several key commands for the same function.

Presets

HALion Sonic SE 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 SE 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

The preset controls can be found throughout the program. The handling is always the same.

- 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 delete a preset, click **Delete** ▥.

  NOTE

  Factory presets cannot be deleted.

Handling VST Presets

Loading VST Presets

PROCEDURE

1. In the header of the plug-in panel, click the **Preset Management** button next to the preset name field and select **Load Preset**.
2. Do one of the following:
   - Select a preset to load it.
   - Double-click a preset to load it and close the preset loader.

Saving VST Presets

PROCEDURE

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

Global Functions and Settings

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
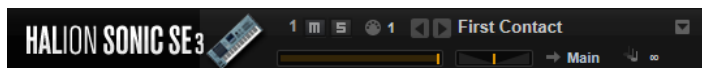
The slot parameters are the same as in the multi program rack. In addition, the following parameters are available:

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.

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 Icon

Click the **Load** icon to the right of the slot to open the program loader. Double-click a program to load it.

MIDI Activity Indicator

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

Level

Adjusts the output level of the slot.

Pan

Adjusts the position of the slot in the stereo panorama.

Output

On the output selector, you 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.

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**.

Master Section

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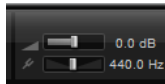
Master Volume

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 get 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 below the plug-in functions section contains controls for loading multi-programs on the left, the buttons to switch between the different pages, and various 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. FlexPhrasers are a feature of the full version of HALion. They add arpeggios and even complex musical phrases to some programs of the factory content.

Lock button

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

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.

Editor/Player

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

Performance Controls

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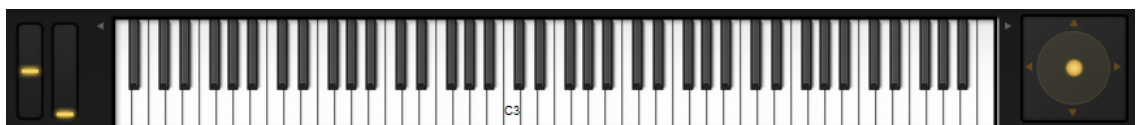
Wheel Controls

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.

For each program, 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.

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 SE make use of the trigger pads.
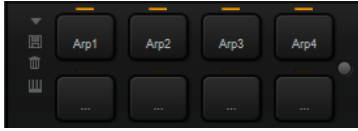
If a note or a chord is assigned to a pad, this pad turns orange. If a pad switches between variations, the line above the pad turns orange.

● 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 loosing 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 blinking.

2. Do one of the following:

   ● Play a chord or a single note and then click the pad that is blinking 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 drag a chord event onto the internal keyboard first, 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.

Removing Chords or Notes from Trigger Pads

PROCEDURE

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

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**.

Now, 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.

Naming Pads

Entering names for pads allows you to get 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**.

Options Page

The **Options** page contains global settings regarding performance optimization, global functions, and MIDI controllers.

17
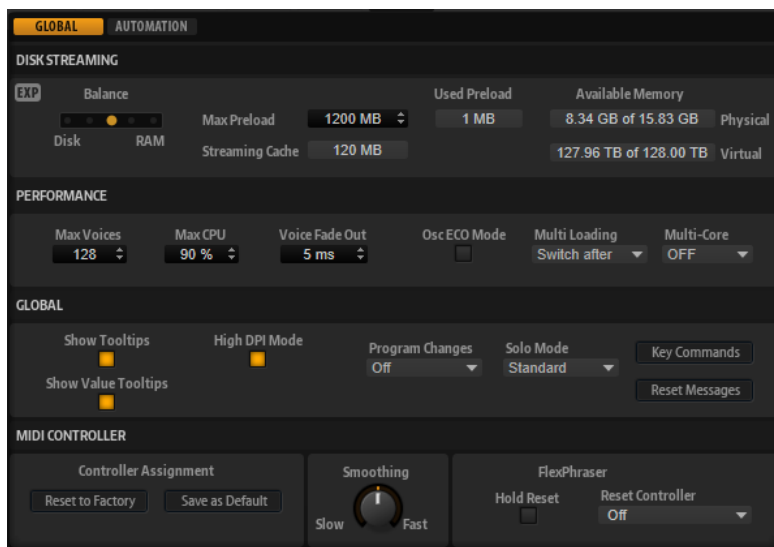
Disk Streaming Section

Some of the programs come with up to 1 GB of samples. That is a large amount of data and your computer cannot load all samples completely into the RAM, especially if you are using all slots. Therefore, HALion Sonic SE loads only the initial milliseconds of each sample into RAM. You can specify how much RAM should be used and how much HALion Sonic SE should 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 always applies to all plug-in instances. It is not saved with the project. You set it up only once for your computer system.

Used Preload and Available Memory

These displays provide information of the memory load in MB according to the current balance slider setting.

Max Preload

Determines the maximum amount of RAM that HALion Sonic SE 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

Activate **Expert Mode** if you want to adjust the **Disk Streaming** settings in greater detail.
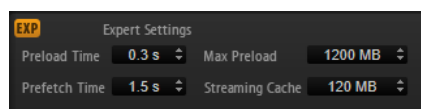
- **Preload Time** defines how much of the start of the samples is preloaded into the RAM. Larger values allow for more samples to be triggered in a short time.

- **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 larger streaming cache in RAM. If you increase the **Prefetch Time**, it is recommended to also increase the **Streaming Cache**.

- **Streaming Cache** determines the amount of RAM that is reserved for prefetching. The actually needed size depends on the prefetch time, the number of simultaneously streaming voices and the audio format of the samples. For example, higher sample and bit rates need more RAM.

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 SE starts stealing voices.

Max CPU

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

NOTE

Because of the reaction time of the plug-in, it is possible that you get 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 at a value a bit 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 have been reached.

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 is kept in the RAM until the new multi has been completely loaded.

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

Multi-Core

On 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 SE to compute each program on a different core, for example. The best setting here depends on multiple factors, and varies from system to system, and project to project. A good starting point is to set this value to one core less than the available number of cores.

NOTE

If problems occur, reduce the number of cores, or set the pop-up menu to **Off** and load multiple instances of HALion Sonic SE instead. This way, the host application distributes the work load across the available cores.

Global Section

Here, you find common settings of HALion Sonic SE and the **General MIDI mode** parameter.

NOTE

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

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.

High DPI Mode

- If you are using a high resolution monitor, such as 4k (UHD), 5k etc., activating **High DPI Mode** results in a sharper display of HALion Sonic SE at a scaling of 150 % and higher. However, currently only even scaling factors are supported. For example, using a scaling of 150 % on your Windows system results in a scaling factor of 200 % in HALion Sonic SE.

  NOTE

  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.

NOTE

If you use HALion Sonic SE 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.

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.

Program Changes

Determines how HALion Sonic SE handles incoming MIDI program change messages.

- In **GM Mode**, program change messages are used to switch programs in the slots of the multi program rack.
- Select **Off** to ignore incoming controller change messages.

GM Mode (General MIDI Mode)

Select **GM Mode** to play back MIDI files that have been arranged for General MIDI sound sets. **GM Mode** supports MIDI program change messages and preloads a global chorus and reverb effect on AUX FX 1 and 3 for immediate use.

If **GM Mode** is activated, all loaded programs are removed and the 16 slots are assigned to the 16 MIDI channels. As long as **GM Mode** is active, the 16 MIDI channels on the **MIDI** page cannot be changed.

The **MediaBay** sets an instrument set filter and displays only the General MIDI sounds. The MIDI program changes 0–127 refer to the corresponding GM Sound

attributes of the **MediaBay**. This means that you can make any of your sounds part of the General MIDI sound set by setting the GM Sound attribute on the corresponding sound.

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.

NOTE

The General MIDI sounds that come with HALion Sonic SE are optimized for fast loading times. However, larger programs take longer to load.

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 default 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. This is rather low. Therefore, 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 SE provides MIDI controller smoothing, so that parameter changes occur more gradually.

- If MIDI controller changes cause audible artifacts, turn the control towards slower settings. 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 towards faster settings. Note, however, that this may introduce audible artifacts.

FlexPhraser (Arpeggiator)

Hold Reset sends a global hold reset message to all FlexPhrasers or arpeggiators that are used.

- FlexPhrasers are a feature of the full version of HALion. They add arpeggios and even complex musical phrases to some programs of the factory content.

- The arpeggiators that you can set up yourself can be found on the **Arp** page of the included instruments, such as Trip, for example.

The **Reset Controller** pop-up menu allows you to assign a dedicated MIDI controller to the **Hold Reset** button for remote-controlling it.

Managing Your Sounds

The following sections describe how to load, save, and manage the different kinds of sound files in HALion Sonic SE. If you are using the version of HALion Sonic SE that is part of a Steinberg DAW, the sounds that come with the program are available in the form of programs, layers, and multis.

Programs, Layers, and Multis

Programs

A program is a complex instrument or sound that can consist of up to 4 layers.

Layers

Programs are combinations of up to 4 layers. Often, a layer contains all components of a particular instrument sound, such as the synthesis part or insert effects. You can make settings for each layer on the corresponding macro page.

Multis

HALion Sonic SE is a multitimbral plug-in that can load up to 16 sounds (or programs) and combine them. This combination is called a multi-program, or multi for short. You can use multis 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.

Presets

You can save and load all types of sounds as presets, that is, you can create presets for single programs and for multis.

