

Operation Manual

VST  
Instruments

The VST-Sampler

# HALION 2.0



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**1**

**Introduction**

Congratulations and thank you for your decision to purchase HALion. This professional VST/DXi Instrument software is a complete 32-bit sample player, providing extensive modulation and editing features.

You can load and use a VST Instrument within the framework of any VST 2.0 or DXi2 compatible host application. Cubase SX, for instance, offers facilities for loading up to 32 VST Instruments.

Each HALion module that you load adds a high-quality instrument with up to 256 voices and 16 channel multi mode to your VST 2.0/DXi2 compatible host application! You can separately make different settings for each of the 16 simultaneously playable channels of a HALion unit.

These are HALion's most prominent features:

- 256 Voices, 16-way multi-timbral, 128 programs per HALion unit.
- HALion supports Akai S1000/S2000/S3000, EMU 3/3X/ESI/4/4K/E64/E6400/ESynth/Ultra, Roland S770, Emagic ESX24, SoundFonts 2.x, GIGA, LM4/LM9 and REX file formats (in addition to all standard audio file formats and ISO Disc Image).
- 8-/16-/24-/32-bit file support.
- 5.1 surround support.
- 18 assignable virtual outputs per HALion (4 x Stereo, 4 x Mono, 5.1 Surround).
- Notch/hi-pass/lo-pass/band-pass filter with selectable 12dB or 24dB slopes.
- Additional Waldorf filter types developed by the famous German synth manufacturer.
- Syncable envelopes and LFOs, with up to 32 freely editable points.
- Step envelope which can produce stepped modulation patterns synced to tempo.
- MegaTrigg function to activate/switch samples via controllers or keys.
- Extensive, chainable modulation features.
- Drag & Drop support.
- All Settings can be applied individually for selected sample(s) – or globally for the program.
- Integrated Loop Editor with crossfade, snap to zero, loop, release loop, loop tuning settings.
- Complete automation from within Cubase or Nuendo or any VST2/DXi2 Host.
- Archive function, transfer of entire projects to other computers with zero hassle.
- Includes several professional sample collections.

We hope you will have a lot of fun with your new VST Instrument!

The Steinberg Team

# 2

## **System Requirements and Installation**

# System Requirements (PC version)

To be able to use HALion you will need at least:

- Windows XP or 2000.
- Pentium III or AMD Athlon 500MHz (1 GHz recommended).
- 256MB RAM (512MB recommended).
- Fast hard disk for disk streaming
- Cubase SL/SX, Cubase VST 5.0 or higher, Nuendo 1.5 or higher or other VST 2.0 or DXi2 compatible host software.
- Soundcard that is supported by your host application (MME, WDM or ASIO).

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**Please also observe the system requirements of your host application!**

---

## Installation (PC version)

Proceed as follows to install HALion:

1. Insert the HALion CD into your CD drive, launch the Explorer or open the “My Computer” window and double click on the symbol for the CD drive that holds the HALion CD.  
If autostart is activated the CD contents will open in a new window automatically.
2. Double click on the HALion Installer symbol to launch a special installation program and follow the instructions on the screen.

# System Requirements (Mac version)

To be able to use HALion you will need at least:

- Apple OSX 10.2 or higher.
- G4 450MHz (733MHz recommended).
- 256MB RAM (512MB recommended).
- Fast hard disk for disk streaming
- Cubase SL/SX, Nuendo 2.0 or other VST 2.0 compatible host software.
- Soundcard that is supported by your host application.

---

**Please also observe the system requirements of your host application!**

---

## Installation (Mac version)

Proceed as follows to install HALion:

1. Quit all other applications so that you return to the Finder. Disable any system activity monitoring software or extension, in particular anti-virus software. Then insert the HALion CD into your computer's CD drive.
2. If needed, double click on the HALion icon to open the CD window.
3. Double click on the HALion Installer symbol to load the installation software. Follow the instructions on the screen.

# Content Installation

The sound content for HALion is delivered on 4 CDs. Please refer to the CD booklets or the chapter “**Content description**” at the end of this manual for an overview of what sounds to find on the different CDs.

We suggest to copy the programs you wish to use to your hard drive as this will give you better performance. However, if you prefer you can also load all programs directly from CD.

To install the content files on your hard drive, proceed as follows:

1. Insert the content CD of your choice.
  2. Select the main folder containing the programs and sample files you wish to use.
  3. Copy the complete folder to a location on your hard drive.
- 
- Don't change the folder structure inside the program or sample files folder. Otherwise HALion will not be able to find the samples!**
- 

## Register your software!

Please fill out and send in the registration card that you have received with your software package. By doing so you are entitled to technical support and kept aware of updates and other news regarding HALion.

**3**

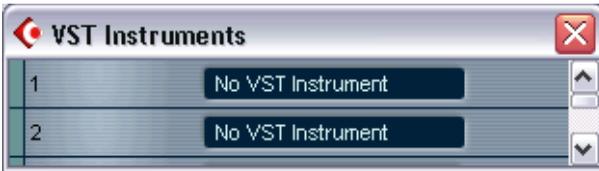
**Preparations**

# Setting up HALion as a VST Instrument in Cubase

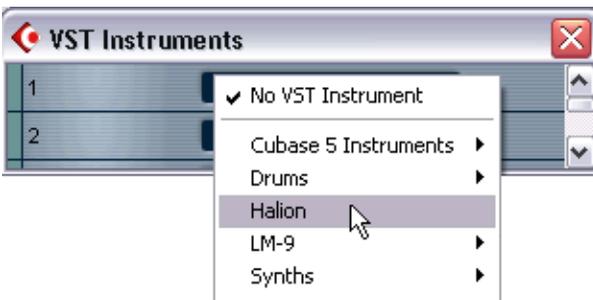
- The information in this section refers to using HALion within Cubase SX. We assume that you have correctly set up both Cubase SX and your available MIDI and audio hardware. Should you wish to use HALion within another VST host application such as Nuendo, please refer to its documentation.

Proceed as follows to activate HALion:

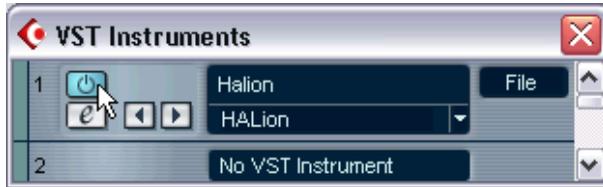
1. Make sure that Cubase SX receives MIDI data that you generate with your external MIDI master keyboard.
2. In Cubase SX, open the “VST Instruments” window from the Devices menu.



3. Select “Halion” from the pop-up menu in the VST Instruments window.



- Clicking the “Power” switch in the rack will activate/deactivate HALion.  
By default this is automatically activated when VST Instruments are loaded.



- Click on the “Edit” button (“e”) to open the HALion window.  
By default, the “Macro” page view (“page views” are user interface panels containing parameters) is shown. In this page view, the parameters affect all the samples in a Program. In addition to this, there are eight other page views. See the chapter “HALion overview” for a brief description of all the page views.



The HALion “Macro” page view.

- In Cubase SX, select a MIDI track and set its Output setting to “Halion”.  
This way, HALion will receive MIDI data from the selected track.
- HALion receives MIDI data in 16 channel multi-mode. It is therefore not necessary to assign a specific MIDI receive channel in HALion. However, you should make sure that the MIDI channel of the currently selected Cubase SX track is set to the channel on which HALion is to receive MIDI data.  
When set, you are ready to load some samples and start using HALion! In the next chapter you will learn how to load programs.

# Setting up HALion as a DXi2 Synth

The information in this section refers to using HALion within Cakewalk SONAR. We assume that you have correctly set up both SONAR and your available MIDI and audio hardware. Should you wish to use HALion within another DXi2 compatible host application, please refer to its documentation.

Proceed as follows to activate HALion:

1. Make sure that SONAR receives MIDI data that you generate with your external MIDI master keyboard. You can check this visually with the "Midi In/Out Activity" tray icon.
2. In SONAR, open the "Synth Rack" window from the View menu.

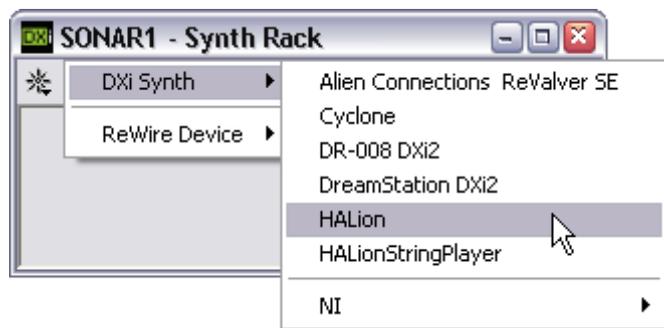


3. Click the Insert button (or the Insert option in the main menu).



The Insert button in the Synth Rack window.

Open the DXi Synth submenu and select "HALion" from the pop-up menu.



4. By default the "Insert DXi Options" dialog appears. To create one MIDI track and connect an audio track to HALion's 1+2 outputs, activate the options "Midi Source Track" and "First Synth Output". To create all available HALion outputs activate "All Synth Outputs". Refer to your host application's documentation for further details.



- Clicking the "Connection State" button in the Synth Rack will activate/deactivate HALion. By default this is automatically activated when DXi SoftSynths are loaded.



- Double-click on the "HALion 1" entry or click the "Synth Properties" button in the tool bar of the Synth Rack to open the HALion window.



The Synth Properties button in the Synth Rack window.

By default, the "Macro" page view ("page views" are user interface panels containing parameters) is shown. In this page view, the parameters affect all the samples in a Program. In addition to this, there are eight other page views. See the chapter "[HALion overview](#)" for a brief description of all the page views.



The HALion "Macro" page view.

- In SONAR, select the previously created MIDI track "HALion1". HALion will now receive MIDI data from the selected track. HALion receives MIDI data in 16 channel multi-mode. It is therefore not necessary to assign a specific MIDI receive channel in HALion. However, you should make sure that the MIDI channel of the currently selected SONAR track is set to the channel on which HALion is to receive MIDI data.

When set, you are ready to load some samples and start using HALion! In the next chapter you will learn how to load programs.

## Displaying sample names in the Piano Roll view

The DXi2 version of HALion lets you display the usual keys or sample names in the Piano Roll view. You can select which Program (1-127) should display sample names by opening the DXi pop-up menu in the HALion window and checking the desired Program(s). You can also select all or no Programs to display sample names. The setting is stored globally and independent of your project.





**4**

**HALion overview**

This chapter contains an overview of the basic concepts and operational procedures, including brief descriptions of the different HALion page views.

## The Demo Songs

On the HALion installation CD you will find a folder called Demo Songs. This folder contains three subfolders with demo projects for three common host applications: Cubase VST 5, Cubase SX and Cakewalk Sonar. There are two projects for both versions of Cubase and one for Cakewalk Sonar, and every project comes in two flavors: an XXL version (good sound quality, but more CPU load) and an ECO version (less quality, less CPU strain).

Copy the contents of the folder containing projects for your host application to your hard disk and follow the instructions in this manual to load and manipulate the samples used in the projects using HALion.

- 
- **When you open HALion to work with the demo songs, you may find that a message is displayed informing you about “missing” samples. See [page 85](#) for details about this message.**
- 

## How HALion plays samples

Unlike other samplers that have to load the entire samples into RAM, HALion can play back samples of virtually any length, regardless of the amount of RAM installed in your computer. This is because HALion can play back audio directly from the hard disk, similar to hard disk recording systems.

Since samples can't be triggered instantly from disk (there would be a delay between pressing a key and the sound playing back), the initial portion of the samples (i.e. the start of the sample) is preloaded into the computer's RAM.

This way only a small fraction of a longer sample will reside in RAM, while the rest is streamed directly from disk.

# About Program Banks and Programs

For HALion to produce sound, you first have to load either one or more audio files (i.e. samples), a Program (a collection of samples) or a Program Bank (a collection of up to 128 Programs):

- HALion always contains a “Program Bank” which in turn contains 128 Program “slots”.  
Even if only one Program containing samples and parameter settings is currently loaded, there are still 128 Program slots, although in this case, 127 of these slots will be empty. Only one Program Bank can be loaded at a time.
- A Program references any number of samples and contains all parameter settings associated with the samples.  
Within a Program folder, samples can be arranged in any number of subfolders, which makes it easy to organize and handle multiple samples.

---

❑ **Samples are not stored in the Program file, but are “referenced” to a location on disk. When you change the location of samples, so that the reference of the Program file to these samples is no longer correct, a warning message is displayed, and you must re-establish the link between the Program and its samples. This is explained in detail on [page 85](#).**

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- You can load or save Program Banks containing up to 128 Programs but also single Programs from the File pop-up menu in the VST Instruments rack of your host application.  
The corresponding functions are called “Load/Save Bank” and “Load/Save Instrument”. It is also possible to load Banks, Programs or individual samples via drag and drop (see [page 79](#)).

When you save your Cubase SX project file, the following information is stored:

- The number of HALion units used in the project.
  - The Bank and/or Programs used.
  - The changed settings of edited Programs.
- 
- ❑ **However, if you wish to use the edited version of a Program in another project, you must save it using one of the Save functions in the File pop-up menu on the VST Instrument rack.**
-

## Working with Program Banks

A Bank is a collection of up to 128 Programs.

Use the “Load Bank” option on the File menu to load a Program Bank. Program Banks have the extension “.fxb”. Loading a new bank unloads all previously loaded banks.

Together with HALion a default sound bank is installed. If you wish you can create your own default sound bank by saving your preferred bank as “haliondef.fxb” in the HALion folder. We recommend to back up the original “haliondef.fxb” file for future use.

## Loading a Program Bank

As explained on [page 22](#), when samples are loaded the initial portion of the samples will be preloaded into RAM. When you load a Bank, all the samples belonging to the Programs assigned to HALion’s 16 MIDI channels will be preloaded into RAM. If you don’t intend to use some of the channels, you should load an empty program (see [page 59](#)).

## Working with Programs

For now, we assume that you have the “Macro” page view open. This page view contains parameter controls that are global, i.e. they affect all samples in the currently selected Program.



The Macro page view.

- Click the down arrow to the right in the Program selector. This brings up a pop-up menu with all Program names of the current Bank. Which MIDI channel (1 to 16) each Program is currently assigned to is shown in parentheses.  
Select the desired Program by clicking on it.



- Programs can not be selected using the Program buttons in the VST Instruments rack (the arrow buttons to the right of the Edit button). Please use the Program selector in the HALion window.

## Loading individual Programs

- You can use “Load Instrument” in the File pop-up menu to load a single Program from disk. Programs have the extension “.fxp”. The program is loaded into the currently selected HALion channel and overwrites any previously loaded Program.  
For better overview, only one channel at a time is visible in the HALion window.
- 
- ❑ **Please note that the previous sections about loading Banks and Programs describe just one possibility of loading by using the VST Instrument “File” pop-up menu. There are several alternative ways of loading Banks, Programs and samples into HALion, which are described later in the manual.**

## Playing a Program

- Check out the currently selected Program by playing notes and chords on your MIDI keyboard.  
As an alternative, you can create a part on a Cubase SX track and fill that with notes and MIDI controller data by using the mouse.
- If you notice considerable latency times (delay) when you play HALion via MIDI keyboard, the sound card that you use and/or its driver are the source of the problem.  
If the problem occurs within your system and you want to record by playing in real time, you should replace your sound card and its driver with a fast audio card and an ASIO driver, that have been optimized for the smallest possible latency time. When playing back HALion data from a Cubase track, this problem does not exist.
- The audio signals that are created by a VST Instrument are automatically routed to the Mixer. In the Track Mixer, four stereo channels, four mono channels, and six surround channels are assigned to each open HALion unit.  
By using the Output controls in the HALion window, you can route the Program (or any sample within the Program) to any of these 12 audio channels or to the surround bus – see [page 116](#).



- Record a few tracks and watch the channel level meters in the Mixer. Play with the volume or EQ settings of the channels that receive a signal.  
Using the Mixer, you can thus mix the sounds created by HALion and process them in the same way as other audio tracks by using plug-ins, effects or external studio equipment.
- If needed, you can transform any or all HALion tracks into an audio file using Cubase's "Export Audio Mixdown" function.

## Saving a Program

Proceed as follows:

1. Select the desired Program.
2. Change the Program settings as desired.  
Read the corresponding chapters of this manual to find out what you can do with the various controls.
3. When you have finished editing, click the name in the Program display and enter a new one via your computer keyboard.

You have three options to save an edited Program:

- You can save it as a single Program file, using the “Save Instrument” function in the File pop-up menu on the VST Instruments rack.
- You can save it together with its Bank, using the “Save Bank” function in the File pop-up menu on the VST Instruments rack.
- You can save the Cubase SX project. If you do this, the changed Program is only available within this particular project. If this is not what you want, use one of the two options above.

## About MIDI channels and Programs

HALion is 16 channel multi-timbral. This means that each MIDI channel (1-16) can be assigned a separate Program.

- The settings for one of the 16 Programs/channels can be selected for viewing.

By simply selecting another Program/MIDI output channel, its corresponding settings are shown. In the HALion window this is called “Channel”.



The Channel selector.

- Each of these 16 Programs separately gets its notes via one of the 16 MIDI channels (Channels).
- Remember: The MIDI data that your MIDI master keyboard sends to Cubase SX (and thus to HALion), is always routed via the MIDI channel of the track that is currently selected in Cubase SX.

You should therefore always make sure that the currently visible HALion page view is set to the same channel number as the track currently active in Cubase’s track list. Additionally, the Output setting for this track must be set to “HALion”.

By keeping these rules in mind, you ensure that it is the correct channel (of the available 16 channels) that you edit and hear when playing your master keyboard.

# The HALion page views

When you open HALion, the afore-mentioned “Macro” page view is shown by default. In addition to this there are 8 other page views each containing various parameters and controls. These page views have common sections like the Navigation Controller (see [page 42](#)) and the Program List (see [page 39](#)).

## Selecting page views

You switch between the different page views using the row of buttons always present at the bottom of the HALion window. You can also use the function keys [F6] to [F12] (if the option “Plug-ins receive key commands” in the Editing page of the Nuendo or Cubase Preferences is activated and the “Always on Top” option of the HALion control panel is deactivated) to select the Chan/Prog to Macro page views, respectively (the MegaTrig and Import pages are not selectable via the function keys).



The page view selector buttons.

On the following pages you find a run through of the different page views available in HALion.

## Global Commands context menu

You can open a Global Commands context menu by right-clicking (Win)/[Ctrl]-clicking (Mac) on the background of the Macro View or on the top or bottom of any of the other page views.

---

<b>Parameter</b>	<b>Description</b>
Clear All...	This will remove all loaded programs. A warning message will be displayed.
Clear Current Program...	This will remove the currently selected Program.
Help	This brings up the online help for HALion (in pdf-format). To be able to read it, you need to have the Acrobat Reader installed, which is included on the program CD.
Version History...	This opens a document describing the version history of HALion 2.
HALion Website...	This launches your web browser application and opens the dedicated web site for HALion.
Steinberg on the Web...	This directs your web browser to Steinberg's Website.
About HALion...	This brings up information about the program.

---

## The Channel/Program page view



The Channel/Program page view contains settings for HALion's 16 MIDI channels, the 12 virtual outputs and the 5.1 surround option. Here you can set which Program should be assigned to each of the 16 MIDI channels and to which of HALion's virtual outputs each channel should be assigned.

- For information on how to make Program/Channel settings, see [page 59](#).
- For information on how to make Output assignments, see [page 60](#).
- For information about the 5.1 surround option, see [page 117](#).

## The Keyzone page view



The Keyzone page view offers a graphic overview of all samples in a Program, their key zones (the note range across the keyboard which samples are mapped to) and velocity settings. The Keyzone page view has many powerful features, and is where the majority of sample-oriented editing takes place.

