

VSampler 3 Tour

Feature Overview



© 1998-2003 Speedsoft Audio Tools GmbH, Döbeln, Germany
All rights reserved.

Revision: 23.12.2003

All product names mentioned in this document remain the property and/or trademark of their respective owners. Mentioning product names of 3rd parties is for information purposes only.

Microsoft, Microsoft Windows, DirectX, DirectSound, WDM © Microsoft Corporation
Cubase, Cubase SX, Steinberg, VST, ASIO, HALion, LM4 © Steinberg Media Technologies AG
Cakewalk, Sonar, DXi © Twelve Tone Systems, Inc.
Emagic, Logic © Emagic Soft- und Hardware GmbH
ACID, Soundforge © Sonic Foundry, Inc.
Reason, ReBirth, ReWire © Propellerhead Software AB
Ogg, Vorbis © Xiph.Org
FLAC © GPL/LGPL

Table of contents

1	Intro	4
2	VSTi, DXi, Rewire, MIDI	6
2.1	Plugin (VSTi, DXi).....	6
2.2	Standalone (MIDI, Rewire, DirectSound, ASIO).....	6
2.3	Optimized for MS Windows.....	7
3	Import	8
3.1	WAV, LM4, Battery, SF2, HALion, Gig, Kontakt, AKAI, E-MU..	8
3.2	Autoload-Preview	9
3.3	Soundbank-Manager.....	9
3.4	AKAI and E-MU CDs 1:1 on harddisk	9
4	Export	10
4.1	SF2: for SB Live! and Audigy.....	10
4.2	VC3: up to 20:1 compressed for Internet exchange	10
5	Sampler	11
5.1	High Performance Audio Engine.....	11
5.2	from “true to nature” to experimental.....	11
5.3	Sample-Editor	12
5.4	Auto-Looper	12
5.5	Beat-Slicer	13
6	Synthesizer	14
7	Effects	17
8	Modulation	19
9	Remote control and automation	21
10	User Interface - The Chameleon	22
10.1	Different Views	22
10.2	Variable designs using Skins	24
10.3	User interfaces should be transparent.	25
10.4	The rack-devices.....	25
10.5	Smart helpers	27

1 Intro

It is aim of this tour to introduce the possibilities of VSampler 3 to you in a summary.

This is the print-version of the VSampler 3 online tour of www.vsampler.com, which additionally contains animated illustrations, demonstrating e.g. the possible drag'n'drop actions.



Small View of VSampler 3

VSampler transforms your PC into a 255-voice software sampler, turning any recorded noise into a musical instrument. VSampler provides all of the classical sampler features in excellent sound quality, and also offers you a multitude of new opportunities. In cooperation with the users of its award-winning predecessor (see www.maz-sound.com/?show=product&id=5) an intelligent software-sampler has been created, which beneath a truly transparent surface combines extensive editing abilities with simplest handling. Drag&drop and context menus allow quick access to all functions and provide for a smooth workflow.

VSampler can operate either as a plugin (VSTi or DXi) in your sequencer, or it can run as standalone version, connecting via Rewire or MIDI. The included “virtual MIDI-cable” also connects VSampler with classical MIDI sequencers.

VSampler loads instruments in the industry standard sampler formats SF2™, Gigasampler™, HALion™, Kontakt™, AKAI™ (S1000/3000 CDs and

S5000/6000 AKP files) and E-MU™ III / IV CD, as well as drumkits (LM4™, Battery™ KIT) and samples (WAV, AIF).

3.1

~~OEM~~

The following new functions are available in VSampler 3.1 (and up):

- plays instruments of any size without being limited to RAM-size
- import formats Kontakt, Battery and E-MU III / IV CD
- group-effects and individual outputs for samples of e.g. a drumkit

Those functions are not available in OEM-versions of VSampler 3.0, which are licensed and distributed by 3rd parties as part of their own products. At the moment this applies to „VSampler 3.0 DXi“ of the Cakewalk product „Sonar 3 Producer“.

The upgrade to the full version is available at www.maz-sound.com for 39 € (around \$47).

The unique instrument preview allows you to test different sounds with a single mouse-click on-the-fly during playback. Owners of an SB Live!™ or Audigy™ soundcard will be pleased that VSampler is able to save files in SF2 format as an option.

