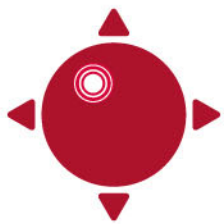


## Operation Manual



# HALION SONIC SE<sub>2</sub>

Matthias Klag, Michael Ruf

Revision and quality control: Cristina Bachmann, Heiko Bischoff, Christina Kaboth, Insa Mingers, Sabine Pfeifer, Kevin Quarshie, Benjamin Schütte

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# Introduction

## Window Overview

The application interface follows a fixed-size single window concept.



The window is subdivided into several sections:

- The **Multi Program Rack** on the left.
- The edit display on the right. It contains the **Edit**, **MIDI**, **Mix**, **Effects**, and **Options** pages.
- The performance section at the bottom. It contains the trigger pads, the quick controls, the performance controllers, and the sphere control.
- The plug-in functions section at the top.
- The toolbars above the edit display.

## View Options

You have 2 view options: the full-size editor view and the smaller player view. In the player view, only the plug-in functions, the trigger pads, the quick controls, and the performance controllers are visible.

- Click the **p** button in the toolbar above the edit display to switch between the views. When the player view is active, the button changes to **e**, indicating that clicking again lets you return to the editor view.

## Instrument Track vs Instrument Rack

HALion Sonic SE can be used on an instrument track or it can be loaded into the VST Instruments rack. In both cases, you can load up to 16 programs simultaneously.

However, when you use HALion Sonic SE on an instrument track, all 16 slots are routed to the main output. By setting multiple program slots to the same MIDI channel, you can create split and layer sounds that can be used on an instrument track.

## About Programs, Layers, Multis, Macro Pages, and Presets

### Programs

A program is a complex instrument or sound that can consist of up to 4 layers. Often, a program contains a single layer that comes with all necessary components, such as the synthesis part or insert effects. Programs add the possibility of combining different layers to build up more complex sounds, or to create combinations of sounds that you want to load as a unit. A typical example is a bass/piano split sound or a piano/string layer sound.

### 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.

## Content Files and Folder Structure

HALion Sonic SE is supplied with a huge amount of ready-to-use sound content. This content, made up of hundreds of multis, programs, and layers, is write-protected. This means that you can edit files while they are loaded, but you cannot overwrite the factory content files to make your changes permanent. To save any edits to the factory content, you must save the files under a new name and to a predefined location. These files have the extension *.vstpreset*, and are referred to as “user content”. You can categorize and search for them in the same way as with the factory content. The user content is saved in a predefined folder structure on your hard disk (the exact path depends on your operating system). You can create subfolders within this structure, to facilitate moving or exchanging content.

# Common Editing Methods

## Presets

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

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.

## 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 the **Save** button (the disk icon).

### 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 the **Delete** button (the trash icon). Note that factory presets cannot be deleted.

## Handling VST Presets

### Loading VST Presets

- 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) Select a preset to load it. Double-click a preset to load it and close the preset loader.

### Saving VST Presets

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

#### NOTE

For more information on VST presets, see the Cubase/Nuendo Operation Manual.

---



# Managing Your Sounds

## Loading Programs

There are several ways to load programs:

- Via drag & drop from the MediaBay or the Windows Explorer/Mac OS Finder.
- Via the slot context menu in the Multi Program Rack.
- By clicking the **Load Program** button at the right of the slot.

### NOTE

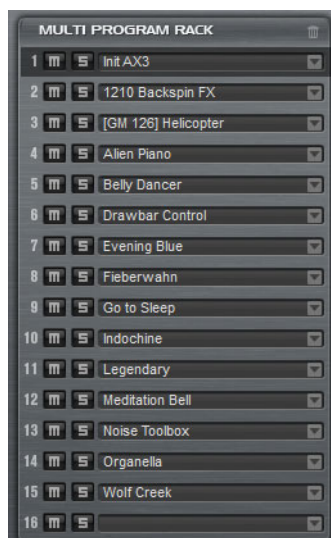
Programs containing lots of sample data may take some time to load.

### RELATED LINKS

[Slot Context Menu on page 10](#)

## Multi Program Rack

The **Multi Program Rack** provides 16 slots. Each slot can contain a program.



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.

When you select a slot in the **Multi Program Rack**, the available settings and parameters for this program are shown on the different pages of the edit display.

The trash button at the top right of the **Multi Program Rack** lets you remove all currently loaded programs. This does not reset any parameters that are independent of programs, such as effect or slot settings.

## 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.

### Remove Program

Removes the program from the slot.

### Revert to Last Saved Program

Discards any changes that you made to the program since the last time it was saved.