The vertical “strips” indicate the velocity range for each sample, and the horizontal width of each strip indicates the keyzone range for each sample. In the figure above, all samples have a keyzone range of one note. The rightmost group of samples is selected, indicated by the handles at the top and bottom of each strip.

For a full description of the Keyzone page view, see [page 61](#) onwards.

## The Loop page view



In this page view you can set loop points for a sample. It is possible to set up both a sustain loop that governs what portion of the sample should loop when a key is held down, and a release loop which governs a separate independent loop activated after a key is released. You can define loops graphically in the sample waveform, or numerically. The Loop page view is described on [page 89](#) and onwards.

## The Envelope/Filter page view



The Envelope/Filter page view contains two envelope generators with up to 32 stages each, a multi-mode filter section (DCF) and an amplifier section (DCA). See [page 99](#) and onwards.

## The Mod/Tune page view



The Modulation/Tune page view contains an extremely powerful modulation section, where a source modulator can be multiplied by one or several modulators and/or values and finally applied to a destination parameter. In addition to the Modulation section, this page view contains the two LFOs, a tune section and a voice grouping section. This page view is described on [page 121](#) and onwards.

## The MegaTrig page view



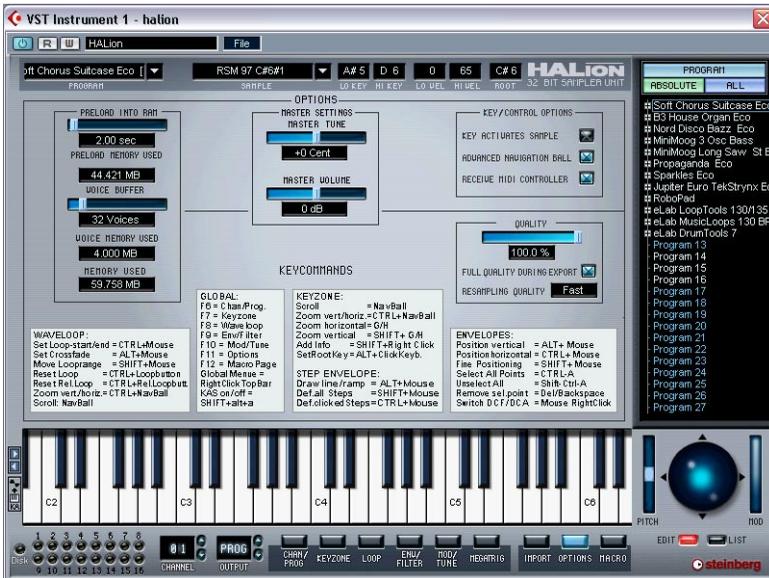
The MegaTrig page allows you to set up various conditions for triggering samples. See [page 133](#) onwards.

## The Import page view



The Import page view is used for importing external audio file formats, such as SoundFonts, Giga etc. See [page 139](#).

## The Options page view



The Options page view is used for making memory settings and various other options that govern global HALion functions. See the chapter [“Settings in the Options page view”](#) on page 147.

## About the Macro page

The main difference between the Macro page view and the other page views is that the Macro parameters always affect all samples in a program. Hence, there are no window sections that relate to settings on a “sample level”. Also note that the Macro parameters are not separate parameters. The Macro Filter section governs exactly the same parameters as the Envelope/Filter page view – the difference is solely that all samples in the Program are always affected.

The following section describes the common window sections for all other page views (although the keyboard, the MIDI channel/virtual output/page view selectors are also present in the Macro page view).

# Common window sections

Each HALion page view is subdivided into several logical sections, common to all page views. Here follows a description of all the common window sections. To bring these sections into view you have to first select any page view (see [page 29](#)) except Macro.

## The Program List

The Program List is located on the right side of the HALion window. This list has many important functions. First and foremost, it is where you decide whether the current page view parameter should affect all or only the selected samples in a Program.

You can also use it to select samples or Programs, drag samples from the list into the Keyzone window, create subfolders for organizing samples and much more.

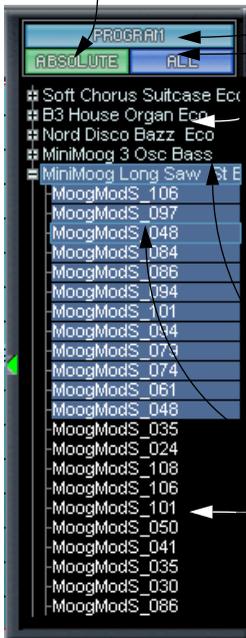
The Program List contains the following:

- The current Program Bank (i.e. 128 Program folders which may either be empty or contain samples).

A Program's associated samples reside in the Program folder (or in subfolders). Empty folders can not be opened.

This button toggles between Absolute and Relative editing – see [page 72](#).

This indicator displays whether All or Select mode is active (see below). In Select mode it also indicates whether one or multiple samples are selected – see [page 71](#).



This button toggles between All or Select mode – see [page 71](#).

Program Folders. A plus sign before the name indicates that the folder is closed, a minus sign that it is open. Clicking on a Program name selects it and all the samples in the Program. Use [Shift] + click to select multiple samples. [Alt]-clicking on a plus sign will open/close all Program folders.

The currently selected Program is indicated by a light blue border.

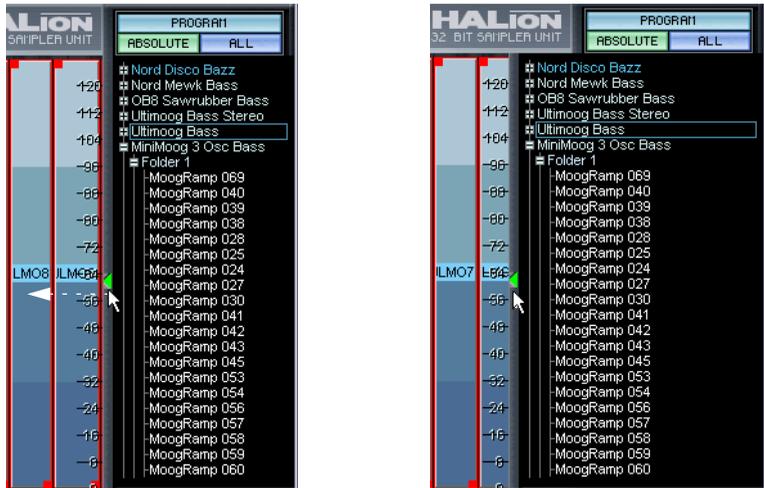
The currently selected samples are highlighted. A light blue border indicates the currently "View Selected" sample – see [page 67](#).

These samples belong to the same Program, but are currently not selected. Use [Shift]+click to select a range of samples, use [Ctrl] (Windows) or [Command]+click (Mac) to select multiple samples.

You can drag the Program List to the left, thus extending the width of the list in order to view longer Program/sample names in full.

Proceed as follows:

1. Select the Keyzone page view.  
This function is only available when this page view is selected.
2. Click anywhere on the left border of the Program List and drag it to the left.



Extending the horizontal view of the Program List.

For more detailed information about the Program List please refer to the chapter [“Editing in the Keyzone page view”](#). Other functions, like scrolling the Program List are described in the next section.

## The Navigation Controller



The Navigation Controller is used for scrolling or zooming. Besides scrolling up/down and left/right, it also functions a bit like a joystick in some page views, in that it can move over two axes simultaneously. To use the Navigation Controller, simply click in the middle of the light blue area and drag in any direction.

- The speed of the scrolling or zooming is determined by the position of the pointer.  
If you drag it further away from the Navigation Controller, the speed increases and vice versa.

The Navigation Controller always affects one of the following areas:

- The currently selected page view (Edit mode).  
The functionality varies depending on which page view is selected.
- The Program List (List mode).

Selecting any item in the Program List automatically switches the Navigation Controller to List mode. Selecting any item in one of the page views to the left of the Program List that is zoomable or scrollable automatically selects Edit mode.

Let's take a look at how the Navigation Controller can be used in the Program List, for example:

1. Make sure List mode is active.
2. Click and hold down the mouse button at the center of the Navigation Controller and drag the pointer up or down.  
This scrolls the Program List. Notice that the Navigation Controller's blue light moves up and down as you scroll. If you move the pointer further away, the list scrolls faster. This functionality requires the "Advanced Navigation Ball" option to be set in the Options page view.
3. Hold down [Ctrl] (Windows) or [Command] (Mac) and scroll the Program List.  
This increases or decreases the size of the text in the Program List. This can also be done by typing [H] or [G], respectively (given that List mode is selected).

- 
- ❑ **What the Navigation Controller controls in different page views is described in the relevant page view chapter.**
- 

## The Keyboard

The keyboard logically spans the entire range that you can assign samples to, from C2 to G8. It is used to quickly audition samples by clicking a key to which a sample is assigned. A blue dot indicates the key where you last clicked.

- To scroll up or down the keyboard range, drag the Navigation Controller (set to Edit mode) left or right.  
This is true for all page views except Macro and Loop. As the Macro page view doesn't contain a Navigation Controller you can instead use the little arrow buttons to the left of the keyboard to scroll.
  - By pressing [Ctrl] and dragging the Navigation Controller to the left/right you zoom in/out to change the size of the keys and thus extend or decrease the visible range of the keyboard.  
This is true for all page views except Macro and Loop.
- 
- ❑ **This function also affects the visible size of the key zones in the Keyzone page view.**
-

- You can audition samples with varying velocity values using the mouse.  
The further down on a key you click, the higher the velocity value, and vice versa. For more information on velocity, see [page 53](#).

Click here for maximum velocity.



Click here for minimum velocity.



## The Playback indicators/Channel selector buttons



Playback indicators

Channel selector buttons

Each of the 16 MIDI channels can play a separate Program. When you select one of the channels 1 to 16 in HALion, it automatically switches to the Program currently assigned to that channel.

There are several ways you can change the currently selected channel/Program.

- By using the up/down arrow buttons beside the Channel indicator.
- By clicking the playback indicators – they light up when a sample is played back on the respective channel.
- By selecting any Program assigned to channels 1 to 16 in the Program List.

## The Program Output selector



The Program Output selector is used for setting which of the virtual outputs a Program is routed to. The options are “PROG”, “St. 1 + 2”, “St. 3 + 4”, “St. 5 + 6”, “St. 7 + 8”, the four mono outputs “9” to “12” and the 5.1 surround option (this is described on [page 117](#)).

By default, “PROG” is set to “St. 1 + 2”.

Setting the output for individual samples and defining where the Program output is routed to is done in the Envelope/Filter page view, see [page 116](#).

## The Program selector pop-up



This pop-up allows you to select one of the 128 Programs (presets) in the Program Bank and assign it to the currently selected channel (MIDI output channel). To rename a Program, click in the name field and type in a new name.

## The Sample selector/numeric edit fields



The sample selector allows you to select one sample in the current Program and always displays the currently “View selected” sample (see [page 67](#)). The fields to the right can be used to set the keyzone range (LO/HI KEY), the velocity range (LO/HI VEL) and the root key. The different parameters and how you can edit them is explained in the chapter [“Editing in the Keyzone page view”](#).



# 5

## Editing in the Macro page view



The Macro page view represents HALion's basic operational mode. Here you adjust the basic parameters like filter and envelope settings and apply these settings to the Program as a whole. All parameters in the Macro page view affect all samples in the current Program. The parameters in the Macro page view are the same as in the other page views, but some (like the envelopes) are more basic. Also, the other page views contain parameters not found in the Macro page view.

The Macro page view parameters are described on the following pages.

## The Filter section (DCF)



- It is worth mentioning that the filter is described as one entity. In the Macro page view this is true – there is only one filter (per channel) that will affect all samples in the Program assigned to the channel. But by using the Envelope/Filter page view, each sample can have its own filter settings. The same applies to other parameters described in this chapter. So really with HALion you have access to an arbitrary number of filters/envelopes etc.

A filter removes certain frequencies from an audio signal. The filter in HALion offers five basic filter modes as well as a selection of alternative filters developed by Waldorf, the renowned German synth manufacturers.

The Filter section contains the following parameters:

### Filter Type



Clicking the “Filter Type” field opens a pop-up menu where you can select one of the following filter types:

#### Low Pass (24dB/12dB)

Low pass filters let low frequencies pass and cut out the high frequencies. This is the most commonly used filter type in synthesizers and samplers. The low pass filter in HALion can be set to either 24dB/octave or 12dB/octave roll-off slope. A 24dB roll-off slope dampens the frequencies above the cutoff frequency more than a 12dB roll-off slope.

## High Pass

A high pass filter is the opposite of a low pass filter, cutting out the lower frequencies and letting the high frequencies pass. It has a 12dB/octave roll-off slope.

## Band Pass

A band pass filter cuts both high and low frequencies, while midrange frequencies are not affected. Each slope in this filter type has a 12dB/octave roll-off.

## Notch

A notch filter can be described as having the opposite effect of a band pass filter. It cuts off frequencies in a midrange band, letting the frequencies below and above through. This filter type also has a 12dB/octave roll-off slope.

## Waldorf

These special filter modes cover the same basic range of filter types; 12/24dB LP and HP, as well as band pass and notch, but offer a different character.

## Filter Cutoff



Perhaps the most important parameter for a filter is its cutoff frequency, which is the setting that determines where in the frequency material it should start cutting. If the cutoff frequency in a low pass filter is set to a very low value, only the lowest frequencies will pass through. If you raise the cutoff all the way up, all frequencies will be let through.

- 
- ❑ **The filter cutoff may also be affected by the Filter Envelope Amount setting (see [page 51](#)) and the Filter Velocity setting (see [page 113](#)).**
-

## Filter Resonance



For low pass filters, raising the filter resonance value will emphasize the frequencies around the set filter frequency. This produces a sharper filter cutoff sweep, but a thinner overall sound. The higher the filter resonance value, the more resonant the sound becomes until it produces a whistling or ringing sound. When you use the band pass or notch filter, the resonance setting adjusts the width of the band. When you raise the resonance, the band where frequencies are let through (band pass), or cut (notch) will become narrower.

## Filter Envelope amount



This parameter determines how much the filter cutoff should be affected by the filter envelope (see below). Raising this value creates more drastic results. The Envelope Amount parameter, the filter envelope and the set filter frequency are related.

Both positive and negative percentage amounts can be set. If negative amounts are set, the way the envelope affects the cutoff will be inverted. For example, if a positive value causes the Decay parameter to lower the filter cutoff, a negative corresponding value will instead raise it.

# The Envelope section



The Filter Envelope (DCF) and the Amplifier Envelope (DCA).

An envelope determines a chronological sequence for changes that can affect the pitch, timbre or level of a signal. This sequence is triggered by notes that are either played on the MIDI keyboard or sent from a sequencer track.

In the Macro page view, HALion has two envelope generators with faders for Attack, Decay, Sustain and Release (ADSR) for every channel. The DCF creates the filter envelope which controls the filter cutoff parameter. The DCA (Digitally Controlled Amplifier) affects the volume of the Program.

Parameter	Description
Attack	Controls the time it takes for the signal to reach its highest level.
Decay	Controls the time it takes the signal to decay to the sustain level.
Sustain	Controls the signal level after the Decay phase, while the key is still held down on the MIDI keyboard.
Release	Controls the signal after a key is released.

## The Amplifier section (DCA)

This section controls the volume of the Program.

### Amplifier Amount



This parameter determines how much the volume should be affected by Envelope 2 (see above). Normally this is set to 100%. If this is set to 0%, no sound will be produced.

### Amplifier Volume



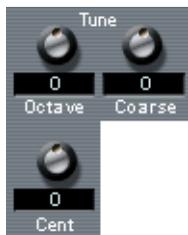
This parameter can be used to boost the sample's level to up to a maximum of 6dB.

### Amplifier Velocity



This dial controls how much the volume is affected by velocity. Velocity is a value determined by how hard or soft you play notes on your keyboard. With Velocity set to 0%, the volume will be constant no matter how hard or soft you play. Increasing this value progressively will make the volume more and more sensitive to how hard or soft you play.

## Tune section



The Tune section is used to control the tuning of the Program in either octave, semitone (“Coarse”) or cent increments. You can tune the octave range +/- 5 octaves, the semitone range +/- 11 semitones and the cent range +/- 100 cents (cent = 100th of a semitone).

## Glide

By using the Glide dial, you can set a glissando (up to 3 seconds) between successive notes.

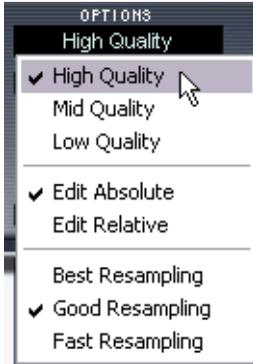


## The LFOs



The parameters in the LFO section allow you to vary the frequency and the waveform of the two LFOs. The LFO section is described on [page 129](#).

# The Options pop-up menu



Click this field to open a pop-up menu with the following options:

## High/Mid/Low Quality

The Quality setting provides a way of balancing audio quality vs. conservation of computer power.

- High Quality uses the highest sample rate, but also requires more CPU time.
- Mid Quality uses less CPU power. Depending on the type of sounds you are using, this mode can provide adequate reproduction in many instances.
- Low Quality works with the lowest sample rate, producing a “Lo-Fi” sound.

Quality can also be set in the Options page view. This is the same parameter, but it is set as a percentage value between 0 and 100% (see [page 150](#)).

- 
- ❑ **The Quality setting is global for all channels in a HALion unit. Programs (or samples) cannot have different quality settings!**
- 

## Edit absolute/Edit relative

This option determines whether the global settings you make in the Macro page view should set the changed parameter to an absolute value, or change values relative to the previously set value.

Absolute/relative editing is explained in more detail on [page 72](#).

## Fast/Good/Best Resampling

Resampling removes anti-aliasing artifacts, which can be especially noticeable in high frequency areas. The higher the setting, the better these artifacts will be suppressed.

- The trade-off with higher settings is heavier CPU load.  
For samples with little high frequency content you can safely use the “Fast” option.
- Resampling quality can also be set in the Options page view.

---

☐ **The Resampling setting is global for all channels in a HALion unit. Programs (or samples) cannot have different resample settings!**

---

**6**

**Editing in the Channel/Program  
page view**

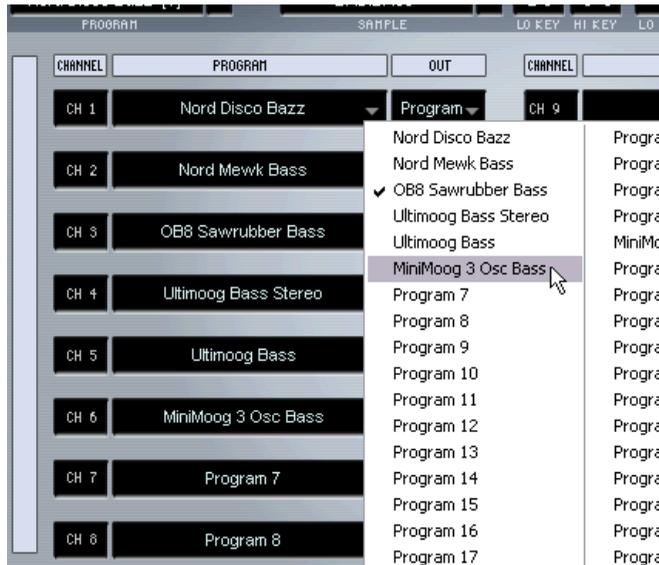


This page view allows you to assign any Program in the Program Bank to any of the 16 channel “slots” in HALion. You can also make output assignments for the 16 channels.

