VSamp

A Sample Playback Program
for the Macintosh

Version: 3.3.0

http://www.VSamp.com

Introduction

VSamp is a powerful program that turns the Macintosh into an OMS, FreeMIDI, OS X MIDI, AudioUnits and VST-compatible multitimbral sample playback module. Configured like a hardware sampler, VSamp can play samples on 16 MIDI channels with up to 128 samples per channel, mapped and enveloped to user-defined configurations. This can then be controlled by a MIDI keyboard or a sequencer running on the same computer. VSamp also includes a VST plugin 'VSamp VST' and an AudioUnits plugin 'Vsamp AU', both of which can play VSamp instruments and banks. VSamp VST enables you to have access to 8 channels of audio output from VSamp within your VST-2 compatible sequencer. VSamp AU allows two channel access.

Without registration, this program and plugin will stop playing samples four minutes from when the samples are loaded. The sound can be restarted with a single command. See the section 'Registration' on how to obtain a fully operational version.

Installation

Installing the VSamp application

Uncompress VSamp: drag the downloaded file **VSamp.sit** or **VSampClassic.sit** onto **Stuffit Expander** version 5 or later (available free from Aladdin Systems (http://www.aladdinsys.com)

Copy the VSamp application: drag the folder **VSamp Folder** to the **Applications** folder on your hard disk.

Installing VSamp VST (MacOS 7-9)

If you have a VST-2 compatible sequencer running under MacOS 7, 8 or 9 (e.g. Logic 4.1 or later or Cubase 4.1 or later), drag the file **VSamp VST** to the **VstPlugIns** folder in the sequencer's folder.

Installing VSamp VST Carbon (MacOS X)

If you have a VST-2 compatible sequencer running under MacOS X (e.g. Cubase SX), drag the file **VSamp VST Carbon** to the folder /Library/Audio/Plug-Ins/VST**.**

Installing VSamp AU (MacOS X)

If you have an AudioUnits compatible sequencer running under MacOS X (e.g. Logic 5.5 or later), drag the file **VSamp AU** to the folder /Library/Audio/Plug-Ins/Components**.**

Quick Demos

Very Quick Demo

Double-click on the file 'Acoustic Guitar Instrument' in the folder 'Demo Instrument' in the VSamp folder.

Choose **Load Instrument->MIDI Channel 1** from the **Play** menu.

Choose **Play Scale**->**MIDI Channel 1** from the **Play** menu. You should hear a C Major scale played on a sampled acoustic guitar.

Choose **Window->Keyboard** to bring up an onscreen keyboard where you can play the instrument either with a mouse or the computer keyboard.

Quick Demo with MIDI and Keyboard

MacOS X:

Choose **Load Instrument->MIDI Channel 1** from the **Play** menu.

Select **MIDI Inputs** from the **Window** menu.

Click in the checkbox **OS X MIDI Input** and select your keyboard from the popup menu.

Set your keyboard to transmit on MIDI channel 1 and play - you now have a sampled acoustic guitar!

MacOS 7, 8 and 9:

If you don't yet have OMS 2.0 or later installed, download it free from www.opcode.com and install it. No specific setup of OMS is required for VSamp but you will need to configure it for any keyboards in your setup.

Double-click on the file 'Acoustic Guitar Instrument' in the folder 'Demo Instrument' in the VSamp folder.

Choose **Load Instrument->MIDI Channel 1** from the **Play** menu.

Select **MIDI Inputs** from the **Window** menu.

Click in the checkbox **OMS Input** and select your keyboard from the popup menu.

Set your keyboard to transmit on MIDI channel 1 and play - you now have a sampled acoustic guitar!

If you have on OMS compatible sequencer, see the VSamp home page on using VSamp with your sequencer.

Registration

The version of VSamp included with this package requires a registration number; otherwise it will stop playing samples four minutes after being loaded. The sound can be reloaded with a single command.

To obtain a registration number:

Visit the VSamp Home Page (www.VSamp.com) for online registration if you have a credit card.

Or

Launch the enclosed program 'Register'.

Type your name and e-mail address in the upper left spaces provided.

Type how many single user licenses you require and if you'd like a site license or world license in the spaces provided.

Choose your payment method from the popup menu in the lower left area. The quickest way is to pay by credit card then e-mail or fax the details. All credit card details are encoded when you e-mail them.
For credit card: enter your credit card details then click the Copy... button. Go to your e-mail program and paste into a new message. Send this to sales@kagi.com **- NOT TO** smaug@kagi.com**.**
For cash, check and invoice click the Print... button and send the form with your payment to the address on the printed form.

The company Kagi will e-mail a registration number as soon as they have processed your payment. Kagi handles payments only and does not provide technical support for VSamp.