VSampler's various tempo-synchronizable envelope types and LFO's, and its velocity sensitive filters ranging from subtle to aggressive are all inducive to sound editing. Instruments can be further refined using either the included effects (Reverb, Delay, Phaser, Distortion, EQ ...) or any VST-plugin. The animation of all effect-, envelope- and filter-parameters in a mutual modulation matrix, creates instruments with extraordinary dynamics and impressive, realistic playability. The included presets for effects, envelopes and modulation will get you off to a good start.



Whether quick playback module for everyday use or creative tool with synthesizer qualities - VSampler fuses both in a versatile instrument.

2 VSTi, DXi, Rewire, MIDI

2.1 Plugin (VSTi, DXi)

Used as a plugin, VSampler is seamlessly integrated in your sequencer with sample-accurate timing. All settings are saved together with the song and are restored on load - total recall! If 16 simultaneously playable instruments, 255 stereo voices and 16 individual outputs (number and mono-/stereo adjustable) are not enough, just start another VSampler plugin - at no extra cost :)



VSampler VSTi with Steinberg Cubase



VSampler DXi with Cakewalk Sonar

2.2 Standalone (MIDI, Rewire, DirectSound, ASIO)

The standalone version of VSampler can be played live via MIDI keyboard, independent of a sequencer. Thanks to the included “virtual MIDI cable” VSampler can be easily connected to any MIDI-sequencer. Audio signals are routed via 16 individual outputs to DirectSound or ASIO soundcards. Each instrument can be assigned to separate output devices which in turn are managed within the integrated 16-channel-mixer, multi-effects and record option inclusive. Via Rewire, VSampler can be hooked up with sample accurate audio/MIDI synchronization to the mixer of sequencers like e.g. Propellerhead's Reason.

2.3 Optimized for MS Windows

VSampler has been developed exclusively for the Windows platform. The program code is not limited by forced compatibility with other operating systems. VSampler supports the Windows versions 98SE, ME, 2000 and XP.

3 Import

3.1 WAV, LM4, Battery, SF2, HALion, Gig, Kontakt, AKAI, E-MU

VSampler owners have the broad range of existing sound libraries at their disposal right away. Additionally to its own format, VSampler loads instruments in the industry standard sampler formats SF2™, Gigasampler™, HALion™, Kontakt™, AKAI™ (S1000/3000 CDs and S5000/6000 AKP files) and E-MU™ III / IV CD, as well as drumkits (LM4™, Battery™ KIT) and samples (WAV, AIF).

3.1

The following new functions are available in VSampler 3.1 (and up):

- plays instruments of any size without being limited to RAM-size
- import formats Kontakt, Battery and E-MU III / IV CD
- group-effects and individual outputs for samples of e.g. a drumkit

~~OEM~~

Those functions are not available in OEM-versions of VSampler 3.0, which are licensed and distributed by 3rd parties as part of their own products. At the moment this applies to „VSampler 3.0 DXi“ of the Cakewalk product „Sonar 3 Producer“.

The upgrade to the full version is available at www.maz-sound.com for 39 € (around \$47).



Import-Rack with One-Click-Autoload

3.2 Autoload-Preview

VSampler's unique instrument preview with its autoload function takes the difficulty out of searching for the right sound; you can test different sounds with a single mouse-click on-the-fly during playback. Before importing the instrument, you can hear how it will actually sound in the song. If you like it, just double-click to import it, or continue testing other instruments by stepping to the next one by cursor keys or mouse - there's no easier and quicker way. Very practical for everyday use is the Import Rack, which recalls the last used location for each file type separately.

3.3 Soundbank-Manager

VSampler's integrated Soundbank-Manager with search function and category filter offers unique comfort for the administration of extensive sound libraries. Each instrument of the soundbank-manager can be loaded to a MIDI-channel with a single mouse-click.

3.4 AKAI and E-MU CDs 1:1 on harddisk

VSampler offers users of AKAI™ and E-MU™ CD's 100%-future compatibility by building a 1:1 copy of the CD as disc image file at your local harddisk or network. No more time consuming conversion into one or even multiple sampler-specific formats. The CD fully retains its best feature - the compatibility with all existing samplers¹. VSampler loads the instruments directly from the disc image and handles them the same way as any other soundbank format. Without having to change CD's, you can scroll through your AKAI™ or E-MU™ CD-collection in the soundbank-manager, enjoying the VSampler-typical comfort of the autoload-feature, testing different sounds with a single mouse-click on-the-fly during playback.