Loading Programs

HALion Sonic SE can load the program content that comes with Steinberg's DAWs and VST Sound Instrument Sets, as well as any compatible user content created with HALion 6.

There are several ways to load programs:

- Via drag and drop from the File Explorer/macOS Finder
- By double-clicking them in the results list on the **Load** page.
- Via the slot context menu
- By clicking the **Load Program** button at the right of the slot

Programs containing lots of sample data may take some time to load.

Slot Rack

The **Slot Rack** has 16 slots. Each slot can hold a program, that is, you can work with 16 programs at the same time.

Each slot has a **Mute** button and a **Solo** button. You can mute and solo several programs at the same time. The slot number to the left of the slot lights up if incoming MIDI data is detected.
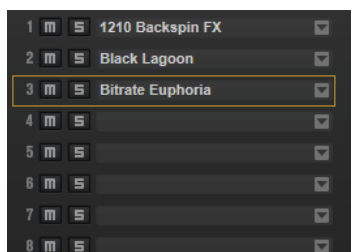
Once a program is loaded in the **Slot Rack**, it can be played and edited.

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.

Save Program

Saves the program. If you try to overwrite write-protected factory content, a dialog opens that allows you to save the edited program under a new name.

Save Program As

Allows you to save the program under a new name.

Save All Programs

Allows you to save all programs as a VST preset.

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.

- 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.

Remove Program

Removes the program from the slot.

Init Program

Loads the **Init** program. This contains a neutral synth layer.

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.

NOTE

You can also cut, copy, and paste programs from one plug-in instance to another.

Managing and Loading Files

You can use the **MediaBay** to manage, navigate to, and load different file types.

Managing Multis

Multis can load multiple sounds or programs and combine them.

You can use multis 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 SE as a plug-in in a Steinberg DAW, these multis 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 SE.

If you use HALion Sonic SE 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 SE.

Loading Multis

You can load multis in the following ways:

- Open the **MediaBay** and double-click a multi or drag a multi onto the multi slot.
- Click the **Load Multi-Program** button in the multi slot to open the **Load Multi-Program** dialog, select a multi, and click **OK**.

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 multi program rack.

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 SE, 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 containing folder.

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.

File Management in the MediaBay

The **MediaBay** functionality can be found on the **Load** page. The **MediaBay** gives access to presets, such as multis, programs, and layers.

In the top section of the page, you specify which sounds to look for. The lower section presents the corresponding results.

- To adjust the size of the two sections, drag the divider at the top of the results list.

Browsing for Files

The **Load** page allows you to browse for and load files. You can restrict the amount of files that are searched by filtering the results list or entering a search text.

PROCEDURE

1. On the **Select Content Set** menu, select the content set from which you want to load a program or layer. To browse the entire content, select **All**.
2. On the toolbar of the results list, specify whether you want to browse through the available programs ▪ or layers ▪.
3. Optional: In the upper section of the page, click on an attribute to display only those files containing the attribute, for example, percussion, or a specific musical style, etc.
   You can activate several attribute filters simultaneously.
4. If you are looking for a specific file, enter its name in the text search field on the toolbar.
   You can also enter text that is part of the file name or the file attributes in the search field.
5. In the results list, double-click a file to load it in the selected slot.
6. Play a note on your keyboard or use the internal keyboard to listen to the selected file.
   If the file is not what you were looking for, step through the files in the results list and listen to them until you found the file that you want to use.

Filtering the Results

You can filter the results list using the configurable attribute columns at the top or by restricting the search to a specific content set.

Content Set Filter

Use the **Select Content Set** pop-up menu to restrict the search to a specific content set. By default, the search is performed in all installed content sets.

Attribute Filter

- To set up the filter, click on specific values in the columns.
- To select different filter criteria, click the column header and select a different attribute from the submenu.

Only the files that match the set filter are displayed in the results list.

Results List

The results list shows all files that have been found according to the category filter.
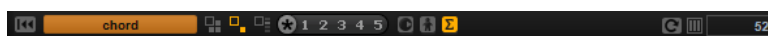
Text Search

In the text search field on the results list toolbar, you can enter text contained in the name or any of the attributes of a preset that you are looking for. The results list is

updated immediately and the category search section above shows all categories that contain presets matching the text search.

To reset the text-based result filter, click **Clear Search Text** next to the search field.

To restrict the search to the names only, activate **Search Names Only** ⬛. This way, other attributes are not taken into account.

View Filters

The toolbar has three filter buttons that allow you to define which preset types to display: multis ⬛, programs ⬛, or layers ⬛. In the results list, the corresponding icon is shown to the left of the preset name.

Rating Filter

You can limit the results list according to the rating of the presets. Use the rating slider to define the minimum rating.

Content Filters

The content filter buttons allow you to define whether to show the entire content ⬛, only the factory content ⬛, or only your user content ⬛.

Rescan Disk

Rescans the disk for files that match the search criteria. Click this button if you added or removed files on your hard disk, for example.

Set Up Result Columns

Allows you to select which attribute columns to display on the toolbar.

Results Counter

Displays the number of files that match the filter criteria. To stop an active scanning process, click in the value field.

RELATED LINKS
Configuring the Results List on page 28

Configuring the Results List

You can specify which file attributes you want to be displayed in the results list and set up the column order so that this attribute is visible without scrolling. This allows you to find the files that have a particular attribute more quickly.

● To configure which attributes are 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.
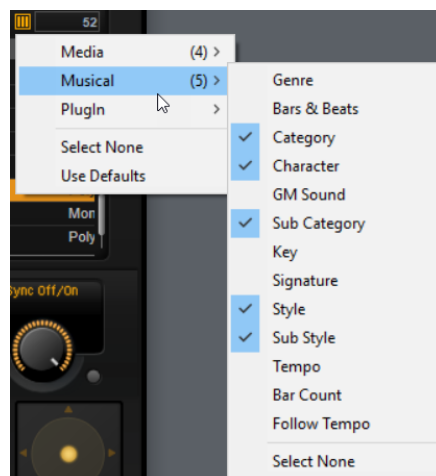
● To reorder the columns in the results list, drag the column headers to another position.

- To change the sorting of the list entries, click the column header. The triangle in the column header shows the sorting direction.

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.

Editing Programs

You can make settings for the programs and their layers on the **Edit** page.

The factory content that comes with the Steinberg DAW features a macro page for each layer in a program. This page allows you to adjust the most important parameters. If a program consists of multiple layers, you can access the different layer pages by clicking the layer buttons (L1, L2, L3, L4) in the title bar of the macro page.

NOTE

Content that uses one of the included instruments features an instrument-specific macro page.

RELATED LINKS
Included Instruments on page 33

Editing the Factory Content

Which content is available for HALion Sonic SE depends on which Steinberg DAW you are using. However, even though the available programs and layers may differ between versions, they use the same macro page.

The macro page is divided into the following sections: **Voice/Pitch**, **Filter** and **Amplifier**.

In the top right section of the macro page, information on the content is shown.

Voice/Pitch Section

This section gives you access to the tuning parameters.

Octave

Adjusts the pitch in octave steps.

Coarse

Adjusts the pitch in semitone steps.

Fine

Allows you to fine-tune the pitch in cent steps.

Pitchbend Up/Pitchbend Down

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

Polyphony

If **Mono** mode is deactivated, you can use this parameter to specify how many notes can be played simultaneously.

Mono

Activates monophonic playback.

Filter Section

This section allows you to adjust the filter settings. These parameters work as offsets, that is, they raise or lower the actual values.

NOTE

This section is only available when a filter is used.

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.

Attack

Controls the attack time of the filter envelope.

Release

Controls the release time of the filter envelope.

Amplifier Section

This section gives you access to the level and pan settings. Furthermore, you can adjust the attack and release times of the amplifier envelopes individually.

Level

Controls the overall volume of the sound.

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.

Attack

Controls the attack time of the amplifier envelope.

Decay

Controls the decay time of the amplifier envelope.

Included Instruments

Depending on the Steinberg DAW that you are using, you can find additional instrument content that was created using two instruments: Trip, a virtual analog synth, and Flux, a wavetable synth.

You can use these instruments by loading the corresponding programs. For example, to use Flux, set the **Content Set Filter** to **Flux** and load one of the available programs or layers.
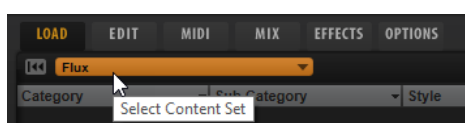
Trip

Trip is a virtual analog synth that comes with three oscillators, a sub oscillator, a ring modulator, and a noise generator.

Accompanied by a flexible filter section that offers 13 different filter shapes and five filter modes, Trip provides a highly flexible sound architecture while still being easy to use. With the integrated arpeggiator and step sequencer that comes with four different pre-configured arpeggio styles per preset, Trip is a real source of inspiration.

Oscillator Page

In addition to the classic synth wave shapes, such as sine, triangle, saw, and square, the three oscillators provide additional sync versions with integrated master oscillators.
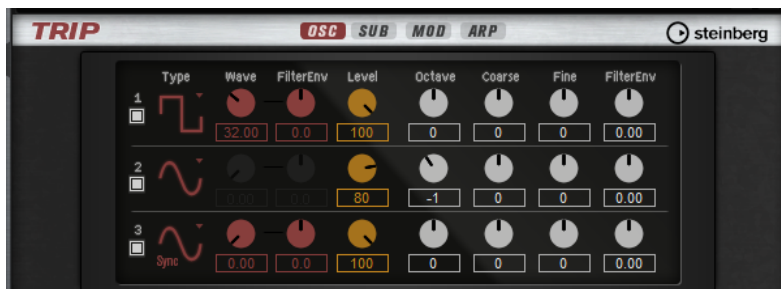
Activate the oscillators by clicking their **On/Off** buttons.