Overview

General:

Output resolution:
VSamp application: 8 or 16-bit.
VSamp VST and VSamp AU: 8, 16 or 24-bit.
Output frequency:
VSamp application: 11025 to 48000 Hz.
VSamp VST and VSamp AU: at least 11025 to 96000 Hz.
Sample Resolution: 8, 16 or 24-bit.
Sample Frequency: at least 11025 to 96000 Hz.
Sample Format: AIFF, Sound Designer II (SDII) or Macintosh Sound Resource.
Import: SampleCell 2.x and SoundFont 2 samples and instrument keymaps.
Polyphony: up to 64 (computer dependent) stereo voices dynamically allocated.
Sample mapping: 128 samples per instrument.
Sample Memory: Depends on memory of computer. Set preferred memory in 'Get Info' in Finder (MacOS 7, 8 and 9 only).
Filters: 128 resonant lowpass filters.
LFO: 64 oscillators 0.1–10 Hz.
Multitimbral: 64 instruments per bank assigned to 16 unique or shared MIDI channels.
Outputs:
VSamp application: 1 stereo output.
VSamp VST: 4 stereo outputs assignable by instrument.
VSamp AU: 1 stereo output.
MIDI Implementation: note on, note on velocity, note off (0x9X or 0x8X with 0 velocity), dynamic filter control (ctrl 2), dynamic volume (ctrl 7 or ctrl 107), dynamic pan (ctrl 10 or ctrl 110), dynamic expression (ctrl 11), channel sustain pedal (ctrl 64), channel pitch bend, all sound off (ctrl 120), reset all controllers (ctrl 121) and all notes off (ctrl 123).

MIDI compatibility:

MacOS X: supports MacOS X built-in MIDI services.

MacOS 7, 8 and 9: Requires OMS 2.0 or greater (free from www.opcode.com) or FreeMIDI 1.34 or later (free from www.motu.com). Use FreeMIDI if you want to use with VSamp with Performer, otherwise use OMS.

System Requirements

Any Macintosh with a PowerPC processor (all Macs made since 1996). Best with a Macintosh with a G3 or G4 processor (e.g. iMac, iBook).
At least 16MB available RAM.
At least 10MB available hard disk space.
MacOS 7.5 to MacOS X.
Sound Manager 3.1 or later strongly recommended (included with System 7.5.3 and later).

For MIDI functionality:

MacOS X: supports MacOS X built-in MIDI services. An OS X compatible sequencer is required.

MacOS 7, 8 and 9: Requires OMS 2.0 or greater (free from www.opcode.com) or FreeMIDI 1.34 or later (free from www.motu.com). Use FreeMIDI if you want to use with VSamp with Performer, otherwise use OMS. An OMS or FreeMIDI sequencer is required.

For VST functionality:

A VST-2 compatible sequencer for using VSamp VST.

For AudioUnits functionality:

An AudioUnits compatible sequencer for using VSamp AU.

Polyphony

Polyphony is user-defined and depends on the processor speed. The benchmark Macs with which I have run this on are a Powermac 7200/90 (PPC 601 processor) which gives 9-voice polyphony. A 7600/132 (PPC 604e) gives 32 voices. A G4/400 gives al least 64 voices at 44100Hz. If the polyphony is set too high, a disjointed sound will be heard. These figures are without filters. Using filters will reduce the number of voices.

Sample Management

The three limitations imposed by the program on sample management are the number of samples that can be loaded, the total amount of memory which all samples occupy, and, if you use sound resources to store samples, the length of any one sample. Samples are stored as AIFF files, Sound Designer II files or Macintosh sound resources. Shareware programs such as the excellent D-SoundPro can be used to record and edit samples on your Macintosh.

The maximum number of samples that can be loaded is 128 samples per instrument for each of the 64 instruments (8192 samples) in a bank.

The memory available to the samples is limited by the size of the application's heap. This value is set in the program's **Get Info** window accessed in the **Finder** (MacOS 7, 8 and 9 only). VSamp samples contain a header as well as the sample data, but the header size is insignificant with regard to memory allocation. The program has been used with 128Mb of samples loaded without a problem and theoretically it could go much higher if more computer RAM were available.

The reliance on sound resources for the sample format limits the maximum size of any one sample. Resources should be kept below about 5 MB, but as this represents almost a minute of 16-bit 44.1kHz mono sound, it is not really a concern unless the program is to be used primarily for triggering long samples. In this case a digital sequencer would be a more appropriate tool, as long samples do not have to be resident in RAM and allows complete synchronisation between MIDI and digital audio. If you use AIFF or SDII files for sample storage there is no limitation on sample size.

MIDI Compatibility

The integration of this program into currently existing systems has been an important consideration in its design, and for this reason it was decided that the best MIDI systems to use would be Apple's OS X MIDI on OS X and the 'Open Music System' (formerly 'Opcode MIDI System') or OMS and MOTU's FreeMIDI on MacOS 7,8 and 9. OMS and FreeMIDI were written by Opcode and Mark of the Unicorn to control the MIDI routing for their various hardware and software products. VSamp's MIDI routing operates by opening a virtual MIDI destination which is recognised by other MacOS X, OMS or FreeMIDI-compatible applications running concurrently. VSamp has been successfully used with OMS compatible sequencers such as Opcode's Vision, Steinberg's Cubase, Coda's Finale and Emagic's Logic family of sequencer programs. Sequencers that support FreeMIDI include MOTU's Performer family.

Using the VSamp Application

VSamp is a stand-alone application that can be launched from the Macintosh **Finder**. As stated earlier, the memory available to VSamp for storage of samples can be set from the program's **Get Info** box (MacOS 7,8 and 9 only). Set the 'preferred size' to the size of all the samples you wish to work with at once with 5MB extra for the program. For example, if you have a piano instrument that uses 2MB of samples and a trumpet that uses 1.5MB, set the 'preferred size' of VSamp to 2+1.5+5=8.5MB.