### Cut Program

Copies the program and removes it from the slot.

### Copy Program

Copies the program.

### Paste Program

Pastes the copied program into the slot. If the slot already contains a program, it is replaced.

### Rename Program

Allows you to rename the program.

### Reset Slot

Resets the slot to the default values.

### **Reset All Slots**

Resets all slots to the default values.

#### **NOTE**

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

---

# Editing Programs

## Macro Page

The factory content 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.

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



### Voice/Pitch Section

This section gives you access to the tuning parameters.

#### Octave

Adjusts the tuning in octaves.

#### Coarse

Adjusts the tuning in semitones.

#### Fine

Adjusts the fine tuning in cents.

### **Pitchbend Up/Down**

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

### **Polyphony**

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

### **Mono Mode**

When Mono mode is active, you can only play one note at a time, and the **Polyphony** control is not available.

## **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**

Adjusts the timbre of the layer.

### **Resonance**

Emphasizes the frequencies around the cutoff frequency.

### **Attack**

Increases or decreases the attack time of the filter envelope.

### **Release**

Increases or decreases 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**

Adjusts the level of the layer.

### **Pan**

Sets the position of the layer in the stereo panorama.

### **Attack**

Offsets the attack time of the amplifier envelope. Positive values decrease and negative values increase the attack time.

### **Decay**

Offsets the decay time of the amplifier envelope. Positive values decrease and negative values increase the decay time.

## Trip Macro Page

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 5 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 4 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 3 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

Adjusts 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.



Activate the sub oscillator, the ring modulator, and the noise generator by clicking 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 in the Trigger and Pitch section.

### Sub Oscillator Type

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

### Sub Oscillator Level

Adjusts the output level of the sub oscillator.

## Ring Modulator

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

### Ring Modulation Source 1/2

This allows you to select the sources for the ring modulation. You can select **OSC1** or **Sub** as Source 1 and **OSC2** or **OSC3** as Source 2.

### NOTE

Make sure the corresponding oscillators are activated when you select them. Otherwise, no sound can be 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 not active, you can use this parameter to specify how many notes can be played simultaneously.

### Mono

Activates monophonic playback.

### Retrig

This option is only available if **Mono** is activated. It allows the retriggering of a stolen note. If **Retrig** is activated, a note that was stolen by another note is retriggered if you still hold the stolen note when releasing 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 two notes that follow each other. You achieve the best results in **Mono** mode.

### Glide Time

Specifies the time needed to bend the pitch from one note to the other.

### Fingered

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

### Octave

Adjusts the pitch in octave steps.

### Pitchbend Up/Down

Sets 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 vibrato settings in the lower section.



### LFO Settings

#### Freq

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

#### Sync

When **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.

#### 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).

### Vib Depth

Controls the depth of the vibrato modulation.

### Cutoff

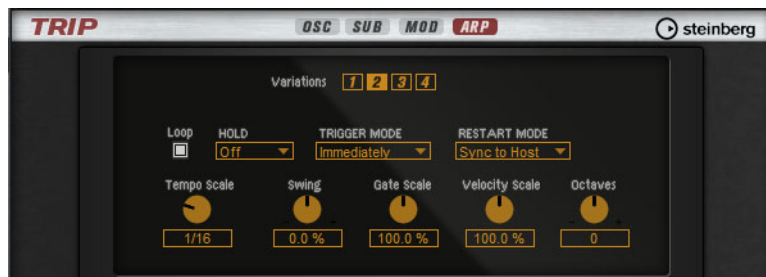
Controls the influence of the mod wheel on the filter cutoff.

### Osc1/2/3 Wave

These parameters control the influence of the mod wheel on the waveform of the three main oscillators. These controls are only available if the selected oscillator type supports waveform modulation.

## Arp Page

The Arp page contains the settings for the integrated arpeggiator and step sequencer.



### Variations

Click the variation buttons to switch between the available variations.

### Loop

Defines whether the phrase is played once or continuously in a loop. If **Loop** is activated, the phrase plays in a loop.

### Hold Mode

With this parameter, you can prevent the phrase from stopping or changing when the keys are released. In addition, the **Gated** mode plays silently in the background when you release the keys, and resumes playback at the current position when you press the keys again. You can select one of the following options:

- If you select **Off**, the phrase changes immediately when you release a key. The phrase stops immediately when all keys are released.
- If you select **On**, the phrase plays to end even when the keys are released. If **Loop** is activated, the phrase plays continuously in a cycle.
- If **Gated** is selected, the phrase starts playback with the first key that is played. It plays silently in the background even when 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

This parameter defines when the arpeggiator scans for new keys that you play on the keyboard.