¹ by the help of e.g. Daemon Tools (freeware, see <http://www.daemon-tools.org>) other softwaresamplers are able to access such a "virtual CD" as well

4 Export

4.1 SF2: for SB Live! and Audigy

In addition to its own format with the file extension .VS3, VSampler also exports soundbanks in SF2 format, an ability that will especially please owners of SB Live![™] and Audigy[™] soundcards. VSampler is the clever comfort-alternative to classic SF2 editors, because it doesn't limit the user to the capabilities of the SF2 format generally. With VSampler you can create SF2s easier than ever, to play them back as usual through an SB Live![™] or SB Audigy[™] soundcard, or you can load them into any other SF2 player. At the same time you stay independent of any specific hardware - indeed the best of both worlds.

4.2 VC3: up to 20:1 compressed for Internet exchange

VSampler allows direct loading and storing of compressed soundbanks, which are much smaller than the uncompressed standard type. This compressed type has the file extension .VC3. Depending on the purpose, you have 2 types to choose from:

- lossless: for archive-purposes, approx. 2:1, which thanks to Flac (<http://flac.sourceforge.net>) is better than Rar/Zip/Ace
- lossy: to exchange larger sound banks over the internet, thanks to Ogg Vorbis (<http://www.vorbis.com>) even at 20:1 the quality is astonishingly good (better than MP3, see <http://www.heise.de/newsticker/data/anw-08.09.02-000>), default compression is approx. 10:1

5 Sampler

5.1 High Performance Audio Engine

The internal 32 bit floating point audio processing enables a pristine playback of your sample material, with a dynamic range beyond human aural perception. The semi-modular structure of the VSampler engine allows it to emulate classical hardware-samplers as well as to construct extremely complex instruments. From a single sample to a filtered, real-time modulated multi-layered sound with multi-effects - everything is possible.

The integrated Dynamic Resource Control (DRC) always provides the best possible use of CPU power and main memory in every situation. Furthermore, the performance of VSampler can be adapted to the arrangement, so that all your other instruments and effects will always have the processing power they need.

5.2 from “true to nature” to experimental

VSampler supports samples with 16/20/24/32 bit resolution at any sampling frequency. The playback frequency is actually limited by the output device only. Of course, VSampler supports all common output formats from 16 bit/44kHz up to 32bit/192 kHz. In its simplest form, a VSampler instrument can consist of a single sample that can be played across the entire range of the keyboard. In order to emulate the dynamic behavior of natural instruments, it can also consist of hundreds of samples mapped to different keys (Key Zones) and velocities (Velocity Zones). If desired, VSampler can automatically create a smooth transition (crossfade) between neighboring areas. Various parameters, modulations and effects can be assigned to each individual sample, as well as conditions when to trigger the sample. A sample can be triggered for example at the release of a key, or when certain controller values are reached, or it can be crossfaded into other samples via MIDI controller.



transparent Volume-Envelope with sample display in background

VSampler offers several sample-playback methods, including Tape Machine (Tap on/off) and Drum Mode. Samples can be organized in groups in order to randomly playback samples (Cycle Groups) or to limit polyphony (Poly Groups). The Exclusion Mode takes care of e.g. a typical hihat group, where the closed hihat stops the decaying open hihat.

5.3 Sample-Editor

The integrated Sample Editor offers all of the basic sample-editing functions, such as cut/copy/insert, change level, fade in/out, autotrim sample start/end, phase and playback reversal, switch channels or convert format. Time stretching (Tempo Scale) enables a sample to be compressed or stretched without changing its pitch. The Pitch Shifter does the opposite.