NOTE

Deactivate the oscillators when they are not needed, because they use CPU cycles even if they are not heard, such as in a situation where the level is set to 0 %.

OSC 1/2/3 Type

The Oscillator Type defines the basic sound character of the oscillator. The pop-up menu lists the wave shapes, followed by the type of algorithm. The following algorithms are available:

- The **PWM** (pulse width modulation) algorithm is only supported by the square wave shape. The **Waveform** parameter sets the ratio between the high and low of the square wave. A setting of 50 % produces a pure square wave. With settings below or above 50 %, the oscillator produces rectangular waves.

- The **Sync** algorithm provides different hard-sync oscillators where each is a combination of a master and slave oscillator. The wave shape of the slave oscillator (sine, triangle, saw, or square) is reset with each full wave cycle of the master oscillator. This means that a single oscillator can already produce a rich sync sound without utilizing other oscillators as slave or master. The waveform parameter adjusts the pitch of the slave oscillator producing the typical sync sound.

Waveform

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

NOTE

This parameter is only available for oscillator types that allow waveform modulation.

Filter Envelope Wave Amount

Specifies how much the modulation of the filter envelope influences the oscillator waveform.

NOTE

This parameter is only available for oscillator types that allow waveform modulation.

Level

Adjusts the output level of the oscillator.

Octave

Adjusts the pitch in octave steps.

Coarse

Adjusts the pitch in semitone steps.

Fine

Allows you to fine-tune the pitch in cent steps.

Filter Envelope Pitch Amount

Here you can specify the modulation amount of the filter envelope on the oscillator pitch.

Sub Page

The **Sub** page contains the settings for the sub oscillator, the ring modulation and the noise generator.

To activate the sub oscillator, the ring modulator, and the noise generator, click their **On/Off** buttons.

NOTE

Deactivate the sub oscillator, the ring modulator, and the noise generator if they are not needed, because they use CPU cycles even if they are not heard, such as in a situation where the level is set to 0 %.

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

The wave shape of the sub oscillator. You can choose between **Sine**, **Triangle**, **Saw**, **Square**, **Pulse Wide**, and **Pulse Narrow**.

Level

Adjusts the output level of the sub oscillator.

Ring Modulator

Ring modulation produces 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

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.

Trigger and Pitch Section
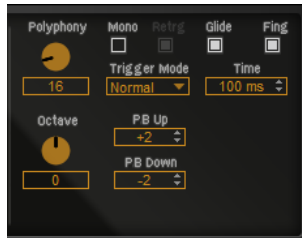
Polyphony

If **Mono** mode is deactivated, you can use this parameter to specify how many notes can be played simultaneously.

Mono

Activates monophonic playback.

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.

Trigger Mode

Defines the trigger behavior for new notes. The following settings are available:

- In **Normal** mode, a new note is triggered when the previous note is stolen.
- In **Resume** mode, the envelope is retriggered, but resumes at the level of the stolen note. The pitch is set to the new note.
- In **Legato** mode, the envelopes keep playing and the pitch is set to the new note.

Glide

Allows you to bend the pitch between notes that follow each other. You achieve the best results in **Mono** mode.

Glide Time

Sets the glide time, that is, the time it takes to bend the pitch from one note to the next.

Fingered

Activate this parameter to glide the pitch only between notes that are played legato.

Octave

Adjusts the pitch in octave steps.

Pitchbend Up/Pitchbend Down

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

Mod Page

The **Mod** page contains the LFO settings in the upper section and the mod wheel, or vibrato, settings in the lower section.

LFO Settings

Freq

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

Sync

If **Sync** is activated, the frequency is set in fractions of beats.

Pitch

Controls the modulation depth of the pitch modulation.

Cutoff

Controls the modulation depth of the filter cutoff modulation.

Pitch

Controls the modulation depth of the pitch modulation.

Cutoff

Controls the modulation depth of the filter cutoff modulation.

Osc1/2/3 Wave

These parameters control the modulation depth of the waveform modulation of the three main oscillators.

NOTE

These controls are only available if the selected oscillator type supports waveform modulation.

Vibrato Parameters

Vib Freq

Controls the frequency of the second LFO that is used for pitch modulation (vibrato).

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Vib Depth

Controls the depth of the pitch modulation (vibrato).

Cutoff

Controls the influence of the mod wheel on the filter cutoff.

Osc1/2/3 Wave

These parameters control the influence of the mod wheel on the waveform of the three main oscillators.

NOTE

These controls are only available if the selected oscillator type supports waveform modulation.

Arp Page

This page contains the integrated arpeggiator.
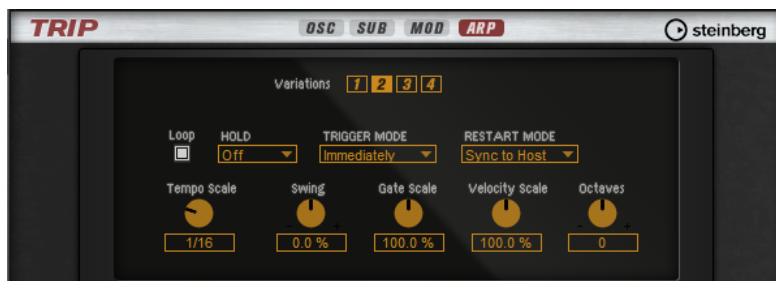
Variations

Trip features four variations that allow you to set up different phrases or variations of phrases or loops. Click the variation buttons to switch between the variations.

NOTE

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

Loop

If this option is activated, the phrase plays in a loop.

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 repeats 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 at which moment the arpeggiator scans for new notes that you play on the keyboard.

- If **Immediately** is selected, the arpeggiator continuously scans for new notes. The phrase changes immediately in reaction to your playing.

- If **Next Beat** is selected, the arpeggiator scans for new notes at every new beat. The phrase changes in reaction to your playing on each new beat.

- If **Next Measure** is selected, the arpeggiator 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.

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. This way, the phrase gets 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 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.

Creating Variations

PROCEDURE

1. Click one of the variation buttons.

2. You can either start from scratch or base the new variation on an existing variation.

   - To start from scratch, load a phrase and edit the settings.

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

RESULT

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

Assigning Variations to Trigger Pads

If you assign the variations to trigger pads, you can use the trigger pads to switch between the variations.

PROCEDURE

1. Right-click a variation button and select the trigger pad on the **Assign Variation to** submenu.
2. Repeat this procedure for all the variations that you have created.

Filter and Amplifier Settings

The lower part of the edit display contains the filter and amplifier settings.

Filter Section

Filter Shape

- LP 24, 18, 12, and 6 are low-pass filters with 24, 18, 12, and 6 dB/oct. Frequencies above the cutoff are attenuated.
- BP 12 and BP 24 are band-pass filters with 12 and 24 dB/oct. Frequencies below and above the cutoff are attenuated.
- HP 24, 18, 12, and 6 are high-pass filters with 24, 18, 12, and 6 dB/oct. Frequencies below the cutoff are attenuated.
- BR 12 and BR 24 are band-reject filters with 12 and 24 dB/oct. Frequencies around the cutoff are attenuated.
- AP is an all-pass filter with 18 dB/oct. Frequencies around the cutoff are attenuated.

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 following distortion types are available:

- **Tube** adds warm, tube-like distortion.
- **Hard Clip** adds bright, transistor-like distortion.

- **Bit Reduction** adds digital distortion by means of quantization noise.
- **Rate Reduction** adds digital distortion by means of aliasing.
- **Rate Reduction Key Follow** adds digital distortion by means of aliasing, but with **Key Follow**. The rate reduction follows the keyboard, so the higher you play, the higher the sample rate.

Envelope Amount

Controls the cutoff modulation from the filter envelope.

Cutoff Velocity

Controls the cutoff modulation from velocity.

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.

Filter Envelope Section

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 Section

Level

Controls the overall volume of the sound.

Velocity

Controls the level modulation from velocity. At 0, all notes are played with the same level.

Amplifier Envelope Section

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.

Flux

Flux is a wavetable synth that uses HALion's wavetable synthesis. It provides two main wavetable oscillators, a classical sub oscillator, and a flexible noise generator.

You can change the waveform of the included wavetables during playback, either with the **Position** control or by modulating the wavetable position with a variety of modulation sources, such as LFOs and envelopes, to create your own sweeping sounds quickly and easily.

In addition to the wavetable oscillators, Flux also provides a filter section with 24 different filter shapes which enables you to shape the sound even further.

Oscillator Page

The **Osc** page contains the settings for the two main oscillators.
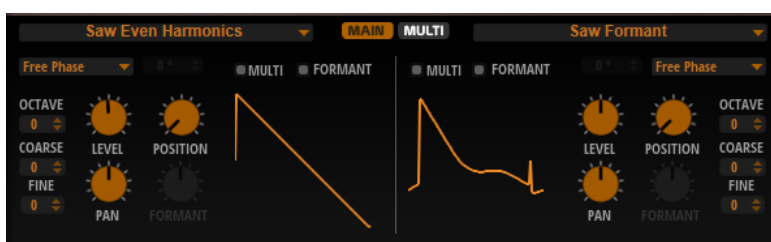
● To activate/deactivate an oscillator, click the corresponding **On/Off** button on the right of the **Osc** button.
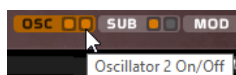
Select Wavetable

This pop-up menu allows you to select one of the included wavetables for the wavetable oscillator.