- If **Immediately** is selected, the arpeggiator scans for new keys all the time. The phrase changes immediately in reaction to your playing.
- If **Next Beat** is selected, the arpeggiator scans for new keys upon new beats. The phrase changes in reaction to your playing on each new beat.
- If **Next Measure** is selected, the arpeggiator scans for new keys upon new measures. The phrase changes in reaction to your playing on each new measure.

### Restart Mode

Depending on the selected Restart Mode and your playing, you can restart playback from the beginning of the phrase.

- If **Off** is selected, the phrase runs continuously and does not restart upon chord or note changes.
- If **New Chord** is selected, the phrase restarts on new chords. However, the phrase will not restart upon notes that are played legato, for example, if you play additional notes to a chord you are holding already.
- If **New Note** is selected, the phrase restarts with each new note you play. Here, the phrase also restarts upon notes that are played legato.
- If **Sync to Host** is selected, the phrase aligns with the beats and measures of your host application, each time you start the transport.

### Tempo Scale

Defines the rate at which notes are triggered, that is, the speed at which the phrase is running. You can specify a value in fractions of beats. You can also set dotted and triplet note values.

### Swing

Allows you to shift 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.

### Velocity Scale

Raises or lowers 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 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 you originally played. Then, it repeats the phrase one octave higher.

## Working with Variations

Trip features 4 variations that allow you to set up different phrases or variations of phrases or loops.

### NOTE

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

### Creating Variations

- To create a variation, click a variation button and set up the arpeggiator.

The variation is instantly modified and can be recalled by clicking the **Variation** button.

### Copying Variations

You can copy variation settings between the variation buttons using the corresponding commands on the context menu.

### Assigning Variations to the Trigger Pads



You can assign the variations to the trigger pads using the corresponding commands on the context menu.

## Filter and Amplifier Settings

The lower part of the Edit display contains the Filter and Amplifier settings.



### Filter Section

#### Filter Shapes

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

#### Env Amount

Controls the cutoff modulation from the filter envelope.

#### Velocity

Controls the cutoff modulation from velocity.

### **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.

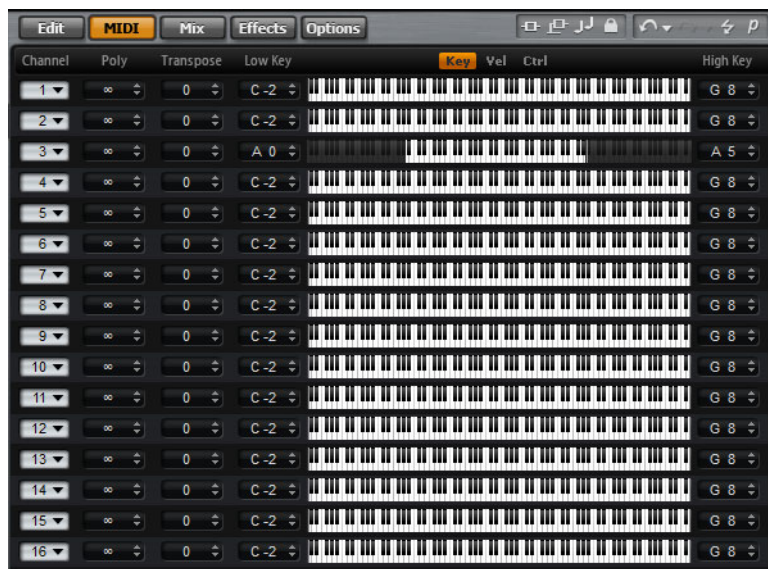
### **Release**

Controls the release time of the amplifier envelope.

# MIDI Editing

## MIDI Page

The MIDI page gives you access to the MIDI slot parameters of HALion Sonic SE. This includes MIDI channel, key and velocity range, and transpose and polyphony settings.



### Parameters

#### Channel

Specifies the MIDI channel for the slot. You can set multiple slots to the same MIDI channel and trigger them simultaneously with the same note event.

#### Poly (Polyphony)

Specifies how many notes can be played at the same time. Because programs can contain up to 4 layers, the resulting number of voices (stereo samples, synth voices etc.) can be much higher than the value specified here.

#### Transpose

Allows you to shift the incoming MIDI notes by  $\pm 64$  semitones before they are sent to the loaded program.



### Key Range (Low Key, High Key)

To switch between velocity and key range, use the **Key/Vel** switches above the range controls.

## Editing the Key Range

Each slot can be limited to a certain key range. To show the key range, activate the **Key** button at the top of the MIDI page.