## Selecting a Program for a channel

There are three ways to select a Program for a channel:

- By using the Program pop-up menu for a channel slot. Click the arrow in the Program column for the channel you want to select a Program for, and select a Program from the menu.



- By sending a Program Change message via the same MIDI channel. Any Program Change message between 1 and 128 will change the currently assigned Program to the Program with this number.

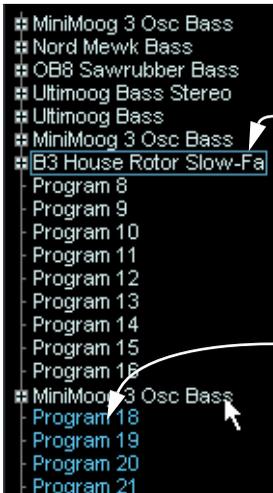
The last example involves two steps:

1. Click on a channel number to select the channel.



Click here to select the channel.

2. If you now click on a Program name in the Program List that is currently not assigned to any of HALion's 16 channel slots, it will be assigned to the selected channel.



This Program is assigned to channel slot 7, and selected. Programs assigned to any of the 16 channel slots have white text.

This Program is currently not assigned to any of the 16 channel slots. Unassigned Programs have blue text. If you click it, it will replace the Program in channel slot 7.

## Selecting the output for a channel

Clicking in the Output column for a channel slot opens the Program Output pop-up menu. This allows you to select which of the virtual outputs the selected channel/Program should be routed to. This is described on [page 45](#).

# **7**

## **Editing in the Keyzone page view**



The Keyzone page view takes care of all your sample mapping, layering and velocity scaling needs. A graphic and intuitive user interface makes it very easy to survey all the samples in a Program. This chapter covers all the operations possible in the Keyzone page view, but also all operations involving the Program List, and general file handling issues such as importing samples.

# Window overview

When you have loaded a Program, the Keyzone page view displays all the samples, mapped out horizontally over the Keyboard so you can clearly see what keys have samples mapped to them. The range across the keyboard that a sample is mapped to is called a key zone.

Both the Keyzone (Lo/Hi Key) and the Velocity range (Hi/Low Vel) can also be edited in the Edit fields.

The sample in the figure is both selected for editing (indicated by a red border and the two red “handles” in the top left and bottom right corner) and “View selected” (indicated by a green border – see [page 67](#)).

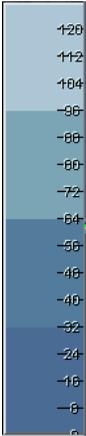


This sample has a key zone range from the C2 key to the D2 key.

A sample in the Keyzone window. Note that each key is superimposed in the Keyzone window background, black keys having a dark blue outline and white keys a light blue outline. This makes it easier to accurately scale and pinpoint ranges.

## How samples are displayed

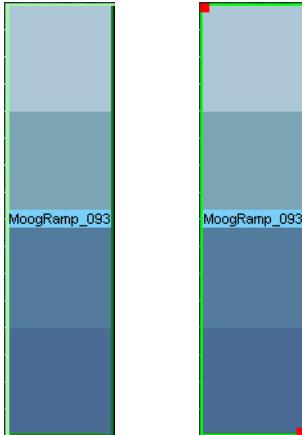
- Samples are colored in 4 different shades of blue according to the velocity range; dark blue at the lowest velocity range (0-32) with lighter shades of blue at each successive range.



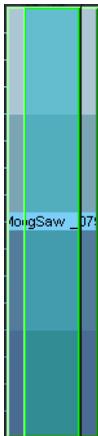
- Samples that are located in the Program folder have red borders and handles when selected.



- Samples that are located in a subfolder of the Program folder are indicated by light green borders. When selected, samples have red handles and bright green borders.



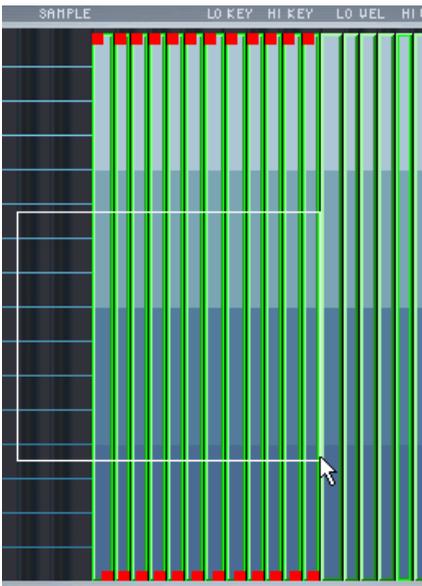
- Overlapping samples are colored turquoise in the overlapping range.



# Selecting samples

The following methods can be used to select samples in the Keyzone page view:

- Clicking on a sample selects it.
- Selected samples are indicated by red handles and borders. If samples reside inside a subfolder of the Program folder, they will have red handles and green borders when selected.
- Use [Ctrl]/[Command] + click to select several samples. Click somewhere in the window (but not on a sample) to deselect all samples.
- Draw a selection rectangle by clicking and dragging in the window. All samples encompassed by the rectangle will be selected.



Drawing a selection rectangle.

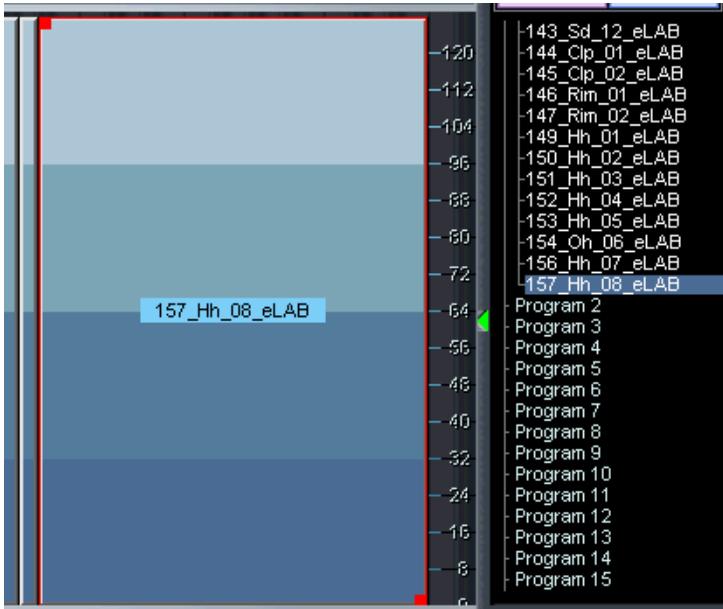
- You can select samples by clicking on their names in the Program List. You can also select samples by using the up/down arrow keys in the Program List. See [page 40](#) for a further description of selecting in the Program List.

## About the “view selected” sample

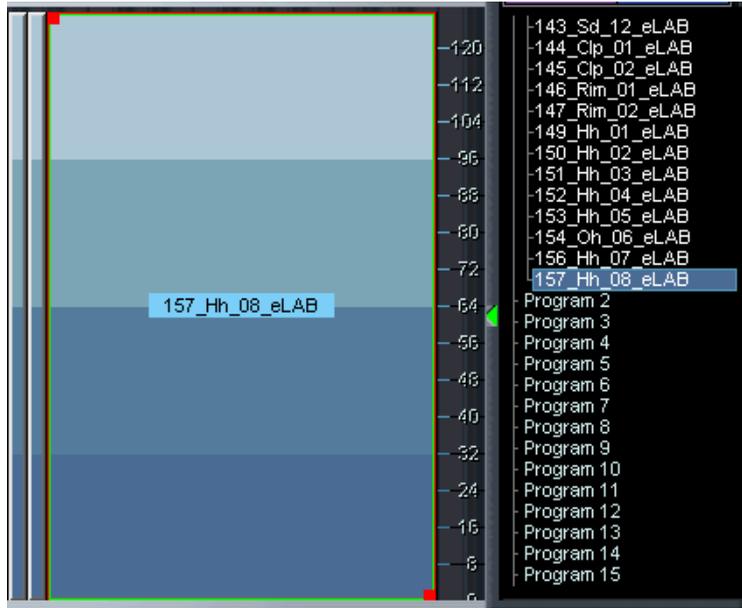
As explained earlier, the Sample selector field at the top of all page views shows the name of the selected samples. In the Keyzone editor, you will notice that one sample has a green or red/green border. The green border indicates that the sample is currently “view selected”. It is this sample’s parameters that will be shown when viewing any of the page views that show the settings for one sample at a time (specifically the Loop, Env/Filter and the Mod/Tune page views). The following determines which sample will be view selected:

- When you select samples using [Shift] + click, the last sample you click on will be view selected.  
If you draw a selection rectangle to select samples, the currently view selected sample will continue to have the focus.

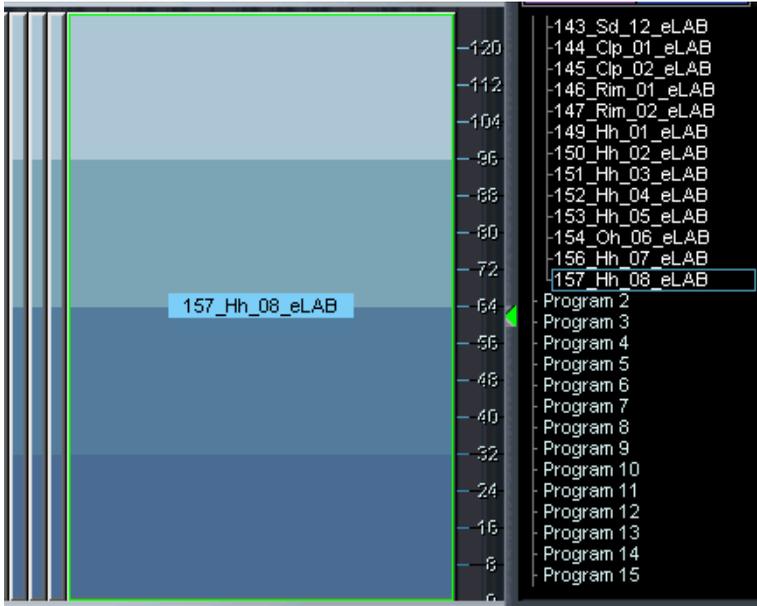
- If you [Alt] + click on a sample in the Keyzone window that currently has a red/green border, it will remain view selected but not edit selected. The sample will then have only a green border.



The sample is selected for editing, but not view selected, as indicated by a red border in the Keyzone window, and by being highlighted in the Program List.



The sample is edit selected and view selected, as indicated by a red/green border in the Keyzone window, and by being highlighted and having a light blue border in the Program List.



The sample is view selected, but not selected for editing, as indicated by a green border in the Keyzone window and a light blue border in the Program List.

The currently view selected sample name is also displayed in the Sample selector field. You can also use the Sample selector pop-up to select another sample, but this will deselect all other selected samples.



## About the “ALL/SELECT” status button

There is one central functionality attached to virtually all editing operations in all HALion’s page views (except Loop and Macro) that is dependent on whether samples are selected or not. That is the “ALL/SELECT” setting at the top of the Program List. You toggle between the two basic modes by clicking the lower right button (it either reads “ALL” or “SELECT”).



In this mode, only selected samples will be affected by parameter changes. “MULTI SAMPLE” indicates that several samples are currently selected.



In this mode, a single selected sample will be affected by parameter changes. “SAMPLE” indicates that only one sample is selected.



In this mode, all samples in the Program will be affected by parameter changes, regardless whether samples are selected or not. “PROGRAM” indicates that the whole Program will be affected.

## Edit Absolute/Edit Relative



In addition, by clicking the button that either reads “RELATIVE” or “ABSOLUTE”, you switch between Absolute or Relative editing mode. This is only meaningful if you have selected “ALL” or have several selected samples, as the “ABSOLUTE”/“RELATIVE” setting doesn’t matter if only one sample is selected.

The “ABSOLUTE”/“RELATIVE” setting determines whether the editing you perform should set the changed parameter to an absolute value, or change values relative to the previously set value for all or selected samples. With the exception of Pitch and Volume, a certain percentage of all values is changed. For Pitch and Volume, the values are changed by adding or subtracting from the current values. Have a look at the following examples:

### Example 1 (Absolute mode)

For some of the samples of a Program a Volume of +2dB has been set in the Env/Filter page view, while all other samples in this Program have a Volume of -2dB. When setting a Volume of +4dB in Absolute mode, this setting is applied to all or all selected samples.

### Example 2 (Relative mode for Volume and Pitch)

In Relative mode, changing the current Volume setting by 2dB will change the Volumes of all or all selected samples by 2dB.

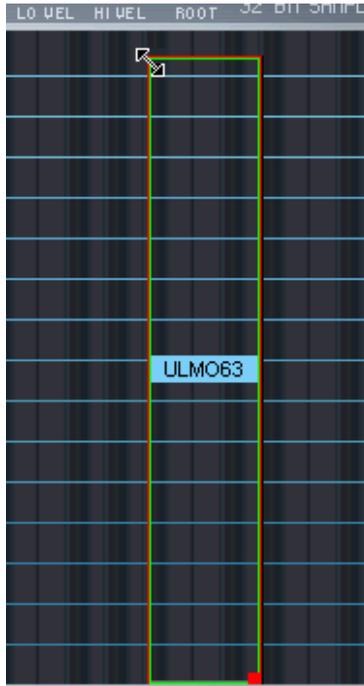
### Example 3 (Relative mode for all remaining parameters)

For Sample 1 a Cutoff value of 60 has been set in the Env/Filter page view, while for Sample 2 Cutoff has been set to 80. When changing the Cutoff setting by 20 for Sample 1, this corresponds to a change of 50% with respect to the maximum value. For Sample 2 this change of 50% with respect to the maximum value results in a change by 10 to a setting of 90.

# Setting keyzone and velocity range

## Using the handles

The handles can be used to set both the keyzone and the velocity range for a sample. You can only set the Keyzone range for one sample at a time.

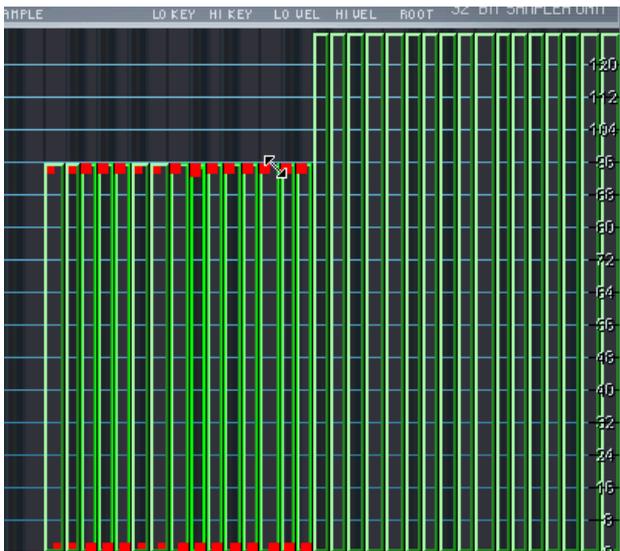


Using the top handle. When you click on a handle, the pointer changes to a double arrow, and the sample itself becomes transparent.

You can use the handles in the following way:

- Click the top handle to either extend the keyzone by dragging to the left, reduce the keyzone by dragging to the right or scale the high velocity by dragging up or down.  
Clicking on the left side or border of a sample allows you to set the key zone range in the manner outlined above, but not the velocity.

- Click the bottom handle to either extend the keyzone by dragging to the right, reduce the keyzone by dragging to the left or scale the low velocity by dragging up or down.  
Clicking on the right side or border of a sample allows you to set the key zone range in the manner outlined above, but not the velocity.
- Hold down [Shift] and drag the handles up or down to set velocity Lo/Hi values for several selected samples simultaneously.



Setting the high velocity value for several selected samples.

## Using the edit fields

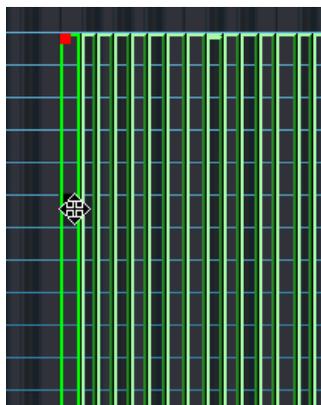
You can also set Keyzone and Velocity by using the Edit fields at the top of the window. This only affects one sample at a time: the currently view selected sample. The following methods can be used:

- Click in one of the Edit fields to type in a new value. Press [Enter] to confirm.
- [Ctrl]-click (MacOS) or right-click (Windows) in an edit field and drag up or down to change values, like using an invisible fader.
- If you have a wheel mouse, this can also be used to change values by clicking in the Edit fields (Windows only).

## Moving samples

Selected samples can be moved around in the Keyzone window:

- Clicking in the middle of a sample, so that the pointer becomes a four-way arrow (Windows) or a Plus sign (Mac) allows you to drag the selected sample(s) left or right (and up or down if the velocity range has been scaled from the default 0 to 127 range) in the Keyzone window. Note that when you move samples horizontally, they will be transposed. To make moved samples play back at the right pitch again you have to change the Root Key setting (see below).



Moving samples in the Keyzone window.

## Deleting samples

You can delete selected samples using the standard commands [Delete] or [Backspace]. This means that the samples will no longer be referenced by the current Program (if saved after deleting the samples). Samples are not deleted from their current location on disk.

# Setting the Root key

The root key determines the pitch of the sample. Samples can contain root key information embedded in the file, which means that when loaded, they will automatically be mapped to the corresponding key(s).

The sample collections included with HALion contain both multisampled instrument Programs, with samples of a specific instrument (where often there is one sample for each corresponding note across the keyboard), and “single-shot” sample Programs, where different separate samples are mapped across the keyboard without any key/pitch relationship. In the former case (i.e. when samples already have the correct root key and are mapped to the corresponding key), it doesn't generally make any sense to change the Root key settings. But in the latter case, you may want to move samples around, and the same applies to imported pitched samples that do not have Root key information.

If you have moved samples in the Keyzone window, you can easily make them play back at the original pitch by setting the Root key manually in the Root edit field. If you set the Root key to the same key a sample is mapped to, it will play back at the sample's original pitch.

You can set the Root key for a sample by holding down [Alt] and clicking the corresponding key on the keyboard. When you move a sample, you can make the Root key “move” with the sample by holding down the [Alt] key while dragging the selected sample.

If you have loaded samples, refer to “Importing Samples”.

- If the sample is mapped to a Keyzone stretching over several keys, you can set which key you want to be the root key according to whether it is the low key, the middle key or the high key in the Keyzone. This is explained on [page 83](#).

# Importing samples

Earlier we have explained how to load a Program Bank and individual Programs using the File pop-up. But to make up your own Programs using your own samples, you first have to import the samples into HALion. This can be done in a number of ways:

- By dragging the samples (audio files) and dropping them into the Keyzone window or the Program List (in any page view) – see [page 79](#).
- By using Import Sample(s) in the Program List context menu – see [page 83](#).
- By using Import Sample(s) in the Keyzone window context menu – see [page 83](#).
- By using the Import page view – see [page 139](#).

## What audio file formats can be loaded?

HALion supports the following file formats:

---

<b>Audio File Format/ Extension</b>	<b>Description</b>
Wave File/.wav	The standard audio file format for the PC platform.
AIFF/.aif	Audio Interchange File Format. The standard audio file format for the MacOS platform.
AIFC/.aif	Compressed Audio Interchange File Format. Similar to AIFF, but compressed (32-bit float format only).
LM4/LM9/.txt	Script files created for the LM4 or LM9 Drum modules.
REX/.rex and REX2/ .rx2	ReCycle Export files. ReCycle is a program created by Propeller-head Software that slices up music loops, and allows them to play back at any tempo. To use the REX file with HALion, you also need a MIDI file (created in ReCycle) to play back the slices correctly.
Sound Designer II/ .sd2 (MacOS only)	The native audio file format used by Digidesign software.
HALion Effect Program/.fxp	A Program containing samples and parameter settings.
HALion Effect Bank/ .fxb	A Program Bank, containing up to 128 Programs.