Retrigger Mode

- If **Free Phase** is selected, the behavior of analog synthesizers is emulated. The oscillator is running freely and continuously.

- If **Random Phase** is selected, the start phase is randomly set to a different value each time that you trigger a note. In contrast to **Free Phase**, there is no continuity in the phase of the waveform.

- If **Fixed Phase** is selected, the oscillator runs with a fixed start phase that can be specified between 0 and 360 degrees.

Multi-Oscillator On/Off

The multi-oscillator function allows you to trigger multiple voices simultaneously with each note that you play.

Formant On/Off

Formants are harmonics within the spectrum of a note which are pronounced and help to define the character of an instrument. The positions of the formants in the spectrum mainly depend on the construction of an instrument, such as the body of a guitar, the form of the vocal tract in a human body, the filter settings for electronic instruments, etc. These conditions lead to specific frequency ranges that are emphasized regardless of the pitch of the note. Playing back samples or wavetables with a different pitch than the original is usually done by increasing or decreasing the playback speed. This leads to the well-known monster or Mickey Mouse effect, because all harmonics are also affected, that is, the characteristic formants are shifted. To avoid this, you can activate the **Formant** option.

Octave

Adjusts the pitch in octave steps.

Fine

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

Level

Adjusts the output level of the oscillator.

Position

Determines where the envelope starts.

Pan

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

Formant

Allows you to shift the formants of the entire wavetable by a fixed value.

Multi Tab

If **Multi-Oscillator On/Off** is activated, the following parameters become available on the **Multi** tab:

- **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.

- **Pan** narrows or widens the stereo panorama. With a setting of 0 %, you create a mono signal and with 100 %, you create a stereo signal.

- **Spread** distributes the oscillators so that each oscillator plays from a different position in the wavetable.

Sub Page

The **Sub** page contains the settings for the sub oscillator and the noise oscillator.

Sub Oscillator Section

Type

The wave shape of the sub oscillator. You can choose between **Sine**, **Triangle**, **Saw**, **Square**, **Pulse Wide**, and **Pulse Narrow**.

Retrigger Mode

- If **Free Phase** is selected, the behavior of analog synthesizers is emulated. The oscillator is running freely and continuously.

- If **Random Phase** is selected, the start phase is randomly set to a different value each time that you trigger a note. In contrast to **Free Phase**, there is no continuity in the phase of the waveform.

- If **Fixed Phase** is selected, the oscillator runs with a fixed start phase that can be specified between 0 and 360 degrees.

Level

Adjusts the output level of the sub oscillator.

Pan

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

Noise Oscillator Section

The noise oscillator offers you a large amount of different noise types that can be used to add inharmonic frequencies to the overall spectrum, either for the entire sound, with looped noises or with one-shot noise samples. This allows you to add characteristic transients to percussive instruments based on samples, for example.

Noise Type

This pop-up menu offers you a choice of classic noises, attack transients, soundscapes, and ambience noise samples.

Level

Adjusts the output level of the noise oscillator.

Sync

Activate **Sync** to synchronize the speed of the noise oscillator to the host tempo. This is particularly useful for rhythmic noises that are based on a tempo of 120 BPM.

Pan

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

Follow Pitch

If **Follow Pitch** is activated, zone pitch settings like **Octave**, **Coarse**, and **Fine**, as well as modulations like **Glide**, **Pitchbend**, or other pitch modulations, affect the duration length. A higher sample pitch leads to a shorter duration.

If **Follow Pitch** is deactivated, the duration is independent of the zone pitch and determined by the **Duration** settings.

Loop

Activate this button to play the noise sample in a loop.

If this button is not activated, the sample is played once.

Speed

Adjusts the playback speed of the noise sample. A setting of 800.0 % equals an increase of three octaves in pitch.

Speed Key Follow

Allows you to adjust the speed modulation by MIDI note number. At a setting of +100 %, the speed doubles per octave.

Start

Adjusts the start of the noise sample. With a value of 50 %, playback starts in the middle of the sample.

Random Start

Selects a random playback start within a specific range around the current position.

At a setting of 100 %, the playback position jumps to a random position between the specified **Start** value and the end of the noise sample.

Mod Page

The **Mod** page contains the modulation matrix.
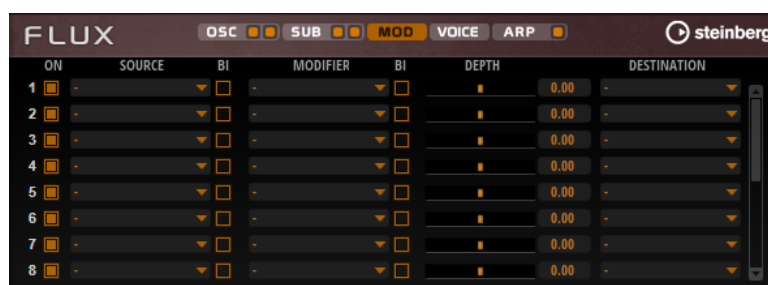
The modulation matrix offers you up to 16 freely assignable modulations, each with a source, a modifier, and a destination with adjustable depth. The polarity of each source and each modifier can be switched between unipolar and bipolar.

Creating Modulations

You create modulations by selecting a source, a modifier, and a destination from the pop-up menus in the modulation matrix.

PROCEDURE

1. Click the modulation **Source** field and select the modulation source.

2. Optional: Click in the modulation **Modifier** field and select the parameter that you want to use to modify the modulation.

This modifier is used to scale the output of the modulation source.

3. Optional: Specify whether you want the **Source** and **Modifier** parameters to be unipolar or bipolar.

4. Set the modulation intensity with the **Depth** parameter.

5. Click in the modulation **Destination** field and select the parameter that you want to modulate.

Modulation Matrix Parameters

Modulation Sources and Modulation Modifiers

The following options are available as modulation sources and as modulation modifiers.

LFO A/B

The LFOs A and B produce cyclic modulation signals.

Amp Envelope

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

Filter Envelope

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

Env 3

A freely assignable envelope. It is suitable for pan or pitch modulation, for example.

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**.

Note-on Velocity

Note-on velocity can be used as modulation signal.

Note-on Vel Squared

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

Pitchbend

The position of the pitchbend wheel can be used as modulation signal.

Modulation Wheel

The position of the modulation wheel can be used as modulation signal.

Aftertouch

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

Arp Controller 1–3

The 3 controllers available on this submenu correspond to the three controller lanes on the **Arp** page.

Bus 1–8

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

Unipolar vs. Bipolar Sources

The polarity of a modulation source specifies the value range that it produces. Unipolar sources modulate between 0 and +1. Bipolar sources modulate between -1 and +1.

- To change the polarity of a modulation source or modifier from unipolar to bipolar, activate its **Bipolar** button.

Modulation Destinations

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.

Cutoff

Modulates the filter cutoff.

Resonance

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

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

Distortion

Modulates the filter distortion.

Level

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

Volume

Modulates the gain. The volume modulation multiplies with the level.

Pan

Modulates the position of the sound in the panorama.

WT 1/2 Pitch

Modulates the **Pitch** parameter of the corresponding wavetable oscillator.

WT 1/2 Level

Modulates the **Level** parameter of the corresponding wavetable oscillator.

WT 1/2 Pan

Modulates the **Pan** parameter of the corresponding wavetable oscillator.

WT 1/2 Multi Detune

Modulates the multi-oscillator **Detune** parameter of the corresponding wavetable oscillator.

WT 1/2 Multi Pan

Modulates the multi-oscillator **Pan** parameter of the corresponding wavetable oscillator.

WT 1/2 Multi Spread

Modulates the multi-oscillator **Spread** parameter of the corresponding wavetable oscillator.

WT 1/2 Multi Voices

Modulates the multi-oscillator **Voices** parameter of the corresponding oscillator.

WT 1/2 Position

Modulates the **Position** parameter of the corresponding wavetable oscillator.

WT 1/2 Formant Shift

Modulates the **Formant Shift** parameter of the corresponding wavetable oscillator.

WT Sub Pitch

Modulates the **Pitch** parameter of the wavetable sub oscillator.

WT Sub Level

Modulates the **Level** parameter of the wavetable sub oscillator.

WT Sub Pan

Modulates the **Pan** parameter of the wavetable sub oscillator.

WT Noise Speed

Modulates the **Speed** parameter of the wavetable noise oscillator.

WT Noise Level

Modulates the **Level** parameter of the wavetable noise oscillator.

WT Noise Pan

Modulates the **Pan** parameter of the wavetable noise oscillator.

Amp Env Attack

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

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

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

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

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

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

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

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

Env 3 Start Level

Modulates the start level of the user-definable envelope 3, that is, the level of the first envelope node. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Env 3 Attack

Modulates the attack time of the user-definable envelope 3. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Env 3 Attack Level

Modulates the attack level of the user-definable envelope 3, that is, the level of the second envelope node. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Env 3 Decay

Modulates the decay time of the user-definable envelope 3. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Env 3 Sustain

Modulates the sustain level of the user-definable envelope 3. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Env 3 Release

Modulates the release time of the user-definable envelope 3. This modulation destination cannot be modulated continuously. The time is updated only when the segment starts.