You can set the key range in the following ways:

- Set the range with the **Low Key** and **High Key** values or by dragging the keyboard range control at its ends.
- Move the key range by clicking it and dragging.
- To set the range via MIDI input, click in a value field and play the note.

## Editing the Velocity Range

Each slot can be limited to a velocity range. To show the velocity range, activate the **Vel** button at the top of the MIDI page.

You can set the velocity range in the following ways:

- Set the range with the **Low Vel** and **High Vel** values or by dragging the velocity range control at its ends.
- Move the range by clicking it and dragging.

## Filtering Controllers

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

When you set up a keyboard split with bass and piano playing on the same MIDI channel, both sounds receive the same MIDI controllers. However, you usually do not want the bass to receive the sustain pedal. To avoid that all sounds on the same MIDI channel receive the same MIDI controllers, you use the controller filter. Filtering out control change messages can also be used to avoid unwanted program changes on MIDI channel 10 (drums), for example.

Proceed as follows:

---

PROCEDURE

1. At the top of the MIDI page, activate the **Ctrl** button.
  2. For each slot, activate the MIDI controllers that you want to filter out.  
You can filter out the following MIDI controllers: Sustain #64, Foot Controller #4, Foot Switches #65-69, Control Change, Pitchbend, Modulation Wheel #1, and Aftertouch.
- 

## 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.
  2. On the context menu, select **Learn CC**.
  3. On your MIDI keyboard or controller, use the potentiometer, fader, or button.
- 

RESULT

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.

---

RELATED LINKS

[Options Page on page 83](#)

## Unassigning MIDI Controllers

---

### PROCEDURE

- To remove a MIDI controller assignment, right-click the control and select **Forget CC**.
- 

## 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 you made for the slots.

---

### NOTE

If you unload or replace the effect, the MIDI controller assignment of this effect is lost.

---

## 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

You can remotely control any other parameter by assigning the parameter first to a quick control and then to a MIDI controller.

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## CC121 Support

HALion Sonic SE can be controlled with the AI knob of Steinberg's CC121 MIDI controller unit. To change a parameter value, move the mouse pointer over a control and turn the AI knob to set the value.

#### NOTE

The AI knob only works on parameters that are automatable. This means that you cannot use the AI knob to change the parameters of the Options page, for example.

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# Mixing and Effect Handling

## Mixing

### 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/Off

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.

### FX1–4 Send Levels

These controls specify the amount of signal that is sent to the 4 auxiliary busses which host up to 4 effects each.

### Meter

Indicates the output level of the slot.

### Output

Specifies to which of the 16 plug-in outputs the slot is routed.

## Effect Handling

HALion Sonic SE features 4 AUX busses that can be used to realize classic send effects. Each bus hosts up to 4 insert effects, which allows you to set up complex effects. 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 4 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 4 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 above 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, drag its label onto the new slot. This replaces any effect loaded in this slot.
- To change the order of the effects, drag them by their label to a new position between two slots.
- To copy an effect into another slot, hold down [Alt]/[Option] and drag it by its label onto the new slot. This replaces any effect loaded in this slot.
- To copy an effect and insert it between two effect slots, hold down [Alt]/[Option] and drag it by its label between two slots.

# Effects Reference

## Reverb and Delay Effects

### 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 reflections 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 3 frequency bands.

#### 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.

#### 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.

#### ER/Tail Mix

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 towards the back of the room.



### 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.

### Low Cut

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

### High Cut

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

### 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 small rooms 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. For 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.

### 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.

### High Cut

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

### Width

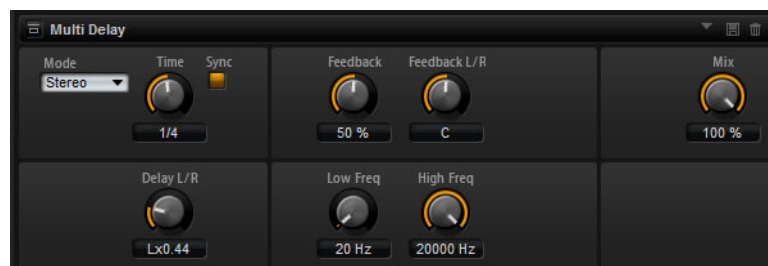
Adjusts the output of the reverb signal between mono and stereo. At a setting of 0%, the output of the reverb is mono, at 100% it is stereo.

### Mix

Sets the ratio between the dry and the wet signal.

## Multi Delay

This effect produces delays, with adjustable time, feedback, and filters.



With the **Mode** parameter, you can set up this effect as Stereo, Cross, or Ping-Pong delay effect. Depending on the selected mode, the echoes repeat in varying patterns across the stereo panorama.