The VSamp interface is very simple to use in that it contains only five menus. The first is the **File** menu, which allows the user to configure instruments and banks and import other formats. The second menu is the **Edit** menu, containing the standard edit commands. The **Options** menu contains several items for configuring VSamp as well as the **Preferences** item where the polyphony, output resolution, sample rate, headroom and Middle C value are set. The fourth menu is the **Play** menu, which is used for loading and unloading instruments and banks into RAM as well as testing the currently loaded instrument or bank. The **Window** menu allows you to select currently open files or the instrument editing windows.

Setting the Sound Format

The type of sound output by VSamp needs to agree with the values set in the sound control panel for maximum efficiency. VSamp is capable of outputting sound as 8 or 16-bit numbers at various sample rates from 11 to 48 kHz.
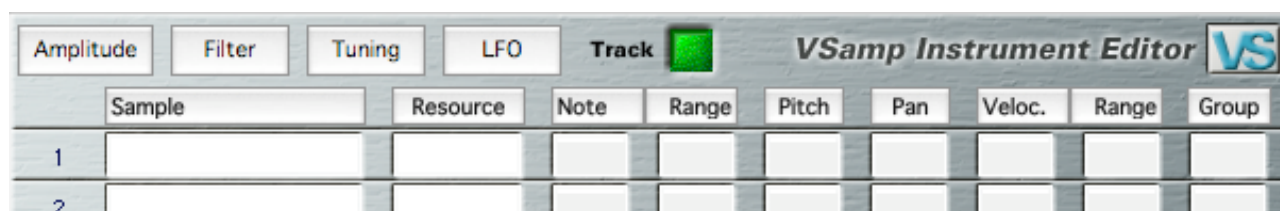
Under MacOS 7, 8 or 9 go to the Sound control panel for your Macintosh and select a sample resolution and rate, preferably the highest values. Then go to VSamp and set the same value in the **Preferences** item.

The sample rate has a big effect on the polyphony and in general halving the sample rate will double the available polyphony. With a fast computer (G3 or G4 processor) 44.1kHz is fine but with a slower computer, if you can make do with 22kHz sound, do so. The sample resolution has a much smaller impact on speed so if you have 16-bit sound available, use it.

Arranging Samples

The arrangement of sounds in VSamp is very straightforward. The most basic unit is the sample, stored as a Macintosh sound resource, Sound Designer II file (SDII) or AIFF file. These files contain all the necessary information about the sample, including pitch, sample rate and loops. Note that SDII files cannot store the sample's pitch so this value must be set in the instrument. These values are set using either a commercial digital waveform editor such as Macromedia's 'SoundEdit 16', Passport's 'Alchemy' or Digidesign's 'Sound Designer' software. Alternatively you can use such shareware programs as the excellent 'D-SoundPRO', 'Sound Effects', 'SndSampler' and 'SoundHack' available online. For accurately setting loops a waveform editor is recommended.

The organisation of a group of samples (e.g. several piano samples) across the keyboard is called an instrument. A VSamp instrument is created or edited with the commands **New->Instrument** and **Open** respectively, chosen from the **File** menu.

Amplitude	Filter	Tuning	LFO	Track		VSamp Instrument Editor	VS
	Sample		Resource	Note	Range	Pitch	Pan	Veloc.	Range	Group
1										
2										

Each line of this instrument is used to select a sample for this instrument and define its lower and upper notes on the keyboard. Click a box in the column labelled **Sample** to select the sample file. The next column is a pop-up menu of all the sound resources in the selected file. If the sample is an AIFF or SDII file this column will display 'AIFF' or 'SDII' and cannot be altered. The resources are listed by ID number and name, and selecting a resource displays its number in the **Resource** box (3rd column). Next the lower and upper MIDI notes are entered in the **Note Range** columns. You can use a MIDI keyboard to enter these values but you must have your keyboard selected in the **MIDI Inputs** window or a sequencer running to route the MIDI from your keyboard to VSamp. These values can be entered as either numbers or names. Up to four samples can share the same note/velocity range. The next column is where you can set the sample's pitch. This will initially show the pitch stored in the sample's header. Note that SDII files cannot store pitch data and so default to middle C.

The next column is where you can set the pan of the sample in the stereo output. The pan of the sample is also influenced by the instrument's overall pan when part of a bank and the MIDI channel's pan value (ctrl #10). If the instrument/channel pan is centre then the samples will pan as set in the instrument window. As the channel pan is moved to the right the samples will all pan to the right until all samples are heard from just the right channel. The same applies to panning left. Enter a pan for the sample between -64 and 63.

The next two columns are where you can set the velocity range for which you want the sample to trigger. Leave these values at 1 and 127 for all velocities. For cross switching samples assign two samples to the same notes but different velocity ranges.

The final column is where you can set mute groups for samples. If you wish a sample to switch off another sample when it is played, assign them the same number between 1 and 127. This is particularly useful in drum kits where one hihat sample can mute another. A sample with a unique group number will mute itself ie. if it has a note range of several notes then it will switch off any other notes using the same sample.

An easier way to add samples is to drag them from the Finder onto an instrument window. If the samples have their pitches set then VSamp will automatically arrange the samples is ascending order and set their note ranges (AIFF files only).