Env 3 Release Level

Modulates the release level of the user-definable envelope 3, that is, the last user envelope node. This modulation destination cannot be modulated continuously. The level is updated only when the segment starts.

Bus 1-8

You can send any modulation to one of the 8 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.

Voice Page

Polyphony

If **Mono** mode is deactivated, you can use this parameter to specify how many notes can be played simultaneously.

Mono

Activates monophonic playback.

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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.

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.

Glide

Allows you to bend the pitch between notes that follow each other. You achieve the best results in **Mono** mode.

Fingered

Activate this parameter to glide the pitch only between notes that are played legato.

Glide Time

Sets the glide time, that is, the time it takes to bend the pitch from one note to the next.

Octave

Adjusts the pitch in octave steps.

Pitch Key Follow

Allows you to adjust the pitch modulation by MIDI note number. Set this parameter to positive values in order to raise the pitch the higher you play. Use negative values to lower the pitch the higher you play. At a setting of +100 %, the pitch follows the played note exactly.

Distribution

Allows you to specify how unison voices are spread in pitch. Changing the unison voice distribution will create different modulations between the unison voices.

- If this is set to 0, the distribution is linear, that is, all voices have an equal distance in their pitch offset.

- Raising the value stretches the distribution using an exponential curve, so that the first unison voices have a smaller pitch offset than the second and third.

- Decreasing the value stretches the distribution using a negative exponential curve, so that the first unison voices have a larger pitch offset than the second and third voices.

Pitchbend Up/Pitchbend Down

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

Filter Section

In the filter section in the lower left, you can activate and set up the filter.

Filter On/Off

Activates/Deactivates the filter.

Filter Shape

- LP 24, 18, 12, and 6 are low-pass filters with 24, 18, 12, and 6 dB/oct. Frequencies above the cutoff are attenuated.

- BP 12 and BP 24 are band-pass filters with 12 and 24 dB/oct. Frequencies below and above the cutoff are attenuated.

- HP 6+LP 18 and HP 6+LP 12 are combinations 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.

- HP 12+LP 6 and HP 18+LP 6 are combinations 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.

- HP 24, 18, 12, and 6 are high-pass filters with 24, 18, 12, and 6 dB/oct. Frequencies below the cutoff are attenuated.

- BR 12 and BR 24 are band-reject filters with 12 and 24 dB/oct. Frequencies around the cutoff are attenuated.

- BR 12+LP 6 and BR 12+LP 12 are combinations 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.

- BP 12+BR 12 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.

- HP 6+BR 12 and HP 12+BR 12 are combinations 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+LP 6 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.

- HP 6+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.

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 following distortion types are available:

- **Tube** adds warm, tube-like distortion.
- **Hard Clip** adds bright, transistor-like distortion.
- **Bit Reduction** adds digital distortion by means of quantization noise.
- **Rate Reduction** adds digital distortion by means of aliasing.
- **Rate Reduction Key Follow** adds digital distortion by means of aliasing, but with **Key Follow**. The rate reduction follows the keyboard, so the higher you play, the higher the sample rate.

Envelope Amount

Controls the cutoff modulation from the filter envelope.

Cutoff Velocity

Controls the cutoff modulation from velocity.

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.

Filter Envelope

On the left on the **Env F/A** tab, you can set up the filter envelope.

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 and Amplifier Envelope

On the right of the **Env F/A** tab, you can make settings for the amplifier and the amplifier envelope.

Amplifier Parameters

Level

Controls the overall volume of the sound.

Velocity

Controls the level modulation from velocity. At 0, all notes are played with the same level.

Amplifier Envelope Parameters

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.

Env3 Section

The **Env3** section provides an additional envelope that can be routed freely in the modulation matrix. This envelope is bipolar, therefore, it is particularly suited to modulate destinations like pan or pitch, for example.

The faders below the envelope display set the following parameters:

- **L0** sets the start level.
- **A** sets the attack time.
- **L1** sets the attack level.
- **D** sets the decay time.
- **S** sets the sustain level.

- **R** sets the release time.
- **L4** sets the end level.
- **Vel** determines how much the envelope intensity depends on the velocity.

  If this fader is set to 0, the envelope is fully applied. Higher values reduce the intensity for lower velocities.

LFO Section

In the **LFO** section, you can make settings for the two included LFOs.

LFO Waveform and Shape

- **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 produced.
- **Ramp** is similar to the **Saw** waveform. **Shape** increasingly puts 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 randomly stepped modulation, where each step is different. **Shape** puts ramps between the steps and changes the **S & H** into a smooth random signal when fully turned 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 when fully turned right.

Sync

If **Sync** is activated, the frequency is set in fractions of beats.

Freq

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.

Sync

If **Sync** is activated, the frequency is set in fractions of beats.

Freq

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)

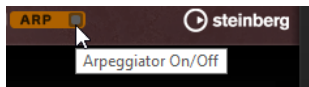If this button is activated, each note starts with a randomized start phase.

NOTE

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

Arp Page

This page contains the integrated arpeggiator.

To activate the arpeggiator, click **Arpeggiator On/Off** on the **Arp** page button.

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

User Mode On/Off

Activates/Deactivates the user phrase and the user phrase editor.

Variations

Click the variation buttons to switch between the available variations.

Phrase

Allows you to select a phrase.

Drag Recorded MIDI to 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.

Loop

If this option is activated, the phrase plays 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 playback. 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 repeats 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.

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.

Trigger Mode

Determines at which moment the arpeggiator scans for new notes that you play on the keyboard.

- If **Immediately** is selected, the arpeggiator continuously scans for new notes. The phrase changes immediately in reaction to your playing.

- If **Next Beat** is selected, the arpeggiator scans for new notes at every new beat. The phrase changes in reaction to your playing on each new beat.

- If **Next Measure** is selected, the arpeggiator 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 arpeggiator, even if no new notes or chords were triggered.

Key Mode

Defines whether the order in which the notes are played on the keyboard affects the playback of the phrase.

- If **Sort** is selected, the notes are played in the order of the selected phrase. The chronological order does not have any influence.
- 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 **As Played** is selected, the notes of the phrase use the velocity of the played note.
- If **Original + As Played** is selected, the phrase velocity is determined by the combination of the velocity saved in the phrase and the velocity of the played note.

Swing

Shifts the timing of notes on even-numbered beats. This way, the phrase gets 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 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.

User Mode Parameters

Save Phrase/Delete Phrase

The two buttons on the right of the phrase field allow you to save/delete your phrases.

Mode

Determines how the notes are played back.

- 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.

Key Replace

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

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 normally.
- **Arp** replaces the missing keys with the note that the arpeggio would normally play.
- **Rest** does not replace any missing keys. The arpeggio plays 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.

Wrap

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

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.

Groove Quantize

To adapt the timing of a phrase to an external MIDI file, you can drop this MIDI file on 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 arpeggiator scans the keyboard and writes the keys that are pressed 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 separately, which allows you to create very elaborate phrases.

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

- To access the **Key Select** values of the steps, click **Show Transpose or Key Select** to the left of the editor, so that a keyboard icon is shown.

- 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.

Recording the MIDI Output of the Arpeggiator

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

PROCEDURE

1. Click **Record MIDI Output**.

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

2. Play some notes.

3. When you are done, click **Record 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.

Creating Variations

PROCEDURE

1.   Click one of the variation buttons.
2.   You can either start from scratch or base the new variation on an existing variation.
   - To start from scratch, load a phrase and edit the settings.
   - To use an existing variation as base, use the **Copy** and **Paste** context menu commands.

RESULT

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

Assigning Variations to Trigger Pads

If you assign the variations to trigger pads, you can use the trigger pads to switch between the variations.

PROCEDURE

1.   Right-click a variation button and select the trigger pad on the **Assign Variation to** submenu.
2.   Repeat this procedure for all the variations that you have created.

User Phrases

The user phrase has up to 32 steps. Each step has an adjustable **Velocity**, **Gate Length**, and **Transpose** value. By adding steps, adjusting their length, or leaving pauses, you define the rhythm of the user phrase. Consecutive steps can be combined to create longer notes. By selecting a **Mode**, you define how the notes play back. In addition, there are additional MIDI control sequences, that is, each step can also send modulation signals.

To create your own phrases, activate the **User** button.
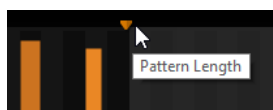
Editing User Phrases

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

- To set up the phrase, activate the **Vel** button above the step display.
- To set up a controller curve for the phrase, activate one of the controller buttons.
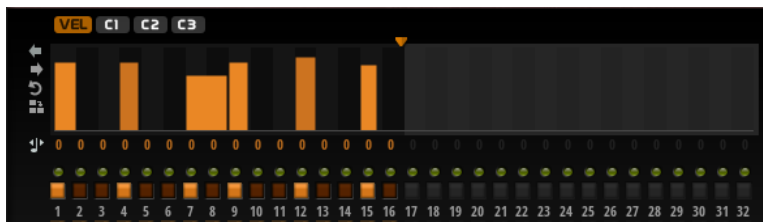
- To specify the number of steps for the pattern, drag the **Pattern Length** handle to the right or left.

Editing Steps

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

- 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** and draw a line.
- To draw symmetric ramps at the beginning and the end of the sequence, hold down **Shift-Alt** and draw a line.
- 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.
- To transpose a step, click in the field below it and enter the number of semitones for the transposition.
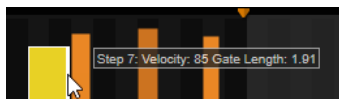
  NOTE

  You can only transpose steps if **Show Transpose or Key Select** is set to show the transpose values.