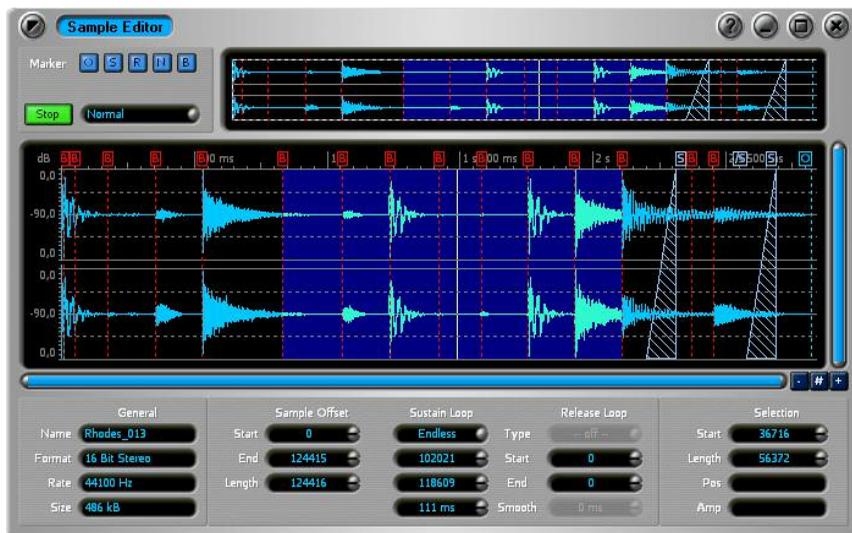
5.4 Auto-Looper

A feature that up until now has only been available in specialized programs is native part of VSampler already: an intelligent Auto Looper. The Auto Looper takes care of the often arduous search for suitable loop points at the touch of a

button - even for hundreds of samples at a time. Alternatively VSampler offers non-destructive crossfade-looping in real time, meaning any crossfade loop can be activated or altered at any time without any changes being made to the sample data. Within a sample, various markers can be set, for example to mark the start- and end-position for playback, or individual drum hits of a drum loop.

5.5 Beat-Slicer

The Beat Slicer slices drum loops into single hits, allowing you to change tempo and pitch of the loop in real time, independent of each other and without losing sound quality. The integrated Beat Detector automatically sets the markers for the individual slices with adjustable sensitivity. These beat markers can be manually moved/deleted/added.



comfortable Sample-Editor with Autolooper and Beatslicer

6 Synthesizer

VSamplers integrated synthesizer features could make some pureblooded synths envious. For sound shaping there are two parallel usable filters with freely adjustable velocity dynamics. The ten different filter types provide cutoff slopes from 6 dB to 24 dB and the types lowpass, highpass and bandpass. The target range of the filter envelopes affecting cutoff frequency and resonance can be adjusted with upper and lower limit to precisely attain the desired effect.



32-stage filter-envelope with autozoom

The various envelope types don't give an edge to just the filter. In addition to the volume- and filter-envelopes with their (up to) 32 freely editable points, curve shape and loop, for each sample you have simultaneously(!) at your disposal:

- 4 free envelopes, each with up to 32 freely editable points, curve shape and loop
- 4 LFOs with various waveforms and delay/attack/release parameters
- 4 step sequencers with freely adjustable number of steps (max.192), free patterns including "load from WAV" option, which transforms the volume progression of a WAV file into a pattern

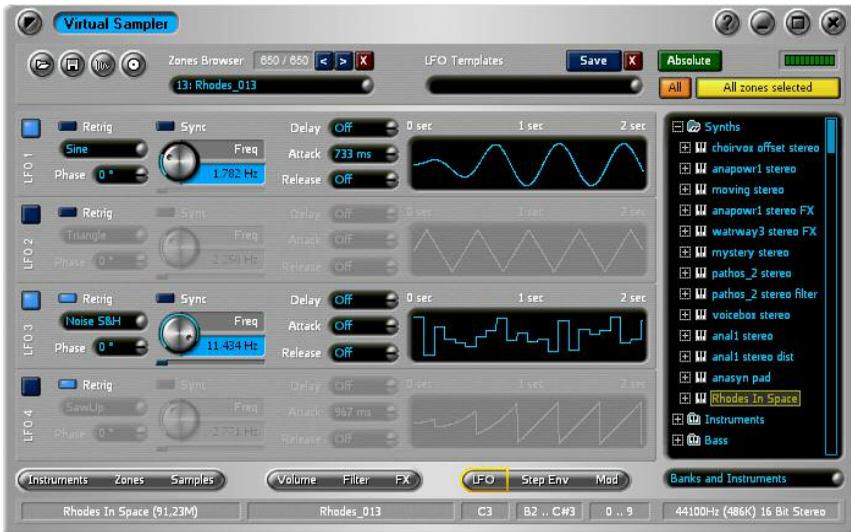
Each LFO and step sequencer also can alternatively operate at instrument level. The “load from WAV” function turns the step sequencer into an “envelope-follower”. This can result for example in marvelously scintillating pad sounds by e.g. having the filter pulsate in the rhythm of a drumloop.