If you wish to insert a line in an instrument, click in the first column (the sample number) on the line where you wish to add a row to highlight the row and select **Insert Row** from the **Edit** menu. If you wish to **Cut**, **Copy**, **Paste** or **Clear** a row, select the row by clicking in the first column and select the appropriate command from the **Edit** menu. Rows can be deleted by selecting the row and choosing **Delete Row** from the **Edit** menu.

Finally select **Save** from the **File** menu to save your instrument.

The instrument also contains a button marked **Track**. Activating this (so it is green) means VSamp will use the sample's pitch information to transpose the sample to the correct pitch. If you leave this box unchecked, VSamp will just play back the sample without transposing it. You will usually leave this box checked unless you are creating drum instruments where you don't want the samples transposed.

To quickly sort the samples in an instrument by any column, click the button header at the top of each column.

The Amplitude Window

Clicking on the instrument's **Amplitude** button (or selecting **Amplitude** from the **Window** menu) brings up the window where you can enter the envelope characteristics for this instrument.
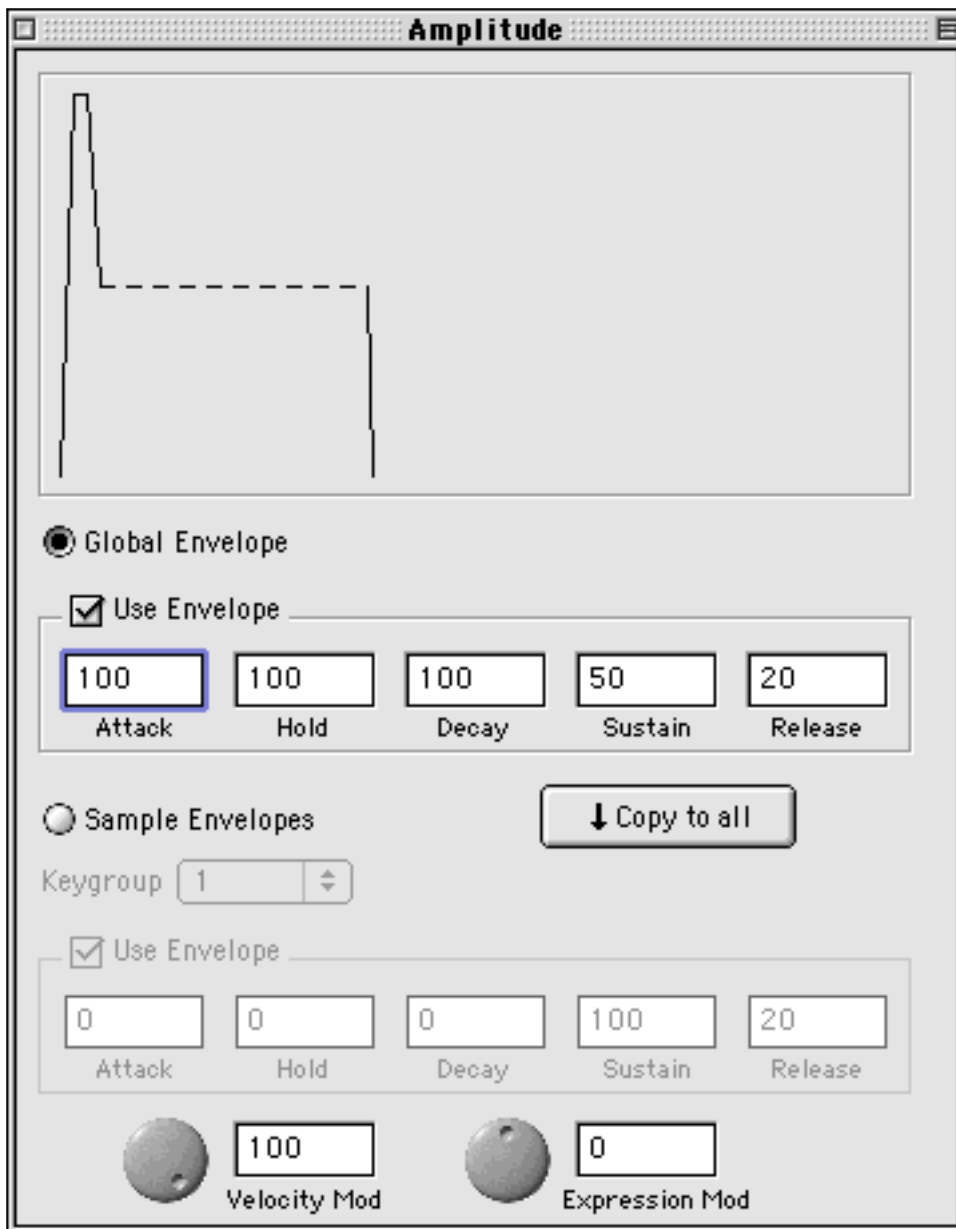
You can set either a global envelope that applies to all samples or you can set each sample individually. Note that all times are in 100ths of a second with a maximum of 9900 (99 secs). The sustain value is in percent of maximum amplitude. The picture in the top of the Amplitude window shows what the current envelope looks like. The Amplitude window is floating and applies to whichever instrument is currently being edited if several are open. If you don't wish to use an envelope, uncheck **Use Envelope** and the sample will be played from beginning to end with no envelope. This will disable any looping in the sample.