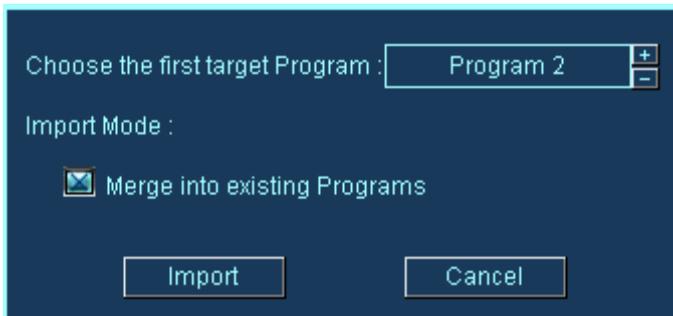
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- 
- ❑ HALion can read 32-bit float files, in all compatible formats that support this resolution, as well as other common bit resolutions (8-bit files excepted). Files may also have any sample rate.
- 
- ❑ By using the Import page view you can also import Banks, Programs and samples from sample CDs in various formats – see [page 147](#).
- 

## Import Sample(s)

When “Import Sample(s)” is selected from the Program list or Keyzone context menus, a standard file dialog opens where you can select audio files or HALion Bank or Instrument files (Programs) for import, into the currently selected Program. You use the “Files of type” pop-up to decide what file formats you wish to import.

- If the currently selected Program contains samples, and you select a HALion Effect Program (.fxp), the following dialog appears:



Here you can either select a new target Program by using the +/- buttons, or import the Program into the current Program. In the latter case, the following applies:

- If “Merge into existing Programs” is checked, the samples in the imported Program will be merged into the existing Program, and the existing Program will keep its name.
- If this option is unchecked, the imported Program replaces the current Program.

## Importing samples using drag and drop

The following applies when using drag and drop to load samples:

- You can import samples to a specific key (or key range) in the Keyzone window.  
Simply select the file(s), and drag them into the Keyzone window. If the samples do not contain root key information, the key the mouse pointer points to when “dropping” determines the keyzone the sample will be mapped to. If several samples are selected, they will be mapped chromatically upwards from this key.

---

- ❑ **If the sample(s) contain root key information embedded in the file, they will be mapped to the corresponding key(s), regardless of what key they are dropped on!**

---

- You can drag and drop samples into any folder in the Program List.  
Simply select the file(s), and drag them into the Program List. Remember that the mouse pointer determines the ultimate destination. Point at the folder, open or closed, that you wish to import the samples to when you “drop”.

---

- ❑ **When you import several samples in this way, and the samples do not contain any Root key information embedded in the file(s), the samples will be mapped chromatically from the selected key on the keyboard (marked with a blue dot). If a sample is already mapped to this key, the dropped samples will be mapped to keys starting from C1.**

---

- ❑ **You can also import Programs or Program Banks using drag and drop.**

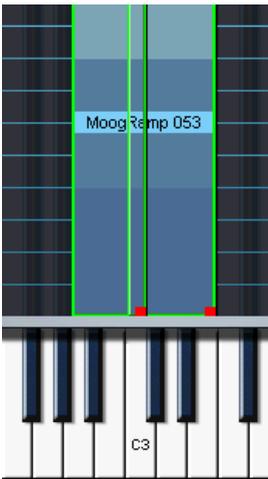
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# Overlapping keyzones

A key range can contain more than one keyzone, as any number of samples (each with its own keyzone) can be layered on top of each other. This can be done in many different ways:

## Playing several samples from one key

You can simply map two or more samples to the same key range. This will play back all samples mapped to this key (or key range) simultaneously. When samples are layered, the color of the samples changes from blue to turquoise (in the overlapping part), and the outline of the overlapping sample(s) is visible. However, if layered samples have identical keyzone and velocity ranges, then layering is indicated by the turquoise color alone.



These two samples are layered (overlap) on the C3 key. Sometimes only the keyzone currently “in front” will be accessible, making it impossible to adjust the handles for a underlying keyzone. In such cases you have to use the context menu items “Send To Back” and “Bring To Front”. All context menu items available in the Keyzone page view are described on [page 83](#).

- 
- You can also use the MegaTrig page view to trigger overlapping samples in different ways – e.g. to have Note On trigger one sample and Note Off another sample – see [page 133](#).
-

## Velocity switching

You can use velocity switching to determine how samples mapped to the same key or key range will play back.

By setting different high/low velocity values for several samples, you can determine which sample is played by how hard or soft you play.



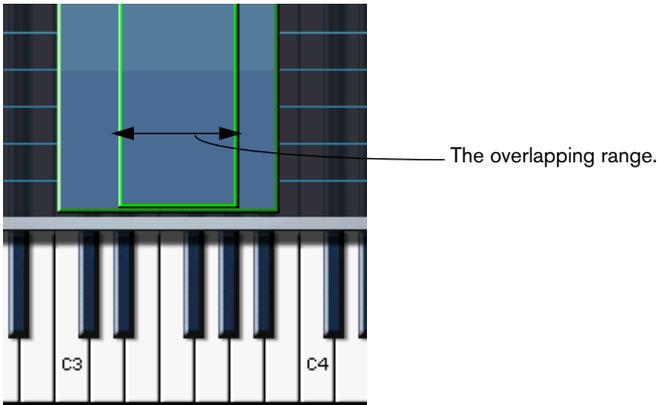
Three samples that are velocity switched. If you look at the velocity scale to the right, the lower sample will play back when triggered by velocities between 1 and 40, the middle sample when triggered by velocities between 41 and 80, and the top sample when triggered by velocities higher than 80. Note that the velocity ranges set in the figure above are exclusive, meaning that only one sample at a time will ever play back. But you could also have overlapping velocity ranges in which case two samples would be played back in the overlapping range, which can produce a smoother transition between two samples.

## Applying crossfades

- Crossfades are selected from a context menu. All context menu items are described on [page 83](#).

You can also apply “crossfades” to overlapping Keyzones. There are two methods:

### X-Fade Pitch



Crossfading according to pitch.

Example: Two samples overlap in a key range over one octave. For both samples the “X-Fade Pitch” option has been selected. A linear fade-out is applied to the sample with a lower value in the “Lo Key” field within the overlapping range as the pitch increases (i.e. the higher the note played within the key range). The sample that has a higher value in the “Lo Key” field is faded in as the pitch increases within the key range.

### X-Fade Velocity

This will crossfade samples by velocity in the overlapping range.

If X-Fade Velocity is applied, samples will be crossfaded according to how hard or soft you strike a key in the overlapping range. The harder the key is struck (in the overlapping range) the more of one of the samples (determined by which sample is view selected when applying the crossfade) and less of the other sample will be heard, and vice versa.

- It is also possible to apply pitch and velocity crossfades together.

# Context menu items in the Keyzone window

The Keyzone page view features powerful context menus, providing many functions and features. Context menus are opened by [Ctrl]-clicking (MacOS) or right-clicking (Windows) in the Keyzone window, either directly on a sample or in an empty area of the Keyzone window.

## Sample specific context menu

Right-clicking (Win) or [Ctrl]-clicking (MacOS) on a sample either in the Keyzone window or in the Program List brings up the following context menu items, which are mostly applicable to the currently View selected sample:

Menu Item	Description
Sample Name	The top menu item displays the name of the currently View selected sample. All items on the top half of the menu will apply to the currently View selected sample.
Replace...	This opens a standard file dialog allowing you to replace the currently View selected sample with another. The new sample will have exactly the same properties (i.e. keyzone/velocity range, parameter settings etc.) as the original sample. You cannot use the Undo function to undo a Replace operation.
Rename...	Allows you to rename the currently selected sample. Note that if this sample is referenced to by another Program, it would have to be re-referenced.
X-Fade Pitch	This applies a pitch crossfade in the overlapping range between the currently selected sample and one (or several) other sample(s). This function can be turned on or off at will by selecting or deselecting it from the context menu. Pitch crossfades are described on <a href="#">page 82</a> .
X-Fade Velocity	This applies a velocity crossfade in the overlapping range between the currently selected sample and one (or several) other sample(s). This function can be turned on or off at will by selecting or deselecting it from the context menu. Velocity crossfades are described on <a href="#">page 82</a> .
Exclude from Automation	By selecting this item you can exclude the currently View selected sample from any recorded parameter automation changes. Automation is described on <a href="#">page 151</a> .

<b>Menu Item</b>	<b>Description</b>
Mute	This mutes (silences) the currently View selected sample. Muted samples are displayed in grey in the Keyzone window, and are listed in italics in the Program List.
Solo/Unmute All	This mutes all samples except the currently View selected sample. Deselecting this unmutes all samples.
Bring To Front/Send To Back	This allows you to access samples that may be hidden behind other overlapping samples. Bring To Front will bring the currently View selected sample to the front, Send To Back will send the currently View selected sample to the back, and bring any underlying sample to the front.
Center in Keyzone	This will scroll the view so that the currently View selected sample will be in the middle of the Keyzone window.
Edit in External Editor	This will open the currently View selected sample in the wave editor of your host application. If you use Cubase SX or Nuendo and have specified WaveLab as your wave editor, HALion will access WaveLab. Refer to the host application's documentation for information about what you can do in the wave editor.
Unload/Load	This will unload the preloaded portion (see <a href="#">page 22</a> ) of the currently View selected sample from RAM. If you open the context menu again, you can reload it. Unloaded samples are displayed in dark blue in the Keyzone window, and are indicated by purple text in the Program List.
Undo	This will undo the last performed "destructive" operation in the Keyzone window. Undoable operations are Cut/Delete/Paste.
Cut/Copy/Paste/Delete	These commands can be used for Cut, Copy, Paste or Delete operations for all selected samples. You can use standard key commands for these operations.
Sample Info/File Info	At the bottom of the menu, information about the currently View selected sample is shown. If you invoke the context menu by Right-click+[Shift] (Win) or [Ctrl]+[Shift]-clicking (MacOS), additional info about the audio file format, length (in time units), size (in bytes), mono/stereo status, sample rate and bit depth is shown. The path to the sample location is also shown.

## The “Locate” and “Search in Directories” items

There are two additional items that appear at the top of the sample specific context menu only when needed; “Locate” and “Search in Directories”. These items appear when the path to the samples in a Program or Bank cannot be found or hasn't been established.



If this warning message appears, one or more audio files could not be found. In the Keyzone page view, samples that were not found when loading are displayed in a slightly darker color in the Keyzone window and in violet letters in the Program List. Locate a missing sample and [Ctrl]-right-click it, either in the Keyzone window or in the Program List, to bring up the context menu. Proceed as follows:

- Select “Locate” from the context menu to bring up a file dialog allowing you to locate the sample you clicked on. Select it and click Open. All missing samples belonging to the Program and located in this folder will now automatically load.
- Select “Search in Directories” from the context menu to bring up a file dialog allowing you to locate the directory (or folder) that contains the samples belonging to the Program.  
This function can search in sub-directories inside the directory you selected, in up to four levels. When the samples are located they will load automatically.

## Program specific context menu

[Ctrl]/right-clicking either in an empty area of the Keyzone window or a Program folder in the Program List brings up the following context menu items:

---

Menu Item	Description
New Folder	This will create a new folder inside the currently selected Program folder. This can in turn contain samples. In all respects a Folder is the same as a Program, but you can import whole Programs into folders without replacing the Program the folder resides in. Organizing samples in folders (or subfolders) allows you to load "Programs into a Program". Folders can be used to structure samples in a Program (for example one folder per octave, or per velocity layer). The advantage is that you can handle all the samples in the folder as an entity, select them (directly by selecting the folder), mute them, load them into another Program, save them as a Program (see below) etc. Samples that reside in folders inside Program folders are indicated by having green borders in the Keyzone window.
Load Folder(s)...	Opens a file dialog where you can browse and select ".fxp" (HALion Effect Program) files for import. This will automatically create subfolders in the selected Program folder for each imported FXP file.
Save Program...	This allows you to save and name the currently selected folder as a ".fxp" (HALion Effect Program) file.
Load Program(s)...	This will load FXP files directly into the current Program folder.
Archive	The submenu items for this menu item will open a standard file dialog where you can name and specify a location for saving Programs together with their associated samples, for archiving purposes. "Save Program with Samples" will save the current Program with all samples. "Save All Programs with Samples" will save the complete Program Bank with all samples, and "Save 16 CH Programs with Samples" will save the Programs and samples currently loaded into the first 16 Program slots.

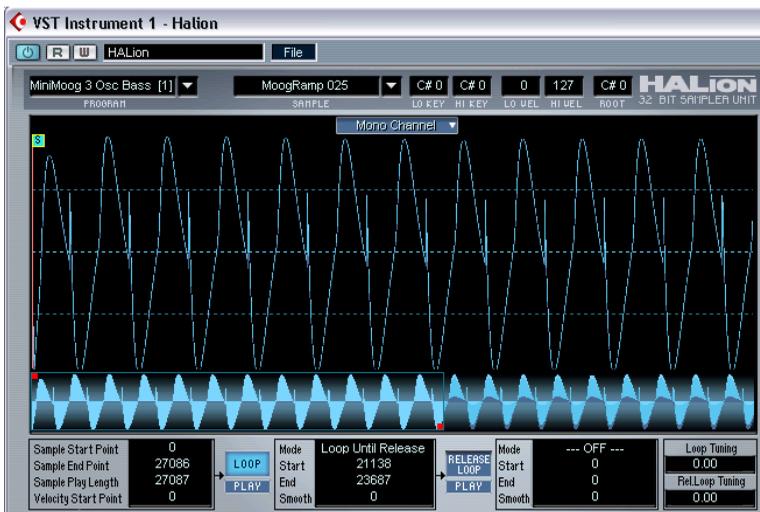
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<b>Menu Item</b>	<b>Description</b>
Import Sample(s)/ Import Sample(s) at mouse position	This menu item opens a standard file dialog where you can select samples for import. The functionality differs according to whether you bring up the context menu by clicking in an empty area in the Keyzone window, or on a Program folder in the Program List. In the first instance, selected samples will be chromatically mapped from the key position you point at in the Keyzone window. The menu item will then read "Import Sample(s) (C2)" (if that was the key position you pointed to). In the second instance the sample(s) will be mapped chromatically from the selected Key on the Keyboard (marked with a blue dot).
Rename...	This allows you to type in a new name for the currently selected Program.
Preload Samples	This allows you to preload all samples for a Program if they have been unloaded. All Programs that are assigned to the 16 channel slots in the Chan/Prog page view are automatically preloaded into RAM, so sometimes you may wish to unload them to save memory.
Always Preload	This allows you to preload a selected Program even when it is not assigned to one of the 16 channel slots. This is useful if you use Program Change messages to change Programs, so that the samples can be instantly triggered.
Mute All/Unmute All	This mutes/unmutes all samples in the currently selected Program or folder, respectively.
Set as Active Program	If you [Ctrl]-click (Mac) or right-click (Win) an unselected Program name in the Program List, you can use this item to select the Program without selecting the samples inside the Program folder.
Undo	This will undo the last performed "destructive" operation in the Keyzone window. Undoable operations are Delete, Cut, Expand Selected and Map Chromatic Selected.
Cut/Copy/Paste	Allows you to use Cut, Copy and Paste operations for selected samples, Programs or Folders. Programs can be copied and pasted into other Programs. If the destination Program is empty, the Program name will be changed according to the copied Program.
Select All	Selects all samples in the selected Program.
Sort by Pitch	This will sort all samples in the selected Program folder according to which keys they are mapped to.
Sort Alphabetically	This will sort all samples in the selected Program folder alphabetically.

<b>Menu Item</b>	<b>Description</b>
("Map selected" submenu) Expand Selected	This will expand the selected sample(s) keyzones in the following manner. If one sample is selected, its keyzone range will be stretched across the entire range overlapping all other samples. If all samples are selected, their keyzones will be extended to the next adjacent sample, without overlapping.
("Map selected" submenu) Map Chromatic Selected	This will remap all selected samples chromatically from the selected key on the Keyboard (marked with a blue dot).
("Set Root Key" submenu) Root Key to Lo Key Selected	This sets the Root to the lowest key in the Keyzone range for selected samples. This means that if a sample is mapped to a keyzone stretching over several keys, selecting this menu item would set the Root to the lowest key in the keyzone range.
("Set Root Key" submenu) Root Key to Mid Key Selected	This sets the Root to the middle key in the Keyzone range for all selected samples. This means that if a sample is mapped to a keyzone stretching over several keys, selecting this menu item would set the Root to the middle key in the keyzone range.
("Set Root Key" submenu) Root Key to Hi Key Selected	This sets the Root to the highest key in the Keyzone range for all selected samples. This means that if a sample is mapped to a keyzone stretching over several keys, selecting this menu item would set the Root to the highest key in the keyzone range.
X-Fade Selected	The submenu contains the same Pitch and Velocity X-Fade options as on the Sample context menu, as well as two items which allow you to remove pitch or velocity crossfades from selected samples.
("Others" submenu) Parameters to Selected	If you have made parameter settings for a sample (with edit mode selected for this sample only), you can select other samples and copy the parameter settings to these by using this menu item.
("Others" submenu) Refresh Selected	If you edit a file in another program, "Refresh Selected" may have to be used when you import the file again. This is because audio files hold the loop information, and these may have been reset (deactivated) when editing in an external editor.
("Others" submenu) Reset Selected	This resets all parameter settings to default values for all selected samples.
Info	This tells you the number of samples and folders contained in the selected Program Folder.
Hide Others (only subfolders)	This hides all other subfolders on the same level of the selected program.
Show Others (only subfolders)	This shows all other subfolders on the same level of the selected program.

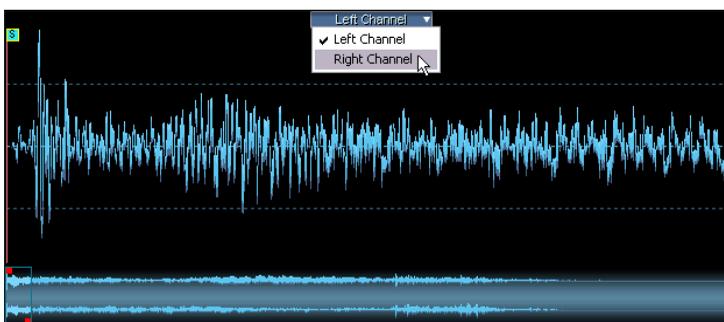
# 8

## Editing in the Loop page view



In this page view you always edit one sample at a time, the currently view selected sample, regardless of the ALL/SELECT setting in the Program List. The Loop editor allows you to set start and end points for a sample, as well as a Sustain loop and a Release loop.

All editing affects both left and right channels of a stereo file (or all 6 channels in a 5.1 surround file). The pop-up in the middle top of the Loop window allows you to switch the view between the left/right channels of a stereo file (or between the channels in a surround file).

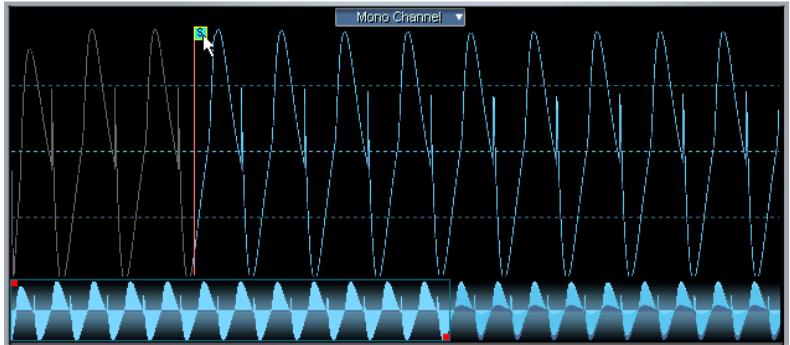


The Channel view selector.