4 free envelopes + 4 free step sequencers

Each controller knob has its own little "Analogizer" attached. This mini-fader allows to add a pinch of analog-like swaying to recreate the vital ever-changing sound of analog synthesizers.

All envelopes, LFO's and step sequencers can be synchronized to the song tempo. The included presets for effects, envelopes and modulation will get you off to a good start.



4 free LFO's

7 Effects

VSampler instruments can be further refined by the included effects (Reverb, Delay, Phaser, Flanger, Chorus, Soft Limiter, Compressor, Distortion, 3-band-EQ) or any VST-Plugin. Multiple effects can be assigned independently: 3 per sample, 3 per sample-group, 3 per instrument and 3 per output channel. The sample can end up passing through up to 12 effects.

3.1

The following new functions are available in VSampler 3.1 (and up):

- plays instruments of any size without being limited to RAM-size
- import formats Kontakt, Battery and E-MU III / IV CD
- group-effects and individual outputs for samples of e.g. a drumkit

OEM

Those functions are not available in OEM-versions of VSampler 3.0, which are licensed and distributed by 3rd parties as part of their own products. At the moment this applies to „VSampler 3.0 DXi“ of the Cakewalk product „Sonar 3 Producer“.

The upgrade to the full version is available at www.maz-sound.com for 39 € (around \$47).

As opposed to other samplers, VSampler seamlessly integrates the effects into the voice architecture and does not differentiate between internal effects and (external) VST-Plugins. The result is a unique combination of effects and modulation: the parameters of all effects, envelopes and filters are controlled in a mutual modulation matrix (see the following section).



joined forces: integrated effects + VST plugins

Just a few examples of use:

- VSampler envelope controls the cutoff frequency of a VST-filter-plugin as if it was one of the integrated filters
- VSampler LFO wavers through the decades of a vinyl-plugin
- Aftertouch activates your favorite distortion effect
- VSampler step-sequencer lets the room size of a reverb pulsate rhythmically

VSampler 3 joins forces and fuses its own strengths with those of the plugins to endless creative freedom². It creates unique instruments with amazing dynamics, that can be played with heretofore unknown expressiveness.

² of course the selection of the modulated effect-parameters is the responsibility of the user, not every parameter of every plugin can be realtime-modulated with a sensible result

8 Modulation

VSampler provides extensive opportunities to endow instruments with an impressive vitality, and to animate parameters in realtime. All modulations are centrally displayed and managed: at the modulation matrix. For each of the 12 modulation slots you can select which Source controls what Target at what Factor (strength). Several sources can affect the same target in order to create particularly interesting modulation passages. Vice versa, a source (e.g. a MIDI controller) can simultaneously control several targets at once, which is especially useful during a live performance.



central modulation matrix incl. effect-parameters-modulation

The most important modulation sources:

- 4 envelopes, 4 step sequencers, 4 LFOs
- elapsed time after pressing or releasing a certain key
- velocity, aftertouch, modwheels, pitchbend, key number
- 6 user-definable MIDI controllers (and more, see next section)

The most important modulation targets:

- all effect parameters (incl. VST plugins)
- volume, panning, pitch, filter
- time + level of the envelope segments of all 7 envelopes (1 x volume, 2 x filter, 4 x free)
- frequency of LFOs and step sequencers
- filter sends and effect sends
- sample start and end

In the detail view, the movements of the current modulation values are displayed graphically. The affect of source and factor on the modulation target can be adapted perfectly with a freely adjustable curve. The included presets for effects, envelopes and modulations will get you off to a good start.