### Mode

Multi Delay offers three different modes:

- **Stereo** mode has two independent delay lines, one for the left and one for the right audio channel, each with a feedback path of its own.
- **Cross** mode has two delay lines with cross feedback. Cross feedback means that the delay of the left channel is fed back into the delay of the right channel, and vice versa.
- **Ping-Pong** mode mixes the left and right input channel and sends it 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.

### 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. Activate **Sync** to set the delay time as a note value.

### Sync

Activate **Sync** to synchronize the delay time to the host tempo. When **Sync** is activated, the time is set as a note value.

#### NOTE

The maximum delay time is 5000ms. If the note length exceeds this value, it is automatically shortened.

---

### Delay L/R

Offsets the time of the left or right delay from the overall delay time. At a factor of 1, the right or left delay time has the same length as the overall delay time. At a factor of 0.5, the time is half as long as the overall delay time. To offset the left delay time, turn the control to the left. To offset the right delay time, turn the control to the right.

### Feedback

Sets the overall amount of feedback for the left and right delay. Feedback means that the output of the delay is fed back to its input. At a setting of 0%, you hear 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.

---

### Filter Low

Attenuates the low frequencies of the delays.

### Filter High

Attenuates the high 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 4 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:

### 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)

Use this parameter to adjust the bandwidth of the mid-range peak filters from wide to narrow. By increasing the **Q** value on the low and high shelving filters, you can add a dip to their shape.

- To adjust the parameters **Gain** and **Freq** simultaneously, drag the points in the EQ curve display.

## 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.

# Filter Effects

## Auto Filter

Auto Filter provides 2 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 shaper.

## Filter Parameters

### Filter Shapes

- 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 filter 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.

### 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

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 only available for the **Tube Drive**, **Hard Clip**, **Bit Red**, and **Rate Red** types.

## Type

The following options are available:

- When this parameter is set to **Off**, the filter offers no distortion.
- **Tube Drive** offers a lot of character by adding 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.

## 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.

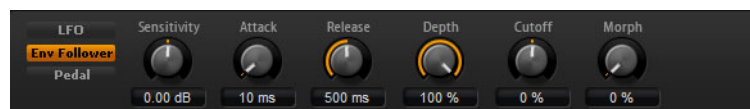
## Cutoff

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.

## MorphFilter

MorphFilter lets you 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

Lets you 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.

## 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 Lo and Hi Pedal positions. The crossover point between the Lo and Hi Pedal positions lies at 50.

### Pedal

Controls the filter frequency sweep.

### Freq Lo/Hi

These parameters determine the frequency of the filter for the **Lo** and **Hi** Pedal positions.

### Width Lo/Hi

These parameters determine the width (resonance) of the filter for the **Lo** and **Hi** Pedal positions.

### Gain Lo/Hi

These parameters determine the gain of the filter for the **Lo** and **Hi** 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. Enable the **Bit Red** option to activate the control that adjusts 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.

## 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

When **Oversampling** is active, 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 1000Hz by +/- 3dB.

### 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.

## 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.

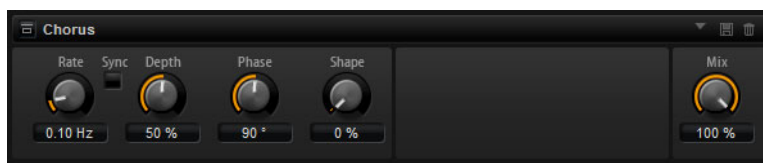
### Octave 2

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

Use this to specify 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.

### 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.

### 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 Rate 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.

## 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

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

### Depth

Sets the intensity of the delay time modulation by the LFO.

### Shimmer

Sets the intensity of a secondary faster delay time modulation.

### Shimmer Rate

Determines the relation between the speed of the primary and the secondary delay modulation. For example, 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.

### 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. When **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 when the **Auto** button is activated.

### Auto

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 when the **Auto Release** button is activated.

### Auto Release

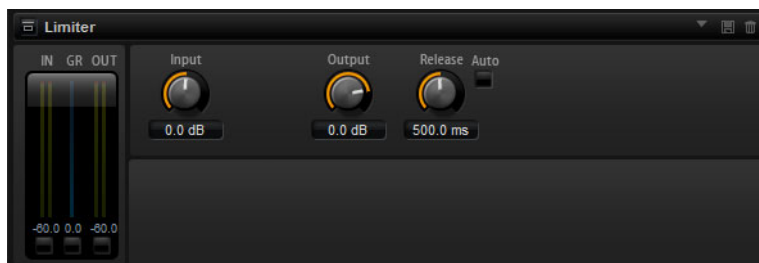
Activate this to set the release time automatically. The Compressor analyzes the input sound continuously to find the optimal setting.