# Setting the start and end points for a sample

If you want to change the sample start and/or end points for a sample, this can be done in the following ways:

- By moving the start and end offset handles manually.  
Simply click and drag the start handle (marked S) or the end handle (marked E) to where you would like the sample to start and end, respectively.



Changing the sample start point. The waveform is grayed out if outside the start/end range.

- By [Ctrl]-clicking (MacOS) or right-clicking (Windows) the sample start or end point numeric display in the lower left corner of the Loop window.  
Move the pointer up and down with the mouse button pressed down to change values. If you simultaneously press [Shift], values are changed with a finer resolution. A wheel mouse can also be used to scroll values.
- By clicking in a value field and typing in a new value.

This functionality applies to all numeric displays in the Loop page view.



# Setting the velocity start point

This parameter allows you to determine the way in which velocity affects the playback starting point for the sample. The higher the number, the later in the sample playback will start relative to the velocity (i.e. a high key velocity will start playback further “into” the sample).

# Zooming the waveform

You can zoom in on the waveform using the thumbnail display or the navigation controller.

## Using the thumbnail display



The thumbnail display contains a small overview of the whole waveform. By dragging the red handles at the start and end of the range you zoom in on the waveform.

- Dragging the red left handle to the right increases the zoom level and shifts the visible range towards the end of the waveform.
- Dragging the red right handle to the left increases the zoom level and shifts the visible range towards the start of the waveform.  
The smaller the blue area is, the higher the zoom factor.
- If you click and hold down the mouse button between the handles (the blue area), you can shift the visible range left or right across the waveform.
- If you click and hold down the mouse button between the handles and move the pointer up or down, you can move both handles at the same time.  
Moving the pointer up moves the handles further apart, zooming out on the waveform and vice versa.

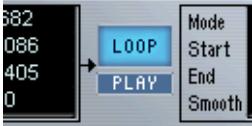
## Using the navigation controller

- Click and hold down the mouse button at the center of the navigation controller and move the pointer to the right to zoom in, with the visible range shifting towards the end of the sample.  
If you change the direction to the left, the zoom level remains but now shifts the visible range back towards the start of the sample.
- By moving the navigation controller up and down you increase/decrease the vertical zoom of the waveform.
- If you drag the mouse pointer sideways in the navigation controller but also move the mouse up or down, you can simultaneously scroll the current zoom level and increase/decrease the vertical zoom of the waveform.
- If you [Ctrl]-click (Windows) or [Command]-click (Mac) and move the pointer to the right or left you can move the right handle right (to zoom in) or left (to zoom out) to/from the current position of the left handle.
- By using the left/right arrow keys you focus the view on either the start or the end of the current loop, respectively.

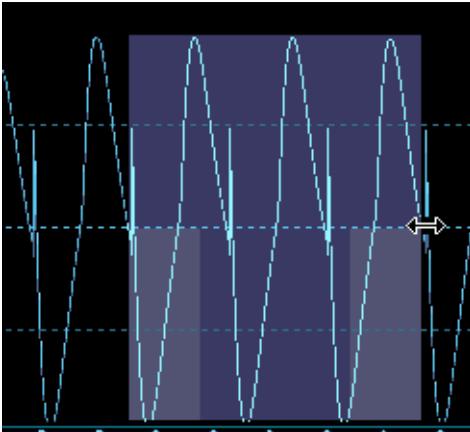
# Setting a sustain loop

A sustain loop determines which range within a sample should be looped when you hold down a key. To set a sustain loop, proceed as follows:

1. Make sure that the Loop button is activated (the box should be displayed in light blue with black text).  
If it isn't, click it.



2. Click in the waveform and keep the mouse button pressed.  
The pointer takes on the shape of a double arrow indicating that you can drag in both directions to create a loop area.
3. Select an appropriate loop range in the waveform.  
The selected loop area is indicated by a light blue background.

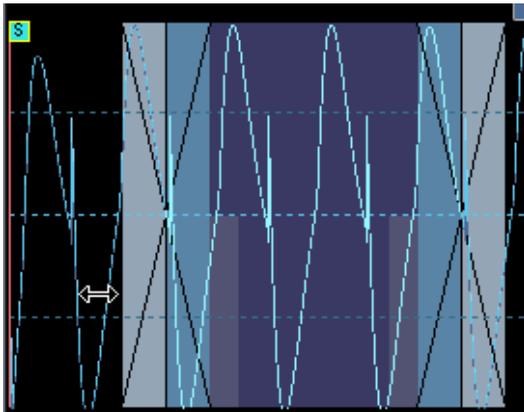


4. To audition the loop, click the Play button, under the Loop button.  
The loop will repeat until you click the Play button again.

5. You can move the loop in the display by dragging it with the mouse, or change the range by dragging the edges of the loop during auditioning. The Loop start and end points will automatically snap to zero crossings. A zero crossing is where the wave crosses the zero level axis. This helps to avoid clicks and pops when setting loops. If you, for some reason, don't want the loop to begin and end at zero crossings you can disable this function, by pressing [Command] + [Shift] (Mac) or [Ctrl] + [Shift] (Windows) when setting the loop.

## Crossfading the loop (Smooth)

If you press [Alt] while clicking in the loop and moving the mouse pointer out of the loop range at either edge, you will add crossfades at both ends of the loop. This makes the loop seamless and “smooth”, which is also the name of the function. To remove crossfades, [Alt]-click inside the loop, in an area that is not part of the crossfade.

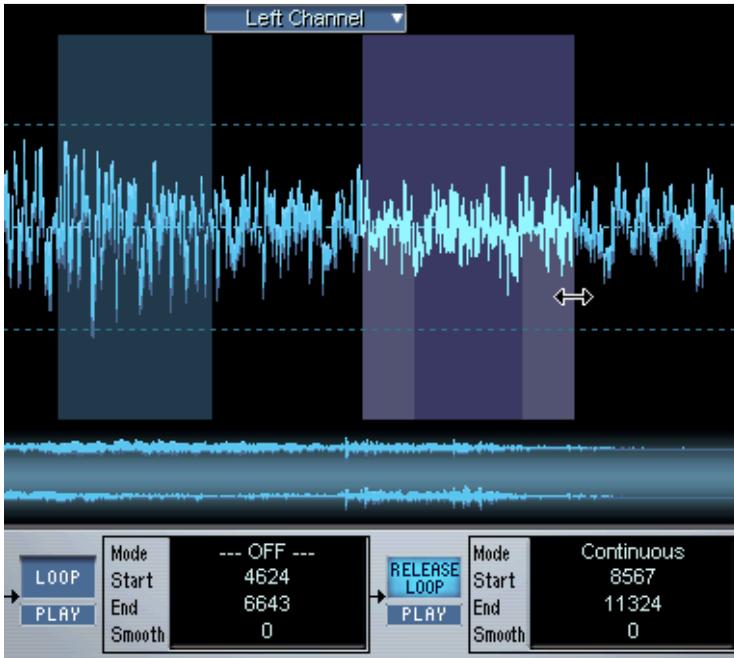


## Setting loop playback

When you are happy with your loop, you can set how it should play back by clicking the Mode field in the box to the right of the Loop and Play buttons. This opens a pop-up menu with the following items:

- Loop Until Release – this will play the loop for as long as you hold down a key.
- Loop Once – this will repeat the loop once and then play to the set end point.
- Play Until End – this has nothing to do with the loop, it will simply play the whole sample until the set end point.
- Play Reverse – this will play the whole sample reversed.

# Setting the release loop



The release loop determines which range within the sample should loop after the key is released. Setting the release loop is done using the same methods as for the sustain loop, except that you should have the release loop button activated instead. When you switch to the release loop mode, the sustain loop becomes dark blue. The currently selected loop is always shown in light blue. You can switch selection between the loop and the release loop using the [1]/[2] keys (not on the numeric keypad).

- The Mode setting allows you to set either a Continuous or a Single release loop.  
A continuous loop will repeat until the release portion of the DCA envelope begins.

# Loop tuning

You can tune the sustain and release loop independently up or down a semitone (in Cent steps) by using the loop tuning parameters.

## Loop context menu items

[Ctrl]-clicking (Mac) or right-clicking (Windows) in the Loop window brings up a context menu with the following items:

Option	Description
Rename...	Allows you to rename the current sample.
Zoom to Loop	Zooms the view to the currently selected loop.
Zoom Full	Zooms the view to the whole sample between the start and end handles.
Start/End Offsets to Loop	Sets the start/end offsets to the sustain loop.
Loop to Start/End Offsets	Sets the sustain loop to the start/end offsets.
Copy Loop to Release Loop	The start and end values for the loop are copied to the release loop.
Edit in (Host Application)	This will open the sample in an external audio editor, depending on your host application.
Unload	Unloads the preloaded portion of a sample from RAM. When a sample is unloaded, this option changes to "Load".
Select Loop	Selects the sustain loop.
Select Release Loop	Selects the release loop.
Locate Start Loop	Focuses the view on the start of the current loop.
Locate End Loop	Focuses the view on the end of the current loop.
Undo	Allows you to undo the last Cut, Copy, Paste, or Delete action.
Select All	Selects the whole sample as the current loop.
Sample Info	At the bottom of the menu, information about the currently view selected sample is shown.



**9**

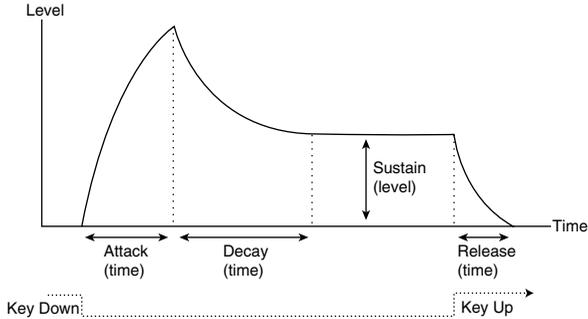
**Editing in the Envelope/Filter  
page view**



This page view is used for making filter and envelope settings for all or selected samples. The parameters are largely the same as the parameters described for the Macro page view, with a few exceptions.

# The Envelope section

The Envelope section offers more complex features than available from the Macro page view. You can have up to 32 points for each envelope, and you can set linear or logarithmic envelope curves. The envelopes are also syncable to the tempo set in your host application – this is described on [page 106](#).



The basic Envelope parameters (Attack – Decay – Sustain – Release).

Above the envelope curve display you select which envelope should be visible by clicking the corresponding button. You can also switch between DCF and DCA by right-clicking (Windows) or [Ctrl]-clicking (Mac) anywhere in the Envelope display.

- DCF selects the Filter Envelope which controls the Cutoff parameter for all or selected samples.
- DCA selects the Amplifier Envelope which controls the volume of all or selected samples.
- STEP selects the Step Modulation Envelope, which is a freely assignable modulation source that can create rhythmic stepped modulation, see [page 108](#).
- When viewing the DCF envelope, an outline of the curve set for the DCA envelope is shown in the curve display and vice versa.
- By clicking the Envelope Bypass button in the upper corner of the DCF or DCA section, the corresponding envelope is bypassed.

## Setting the envelope curve



The vertical axis displays the Level, the horizontal axis displays the Time.

Clicking the Zoom button and moving the mouse up and down allows you to zoom in/out on the envelope curve.

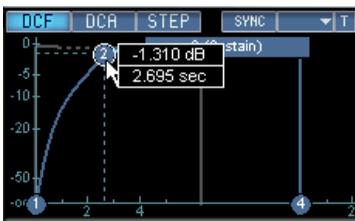
The scrollbar scrolls the view.

Points 1-4 correspond to Attack (Level), Decay (Attack Time/max. Level), Sustain (Decay Time/Sustain Level) and Release (Time).

## Positioning curve points

- You move the envelope points by clicking and dragging them in the desired direction.

When you click on a point, the current level and duration for the parameter are displayed. If MIDI Sync is activated, the duration is displayed as note values, which allows you set tempo related durations with ease, see [page 106](#).



Dragging the Decay parameter to the right sets the Attack Time.

- The maximum duration of each of the stages in the envelope is 10 seconds.  
If MIDI Sync is activated, the maximum duration relates to the set note value, e.g. if this is set to 1/4 note, the maximum duration will be 20/4.
- If you [Alt]-click on a point, only vertical positioning is possible (level).
- If you [Command]-click (Mac)/[Ctrl]-click (Windows) on a point, only horizontal positioning is possible (time).
- If you hold down [Shift] and move a point, the resolution for the positioning is higher.

- If you hold down [Ctrl] and drag the mouse up or down, you can expand/contract all selected points.
- If “Slide” is activated, moving a point horizontally will also move all points to the right of it.
- If “Fix” is activated, only the selected point(s) will be moved.

### Selecting curve points

- Clicking a curve point selects it.  
Selected points are indicated with a white outline.
- You can use [Shift] to select several points.  
Selected points will be moved together.
- [Ctrl]-[A] (Win) or [Command]-[A] (MacOS) selects all points.

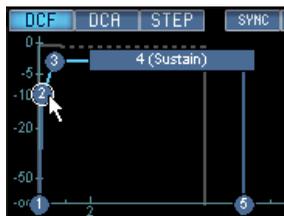
### Adding/removing curve points

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**You cannot remove the first, last or the sustain point!**

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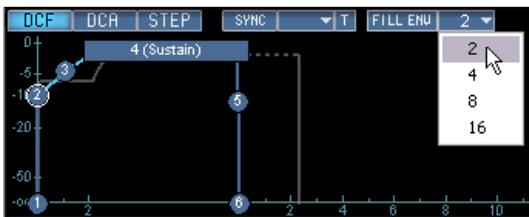
- You can add or remove points by double-clicking.  
Add a point by double-clicking on the curve, remove a point by double-clicking the point. You can have up to 32 points per envelope.



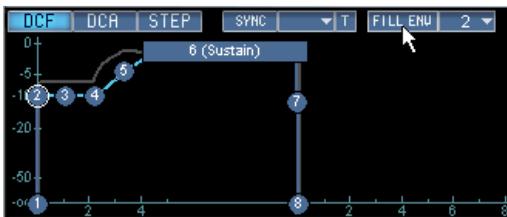
- All points added after the sustain point will always affect the release stage of the envelope, i.e. after the key is released.
- [Del] or [Backspace] removes selected points.

The “Fill Env” function allows you to add multiple envelope points from the currently selected point(s):

1. Select the number of points you wish to add from the pop-up.



2. Select the point from where you want to add points.  
The new points will be added to the right of the selected point. If several points are selected, new points will be added to the right of all selected points.
- The interval of point placement can be set with the Sync value.  
If Sync is selected (see [page 106](#)), you can specify the interval with the Sync note value. E.g. if 1/4 is selected, new points will be added at exact quarter note intervals.
3. Click the “Fill Env” button.  
The points are added.



## Setting logarithmic curves

- If you click on a curve and move the mouse up or down (keeping the mouse button pressed) logarithmic curves can be set. [Ctrl]-clicking (PC) or [Command]-clicking (Mac) a logarithmic curve resets it to linear.



Creating logarithmic curves.

## Additional envelope functions

### Saving/loading envelope presets

You can store and recall envelope presets.

- Type in a name for the preset in the name field and click the plus sign to save the current envelope curve as a preset.



- Saved presets are available from the pop-up.

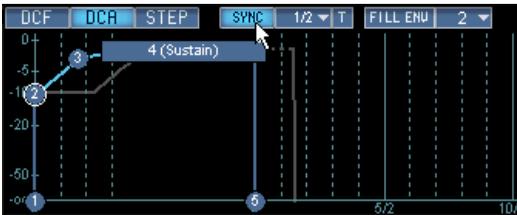


- To delete a preset, select it and click the minus sign.

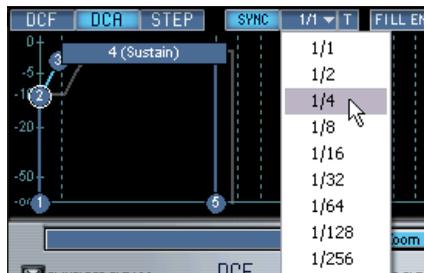
### Using Sync

You can sync the envelopes to the MIDI clock tempo set in your host application. This allows you to set envelope durations that will relate to musical time intervals (for example 1 bar), regardless if the tempo is later changed.

1. Click the “Sync” button to activate sync mode.  
A grid appears in the curve display.



2. Select a note value from the pop-up to the right of the Sync button. This sets the resolution of the grid, i.e. the minimum note value the points will snap to when moved. E.g. if you specify a 1/4 note value, points positioned on the horizontal time axis will snap to 1/4 note steps.



- If the “T” button is activated, the note values correspond to triplet values.
- The Zoom factor will be automatically adjusted to the set note value. The shorter the note value the more the envelope will be zoomed out to accommodate the higher resolution (and vice versa).

## Loop

When activated, the Loop function affects the Decay stage of the envelope.

When the envelope reaches the Sustain stage (Decay end) it will jump to the set Loop beginning (Decay start), and continue looping between the set loop range, which is indicated by a gray area in the curve display.



↖ The envelope will be looped between this range.

# The Step Envelope



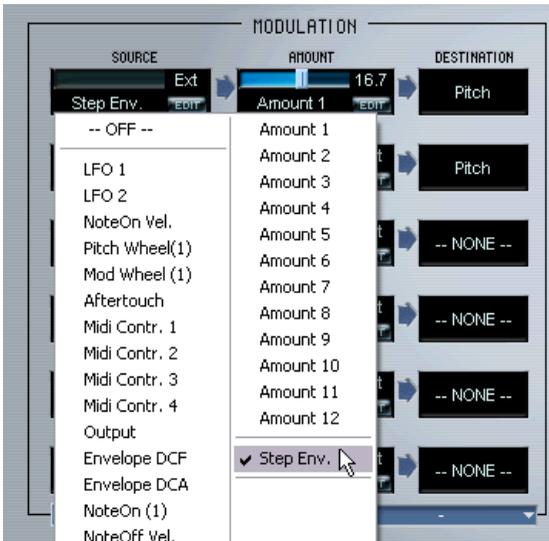
The Step Envelope can be used to create stepped modulation patterns.

## Setting up

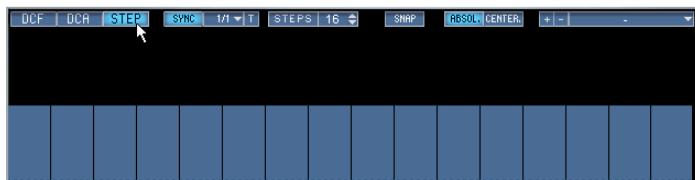
Before you can use the Step Envelope, it has to be assigned as a Modulation Source and be routed to a Modulation destination.

Here follows a brief tutorial of how to set up the Step Envelope to control pitch:

1. Select the Mod/Tune page view.
2. In the Source column, click into an empty field and select “Step Env”.



3. In the Amount column, select an unused Amount adjuster, and set the Amount to 100.
4. Select “Pitch” as the destination in the Destination column.
5. Select the Env/Filter page.
6. The Step Envelope is opened by clicking the “STEP” button beside the DCA button.  
When opened, the window consists of a row of 16 blue vertical bars, by default all set to the same value.



7. Click and drag with the mouse inside the Step Envelope window.  
As you can see, you can set different vertical values which will affect the pitch for each step. Each vertical bar represents a step in the pattern.



8. Make sure the Sync button is lit.
9. Pull down the Sync pop-up and select a 1/8 note value.
10. Play a note.  
The pitch is altered according to the set pattern in 1/8 note steps (synced to the MIDI clock of your host application).