Adjusting the Gate Length

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 the following step, this following 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.

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 entirely.
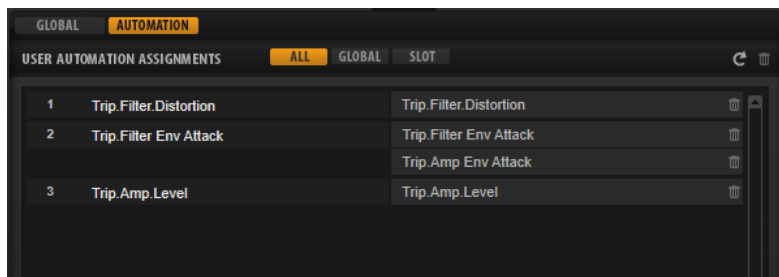
NOTE

Automation

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

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 SE parameter. If multiple HALion Sonic SE 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 free 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 SE interface.

MIDI Editing and Controllers

MIDI Page

The **MIDI** page gives you access to the MIDI slot parameters of HALion Sonic SE.
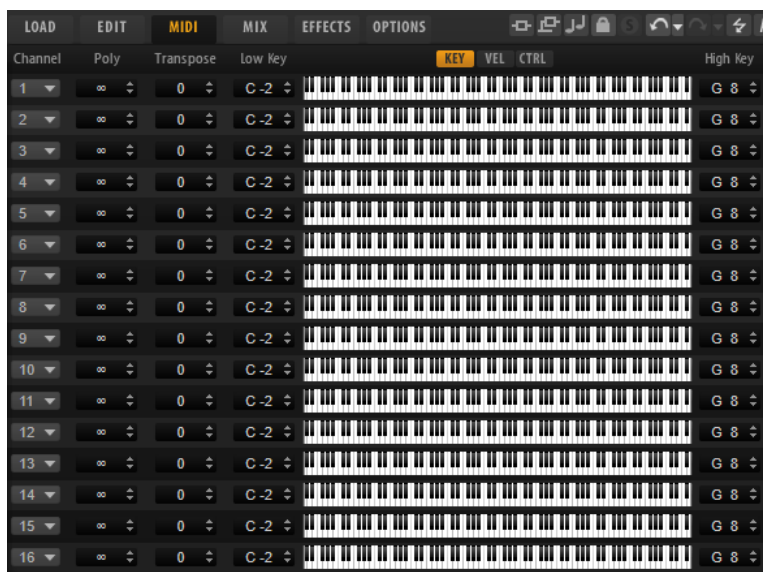
Parameters

Channel

The slot receives MIDI signals on the MIDI port and channel that are specified here. 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

To assign a MIDI controller to a parameter, proceed as follows:

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 several times to different parameters. However, you cannot assign different MIDI controllers to the same parameter.

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 for 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 default.

PROCEDURE

● Open the **Options Editor** 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 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
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 remotely control any other parameter by assigning the parameter first 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 and Effect Handling

Mix Page

The **Mix** page gives you access to the audio parameters of HALion Sonic SE. 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.

Mix Page Parameters

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.

Effect Handling

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 section 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.

Using the Insert Effect Slots

On the **Effects** page, you can set up insert effects for AUX busses.

Each bus provides four slots for insert effects.

● 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 them by their drag icon to a new position between two slots.

● To copy an effect into another slot, **Alt**-click its drag icon and drag it onto the new slot. This replaces any effect loaded in this slot.

NOTE

You can also copy effects between the different mixers. First drag an effect to the corresponding mixer tab. Then drag it to the position where you want to insert it.

● To copy an effect and insert it between two effect slots, **Alt**-click its drag icon and drag it between two slots.

NOTE

You can also copy effects between the different mixers. First drag an effect to the corresponding mixer tab. Then drag it to the position where you want to insert it.

Effects Reference

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 to the sound. The result is a very natural sounding reverb. Included with this effect is a collection of high-quality reverb impulse responses.

Impulse Response

Allows you to select an impulse response. This determines the basic sound character of the reverb.

Reverse

Reverses the impulse response.

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. At a setting of 100 %, the impulse response is applied with its original length.

Size

Scales the size of the simulated room. At 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. At 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 between 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 listener.

Early Reflections

Here, you 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.

Show Early Reflections Page/Show Chorusing Page

With these two buttons below the **Early Reflections** pop-up menu, you can choose
whether to display the early reflections settings or the chorusing settings in the
lower left part of the effect panel.

ER/Tail

Sets the level balance between the early reflections and the reverb tail. At 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. At a setting of 100 %, the
dimensions correspond to a cathedral or a large concert hall. At 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. At 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. With positive values, low frequencies decay longer and vice versa. Frequencies will be 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.

Size

Adjusts the length of the early reflections pattern. At a setting of 100 %, the pattern is applied with its original length and the room sounds the most natural. At settings below 100 %, the early reflections pattern is compressed and the room is perceived smaller.

ER Low Cut

Attenuates the low frequencies of the early reflections. The higher this value, the fewer low frequencies are present in the early reflections.

ER High Cut

Attenuates the high frequencies of the early reflections. The lower this value, the fewer high frequencies the early reflections will have.

Shape

Controls the attack of the reverb tail. At a setting of 0 %, the attack is more immediate, which is a good setting for drums. The higher this value, the less immediate the attack.

Density

Adjusts the echo density of the reverb tail. At a setting of 100 %, single reflections from walls cannot be heard. The lower this value, the more single reflections can be heard.

Tail High Cut

Attenuates the high frequencies of the reverb tail. The lower this value, the fewer high frequencies the reverb tail will have.

Width

Adjusts the output of the reverb signal between mono and stereo. At 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

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 like a ping-pong ball between left and right 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

> Activate **Sync** 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 Time 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. At a setting of 0 %, you hear only one echo. At a setting of 100 %, the echoes repeat endlessly.

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

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:

On/Off

Activates/Deactivates the 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.

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 where the resonance depends on the amount of gain.
- **Constant Q** mode uses parallel filters where the resonance is raised when boosting the gain.

Range

Adjusts the maximum cut or boost for all frequency bands together.

Invert

Activate this to invert the EQ curve.

Flatten

Resets all frequency bands to 0 dB.

DJ-EQ

This plug-in 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.

Filter Effects

Auto Filter

Auto Filter provides two morphable filter shapes with distortion.

The 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

- LP 24, 18, 12, and 6 are low-pass filters with 24, 18, 12, and 6 dB/oct. Frequencies above the cutoff are attenuated.

- BP 12 and BP 24 are band-pass filters with 12 and 24 dB/oct. Frequencies below and above the cutoff are attenuated.

- HP 6+LP 18 and HP 6+LP 12 are combinations 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.

- HP 12+LP 6 and HP 18+LP 6 are combinations 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.

- HP 24, 18, 12, and 6 are high-pass filters with 24, 18, 12, and 6 dB/oct. Frequencies below the cutoff are attenuated.

- BR 12 and BR 24 are band-reject filters with 12 and 24 dB/oct. Frequencies around the cutoff are attenuated.

- BR 12+LP 6 and BR 12+LP 12 are combinations 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.

- BP 12+BR 12 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.

- HP 6+BR 12 and HP 12+BR 12 are combinations 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+LP 6 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.

- HP 6+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. At 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 Waveform and Shape

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

- **Sine** produces smooth modulation. **Shape** adds additional harmonics to the waveform.

- **Triangle** is similar in character to **Sine**. The waveform periodically ramps up and down. **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. At 50 %, it produces a square wave.

- **Ramp** is similar to the **Saw** waveform. **Shape** increasingly puts silence before the sawtooth ramps up.

- **Log** is a logarithmic curvature. **Shape** continuously changes the curvature from negative to positive.

- **S & H 1** produces random stepped modulation, where each step is different. **Shape** puts ramps between the steps and produces a smooth random signal when fully turned 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 produces a smooth random signal when fully turned right.

Freq

Determines the frequency of the cutoff modulation.

Sync

Activate this to set the **Freq** parameter in fractions of beats.

Depth

Determines the output level of the LFO modulation signal.

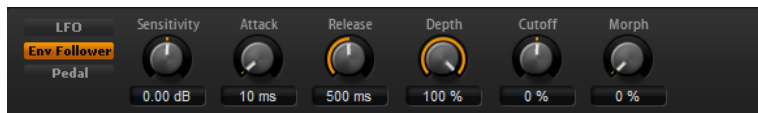**Cutoff**

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.
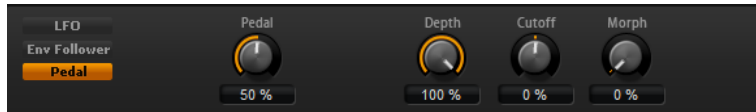
Cutoff

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.

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 independently for filter shape A and B.

Filter Shape B

Here, you can choose between several high-pass and band-rejection filter shapes.

Filter Shape A

Here, you can 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 sound of the human voice or of acoustic instruments can be characterized by their 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.

The Resonator effect comes with 14 predefined filter shapes that determine the basic sound character. In addition, three LFOs can be used to modulate each filter separately, which allows for adding extra motion to the sound.

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*
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 Tab

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. At 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 from the LFO.

LFO Tab

LFO Waveform and Shape

- **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 produced.

- **Ramp** is similar to the **Saw** waveform. **Shape** increasingly puts 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 randomly stepped modulation, where each step is different. **Shape** puts ramps between the steps and changes the **S & H** into a smooth random signal when fully turned 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 when fully turned 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

Activate this 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 independently 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.