### 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.

## Limiter

The Limiter effects 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 VU 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.

## Expander

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 VU 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 Release

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.

# 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

Activate this button to adjust the bandwidth of the band-pass 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.

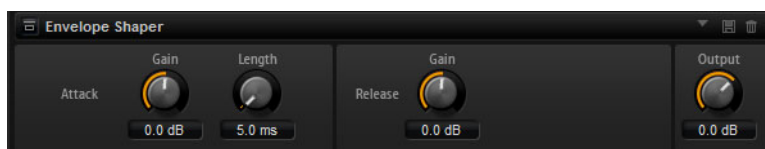
### Peak – RMS

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.

## 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.

## 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.

## **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.

#### **HF Damp**

Progressive damping of high frequencies.

#### **Lo EQ**

Low-cut EQ.

#### **Hi 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 80's-type reverb.

#### **HF Damp**

Progressive damping of high frequencies.

**Lo EQ**

Low-cut EQ.

**Hi 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.

**Lo EQ**

Low-cut EQ.

**Hi EQ**

High-cut EQ.

**Mix**

Wet/dry mix.

**Delay**

A simple mono-in/stereo-out delay.

**Delay**

Delay time. If the **Sync** parameter is activated, you can set the delay time in fractions of beats.

**Sync**

Activate this parameter to synchronize the delays to the tempo set in your host application.

**Feedback**

Controls the number of delay repeats.

**Balance**

Ratio of left delay time to right delay time.

**HF Damp**

High-cut filter to soften delay repeats.

**Stereo Delay**

A stereo-in/stereo-out delay.

### **Delay**

Delay time. If the **Sync** parameter is activated, you can set the delay time in fractions of beats.

### **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**

Activate this parameter to synchronize the delay repeats to the tempo set in your host application.

### **Balance**

Ratio of left delay time to right delay time.

### **HF Damp**

High-cut filter to soften delay repeats.

## **Long Delay**

This effect provides the same parameters 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.

### **Delay**

Delay time. If the **Sync** parameter is activated, you can set the delay time in fractions of beats.

### **Sync**

Activate this parameter to synchronize the delay repeats to the tempo set in your host application.

### **Feedback**

Controls the number of delay repeats.

### **Vintage**

Amount of vintage color and tape flutter.

### **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.

### Lo/Hi

Crossover frequency between low and high rotors.

### Width

Stereo width.

### Tone

Adjusts the tone of the overdriven signal.

### Hi/Lo Speed

Speed of the high and low rotors.

### Hi/Lo Acc

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:** Envelope controlled wah effect.
- **Pedal:** No modulation. The **Pedal** parameter sets the frequency.
- **Mod:** 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.

## 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.

### **Output**

Output level trim.

### **Drive**

Input signal drive.

### **Attack**

Attack time.

### **Release**

Release time.

## **Compressor**

A simple compressor effect.

### **Output**

Output level trim.

### **Threshold**

Compression threshold.

### **Ratio**

Compression amount.

### **Attack**

Attack time.

### **Release**

Release time.

## **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.

### **Output**

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.

### **Output**

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 modelling 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.

# Performance Section

The performance section is found in the lower part of the window. The performance controls, the quick controls, and the trigger pads are the main components of the performance section.

## Performance Controls

The lower part of the performance section contains the performance controls, that is, the wheel controls, the keyboard, and the sphere control.

### Wheel controls

To the left of the preview keyboard of the plug-in, you can find the pitchbend wheel and the modulation wheel.



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. Typically, you assign the modulation wheel to a parameter of an insert effect, such as the speed of the Rotary.

#### NOTE

The fixed assignment of MIDI controller #1 cannot be changed. Therefore, the modulation wheel offers no “Learn CC” function.

### Keyboard

The virtual 88-note keyboard can be used to trigger MIDI notes just like a real keyboard.



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 shift the keyboard range by octaves. This allows you to display, key switches that are located on lower keys, for example.

### Sphere H and Sphere V

The sphere is the orange ball in the bottom right-hand corner of the window. It is a two-dimensional control, which means that you can adjust two quick controls simultaneously by dragging the mouse horizontally and vertically within the Sphere.



The quick control on the horizontal axis is called **Sphere H**. The quick control on the vertical axis is called **Sphere V**. Typically, two parameters that belong together are assigned to the Sphere, such as Cutoff and Resonance, for example.

The small triangles for indicating the horizontal and vertical axis are available only if parameters are assigned to **Sphere H** and **Sphere V**. You can set up the Sphere to return to its center position automatically by activating the **Center Horizontal** or **Center Vertical** commands on the context menu.