The pattern generated by the Step Envelope is continuously looped as long as you hold a note down. A note on message restarts the pattern from step 1.

That concludes the basic setting up of the Step Envelope!

- You can of course apply the values produced by the Step Envelope to any available destination parameter to produce stepped modulation effects.

In the following section we will describe how to edit step values in various ways. Pitch will again be used as an example destination, so you can keep the settings already made.

## Step Envelope parameters

### Sync vs. “free running” modulation

- If Sync is disabled the tempo of the pattern will be “free running”. The rate is set by clicking in the field beside the Sync button and moving the mouse left or right. Values between 0.01 Hz and 30.00 Hz can be set.
- If Sync is enabled, the pattern will be synced to the host tempo and the set note value determines the length of each step. Values between 1/1 to 1/256 can be used. If the “T” button is activated, triplet values can be set.

### Setting the number of steps

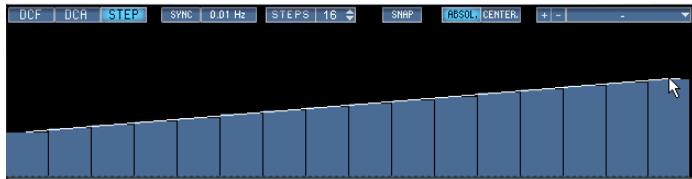


- You can set how many steps the pattern cycle should play by clicking up/down arrows. You can set up to 32 steps.

## Editing step values

Step values can be set in various different ways apart from clicking with mouse:

- [Ctrl]-clicking on a step will reset it to default state.
- [Shift]-clicking enables moving all steps together.
- [Ctrl]+[Shift]-clicking resets all steps.
- [Alt]-clicking (Win) or [Option]-clicking (Mac) produces a line tool, which enables you to apply ramp curves.



Using the line tool.

## Using Snap

If Snap is enabled, the step values will snap to a horizontal grid when set. What the snap value “represents” depends on the selected modulation destination and the Amount setting (on the Mod/Tune page), but it is obviously applicable for pitch:

- When the Amount parameter is set to 100 and Pitch is the destination, each horizontal gridline represents a semitone step.

## Absolute vs. Center mode

- When Absolute mode is selected you can set values from zero (blank step) and upward.

In terms of pitch a blank step will correspond to the original pitch of the note you play and the maximum value would produce a pitch one octave higher.



- When Center mode is selected, zero is in the middle, and you can set values both below and above zero.

Thus (using pitch as an example), the range in this case will be +/- 1 octave. The grid in Center mode also reflects the extended range – there are 24 horizontal gridlines.



## Saving/Loading Presets

- You can save Step Envelope patterns as presets. The method used is identical to normal Envelope presets (see [page 106](#)). Step Envelope presets cannot be applied to DCF or DCA envelopes.

## The filter section (DCF)



The filter section has the same basic parameters as described for the Macro page view, see [page 49](#). The main difference is that in the Envelope/Filter page view, you can make Filter settings for all or all selected samples in a Program.

In addition, the Filter section here contains three parameters not present in the Macro page view:

### Velocity

Normally this is set to 50%. This will produce a brighter timbre if keys are struck harder, like many real instruments.

### Fatness

This parameter adds a tubelike distortion to the signal.

### Filter Bypass

This bypasses the Filter Section.

### Envelope Bypass

This bypasses the DCF.

# The amplifier section (DCA)



The amplifier section contains a number of parameters only available in this page view. Again, all or all selected samples are affected.

- The Env. Amount, Velocity and Volume parameters are the same as described in the Macro page view chapter, see [page 53](#).

## Release envelope parameters



The “Rel. Env.” modes and parameters affect samples that are triggered by Note Off messages, i.e. when a note is released. Triggering samples with note off messages is set up in the MegaTrig page view, see [page 133](#).

## Setting up for use

The basic way to use these Release Envelope functions is as follows:

1. Start by having two overlapping samples.  
Sample Select editing mode should be selected, see [page 71](#).
2. In the MegaTrig page view, set one sample to be triggered by Note On, and the other to be triggered by Note Off messages  
Refer to [page 133](#) for how to use the MegaTrig functions.
3. When you now play notes in the range set up for the overlapping samples, you should hear one sample when you play a note, and another sample when the note is released.
4. Open the Env/Filter page and select the sample that is triggered by Note Off.

## Release Envelope modes

The Release Envelope modes govern how the Note Off triggered sample will play back. Click in the “No Mode” field to bring up a pop-up where the following modes can be selected:

“REL. ENV.” Mode	Description
NoteOff Env. at current Pos.	This will take the volume from the current Note Off envelope position. When you hit a note, it will trigger the start of both the Note On and Note Off envelopes, although as long as the note is held, only the Note On triggered sample is heard. When you release the note, the Note Off triggered sample will play back at the volume governed by the current Note Off envelope position.
NoteOn Env. at Sustain	This will trigger the Note Off sample at the sustain volume set for the Note On sample.
NoteOff Velocity	This will use the velocity as the volume for the Note Off, i.e. the harder you strike a key, the louder the Note Off sample will be played back.
Current Amplitude	This will use the volume from the current Note On envelope position and apply this to the Note Off sample.
Decay	In this mode, you use the knob to the right of the Amount knob to set a Decay time. When the Note On starts the Note Off sample will begin its decay from the point of the Note On so that the longer a note on is held the quieter the Note Off will be.

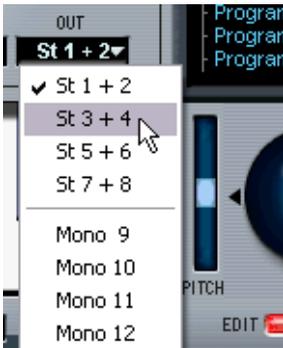
## The Rel. Env. Amount knob

The Amount knob governs how much the Release Envelope modes affect the envelopes. It should normally always be set to maximum value.

## Out

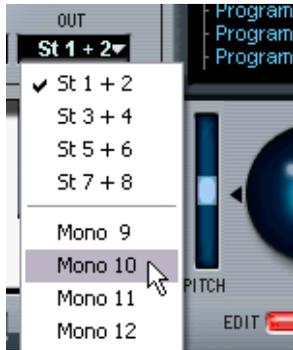
This lets you route all or selected samples to any of the 12 virtual outputs or to the 5.1 surround bus. Using surround encoded samples in HALion is described below.

- If the main Program Output is set to “PROG”, and you adjust the output setting with the Select “ALL” button activated, this will define the main output for the Program.



This will change the output for the whole Program to 3+4, if selected.

Once you have set the main output, you can route individual samples to separate outputs by using the output menu.



This will route the currently selected samples to output Mono 10, while the remaining samples will be routed to the set main Program output.

### **About the 5.1 surround output option in HALion**

HALion can import interleaved multichannel samples in the 5.1 format. This format contains 6 speaker channels of the following configuration (in this particular order): Left and Right front, Center, subbass (LFE) plus Left and Right Rear channels.

Samples in this format should be routed to the 5.1 output option in HALion. Each of the six individual channels in the sample will then be routed to the host application mixer via the HALion surround outputs in the following way:

- Channels 13/14 (stereo) --> Hal L/R Front
- Channel 15 (mono) --> Hal Center
- Channel 16 (mono) --> Hal LFE
- Channels 17/18 (stereo) --> Hal L/R Rear



The surround channels in the Cubase SX Mixer.

- **Tip:** Even if you don't use surround, you can use the 5.1 option as an extra virtual stereo output for HALion. If a standard stereo audio file is routed to the 5.1 output it will use the 13-14 stereo output channel in your host application.

To route the stereo channels to the Surround busses in SX, (or pre-Nuendo 2.0 versions), you have to set up as follows:

- Make sure you have selected a 5.1 format in the Master Setup dialog.

- Route the Hal L/R Front (channels 13/14) to the SurroundPan output. Double-click on the mini SurroundPanner and choose Y-Mirror as Mode, and move the L and R balls to the upper front Left and Right corners.



- Hal Center (channel 15) should be routed directly to the Center output.
- Hal LFE (channel 16) should be routed directly to the LFE output.
- Hal L/R Rear (channels 17/18) should be routed to the SurroundPan output. Double click on the mini SurroundPanner and choose Y-Mirror as Mode, and move the L and R balls to the lower rear left and right corners.

## Panorama/Spread

The Panorama parameter sets the stereo position for the currently selected samples.

Spread is an automatic Panner. The function distributes the signal of each single note randomly within the stereo spectrum:

- If the dial is turned fully left, the signal is played back at the position defined by the Panorama dial. The more you turn the dial to the right, the wider the signal will be distributed.
- If the Panorama dial is set to its middle position, Spread will distribute the signal across the whole stereo spectrum. If it is set to “10 o'clock”, Spread will distribute the notes between the extreme left and the middle of the stereo spectrum etc.

**10**

**Editing in the Modulation/Tune  
page view**



This page view offers complex modulation possibilities, as well as LFO, Tuning and polyphony Grouping settings. All parameters can affect all or selected samples.

## The Modulation section

The modulation possibilities in HALion are as simple or as complex as you want them to be. The basic structure works as follows:

- The **Destination** governs what parameter the modulation is applied to.
- The Destination is modulated by a **Source**.
- How much this Source modulates the Destination is set by an **Amount**.



Here Source is incoming pitch bend data. Source modulates destination Pitch, and Amount specifies the pitch bend range – 5.7 semitones in this case.

- You can specify up to twelve different modulation routings. While any combination of these can be active at the same time, only six modulation routings are shown on the page simultaneously. Use the “Matrix 1” and “Matrix 2” buttons to toggle between viewing modulation 1-6 and 7-12.

## The Source column

Clicking in the bottom section of the Source fields in the Source column brings up a pop-up menu from which you can select a modulation source. The following modulation sources are available:

Source	Description
OFF	No modulation.
Lfo 1-2	One of HALion's two LFOs.
Velocity	Note-on velocity data. Use this as Source if you want the sound to change depending on how hard you play.
Pitch Wheel	Pitch Bend data, typically sent out by a pitch bend wheel, bend lever or joystick.
Mod Wheel	Modulation data, typically sent out by a modulation wheel.
Aftertouch	Aftertouch (channel pressure) data.
MIDI Contr 1-4	One of four assignable MIDI controllers (see <a href="#">page 128</a> ).

Source	Description
Output	The output signal of the sample itself, taken before the main volume and pan settings. If the sample is in stereo, the left channel is fed to the Output parameter.
Envelope DCF	The filter envelope.
Envelope DCA	The volume envelope.
Note Off Vel	Release velocity data. Note that not all MIDI keyboards send Note off velocity.
Glide	Uses the signal generated by the Glide parameter as a modulation source.
Noise	A built-in white noise source.
Key 2, Velocity 2, Pitch Wheel 2, Mod Wheel 2	These are the same as Key, Velocity, Pitch Wheel and Mod Wheel, respectively, but allow you to set up separate Modulator Adjustments. See below.
Amount 1-12	These are described below.

The “Amount 1-12” options are internal, arbitrary amounts. When you select one of the Amount options, a slider appears above the field in the Modulation section, and the current value of the Amount is shown to the right.

- To set a value for the Amount, use the slider or click the field to the right of the Amount field and type in a value. The Amount values can also be modulated by other sources, see [page 125](#).
- If you click the Edit button a dialog appears in which you can set an Offset and a Range for the Amount. See the section about Adjusting Modulators for a description of Offset and Range.

## The Amount column

The Amount parameter works by “scaling” the corresponding source by a bi-polar value. One example of this would be to have the Modulation Wheel as Source, modulating the destination Pitch, with an LFO selected as Amount. This would give you standard mod wheel control over vibrato.

Clicking the Edit button in the Amount column brings up a dialog in which you can set an Offset and Range amount options. The available options in the Amount pop-up menu are the same as in the Source column (see above).

## The Destination column

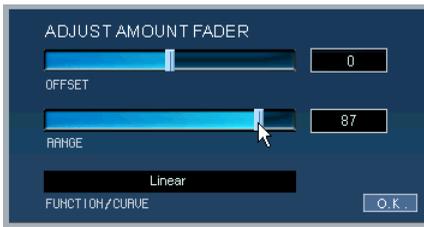
The Destination column is where you select what to modulate. The options are:

Option	Description
Cutoff	The cutoff frequency of the filter.
Resonance	The filter resonance.
Volume	The DCA volume setting.
Pan	The stereo panning of the sound.
Pitch	The pitch of the sound.
Amount 1-12	These are the same Amount 1-12 options that are available as Source and Amount options. By modulating an Amount, which in turn is used for modulating something else, you can create complex “modulation chains”.
Env. Attack	The DCA Envelope Attack.
Env. Release	The DCA Envelope Release.

## Adjusting Modulators

When an external MIDI data type (e.g. Pitch Wheel, Mod Wheel, Velocity, Key, etc.) is selected as Source or Amount, you can make further adjustments to how the value should affect the modulation:

- Click the Edit button in the Source or Amount column. This opens the Adjust Amount Fader dialog.

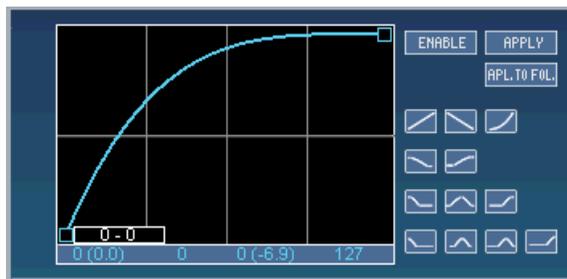


The dialog contains the following settings:

Setting	Description
Offset	Allows you to offset the incoming data. For example, if you set Offset to 10, an incoming MIDI Event with the value 20 will result in the value 30 being sent as Source or Amount.
Range	Allows you to scale the incoming values so that they fit within a specified range, set as a percentage. Set this to 100 to use the actual incoming values.
Function/ Curve	This is a pop-up from which you can select a preset function or curve. The Source or Amount value is scaled according to the selected function or curve, allowing e.g. logarithmic changes. The default option is Linear.

## User curves

The graphic display in the lower half of the Adjust Amount Fader dialog (when opened from the Source Edit button) can be used to “draw” custom curves, or select from a range of preset curve shapes. Four curve points allow you to set up a curve of your liking. The leftmost and rightmost points can be positioned horizontally and vertically, and the two middle points horizontally.



A custom curve.

- When “Enable” is activated, the set curve is applied to the selected sample and controller, and overrides the curve type selected from the Function/Curve pop-up.
  - If you have modified settings in the curve display click “Apply” to update the settings.
  - “Apl. to Fol.” will apply the curve to all samples in the same folder.
- 
- Any settings you make in this dialog affect all instances of the same Source/Amount option! For example, if you select a logarithmic curve for the Mod Wheel, this will be reflected everywhere the Mod Wheel is used as a Source or Amount. For some of the MIDI data types, there are additional options on the Source/Amount pop-up menus (Key 2, Velocity 2, Mod Wheel 2, Pitch Wheel 2 etc.). These can have their own Modulator Adjustment settings.**
-

## Saving/loading Modulation presets

You can store and recall Modulation presets. All modulators set up on both Matrix pages are saved.

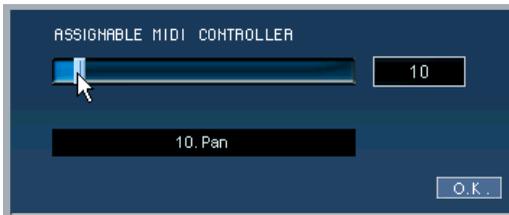
- Type in a name for the preset in the name field and click the plus sign to save the current Matrix modulators as a preset.
- Saved presets are available from the pop-up.
- To delete a preset, select it and click the minus sign.

## About the assignable controllers

If you have selected one of the “Contr 1-4” options as Source or Amount, you need to assign a MIDI Controller:

1. Right-click (Windows) or [Ctrl]-click (Mac) on the grayed-out slider area above the orange label in the Source/Amount column.
2. In the Assignable MIDI Controller dialog that appears, use the slider to select a MIDI controller.

The name of the controller is shown below the slider.



3. Click OK to close the dialog.

---

**Your assignment setting affects all instances of the Controller.**

---

## LFO section



HALion features two LFOs (Low Frequency Oscillators). The most common use of an LFO is to modulate pitch to produce vibrato.

The LFOs in HALion have the following parameters:

Parameter	Description
Freq	This controls the frequency of the modulation, i.e. the “speed” of the LFO. The range is 0 to 30Hz for LFO1 and 0 to 10Hz for LFO2.
Delay	This allows you to set a delay before the LFO modulation starts. You can also set negative values, in which case this parameter controls the duration of the modulation. Range is +/- 3 seconds.
Waveform types	This sets the LFO waveform type, which governs the shape of the modulation. The available waveforms are described below.
Sync	This will sync the LFO to the tempo set in HALion's host application. The Freq dial is then used to specify the base note value for the modulation speed (i.e. 1/4 note, 1/8 note etc.). Dotted and triplet note values can also be set.

## LFO waveform types

The available waveforms have the following characteristics:

---

<b>Option</b>	<b>Description</b>
Sine	This produces smooth modulation, suitable for vibrato or tremolo.
Triangle	This is similar in character to Sine.
Pulse	This produces stepped modulation, where the modulation switches abruptly between two values (the ratio is 50:50).
Sawtooth	This produces a “ramp up” cycle. The modulation sweeps up to a set point (governed by the Amount setting), after which the cycle immediately starts over.
SawPulse	Similar to Sawtooth.
Pulse15	This produces stepped modulation, where the modulation switches abruptly between two values. This waveform “holds” longer on one of the values (the ratio is 15:85).
Pulse30	This also produces stepped modulation, where the modulation switches abruptly between two values. Similar to Pulse15 (the ratio is 30:70).
SineComplex	Three sine waves overlap to produce complex sine modulation.
Log Pos	This produces a logarithmic “ramp up” cycle. The early part of the modulation cycle rises slowly but rises faster higher up in the cycle.
Log Neg	Same as Log Pos but inverted.

---

## Tune section



This section allows you to tune all or selected samples in either Octave, Semitone (“Coarse”) or Cent increments. You can tune the Octave range +/- 5 octaves, the Semitone range +/- 11 semitones and the Cent range +/- 100 cents (cent = 100th of a semitone).

If the “No Transpose” option is ticked, samples will play back at constant pitch across the Keyboard.

## Glide



This parameter can set a Glissando (up to 3 seconds) between successive notes for all or selected samples.

# Grouping



This section lets you assign samples to one of up to 16 groups, and define the number of voices (polyphony) for each group. One obvious application of polyphony grouping is to assign open and closed hi-hats to a group with a voice setting of 1, so that one will cut off the other.

# Play Raw/Drum Mode/Enable Contr. in Release



- If you activate the “Play Raw” option, selected samples will play without the assigned modulation or applied parameter settings. The Amplifier Envelope parameters are still applied (Velocity, Envelope, Pan and Spread). Apply this mode to use as many voices as possible.
- If you activate the “Drum Mode” option, samples will play in a “one-shot” manner, from start to the end of the sample, regardless of how long you hold down a key. Selecting Drum mode also automatically selects Play Raw mode. Samples played back in Drum mode use the least system resources.
- If you deactivate the “Enable Contr. in Release” option (the option is enabled by default), controller data will not be processed once you let go of a key on your keyboard, i.e. there will be no modulation during the release phase.

**11**

**Editing in the MegaTrig page  
view**

MegaTrig is a feature that provides conditional sample triggering. It allows you to define conditions that determine which particular sample will be triggered.



## Applying Conditions

The Controller fields 1 to 3 can be set to MIDI controllers 0-120, Keyboard Range or Switch Key.