Freq Low/Freq High

These parameters determine the frequency of the filter for the low and high pedal positions.

Width Low/Width High

These parameters determine the width (resonance) of the filter for the low and high pedal positions.

Gain Low/Gain High

These parameters determine the gain of the filter for the low and high pedal positions.

Slope

Here, you can choose between two filter slope values: 6 dB or 12 dB.

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

Determines the type of amplifier. The sound character of the overdrive changes with the amplifier. To bypass the amplifier, select **No Amp**.

Speaker Model

Determines the speaker model type. Each model colors the sound uniquely. 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

Adds brightness to 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.

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.

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.

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 get a dynamic microphone. Settings in between allow you to fade between the characteristics of these two microphones.

Microphone Position

Here, you can choose between 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** (Left) only distorts the left input channel. The right channel remains clean and unprocessed.

- **R** (Right) only distorts the right input channel. The left channel remains clean and unprocessed.

- **L+R** (Left + Right) sums the two input channels into a mono signal which is then distorted.

- **Stereo** distorts the two input channels independently.

NOTE

The **L** and **R** modes allow you to cascade two VST Amp effects, that is, to use the first one to processes the left channel and the second one to process the right channel at different settings.
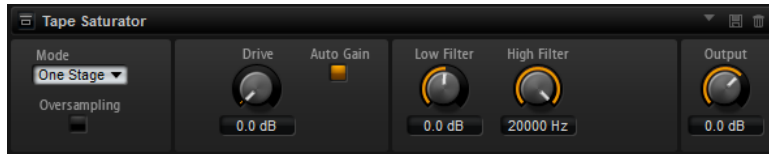
Output

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

> Here, you can choose between the effect of a single (**One Stage**) or two cascaded tape machines (**Two Stage**). **Two Stage** mode leads to higher saturation and compression.

Oversampling

> Activate this parameter to increase 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

> Activate this option for an automatic level compensation.

Low Filter

> Here, you can adjust the low frequency range below 1000 Hz by +/- 3 dB.
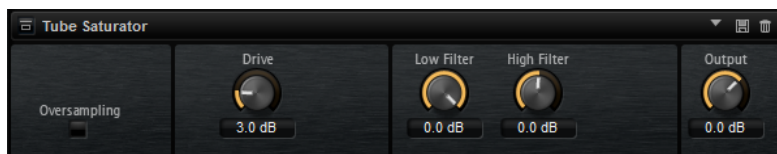
High Filter

> Here, you can 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.

Pitch Shift Effects

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

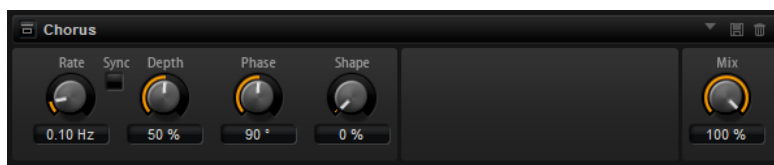> Determines the level of the signal that is produced an octave below the original voice.

Octave 2

> Determines the level of the signal that is produced an octave above the original voice.

Modulation Effects

Chorus

Chorus thickens and broadens the sound by means of pitch modulation.

Rate

> Determines the frequency of the pitch modulation, in Hertz.

Sync

> Activate this 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. At a setting of 0 %, the pitch changes continuously, producing a steady modulation. At 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

Activate this 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 characteristic of the **Cross FB** parameter.

Shape

Adjusts the characteristics of the modulation. You hear this best when **Feedback** is activated. At a setting of 0 %, the sound sweeps linearly up and down. At 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

Activate this 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 characteristic of the **Cross FB** parameter.

Shape

Adjusts the characteristics of the modulation. You hear this best when **Feedback** is activated. At a setting of 0 %, the sound sweeps linearly up and down. At 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 and **Long** a less defined, more blurred flanger sound.

S&H Mix

Use this parameter to blend the normal modulation signal with the stepped modulation signal. At 100 %, only the stepped modulation is used.

Smooth

Use this parameter to create 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

Activate this 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

Activate this to set the **Rate** value in fractions of beats.

91

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

The Ring Modulator 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 characteristic of the waveform.

- **Sine** produces smooth modulation. **Shape** adds additional harmonics to the waveform.

- **Triangle** is similar in character to **Sine**. The waveform periodically ramps up and down. **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. At 50 %, it produces a square wave.

- **Ramp** is similar to the **Saw** waveform. **Shape** increasingly puts silence before the sawtooth ramps up.

- **Log** is a logarithmic curvature. **Shape** continuously changes the curvature from negative to positive.

- **S & H 1** produces random stepped modulation, where each step is different. **Shape** puts ramps between the steps and produces a smooth random signal when fully turned 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 produces a smooth random signal when fully turned right.

LFO Freq

Use this to specify the frequency of the LFO for modulating the frequency of the sine oscillator.

Sync

Activate this 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

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. The **Sensitivity** parameter sets the optimum input level for the Envelope Follower.

Attack

This adjusts the attack time, that is, the time the Envelope Follower needs to approach increasing input levels.

Release

This 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, where the frequencies are shifted by a factor, and where the harmonic relations are kept, 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

Here you set the amount of frequency shift.

Freq Fine

Here you can fine adjust the amount of frequency shift.

L/R Offset Coarse

Sets an offset for the left and right channels. Positive values shift the right channel upwards and the left channel downwards, and vice versa.

L/R Offset Fine

Allows for fine-adjustments of the offset between the left and right channels. Positive values shift the right channel upwards and the left channel downwards, and vice versa.

Mod Coarse

Sets the maximum amount of frequency shift via modulation from LFO and Envelope Follower.

Mod Fine

Allows for fine-adjustments to 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 speed of this effect with the **Frequency Fine** parameter.

Notches

Here you set the number of notches the phaser effect produces when you use larger amounts of Feedback.

LFO Section

LFO Waveform and Shape

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

- **Sine** produces smooth modulation. **Shape** adds additional harmonics to the waveform.

- **Triangle** is similar in character to **Sine**. The waveform periodically ramps up and down. **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. At 50 %, it produces a square wave.

- **Ramp** is similar to the **Saw** waveform. **Shape** increasingly puts silence before the sawtooth ramps up.

- **Log** is a logarithmic curvature. **Shape** continuously changes the curvature from negative to positive.

- **S & H 1** produces random stepped modulation, where each step is different. **Shape** puts ramps between the steps and produces a smooth random signal when fully turned 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 produces a smooth random signal when fully turned right.

Freq

Specifies the frequency of the LFO in Hertz.

94

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

The Rotary effect 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 speed producing different amounts of Doppler effect. The amplifier of the rotary speaker adds a warm sounding distortion, and the horn, drum, and cabinet color the sound uniquely. 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

> This parameter 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 sounds the most interesting.

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 to color the horn and drum with the sound of the cabinet. At a setting of 100 %, you get the full sound of the cabinet.

Balance

> Here you adjust the balance between the horn and drum microphones. At a setting of 0 %, you hear only the drum. At a setting of 100 %, you hear only the horn.

Slow

> Adjusts the slow speed of the horn and drum together.

Fast

> Adjusts the fast speed of the horn and drum together.

Accel

> Adjusts the acceleration time for raising and lowering the rotation speed of the horn and drum.

Horn Mic Angle

> This adjusts the stereo spread of the horn microphones. At a setting of 0°, the sound image is monophonic. At a setting of 180°, the sound image is fully stereo.

Drum Mic Angle

> This adjusts the stereo spread of the drum microphones. At a setting of 0°, the sound image is monophonic. At 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.

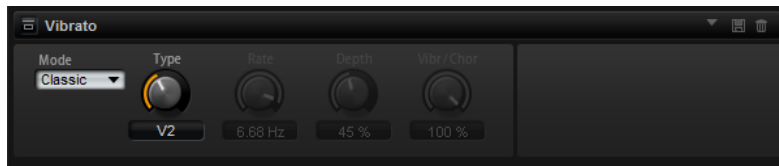**Bass**

> Adjusts the tone color of the low frequencies.

Treble

> Adjusts the tone color of the high frequencies.

Vibrato

The Vibrato effect 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 (C1, C2 and C3 and V1, V2 and V3). In addition, there is a custom mode that allows you to adjust the amount of chorus or vibrato freely.

Type

> Here, you can select the classic chorus and vibrato settings. This control is only available if the effect is set to **Classic** mode.

Custom Mode

> Activate this to adjust the chorus and vibrato settings freely with the **Rate**, **Depth**, and **Vibr/Chor** controls.

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

> If **Sync** is activated, you can 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, with 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

Compressor

The 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 stay untreated.

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.

Soft Knee

If this button is deactivated, signals above the threshold are compressed instantly 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 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 Compressor reacts to sounds that exceed the threshold. The longer the attack time, the longer the time it takes to reduce the gain. With longer attack times, the onset of sounds exceeding the threshold pass 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 set threshold. The longer the release time, the longer it takes to return to the original level.

NOTE

This parameter is not available if the **Auto Release** button is activated.

Auto Release

Activate this 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 according to peak or RMS values or a mixture of both. At a setting of 0 %, the Compressor uses Peak sensing only and at 100 %, RMS sensing only. Peak means that the Compressor directly 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 and RMS sensing for sustained sounds.