The two knobs at the bottom of the window control how the amplitude (loudness) of the instrument responds to note-on velocity and MIDI control #11 (expression). A value of 0 means the instruments will not respond to note-on velocity and MIDI control #11. A value of 100 will cause the instrument to become louder with higher velocity or controller. A value of -100 causes the instrument to become quieter with increasing velocity or controller.

The Filter Window

Clicking on the instrument's **Filter** button (or selecting **Filter** from the **Window** menu) brings up the filter window where you can configure the filter for this instrument.
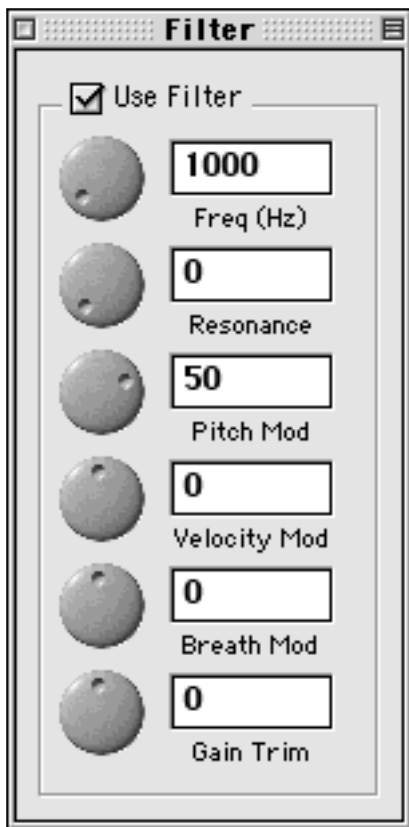
The filter settings apply to all samples in the instrument. To activate the filter, select the **Use Filter** checkbox, which will enable the filter controls. The first dial is where you set the frequency for the filter in Hz. The second dial is the resonance (Q). The next three controls adjust how the filter frequency changes with various parameters. The **Pitch Mod** setting changes the frequency depending on the pitch. A setting of 50 (default) means that the frequency will double every octave. In this case the value of the frequency dial applies to Middle C. Higher values will increase the frequency with pitch and negative values will reduce the frequency with pitch. The **Velocity Mod** setting changes the filter frequency with the note-on velocity. A setting of 100 will double the frequency for a velocity of 127 compared to 64. The **Breath Mod** enables you to modulate the frequency with MIDI control #2. Finally the gain enables you to increase or decrease the gain of the filter. **You will usually need to reduce the gain when using resonance or the samples will distort.**

The Tuning Window

Clicking on the instrument's **Tuning** button (or selecting **Tuning** from the **Window** menu) brings up the tuning window where you can configure the tuning parameters for an instrument.
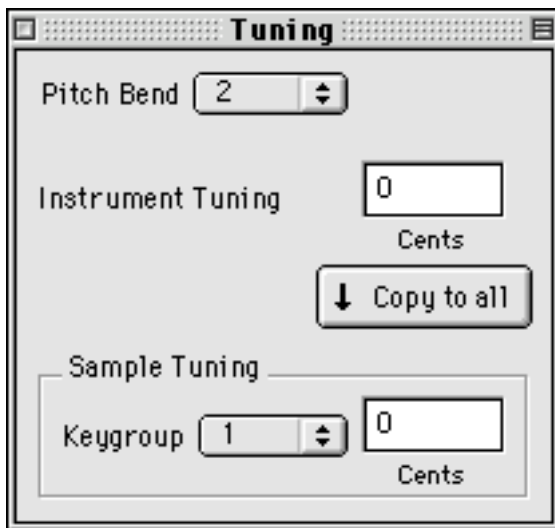
The Pitch Bend popup sets the number of semitones that the pitch will move when the instrument receives a full pitch bend command. The **Instrument Tuning** adjusts the tuning of all samples equally. 1 cent = 1/100th of a semitone. The **Sample Tuning** adjusts the tuning of each sample separately. Select the keygroup with popup menu for which you wish to adjust the tuning then set the tuning in the cents box. You can use the **Copy to All** button if you want to set the tuning for all keygroups to the same value.

The LFO Window

Clicking on the instrument's **LFO** button (or selecting **LFO** from the **Window** menu) brings up the LFO window where you can configure the low frequency oscillator for the instrument.
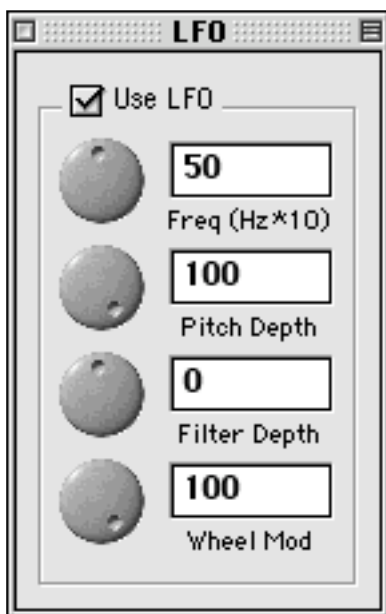

To activate the LFO, select the **Use LFO** checkbox, which will enable the controls. The first dial is where you set the frequency for the LFO in Hz*10. A value of 10 is 1 Hz. The second dial controls the degree to which the LFO adjusts the pitch of the instrument. A value of 0 does nothing while a value of 100 alters the sound by one octave. Negative values reverse the phase of the oscillator. The third dial controls the degree to which the LFO adjusts the frequency of the instrument's filter. A value of 0 does nothing while a value of 100 doubles the filter's frequency. Negative values reverse the phase of the oscillator. The fourth dial controls how much the mod wheel (MIDI ctrl #1) changes the LFO's effect on pitch. A value of 0 has no effect and a value of 100 means a full mod wheel setting will change the pitch by one octave.