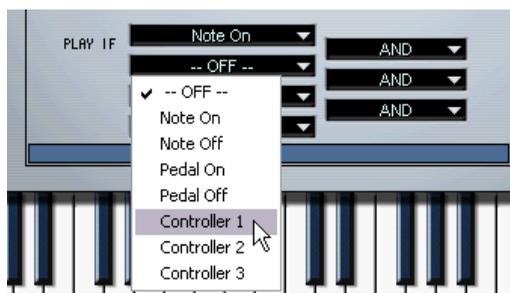
To specify a triggering condition for a particular sample, proceed as follows:

1. Open the MegaTrig page view.
2. Edit select one or more samples, e.g. in the Program List. Make sure that the All/Select button is set correctly (i.e. to “All” when you want to select all samples in a program, and to “Select” when you want to select one or more particular samples).

3. In the Controller 1-3 sections, click in the dark field at the top to open a pop-up menu.  
From this menu, you can select either a MIDI controller (0-120), a Keyboard Range or Switch Key. Using the Hi and Lo sliders below the selection field, you can set a range for the selection.
4. In the “Play if” section below the Controller sections, you can combine your settings using AND or OR operators to define conditions for sample triggering.

## “Play If” conditions

Up to four “Play if” conditions can be applied simultaneously. Conditions are set by selecting from the pop-up menus in the corresponding fields. You can combine these “Play If” conditions using “AND”, “OR” or “AND NOT” operators.



The first “Play if” condition can be set to:

- Note On
- Note Off
- Pedal On

The other “Play if” conditions can be set to:

- Off
- Note On
- Note Off
- Pedal On
- Pedal Off
- Controller 1-3

## Keyboard Range and Switch Key

“Keyboard Range” allows you to trigger the selected samples only while the key (or a key in the range) specified with the “Lo” and “Hi” sliders is pressed.

With the “Switch Key” controller the selected samples will be triggered only if previously the key (or a key in the range) specified with the “Lo” and “Hi” sliders was pressed. This works only if the switch keys have no samples assigned.

For example, you can set the “Switch Key” controller with key C0 for normal bass samples and for bass with slap effect with the key D0. Now just press the C0 key once and you can play a “normal” bass line, press the D0 key and you can play the “slapped” bass line.

### Examples

The following two examples describe conditional sample triggering with HALion:

Example 1:

In this example we use two tambourine samples, one for the sound when the tambourine hits the player’s hand and one for the reverse action. Both samples are assigned to the same note in the Keyzone page view.

- In the “Play if” section of the MegaTrig dialog, set the first sample to be triggered by “Note On” and the other sample by “Note Off”.

In this example we will leave the other two trigger conditions set to “Off”. Now you can easily imitate the back and forth movement of a tambourine player’s hand by making a similar hand movement hitting and releasing the key on the keyboard.

### Example 2:

1. Load several different samples of talking drums (or bongos, congas, etc.). In the Keyzone page view, map them all to the same note and the full velocity range.
2. In the “Play if” section of the MegaTrig dialog, set all samples to be triggered by the “Note On” event.

This condition is now combined with a second condition which determines which particular sample is to be triggered by “Note On”. In this example we use the Mod Wheel (Modulation [1]) as our device for choosing the different samples while playing.

3. In the Controller 1 section, open the pop-up menu and choose “Modulation [1]”.
4. In the “Play if” section, set the field for the second trigger event to “Controller 1”.

We want the combination of “Note On” and the “Modulation [1]” events to determine which sample is triggered.

5. Set the operator field to the right of the “Note On” field and the “Controller 1” field to AND.
6. Distribute the various samples evenly across the range of the “Modulation [1]” controller using the range sliders in the “Controller 1” section below the selection field for the controller.

The reward for all this work is a talking drum that is fantastically controllable!



**12**

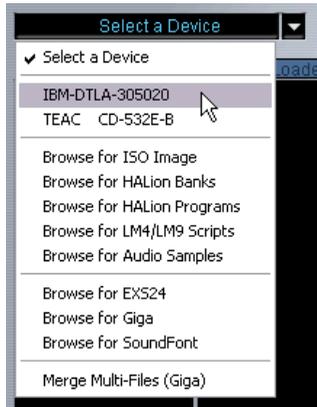
**Settings in the Import page view**

# Overview



In this page view you can copy selected contents from sample CD-ROMs to disk (e.g. an internal or external hard drive), browse for HALion Banks or Programs and other sampler formats. The page features a large Import dialog with 4 main columns.

Click on “Select a Device” to open a pop-up menu allowing you to select any connected or internal CD-ROM drives. You can also browse to select ISO Image, HALion Banks or Programs, LM4/LM9 scripts or audio samples. Other external formats you can browse for are EXS24, SoundFont or Giga Folders.



Selecting a CD drive with a compatible sample CD inserted...



...opens the CD contents (in this case an Akai S3000 compatible CD).

# About the columns

The structure of the CD contents is displayed, from left to right, in the following way:

- The “Partition” column displays the entire CD contents as separate partitions.  
Several partitions can be selected but the contents in the following columns will be the currently view selected partition (with a white border).
- The “Volume” column shows the contents of the view selected partition. Each Volume can contain a number of Programs.
- The “Program” column displays the Programs in the selected Volume.
- The “Sample” column displays the samples in the selected Program.

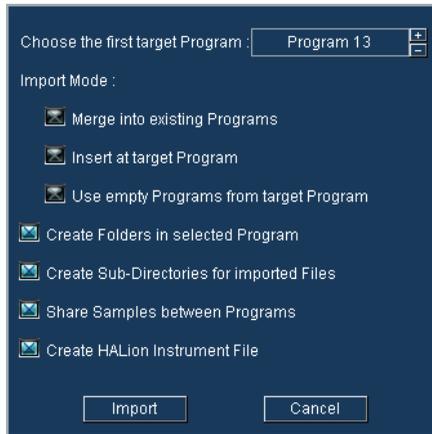
# Import

Each column has its own Import button. You select what to import using the button in the corresponding column.

- When you click Import in any of the columns, a file dialog opens where you can designate a target directory. This folder is where the imported CD contents will be copied to on your hard drive. Choose a directory, and click OK.



A new dialog appears, containing the following options:



### **Merge into existing Programs**

This will merge the samples into the Program set as target.

### **Insert at target Program**

This will import the samples into the Program set as target.

### **Use empty Programs from target Program**

This will select the first empty Program from the designated target Program.

### **Create Folders in selected Program**

This will create a new folder for the imported Programs/samples inside the currently selected Program folder.

### **Create Sub-Directories for imported Files**

This will create a subfolder structure on your hard-disk that matches the selected item (partition/volume/Program etc.).

## Share Samples between Programs

If this is checked, the samples imported from a CD will only be imported once to your drive. If unchecked, all samples will be copied to disk again if you select the same samples for import at some later stage.

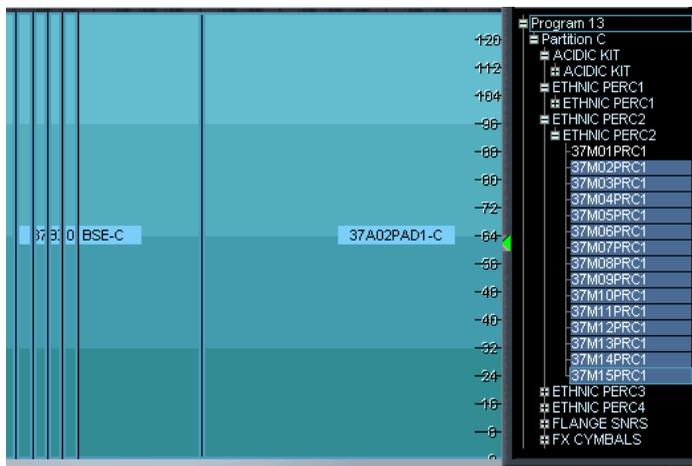
## Create HALion Instrument File

This will create a HALion Instrument file for all imported Programs/samples. One Program will be created, with each separate volume/Program residing in separate folders inside the Program.

When you select Import in one of the columns, the selected Programs/samples will be copied to disk, and a progress meter is shown.

Let's say that you have decided to import one single partition from a CD, using the options exactly as set in the figure above. This would end up looking something like this in the Program List:

In the Keyzone window, samples have green borders to indicate that they reside in folders.



The designated Program folder. Below it, the imported partition folder is shown. It is open to display all volumes belonging to the partition arranged in subfolders. When a volume folder is opened, Programs are shown as subfolders within the volume folders etc.

In the future, you can load the whole partition as a HALion effect Program that was automatically created while importing to disk.

# What sampler formats are supported?

The following sampler formats can be imported:

- Akai S1000/S2000/S3000
- EMU 3/3X/ESI/4/4K/E64/E6400/ESynth/Ultra
- Roland S770
- Emagic ESX24
- SoundFonts 2.x
- Giga

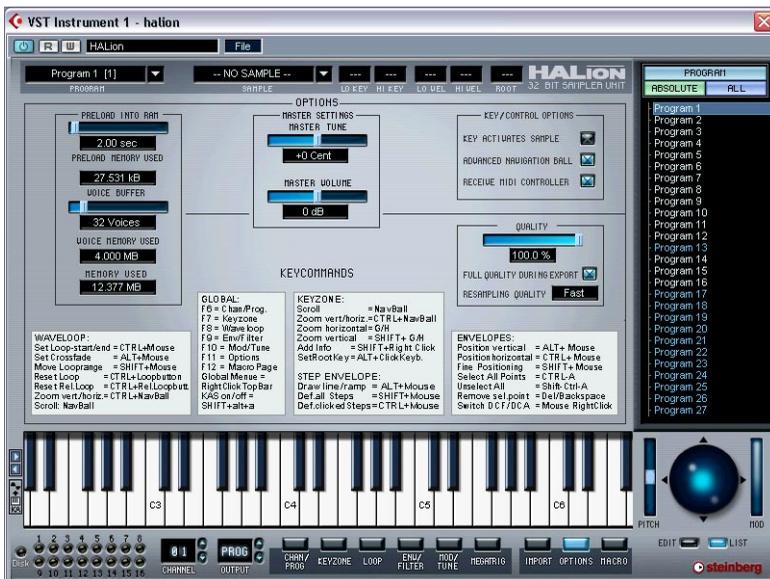
## **About the “Merge Multi-Files (Giga)” option**

Use this option to import Giga sample libraries that are stored on multiple CDs.



**13**

**Settings in the Options page  
view**

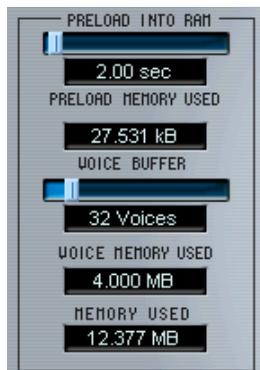


The Options page view contains a number of global settings and contains the following sections:

## Master Settings

This allows you to set Tune and Volume globally for HALion. You can tune up/down 200 Cents, and set the Master Volume from silence up to +6dB.

## Preload and memory options



### Preload into RAM

This slider setting determines how many seconds of each sample are loaded into RAM. It should be set depending on the number of samples that you intend to use, and the amount of RAM you want to dedicate to HALion. The less RAM you assign, the more often HALion has to access the disk. Since your sequencer is competing with HALion for disk access, this setting may also have an impact on audio playback of your sequencer.

The Preload Memory Used shows how much RAM memory the currently preloaded samples use.

### Voice buffer

The voice buffer slider should be set to the number of HALion's voices. The slider setting determines the number of RAM buffers requested by HALion.

The Disk LED in the bottom left corner of the HALion window will light up red when samples cannot be loaded from disk in time. In such a case you can increase the number of Voice Buffers and/or the Preload time of the samples.

Voice Memory Used shows the total amount of RAM requested by HALion.

# Key/Control options

## Key activates sample

When this is checked, playing a sample from your keyboard will automatically select it. This can also be set using the checkbox to the right of the keyboard.

## Advanced Navigation Ball

When this is checked, the navigation controller acts like a trackball and the moving graphics are shown. If unchecked, the navigation controller will directly follow your mouse movements, acting more like a slider.

## Receive MIDI Controller

This must be checked if you intend to use external MIDI controllers which access parameters such as Cutoff (CC74) or Resonance (CC71) directly, bypassing modulation (see [page 153](#)).

# Quality

This is the same setting as the Quality setting available in the Macro page view, but here you can set it as a percentage value. There is also a “Full Quality during Export” option. When checked, samples will be reproduced with full quality if the HALion tracks are exported to file, regardless of the Quality setting.

The lower the Quality slider setting, the more voices are available. As a trade-off, sound quality is reduced.

## Fast/Good/Best Resembling

This is the same setting as the setting available in the Macro page view, see [page 56](#) for a description.

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**Automation, MIDI controllers  
and navigation controls**

This chapter provides information on automation options when using HALion within Cubase SX, MIDI controllers and HALion key commands.

## Recording dynamic control settings

Proceed as follows to record dynamic control settings within the HALion window onto a Cubase SX track:

1. Open the MIDI-Filter Preferences in Cubase and switch off the “Sysex” Filter.  
In Cubase SX, this Filter is activated by default. By deactivating it, you enable Cubase SX to record SysEx data.

---

- If in doubt, please read the document “System Exclusive Handling”. It can be found on the Cubase SX Program CD and contains detailed information on recording and editing SysEx data.**

---

2. Create a separate empty MIDI track for the automation data that you wish to record.  
This way, if something goes wrong, you can simply delete the automation data and try again.
3. Set the Output of the track so that it sends to the desired HALion channel.
4. Open the HALion window and make sure that the correct sound and channel are selected for automation and recording.
5. Press the Record button in Cubase SX to start recording.  
Dynamically change the control settings as desired.
6. Stop recording and rewind. Then start playback.  
The controls in the HALion window should now dynamically move and reflect the settings you have made.

## Exporting HALion tracks to audio files

You can export one or more HALion MIDI tracks to an audio file, e.g. to save processor resources. To do this, solo all tracks that you wish to export (or mute all the other tracks) and select “Audio Mixdown...” from the Export submenu on the File menu. A detailed description of the export process for audio files can be found in the Getting into the Details document for Cubase SX or the Operation Manual for Nuendo.

## Using MIDI controllers

You can use MIDI controller data to completely control HALion, e.g. from an external MIDI hardware control unit or a MIDI Master keyboard. The “Receive MIDI Controllers” option must be selected in the Options page view (page 150). You can also graphically or numerically create MIDI Controller data in an Editor (e.g. List Edit in Cubase SX or Nuendo). The following table shows you the MIDI controller numbers for each HALion control:

---

<b>HALion Control</b>	<b>Controller</b>
Cent	90
Glide	05
Octave	28
Semitone	31
Sample Volume	20
12/24 dB Low pass	21
Filter Cutoff	74
Resonance	71
Filter Envelope Amount	80
Filter Envelope Attack	83
Filter Envelope Decay	89
Filter Envelope Sustain	85
Filter Envelope Release	82
Amp Amount	70
Amp Envelope Attack	73
Amp Envelope Decay	79
Amp Envelope Sustain	75
Amp Envelope Release	72
Filter Velocity Amount	15
Amp Velocity Amount	19
Spread	44

---

# HALion navigation controls and keyboard commands

The following table lists the navigation controls and key commands available in the HALion window.

Note that most of these commands are also listed in the Options page view.

- ❑ **When using HALion as a VST instrument in Cubase or Nuendo, make sure the option “Plugins receive key commands” in the Preferences is activated. Otherwise, HALion will not receive any key commands. If you use HALion in another host application, there may be a similar option – refer to your host application’s documentation.**

Key	Page View	Function
[F6]	all	Opens the Chan/Prog page view.
[F7]	all	Opens the Keyzone page view.
[F8]	all	Opens the Loop page view.
[F9]	all	Opens the Env/Filter page view.
[F10]	all	Opens the Mod/Tune page view.
[F11]	all	Opens the Options page view.
[F12]	all	Opens the Macro page view.
Right-click top of the HALion control panel	all	Global Commands pop-up menu
[Shift]-[Alt]-[A]	all	Key activates sample on/off (also indicated by the KA icon to the left of the keyboard).
Navigation Ball	Keyzone	Scrolling
[Ctrl]+Navigation Ball	Keyzone	Zooming vertically/horizontally
[G]/[H]	Keyzone	Zooming horizontally
[Shift]+[G]/[H]	Keyzone	Zooming vertically
[Shift]+right-click	Keyzone	Add “File Info”

<b>Key</b>	<b>Page View</b>	<b>Function</b>
[Alt]+click	Keyzone	Set root key
[Ctrl]+click	Waveloop	Set loop start/end
[Alt]+click	Waveloop	Set crossfade
[Shift]+click	Waveloop	Move loop range
[Ctrl]+Loop button	Waveloop	Reset loop
[Ctrl]+Release Loop button	Waveloop	Reset release loop
Navigation Ball	Waveloop	Scrolling
[Ctrl]+Navigation Ball	Waveloop	Zooming vertically/horizontally
[1]/[2] (key pad)	Waveloop	Toggle Loop/Release Loop buttons
[Alt]+click	Envelopes	Position vertical
[Ctrl]+click	Envelopes	Position horizontal
[Shift]+click	Envelopes	Fine positioning
[Ctrl]+[A]	Envelopes	Select all points
[Shift]-[Ctrl]+[A]	Envelopes	Deselect all points
[Del.]/[Backspace]	Envelopes	Remove selected point
Right-click/[1]/[2] (key pad)	Envelopes	Toggle DCF/DCA
[Alt]+click	Step Envelope	Draw line/ramp
[Shift]+click	Step Envelope	Default all steps
[Ctrl]+click	Step Envelope	Default clicked steps



**15**

**Content description**

# The HALion CDs

HALion is supplied on a total of five CDs: the installation CD and four sample content CDs.

The following sections briefly describe the contents of all the HALion CDs.

## Sample content of the installation CD

The installation CD contains the program installer (for details, refer to the chapter “[System Requirements and Installation](#)”), a number of demo songs and tutorials, and a number of programs and sample files that provide 5.1 surround sound.

- An all new, "bigger than life" rock drum kit that comes with three flavors of 5.1 reverb
- A latin percussion set that gives you the experience of literally being surrounded by percussion instruments
- A 10,000 sqm wide and deep pad
- A collection of real-life indoor and outdoor atmospheres
- A collection of impressive movie-style SFX

## System requirements

Apart from a system that meets the requirements of the host software and HALion, you only need a 6-channel (5.1) surround system and enough free RAM to play the surround sounds. Thanks to HALion's streaming technology you can use the new surround content with a minimum of only 100 MB of free RAM (i.e. RAM available for sample content). If you experience any RAM related problems, try setting the Preload time in the Options page view of HALion to 2 seconds or less.

- **Of course you can play all HALion surround content on a stereo system, at the obvious cost of loosing the outstanding surround experience.**

## Playing the surround content

To play the 5.1 content on a surround sound system, proceed as follows:

1. Copy the surround programs you find on the installation CD to your hard drive.
2. Set up your audio system so that the channel assignment of your host's audio output looks like this: 1 Front Left, 2 Front Right, 3 Center, 4 LFE, 5 Surround Left, 6 Surround Right.
  - **There is a program called "Rolf Channel Checker" that plays a voice telling you which channel it should come from. Play it once to make sure channel assignments are correct – you wouldn't like the sound of the front left speaker coming from the LFE.**
3. If you use Cubase SX or Nuendo 2, start the "HALion II Surround Content" project. The channel and output assignments in this project have been set up so that HALion's 5.1 signals are automatically routed to the correct outputs.
4. If you use another host, load HALion, choose "Load Bank" and select "HALion II 5\_1 Content.fxb" or, if your host doesn't support banks, load the programs described below one after another.
5. In your host's audio mixer, find the new, additional HALion surround channels (on the right of the original outputs) and make sure they are routed to the correct output busses (normally FL/FR go to BUS 1, C/LFE to BUS 2, and FL/FR to BUS 3).
6. Set up a MIDI track to play HALion from a keyboard (preferred), or use the on-screen keyboard to play the sounds.