Live

If this button is activated, the look-ahead feature of the effect is disengaged. Look-ahead produces 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, 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 lets you 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

Adjusts the mix between dry signal and 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 (50 to 20000 Hz)

If the **Side-Chain** button is activated, this sets the center frequency of the filter.

Q-Factor

If the **Side-Chain** button is activated, this sets the resonance or width of the filter.

Limiter

The Limiter effect prevents the sound from exceeding the set output level. This can be used to avoid clipping in following effects, for example.
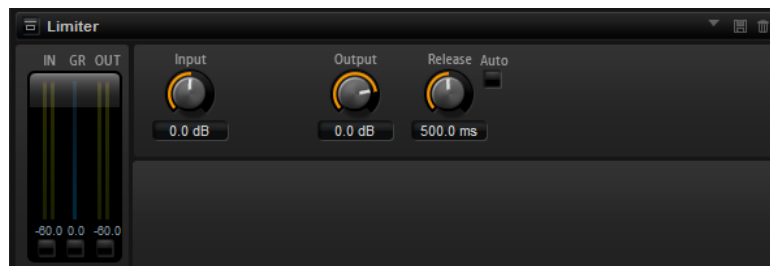
The input and output meters indicate the level before and after the Limiter. The Gain Reduction meter in the middle indicates the current attenuation of the level.

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

Activate this to set the release time automatically. The Limiter analyzes the input sound continuously to find the optimal setting.

Brickwall Limiter

Brickwall Limiter ensures that the output level never exceeds a set limit.
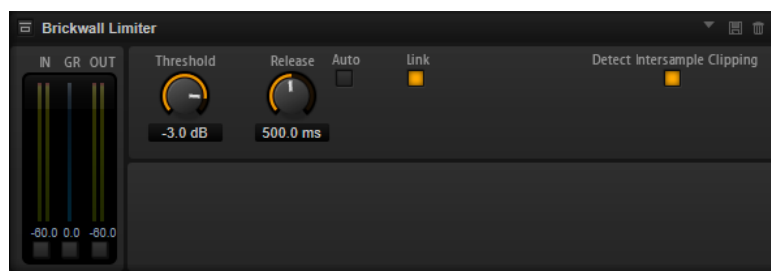
Due to its fast attack time, Brickwall Limiter can reduce even short audio level peaks without creating audible artifacts. However, this plug-in creates a latency of 1 ms. Brickwall Limiter features separate meters for input, output, and the amount of limiting.

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

If this button is activated, **Brickwall Limiter** uses the channel with the highest level to analyze the input signal. If the button is deactivated, each channel is analyzed separately.

Detect Intersample Clipping

If this option is activated, **Brickwall Limiter** uses oversampling to detect and limit signal levels between two samples to prevent distortion when converting digital signals into analog signals.
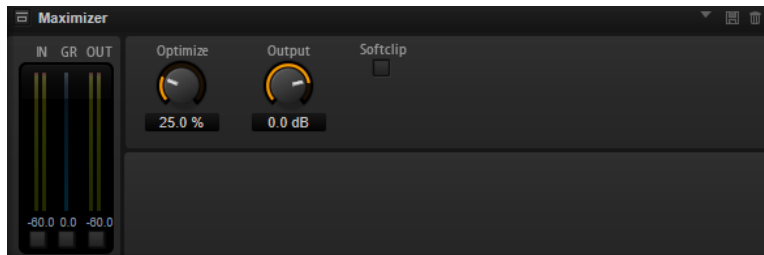
NOTE

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

This 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 stay untreated.

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 according to the set ratio. When **Soft Knee** 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 according to peak or RMS values or a mixture of both. At a setting of 0 %, the Expander uses Peak sensing only and at 100 %, RMS sensing only. Peak means that the Expander directly 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 and RMS sensing for sustained sounds.

Live

> If this button is activated, the look-ahead feature of the effect is disengaged. Look-ahead produces 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

Activate this button 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

Activate this to set the Release time automatically. The Gate analyzes the input sound continuously to find the optimal setting.

Peak/RMS

Determines whether the input signal is analyzed according to peak or RMS values (or a mixture of both). At a setting of 0 %, the Gate uses Peak sensing only and at 100 %, RMS sensing only. Peak means that the Gate directly 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 and RMS sensing for sustained sounds.

Live

If this button is activated, the look-ahead feature of the effect is disengaged. Look-ahead produces 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

This 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.
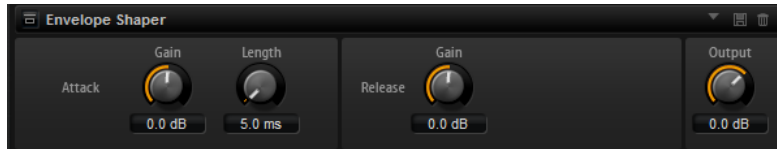
Attack - Gain

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

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

This plug-in 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 possible unwanted coloring of the sound which sometimes can occur when enhancing the stereo image.

Legacy Effects

HALion 3 Legacy Effects

In addition to the standard effects, a number of effects from HALion 3 is also provided. These effects can be selected from the **Legacy** submenu of the effects menu.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

Shelf EQ

Simple tone control.

Output

Output level trim.

Bass

Low frequency cut/boost.

Treble

High frequency cut/boost.

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.

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.

Limiter

Hard level limiting.

Drive

Input signal drive.

Attack

Attack time.

Release

Release time.

Output

Output level trim.

Compressor

A simple compressor effect.

Threshold

Compression threshold.

Ratio

Compression amount.

Attack

Attack time.

Release

Release time.

Output

Output level trim.

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.

Gate

Simple gate effect.

Threshold

Gate threshold.

Range

Level reduction when gate closed.

Attack

Attack time.

Release

Release time.

Output

Output level trim.

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.

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.

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.

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.

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.

Using the Standalone Version of the Plug-In

You can use the free version of HALion Sonic SE independently from a host application.

If you use HALion Sonic SE as a standalone application, an additional section is available at the top of the control panel. Here, 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.
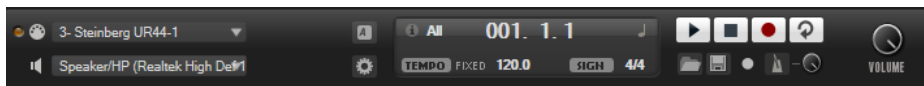
Making Preferences Settings

You can configure the standalone version of HALion Sonic SE in 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** on 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 SE 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.

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- To assign the audio outputs in pairs to the front and rear channels, hold down **Alt-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 SE

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 SE**.

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 SE, the scaling factor used is 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

On 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 when you press a key and when you hear the sound.

You can change the latency with the **Buffer Size** parameter in the control panel for your driver, opened 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 SE processes gets 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.

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
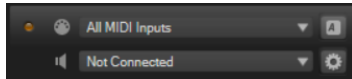
The MIDI input pop-up menu lists all MIDI devices that are installed on your system.

- Select the MIDI device that you want to use from the **MIDI Input** 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 SE 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** pop-up menu.

  If you select an audio output, the front and rear channels are set to incrementing audio output ports. To assign the audio outputs in pairs to the front and rear channels instead, hold down **Alt-Shift** and select an output.

RELATED LINKS
ASIO Driver Page on page 118

Scratch Pad

The scratch pad allows you to record and play back MIDI files in Standard MIDI File format. You can load existing MIDI files and you can record your own files and save them.
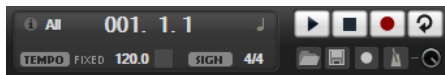
The transport section provides buttons for play, stop, record, and loop. The display shows the song position, the tempo, and the time signature of the MIDI file. In addition, there is a metronome that you can use for recording and practicing.

The scratch pad can play back multi-track MIDI files sending notes on all 16 MIDI channels.

Transport Controls

Play

Click **Play** to start playback of the MIDI file. Playback always starts at the song position.

Stop

Click **Stop** to pause the MIDI file at the current position. Click the button twice to reset the song position to the start.

Record

Click **Record** to start recording.

Loop

Activate **Loop** to play the entire MIDI file in a loop.

Info Icon

To check which MIDI file is loaded, point the mouse at the info icon in the top left corner of the scratch pad. A tooltip appears, showing the name of the MIDI file.

Song Position Indicator

The song position indicator shows the position of the transport. Above the song position indicator, the position is displayed numerically.

After loading a MIDI file, the display shows the full length of the file.

- To move the transport to a different song position, drag the song position indicator to the new position.
- To switch the time format between **Time** and **Bars**, click **Select Time Format** in the top right corner of the display.

Tempo and Time Signature

Below the song position display, the **Tempo** and **Time Signature** fields are located. These fields provide HALion Sonic SE with tempo and time signature information. These settings are used by the scratch pad and the metronome.

Fixed Tempo/Tempo Track

Set this parameter to **Track** to follow 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.

Tempo Value

Determines the tempo of the MIDI file.

Adjust Tempo

If the **Tempo Track** option is selected, this parameter is available, allowing you to scale the playback relatively to the original tempo of the MIDI file.

Time Signature

Determines the time signature. You can enter the new signature as fractions of beats.

Recording Your Performance

PROCEDURE

1. Click the record symbol below the **Record** button to select a record mode.

- To start recording immediately when you click the record button, 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 2 bars, select **Count In 2**.

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
Saving a MIDI File on page 121

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 multitrack MIDI file is loaded, you can play back all MIDI events or only the events of a specific MIDI channel.

- To specify which events to play back, 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 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 SE. This includes the volume of the main outputs, the rear outputs, and the output of the metronome.

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