Loading Instruments

You can load the current instrument only by selecting **Load Instrument->Channel X**. In this case whenever you change a setting on the instrument, the change will be heard immediately i.e. you don't have to reload the instrument. If you add, remove or reorder a sample you will have to reload the instrument to hear the changes.

Arranging Instruments

The manner in which instruments are assigned to MIDI channels and outputs constitutes a bank. Using **New->Bank** or **Open** from the **File** menu to create or edit a bank respectively, brings up a window with 64 lines, one for each instrument.
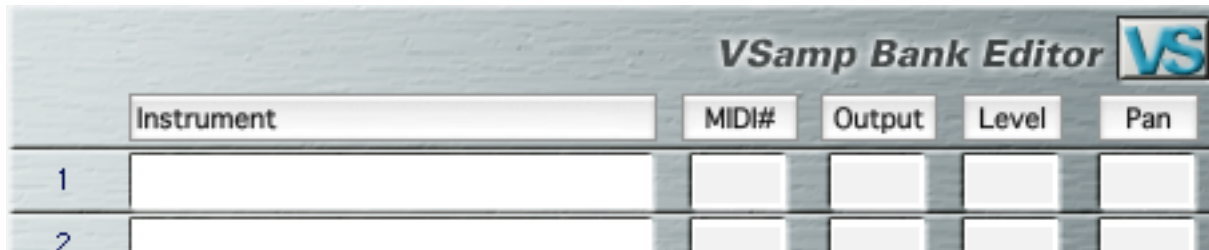
Each line is used to assign a VSamp instrument to a MIDI channel and output. Simply select the instrument by clicking on one of the boxes in the column marked **Instrument** then type the MIDI channel (1-16) in the **Channel** column. Up to four instruments can share the same MIDI channel. Alternatively drag instruments from a Finder window onto a bank window and they will be added with incremented MIDI channels.

The output refers to the VSamp VST or Vsamp AU output pair (1-4). All instruments go to the same output in the VSamp application (VSamp AU currently only has one stereo output).

Instruments can also be assigned a level (0-127) or pan (-64 to 63). These apply to when the bank is first loaded (or a Reset All Controllers MIDI message is received (ctrl #121). Any MIDI volume or pan commands will replace these values.

Finally select **Save** to save the bank.

You can open an instrument directly from the bank window by selecting the instrument so it is highlighted, then selecting **Open Instrument** from the **Edit** menu.

As with the instrument window, clicking on the column header will sort instruments by that column.

Loading a Bank

A VSamp bank is loaded into memory using the **Load Bank** command from the **Play** menu. This command is only available when a bank is open and is the front document (chosen from the **Windows** menu if needed). This command opens each of the files referenced by the various instruments in the bank and loads the relevant samples into memory, assigning each to a range of notes for it's particular MIDI channel. Appropriate error messages are given for such problems as not being able to find files or resources, or running out of memory. Note that the bank loaded is as the window shows, not how the bank was last saved. Likewise, if a bank references an instrument that is currently open, the instrument is loaded as it appears on the screen, not how it appears on disk.

Unloading an Instrument or Bank

When a bank is loaded the processor will be doing much extra processing even when no sound is playing. Choosing **Unload Instrument/Bank** prevents this when you need the processor for other

tasks. A currently loaded instrument or bank is also unloaded when you choose **Preferences…** from the **Options** menu.

Saving Output as a File

Enabling the menu item **Save Output as File** in the **Options** menu before selecting **Load Instrument** or **Load Bank** saves the audio output to a stereo Sound Designer II file. You are prompted for a name before the instrument or bank is loaded. Saving output starts as soon as the bank is loaded. Alternatively if you have the **MIDI Start/Stop** item in the **Options** menu enabled, then VSamp will wait for a MIDI Start or Continue command before commencing writing to the file. With this item enabled it will also stop writing when it receives a MIDI Stop command. To use this option you will need to configure your sequencer to send MIDI Clock messages to VSamp. Note that output files can be fairly large, for example at 44kHz 16-bit settings the output file will take up about 10MB per minute.

Testing a Bank or Instrument

Choose **Play Scale**->**Channel X** from the **Play** menu to play a C Major scale on the selected MIDI channel for the currently loaded bank or instrument. This item is only enabled when an instrument bank is loaded.

Importing SampleCell and SoundFont Instruments

Using the **Import** command in the **File** menu you can convert SampleCell 2.x instruments and SoundFont 2 instruments into VSamp instruments. Select **Import->SampleCell** Instrument to bring up a window to select the SampleCell instrument. Then another window asks where you'd like to save the translated instrument and samples. Similarly use **Import->SoundFont** for SoundFonts except that you are prompted for a location to save the files rather than a file name. SoundFont files can contain many instruments which will all be translated.