Now you're all set to enjoy the superb surround experience offered by HALion!

## Rock Drum Kit

The Rock Drum Kit programs feature a powerful rock drum kit, providing both dry stereo samples (with the original drum chamber ambience) and 5.1 ambience.

Any variation from dry drums to a huge live rock situation in a concert hall is at your fingertips: thanks to HALion's modulation and MegaTrig features, you can choose between different types of reverbs, and you can also adjust the reverb portion by using the mod wheel.

The listening position is that of a spectator standing in the audience, facing the stage where the sound comes from.

### Routing

Each program consists of two types of samples:

- The dry (close-mic) signals routed through the four stereo outputs (kicks go to 1+2, snares to 3+4, hi-hats and cymbals to 5+6 and toms to 7+8). Note that the four stereo output faders act like a pre-mixer for the "Hal LR Front" bus. By using the output faders you can adjust the levels of the individual types of drum instruments against each other.
- 5.1 ambient signals routed to the 5.1 outputs.

### 5.1 Rock Drums MW SW program

In this program, the modulation wheel switches between four reverb variations:

Mod Wheel value	5.1 ambience type
0-5	Small wood chamber
6-63	Medium drum room
64-125	Large concert hall
126-127	Dry kit only

### 5.1 Drums Small/Medium/Large MW FD programs

In these programs, you have only one type of 5.1 ambience per program, but by turning the modulation wheel down you can fade out the reverb (default is ambience fully up).

## Latin Percussion Kit

This is a full set of latin percussion instruments with different ambiances. Your position as a listener is the percussion player's position, i.e. you are surrounded by the various instruments. Therefore each signal is a 5.1 sample including the positional information of the dry instrument and the ambience. The difference compared to the Rock Drum Kit: with the rock kit you cannot alter the volume and type of effect, while the percussion instruments literally surround you.

The MIDI mapping is GM compatible, so try playing a couple of MIDI grooves for latin percussion – you'll be impressed by the surround image.

## 10,000 sqm Pad

The name says it all: This pad is not just wide or big, it's 10,000 square meters large – a field of sound in the literal sense. This is possible because 5.1 surround adds the depth dimension. The pad consists of two portions:

### Foundation

A 5.1 signal created by combining three synthesized pad sounds:

- Front: metallic ringing pad
- Rear: warm, soft, slow chorussing pad
- Overall: wide and deep 5.1 string orchestra pad

### Sweep

A cutting through stereo pad with a significant resonance sweep adding life and colour.

When turning up the modulation wheel, the sweep layer fades out, at the same time the cutoff frequency of the foundation gets moved down. This way you can effectively use the Modwheel to control the brilliance and dynamics of the pad during the song.

## Urban Atmospheres

This program plays straight 5.1 events from the Steinberg/Wizoo library "Urban Atmospheres" (which features sounds on 9 DVDs and can be purchased separately from Steinberg).

This library features indoor and outdoor scenes recorded on location using an SPL Atmos 5.1 system. If these events don't sound 100% real, you will need to change something about your surround sound system.

### 5.1 Movie SFX

A collection of sound effects, served movie-style: large hangar doors slammed in a huge hall, a larger-than-life toilet flush or subsonic space atmo – exactly the stuff you need to impress your neighbors, preferably after 10 p.m. Use the pitchbend controller to change the sound character towards subsonic or disney-style.

# The Content CDs

The programs and samples on the HALion content CDs are provided by Wizoo (CDs 1, 2 and 3) and by eLAB (CD 4).

The large acoustic instruments on CD 1 and CD 2 come in three sizes each: XXL, MID and ECO. These versions differ in preload memory consumption, RAM demand and CPU load.

On CD 3, you find programs in a full (no reduction) and an ECO version.

## XXL

This is the full version giving you maximum sound quality and variations. In other words: if your system can handle it, use the XXL version for best quality sound. If system performance is an issue, try using the XXL versions only for prominent sounds that stand out in the arrangement.

## MID

Only the big XXL instruments have MID versions. Here the number of samples is reduced by 40 % compared to the XXL version. The MID versions are most appropriate for accompaniment and chord tracks.

## ECO

Compared to XXL the ECO versions sample numbers are reduced by 65 %, where applicable the filter is bypassed for better performance. Use ECO versions for less prominent background tracks.

## Compatibility

Obviously, the XXL versions are the most demanding in terms of memory, RAM and CPU requirements, while the ECO versions are a smaller burden on your system. While authenticity, number of samples and quality are different between XXL and ECO, all three versions are fully compatible, i.e. you can replace an XXL version with an ECO version at any time. The sound will retain its character, response and functionality.

On MacOS, all programs are color labelled according to their type: XXL, MID, Normal and ECO. Versions for 5-octave-keyboards also have a color of their own. Colors differ according to which colors you have assigned to the labels in the Finder.

# CD 1

## Wizoo Acoustic Piano XXL

This is an excerpt of the Grand Piano VSTi. The fortissimo layer of an exceptionally balanced Kawai EX Concert Grand is provided in full length, i.e. without any looping, and optimized for use with HALion's filters for recreating the tonal dynamics. Use this Grand Piano for jazz, pop or other relaxed styles.

Below, the contents of the folder "01 Acoustic Piano XXL" is described.

Program	Description	Voices	Filter
01 Wizoo Acoustic Piano XXL	1 layer Grand Piano	12	12dB
02 Gooseskin XXL	As above, layered with string pad	12/6	12dB

There are also MID and ECO folders for the acoustic piano. The programs in these folders differ only in the reduced amount of samples available (40% for the MID and 65% for the ECO programs).

## Wizoo Nylon Guitar XXL

This is a very rare and expensive handcrafted German classical nylon guitar, played in a variety of styles. It sounds clear, transparent and absolutely natural. Use it for solo and accompaniment in all styles of music from classic to pop.

To enhance the unrivalled authenticity of this HALion instrument even further, make use of the fret noises, semitone slides, wholetone hammers and harmonics provided.

Below, the contents of the folder “01 Nylon Guitar XXL” is described.

<b>Program</b>	<b>Description</b>	<b>Voices</b>	<b>Filter</b>
01 Wizoo Nylon Gtr Velo XXL	Velocity Switch: Soft/Hard	6	Off
02 Wizoo Nylon V Hrm XXL	Extended Velocity Switch: Soft/Hard/Harmonics	6	Off
03 Wizoo Nylon V Ham XXL	Extended Velocity Switch: Soft/Hard/Wholetone Hammer	6	Off
04 Wizoo Nylon XTV XXL	Extreme Velocity Switch: Harmonics/Soft/Hard/Semi slides	6	Off
05 Wizoo Nylon MTg Hrm XXL	Velocity Switch: Soft/Hard/Semi Slide, turning up ModWheel switches to harmonics (MegaTrigg)	6	Off
06 Wizoo Nylon MTg Slids XXL	As 03, but moving up the Mod Wheel switches to semi tone slides (11-110) and then to whole tone hammers (111-127)	6	Off

There are also MID and ECO folders for the nylon guitar. The programs in the MID folder provide 40% less samples and less add-ons. In the ECO folder, the programs provide open strings only in the low/ mid range and only three fret noises.

The add-on samples provide fret noises (fingers sliding across the strings) above B4.

## CD 2

### Wizoo 6 String Bass XXL

These samples were recorded using an active Ken Smith 6 string electric bass. We have chosen a heavy rear pickup balance for a round, subtle, yet powerful sound.

All kinds of playing styles like dead notes, stops, harmonics and slides are provided, so take your time to play around with velocity and Mega-Trig to make your bass player nervous.

Below, the contents of the folder “01 6 String Bass XXL” is described.

<b>Program</b>	<b>Description</b>	<b>Voices</b>	<b>Filter</b>
01 Wizoo 6Str Bass Velo XXL	Velocity Switch: Soft/Hard	6	Off
02 Wizoo 6Str Bass XVS XXL	Extended Velocity Switch: Soft/Hard/Semi slide	6	Off
03 Wizoo 6 Str Bass XVH XXL	Extended Velocity Switch: Soft/Hard/Harmonics	6	Off
04 Wizoo Bass XTV XXL	Extreme Velocity Switch: Layer 1: Harmonics soft (key split Natural-Artificial) Layer 2: Harmonics hard (as above) Layer 3/4: Soft/Hard Notes	6	Off
05 Wizoo Bass MTg Hrm XXL	Velocity Switch: Soft/Hard, turning up ModWheel switches to harmonics (MegaTrig)	6	Off
06 Wizoo Bass MTg Slids XXL	Velocity Switch: Soft/Hard, turning up ModWheel switches to Semi tone slides (MegaTrig)	6	Off

There are also MID and ECO folders for the 6 string bass. The programs in the MID folder provide 40% less samples and less add-ons. In the ECO folder, the programs provide open strings only in the low/mid range and only one sample for each add-on.

Add-on samples in all programs provided:

C0 to D#0	Dead Notes, created by playing muted strings
E0 to A#0	Stops, thumb pops muted strings
C#5 to E7	Slide FX – various intro and intermezzo slides

## Wizoo XXL Drums & Percussion

Most of you already know the award winning professional quality of Wizoo drums from Steinbergs best selling LM4. For HALion, the acoustic drums have been extended to up to 12 velocity layers, again setting a new standard for acoustic drums and – also brand new – latin percussion.

Below, the contents of the folder “01 Drums & Perc XXL” is described:

Program	Description	Voices	Filter
01 Wizoo Big Gig Kit XXL	Combination of 02 and 05. Percussion is routed to HALion output 3+4.	By group	Off
02 Wizoo Studio Drums XXL	Dry, universally usable drum kit featuring up to 12 velocity layers per instrument.	By group	Off
03 Wizoo Soul Kit XXL	A deeper and heavier drum kit especially suitable for dirty, processed application.	By group	Off
04 Wizoo Reverb Kit XXL	A combination of dry drums and reverb signals. Reverb is routed to HALion output 3+4.	By group	Off
05 Wizoo Latin Perc XXL	A huge GM compatible latin percussion setup with up to 8 velocity layers.	By group	Off
06 MegaTriggPercussion XXL	A selection of percussion instruments (see table below). The sustain pedal is activated by MegaTrig to switch styles while playing.	By group	Off

There are also MID and ECO folders for the drums and percussion programs. The programs in the MID folder provide 50% less samples for most single instruments. Crashes are reduced to one layer, ride cymbals to two layers. In the ECO folder, all instruments have been reduced to one layer.

- **For multiple stereo outputs, select the drum kit in up to 4 MIDI channels and choose different HALion outputs.**

## Activation keys for the 06 MegaTrigg Percussion programs

Note	Normal	Sustain Pedal
C3	Bongo Hi	Bongo Lo
D3	Conga Lo	Conga Slap
E3	Conga Hi	Conga Slap
F3	Timbales Hi	Timbales Lo
G3	Agogo Hi	Agogo Lo
A3	Whistle Hi	Whistle Lo
B3	Guiro Short	Guiro Long
C4	Wood Block Hi	Wood Block Lo
D4	Guica Hi	Guica Lo
E4	Triangle Mute	Triangle Open

## CD 3

### 01 Wizoo Magnetic Instruments

Below, the contents of the folder “01 Wizoo Electric Pianos” is described:

Program	Description	Voices/ Polyphony	Filter
01 Rhodes Suitcase	Jazzy, expensive sounding electric piano; 4 layer velo switch	16	12dB
02 Rhodes Suitcase Autopan	Autopanning between the two stereo channels created by LFO1, ModWheel controls depth	16	12dB
03 Rhodes Suitcase MTg	Velocity controls volume, ModWheel steps through the 4 layers (e.g. you can play the hard layer with low velocity)	16	12dB
04 Rhodes Mark 1	Electric piano with rich harmonics, harder character than Suitcase; 4 layer velo switch	16	12dB

<b>Program</b>	<b>Description</b>	<b>Voices/ Polyphony</b>	<b>Filter</b>
05 Rhodes Mark1 AutoWah	AutoWah created by LFO1 modulating Cutoff. ModWheel decreases the effect gradually	16	12dB
06 Rhodes Mark1 MTg	As with 03	16	12dB
07 DX PunchReeds	Artificial FM version of a Rhodes piano	16	12dB

There is also an ECO folder with three electric piano programs. The description for these programs is the same as for the full versions. “01 Rhodes Suitcase ECO” and “04 Rhodes Mark 1 ECO” are reduced to two layers, and “07 DX PunchReeds ECO” provides 50% less samples, and the filter is off.

Below, the contents of the folder “03 Wizoo Clavinet” is described:

<b>Program</b>	<b>Description</b>	<b>Voices/ Polyphony</b>	<b>Filter</b>
01 Clavinet D6	Funky Clavinet	16	Off
02 Clavinet D6 Wah	Auto Wah created by filter envelope	16	12dB

Below, the contents of the folder “04 Wizoo Clean Guitar” is described:

<b>Program</b>	<b>Description</b>	<b>Voices/ Polyphony</b>	<b>Filter</b>
01 Straight Strat	Clean straight strat – needs processing such as “Chorus” or “Overdrive” send effect	6	-
02 Radio Stack	Detuned stereo (2 voices per note) version with long release time	12/6	-
03 Wizoo Strat Mtg Sustain	Pedal switches between 01 and 02	12/6	

Below, the contents of the folder “05 Wizoo Organs” is described:

<b>Program</b>	<b>Description</b>	<b>Voices/ Polyphony</b>	<b>Filter</b>
01 B3 Rotor Mtg	Percussive B3 organ sound, MegaTrig switches rotor speaker status via ModWheel: 0-10: Slow 11-120: Fast 121-127: Dry	16	Off
02 B3 Rotor Slow-FastMW	Percussive B3 organ sound, ModWheel fades from slow to fast speaker rotation	32/16	Off
03 B3 Rotor Slow-Fast Velo	Percussive B3 organ sound, velocity switches from slow to fast speaker rotation	16	Off
05 B3	Dry Percussive B3 organ sound w/o speaker rotation, use with Rotor simulation plug-ins or external speaker cabinets	16	Off

There are also ECO folders for the organs programs. The programs in the ECO folders provide 50% less samples than in the full version.

## 02 Wizoo Electronic Toolkit

Each folder of the Electronic Toolkit contains a bank file. It loads all programs of the folder simultaneously to different channels of HALion for browsing convenience.

Below, the contents of the folder “01 Electronic Drums” is described:

<b>Program</b>	<b>Description</b>	<b>Voices/ Polyphony</b>	<b>Filter</b>
01 Drum n Bass Kit	4 sets of Drum'n'Bass style drums spread in octaves across a keyboard range of C1 to A#4	Per group	Off
02 Drum n Bass Reso Kit	As with 01 with resonant, velocity-sensitive filter	Per group	Off
03 HipHop Kit	Comprehensive processed kit 808 style, up to 10 layers per instrument	Per group	Off
04 Tekkno Kit	Comprehensive processed kit 909 style, up to 10 layers per instrument	Per group	Off

There is a “02 Electronic Drums ECO” folder containing two programs “03 HipHop Kit ECO” and “04 Tekkno Kit ECO” that differ from the full version in that they are reduced to a single layer.

Below, the contents of the folder “03 Synth Bases” is described:

<b>Program</b>	<b>Description</b>	<b>Voices/ Polyphony</b>	<b>Filter</b>
01 Minimoog Bass	Straight no-frills Minimoog bass	1	
02 OB8 Sawrubber Bass	Subsonic rubber-style bass	1	
03 Nord Disco Bazz	Virtual analog percussive bass	1	
04 Ultimoog Bass	Fat, detuned FM bass	1	
05 Nord Mewk Bass	Straight analog bass with sub-oscillator two octaves below	1	

Below, the contents of the folder “04 Analog Chords” is described:

<b>Program</b>	<b>Description</b>	<b>Voices/ Polyphony</b>	<b>Filter</b>
01 Electric V	Bright, powerful poly synth from the Waldorf Wave	10	
02 MiniMoog Soft Synth Brass	Pretty much what the name says	16/8	
03 OB8 Fat PWM	Straight, brutal and fat chord sound	10	
04 Oberbrass	Analog soft brass sound	16/8	
05 Nord Section	Analog Brass Section	10	

Below, the contents of the folder “05 Digital Decays” is described:

<b>Program</b>	<b>Description</b>	<b>Voices/ Polyphony</b>	<b>Filter</b>
01 Propaganda	Metallic, chorusing FM sound with long release	10	
02 WaveBellz	Fat bell sound from Waldorf Wave	10	
03 Sparkles Soft	Element 1 of a sparkling metallic FM sound	10	
04 Sparkles Bright	Element 2 of a sparking metallic FM sound	10	
05 Sparkles Layer	Layer of 04 and 05	16/8	
06 Erazor FX	Animated chainsaw style synth sound	10	

Below, the contents of the folder “06 Pads” is described:

<b>Program</b>	<b>Description</b>	<b>Voices/ Polyphony</b>	<b>Filter</b>
01 Long Swell Warm Pad	Slow attack soft pad	16/8	
02 RoboPad	Highpassed techno style pad	10	
03 Wave SingSing	Subtle, wide pad sound from the Waldorf Wave	10	
04 PPG Choir	Vintage digital choir	10	
05 Warm Brass Pad	Read my name	16/8	
06 Warmer	Warm, subtle pad	10	
07 Cloudz Pad	FM pad with fat attack	10	

Below, the contents of the folder “07 Analog Leads” is described:

<b>Program</b>	<b>Description</b>	<b>Voices/ Polyphony</b>	<b>Filter</b>
01 Frying V	Fat FM sound resembling a distorted guitar chord	1	
02 MiniMoog Porta Lead	Powerful fat Moog lead with glide effect	2/1	
03 Jupiter Euro TekStrynx	Techno style lead	2/1	
04 Jupiter Hard Sync	Hard sync lead	1	
05 MultiMoog	Nice, fat moog lead	1	

Below, the contents of the folder “08 Massive String Pad” is described:

<b>Program</b>	<b>Description</b>	<b>Voices/ Polyphony</b>	<b>Filter</b>
01 Big String Pad	Wide, very subtle stereo string pad	10	
02 String Pad Octave	As with 01 plus octave	16/8	
03 Intro Sweep Pad	Highpassed resonant intro sweep with autopan	8	
04 Reso Sweep Pad	SciFi pad with rotating resonant filter	8	
05 LoFi Strings	Mellotron style string sound	8	

Below, the contents of the folder “09 Oscillator Toolbox” is described:

<b>Program</b>	<b>Description</b>	<b>Voices/ Polyphony</b>	<b>Filter</b>
01 MiniMoog Long Saw Stereo	Raw waveform: Two oscillators detuned and stereo layered	16/8	Off
02 MiniMoog Long Saw	Raw waveform: Two oscillators detuned	8	Off
03 MiniMoog VCO Square	Raw square wave	8	Off
04 MiniMoog VCO Saw	Raw sawtooth wave	8	Off
05 MiniMoog VCO Ramp	Raw waveform mixture of sawtooth and triangle	8	Off

For the five Oscillator Toolbox programs there are ECO versions that differ from the full versions in that they provide 50% less samples.

## CD 4

The content of CD 4 is provided by eLAB. The CD contains detailed descriptions of what samples are provided, the following list is only an overview.

- eLAB DrumTools  
Kicks, Snares, HiHats...
- eLAB LoopTools 65 bpm – 170 bpm  
Drumloops and more
- eLAB MusicLoops 90 bpm – 170 bpm  
Musicloops and more
- eLAB SoundTools Samples  
FX and more
- eLAB SoundTools Vox  
Vocal FX and more



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