## Quick Controls

Quick controls allow you to remotely control any parameter inside the program, typically the most important sound parameters. There is a set of quick controls for each program.



The eight potentiometer controls, the horizontal and vertical axis of the sphere, and the modulation wheel located at the bottom of the plug-in interface can be assigned 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 remotely trigger single notes or whole chords. Many of the programs that come with HALion Sonic SE make use of the trigger pads.



- Orange pads have single notes or whole chords assigned.
- The line above a pad turns orange when the pad switches between sound variations.

## Assigning Trigger Notes to Pads

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

---

### PROCEDURE

1. Right-click the pad to open the context menu.
2. You have the following options:
  - On the **Assign Trigger Note** submenu, select the octave and the note that you want to assign.
  - Select **Learn Trigger Note** and play the note on your MIDI keyboard or click it on the virtual keyboard.

Keys that serve as trigger notes light up in blue on the virtual keyboard. These keys no longer play sounds, they trigger the corresponding pads instead.

---

## Unassigning Trigger Notes

---

### PROCEDURE

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

## Defining Trigger Chords or Notes

To trigger a chord or a single note with a pad, you first need to define the chord or note.

---

### PROCEDURE

1. Right-click the pad and select **Snapshot Chord** from the context menu.  
The pad starts blinking to indicate it is in learn mode.
2. You have the following options:
  - Play a chord (as single notes or all notes at once) or a single note.
  - Click the corresponding keys on the virtual keyboard. Clicking a selected key again removes the note from the chord.
  - To use the pads for switching between expressions, play the corresponding key switch.

The keys belonging to the chord are highlighted on the virtual keyboard.
3. To accept the chord or note, click the pad that is still blinking.  
The pad turns orange to indicate that a chord or note has been assigned.

---

### RESULT

Triggering the pad now plays the chord or note.

#### NOTE

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

---

#### NOTE

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

---

To remove a trigger chord assignment, select **Clear Chord** on the context menu.

## Using Default Trigger Note Settings

By default, the assigned trigger notes are stored with each program, to allow for maximum flexibility. However, you can also use a fixed set of trigger notes, for example to reflect an existing hardware setup.

To be able to use default trigger note settings, you have to save them first.

---

### PROCEDURE

1. To specify a global set of trigger notes, set up the trigger notes for all pads, right-click a pad, and select **Save Trigger Notes as Default**.
  2. Right-click a pad and select **Use Default Trigger Notes** or click the corresponding button to the left of the pads.
- 

### RESULT

Changing programs or multi-programs does not change the trigger notes anymore.

---

### NOTE

When you deactivate this option, the trigger notes that were saved with the multi are used.

---

## Naming Pads

You can specify names for the pads, to indicate their functionality, for example.

---

### PROCEDURE

1. Right-click the pad to open the context menu.
  2. Select **Rename Pad** and enter a name, for example, KeySw1, KeySw2, Amin7, Gmaj, etc.
  3. Press [Enter] on your computer keyboard to confirm the name.
- 

## Defining Trigger Chords or Notes

To trigger a chord or a single note with a pad, you first need to define the chord or note.

---

### PROCEDURE

1. Right-click the pad and select **Snapshot Chord** from the context menu.  
The pad starts blinking to indicate it is in learn mode.

2. You have the following options:
  - Play a chord (as single notes or all notes at once) or a single note.
  - Click the corresponding keys on the virtual keyboard. Clicking a selected key again removes the note from the chord.
  - To use the pads for switching between expressions, play the corresponding key switch.

The keys belonging to the chord are highlighted on the virtual keyboard.

3. To accept the chord or note, click the pad that is still blinking.  
The pad turns orange to indicate that a chord or note has been assigned.
- 

#### RESULT

Triggering the pad now plays the chord or note.

#### NOTE

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

---

#### NOTE

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

---

To remove a trigger chord assignment, select **Clear Chord** on the context menu.

## Bypassing the Pads Section

You can bypass the whole pads section. This deactivates any functionality you assigned to the trigger pads.

---

#### PROCEDURE

- To bypass the pads section, press the **Bypass Pads** button to the right of the trigger pads.  
The **Bypass** button lights up to indicate that the trigger pads have been deactivated.
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# Global Functions and Settings

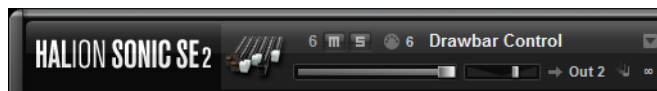
## Plug-in Functions Section

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 program slot section, the master section, and the performance displays.