Note that only samples and keymaps are translated. Any modulation data needs to be set manually.

Resetting Sound

Choose **Panic** from the **Options** menu to stop all sound and reset all MIDI controllers. This item is only enabled when an instrument or bank is loaded.

Accessing VSamp from Sequencer

Refer to your sequencer's manual on using MacOS X MIDI, OMS or FreeMIDI. Directions for each of the major sequencers can be found at the VSamp home page.

Setting the Polyphony

VSamp requires you to set the polyphony to avoid breaks in the audio signal. A simple test needs to be carried out: Load an instrument into VSamp and with the sustain pedal down play up a scale, counting the notes until the sound deteriorates. Set this number (minus two for safety) in the polyphony field from the **Preferences…** item in the **Options** menu. Note that if you push the computer too hard the computer is more likely to crash and there will not be enough power to run a sequencer in the foreground. If you use the 'Acoustic Guitar Instrument' for this test you should first set it's envelope's sustain value to 100. That way the sound will not fade when you sustain notes. If you are using filters you should enable them for the test instrument before carrying out the polyphony test.

Fine Tuning the Program

The headroom setting sets the output level of VSamp and defaults to 6dB. Setting a value of 0dB will give a stronger output and better quality sound but will more likely distort with multiple voices. If you don't use many voices you can set this to 0dB but beware - the distortion when it happens is severe! For higher polyphony settings it is suggested you set this to 12dB or even 18dB.

The MIDI Input Window
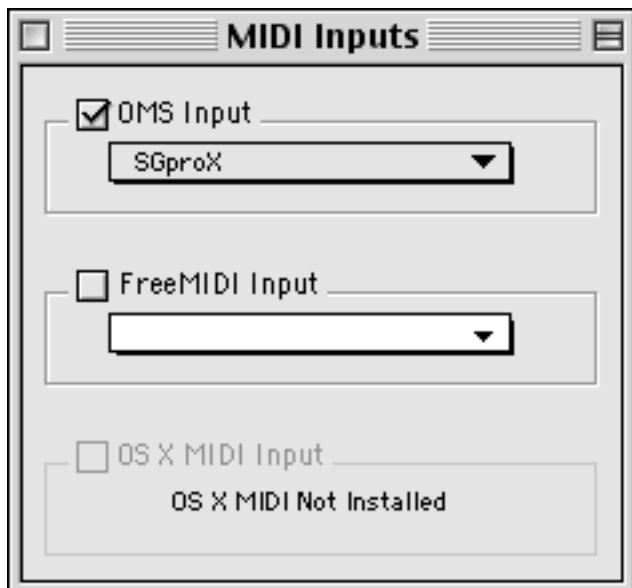
Selecting **MIDI Inputs** from the **Window** menu enables you to connect VSamp directly to a MacOS X, OMS or FreeMIDI device. This is only necessary when using VSamp without a sequencer. To connect VSamp to a keyboard, click in the appropriate checkbox depending if you are using MacOS X, OMS or FreeMIDI, then select your keyboard from the popup menu.

The Keyboard Window

Selecting **Keyboard** from the **Window** menu brings up the onscreen keyboard.
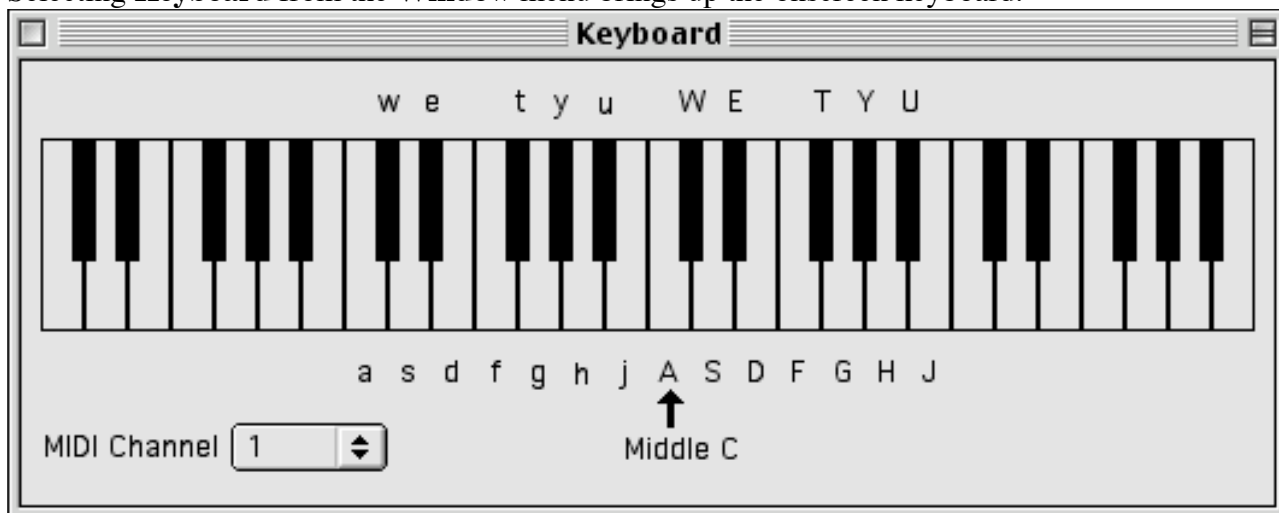
When a instrument or bank is loaded you can trigger samples either by using the clicking the mouse on a key or by typing the corresponding key on the computer keyboard. Select the MIDi channel you wish to play from the popup menu labelled MIDI Channel.