animated display of the current modulation values

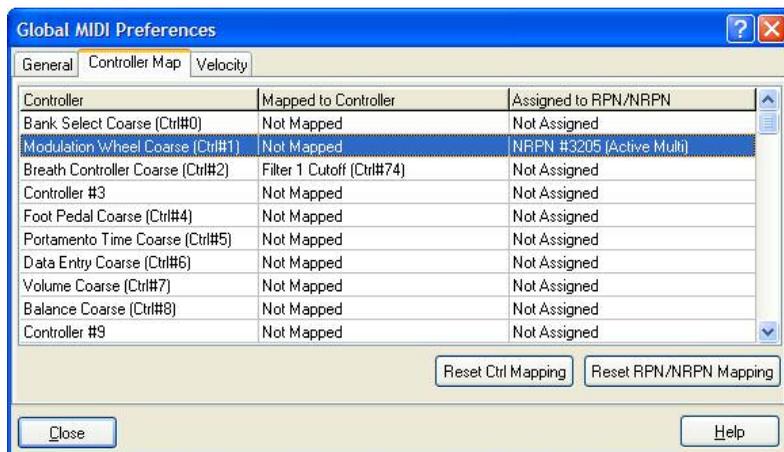
9 Remote control and automation

Practically every VSampler parameter can be remote controlled and automated by MIDI-controllers. Likewise, the movements of all VSampler controller knobs in the main view and the mixer can be automated, i.e. the suitable sequencer³ records the on-screen movements of the control knobs made with the mouse, and later reproduces them 1:1.

Thanks to VSampler's integrated **Learn Controller** function, a small movement of your controller is all it takes, and the selected knob of VSampler's main view or mixer will recognize the controller number, and immediately respond to it.



For all other parameters VSampler provides a detailed Controller List where each incoming MIDI controller can be assigned to any VSampler parameter. The advantage: VSampler can work with any MIDI hardware even if that hardware is unable to send Sysex messages or to be programmed.



Controller-List

³ requires a host sequencer able to record VST automation data, DXi-plugin and standalone momentarily only support the automation by MIDI controller

10 User Interface - The Chameleon

At least as important as the technical features of an electronic instrument is its handling. In close contact with the users of the predecessor version a truly transparent user interface has been developed. It can easily be adapted to individual working methods, following the "less is more" principle. For beginners, VSampler provides a simple Small View for quick playback of soundbanks, whereas advanced users can choose the Edit View with its outstanding graphical support for sound editing. Drag & drop and context menus allow quick access to all features and provide for a smooth workflow.

10.1 Different Views

VSampler's flexible user interface can easily be adapted to your personal practices. Whether you prefer a simple compact view for playback, or the complete editing features of the edit view; whether you prefer switchable windows or several windows in classical rack view or undocked at the desktop - you call the shots! VSampler always recalls the last setting, including all window positions.

Small View
quick soundbank-player



Edit View, variant 1
compact all-in-one view



Edit View, variant 2
scrollable rack



Edit View, variant 3
all windows undocked



VSampler supports the creative workflow by following the “less is more” principle. Unused function groups can be hidden using the context menu (right mouse button). What may sound trivial in theory is quite useful in practice:

Pages in the Main-Rack:

Each of the 9 buttons can be hidden if the corresponding page is not currently needed:



... or e.g. this way:



File types in the Import-Rack:

VSampler supports a multitude of file formats. If you don't own any instruments of a particular file type you should hide the corresponding button.



... or e.g. this way:



Toolbar (right):

As shown above in the screenshots of the Edit View variants 1 and 2, the number and order of the rack buttons appearing in the toolbar is adjustable. Also, the individual pages of the main window can appear as smaller buttons.

10.2 Variable designs using Skins

VSampler can change its design by loading Skins, to support the mood of a song, which can be quite inspiring.



10.3 User interfaces should be transparent.

VSamplers user interface offers outstanding graphical support for sound editing and also makes it easy for beginners to get started. It combines the flexibility of the semi-modular sound engine with the clarity of a fixed layout of all control elements. And the interface is transparent in every sense of the word: unused or inactive elements are hidden. They appear in transparent shades of gray, and their settings can't be changed. By linking the graphics to the logic of the sound-engine, VSampler provides visual support that helps to avoid twisting currently ineffective knobs. For example, without having set the range slider for filter frequency or resonance as a target for the filter envelope, altering the curve points won't result in any audible effect. VSampler tries to discourage you from such futile actions:-)



And there's more transparency: The transparent envelope display allows the sample waveform (incl. loop points) and the shape of the other envelopes to shimmer through. This way you can optically adjust the envelope to the course of the waveform or to other envelopes (e.g. filter and volume).

At the **Zones** page which shows which sample per key and velocity is played, all zones appear half-transparent as well, letting you see how the zones overlap.