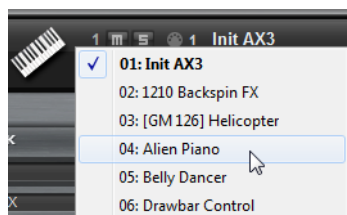
## Program Slot Section

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



### Slot Number

You can switch to another program by clicking the slot number and selecting a program from the list of loaded programs.



### 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

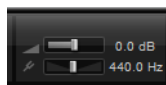
One key can trigger several layers. On the performance meter, you can see how many voices are triggered by your playing.

### 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 red 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 red overload indicator lights up, the hard disk is not supplying data fast enough. In such a case, adjust the **Disk vs. RAM** slider on the **Options** page towards **RAM** or decrease the **Max Voices** setting on the **Options** page.

### Polyphony (Mono Voices)

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 voices currently playing.

### MEM (Memory)

This display indicates the overall amount of RAM 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 do so by adjusting the **Disk vs. RAM** slider on the **Options** page towards **Disk**. You can verify your settings by monitoring the **MEM** display.

## The 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.

## Toolbars

The two toolbars above the edit display contain useful global functions.

### Fix Velocity

To trigger all pads with the same velocity, activate this button. Use the button to the right to set the velocity value. This velocity is used for incoming MIDI notes, as well as for notes that are triggered by clicking a pad.

## Global insert, AUX, and FlexPhraser buttons

### Lock button



When you activate this button, loading another program or layer does not overwrite the current FlexPhraser and trigger pad settings.

### Undo/Redo



You can undo or redo the last 10 operations. 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.

### MIDI Reset



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

### Editor/Player



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

## Options Page

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



## Disk Streaming

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 of the 16 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.

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### Used Memory and Available Memory

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

## Performance

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.

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### 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 to run the oscillators of synth layers in ECO mode. The oscillators use less CPU at the cost of producing more aliasing at higher pitches. When activated, you are able to 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. Therefore, replacing a large multi by another can lead to RAM overload on 32-bit systems.

- 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

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

### Show Value Tooltips

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

### Controller 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.
- In **Multi Mode**, program change messages are used to switch between the 128 multis that can be configured on the Multi chain page.
- Set this to **Off** to ignore incoming controller change messages.

## General MIDI Mode

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

If **General MIDI mode** is activated, all loaded programs are removed and the 16 slots are assigned to the 16 MIDI channels. As long as **General MIDI 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.

### NOTE

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

## Solo Mode

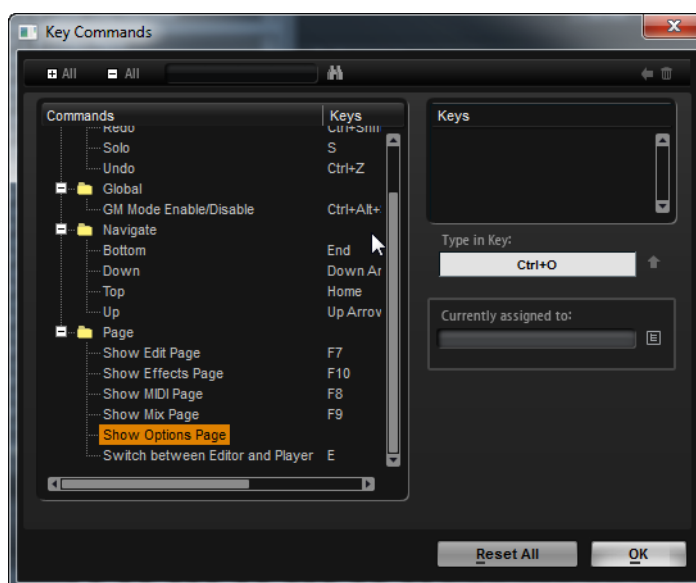
- In **Standard** mode, you can solo multiple programs or layers to hear them combined.
- In **Exclusive** mode, only one program or layer can be soloed at a time.

## Reset Messages

Click this button to see all message dialogs again that have been suppressed with the **Don't Show Again** option.

## Key Commands

Click the **Key Commands** button to open the Key Commands dialog.



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 corresponding command, select the key command in the **Keys** list and click the **Delete** button (the trash icon).

#### NOTE

You can search for a specific function by entering its name in the search field at the top of the dialog and clicking the search button (the magnifying glass button).

#### NOTE

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

## MIDI Controller

### 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

The **Hold Reset** button sends a global Hold Reset message to all FlexPhraser modules that are used.

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

### Pattern Playback

The **Hold Reset** button sends a global Hold Reset message to all patterns that are used.

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



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