10.4 The rack-devices

The Edit View of VSampler consists of 8 rack devices. As described in the chapter "Different Views", these racks can be arranged in 3 different ways:

- compact single window view, similar to VSampler 2
- classical rack view, devices are scrollable
- all devices as separate windows undocked at the desktop

Main window, Import window, Sample Editor and Bank Manager can be maximized to fullscreen.

Main Window ("F2" key)

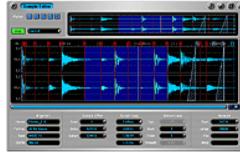
control center: Instruments Pool, Quick-browser, sound editing

**Keyboard ("F3" key)**

plays chords, is velocity sensitive :)

**Sample Editor ("F4" key)**

Autolooper, Beat Slicer, sample editing

**MIDI ("F5" key)**

16 MIDI channels to 16 output devices, multi-effects

**Mixer ("F6" key)**

16 stereo channels, record option

**Pattern Sequencer ("F7" key)**

sequence instruments and their parameters

**Import ("F8" key)**

Autoload-preview while song is running

**Bank Manager ("F9" key)**

organize instruments independent of their physical location, search, autoload, filter



10.5 Smart helpers

... Multilingual user interface and help

Not only the context-sensitive help, but also the complete user interface is multilingual. You can currently choose between German and English; further languages will be freely downloadable as they become available. An additional owner's manual is in the works.

... Drag'n'Drop

The many supported drag & drop features of VSampler help to keep distances short and handling easy. Soundbanks and instruments can be dragged directly from the Windows-Explorer to the VSampler interface. It's as easy to assign a sample to a key: just drag it onto the onscreen-keyboard. When dragging several samples you will be asked if they should be placed next to each other on the available keys, or on top of each other to be triggered per velocity level. In the Instruments Pool you can copy, move or merge instruments using drag & drop. The "Shift" and "Ctrl" keys decide between move ("Shift") and copy ("Ctrl") without asking. In the Quickbrowser samples can be copied into other instruments, or instruments can be loaded directly out of an external soundbank without loading the soundbank. In the Import Rack instruments can be mapped to the 16 MIDI-channels by drag & drop.

... Context menus (right mousekey)

VSampler offers a number of different context menus depending on the situation. A click on the right mouse-button shows at once which functions are available for the selected control knob or part of the screen. This often saves you the trouble of having to search the main menu or to dig through the help file or manual. By using the right mouse button you can e.g. setup a controller knob for being remote-controlled by an external MIDI controller, without any programming. Or you can switch the scale of a tempo-related knob between Hz and BPM.



context menu "Learn Controller" for easiest controller-mapping



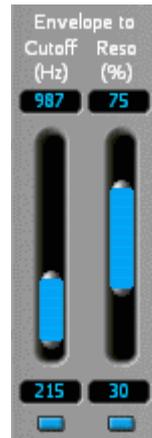
rotary knob: Shift-key for finetuning, right mousekey for BPM vs. Hz scale

... Finetuning by Shift-key

All screen controls of VSampler respond in fine-tuning mode when pressing the "Shift" key. In this mode, the controllers move significantly slower, to make it easy to adjust even the smallest knobs in single steps. In the envelope display, pressing "Shift" will cause the envelope points to snap in at the x- or y-axis.



one of the many context menus, Shift-key snaps in at x- or y-axis



range sliders: Shift-key for finetuning mode

... Cloning instruments and settings

Page Templates: Each page of VSampler's main window can load and store its settings. The included Page Templates help you get started using VSamplers extensive editing features.

Instrument Templates: with the help of an Instrument Template you can clone entire instruments or function-groups, and transfer their settings to another sample set.

... Full control for sound editing

Parameter changes always affect the selected Sample Zones. To simplify the editing of complex instruments with hundreds of samples, you can organize samples in named Selection Groups. When importing SF2- and HALion-files VSampler automatically converts layers or folders into Selection Groups. The state of the current selection is displayed by two colored buttons, which simultaneously serve as switches. They let you see whether your next edit operation will change all, several or just one zone of the instrument.



The left button allows you to quickly switch between the last selection and "All", the right button lets you switch between the last selection and the current zone. By using the right mouse-button you can select existing selection groups or create new groups. If the current selection corresponds to a saved Selection Group, VSampler automatically recognizes it and displays its name.