Using VSamp with Soundcards

VSamp has been tested with the Pro Audio Spectrum 16 sound card, which doesn't support multichannel sound. Since VSamp only uses one sound channel this is not a problem as long as other applications don't require sound channels. I have found that Opcode's Vision sequencer allocates a sound channel during playback and record which stops VSamp playing. The way to prevent this is as follows:

> Go to the Sound Out panel of the Sound control panel and select the output device that you want VSamp to use (PAS16 card)
> Launch VSamp and load a bank. This is when VSamp opens its sound channel.
> Go to the Sound Out panel of the Sound control panel and select a different output device that other applications can use (MAC internal).
> Launch the sequencer or other application.

The VSamp sound will then go to the sound card and other applications will send sound to the Macintosh, which shouldn't upset VSamp. Whenever you load a new bank you will have to change the Sound Out panel of the Sound control panel to your soundcard before you load the bank, then back again before you continue.

Using VSamp VST and VSamp AU

For deciding which plugin to use with your sequencer refer to Installation.

VSamp VST and VSamp AU are plugins that can play VSamp instruments and banks from within a sequencer. You will need to create and edit the instruments and banks with the VSamp application. The plugins are controlled and configured from within the sequencer. You can only use VSamp VST with a VST-2 compatible sequencer and VSamp AU with an AudioUnits compatible sequencer.

VSamp VST has four stereo outputs and VSamp AU has one stereo output and can play both VSamp instruments and banks. If you have loaded a VSamp instrument into one of the plugins then it will respond to messages on **any** MIDI channel and send it's output to the first stereo pair. If you have loaded a bank then each instrument in the bank will respond to it's assigned MIDI channel and send it's output to its assigned output pair.
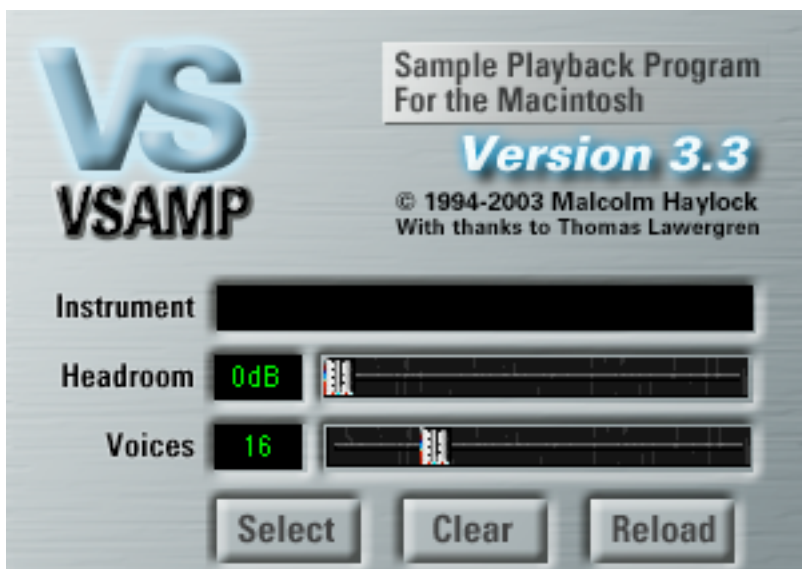
To use VSamp VST with Cubase 4.1:

Put the file 'VSamp VST' in the **VstPlugIns** folder, which is in the Cubase folder.
Launch Cubase
Select **VST Instruments** from the **Panels** menu.
Select **VSamp VST** from the popup menu **No VST Instr.** on the Instruments window. This will create a new VSamp VST instrument.
Click on the power button on the left side of the VSamp VST Instrument.
Each VSamp VST instrument can store up to 32 programs, which are a combination of a VSamp Instrument or Bank with polyphony and voice settings. These programs are selected with the program arrows.
To edit a program select the program with the program arrow buttons then press the **Edit** Button.
Press the **Select** button and select your VSamp instrument or bank.
Use the faders to set the number of voices that this instrument will play. A lower value will put less strain on your computer's processor. Select also the headroom. Leave this at 0dB unless the sound starts to distort.
Close the Editor window by clicking in the close box (top left of window).
You can create more of these instruments if you wish provided you have enough processing power. They will be called VSamp VST (1), VSamp VST (2) ....
Assign a MIDI track to this instrument by selecting the instrument in the track's output window.

To use VSamp VST with Logic 4.1:

Put the file 'VSamp VST' in the **VstPlugIns** folder, which is in the Logic folder.
Launch Logic
Open an **environment** window and select **New->Audio Object**.
Select **Instrument 1** from the **Channel** setting in the **parameter** box.
Hold down the mouse on the **FIRST** insert of the audio object and select **VSamp VST**.
Double-click the insert laballed **VSamp VST** to open the editor**.**
Press the **Select** button and select your VSamp instrument or bank.
Use the faders to set the number of voices that this instrument will play. A lower value will put less strain on your computer's processor. Select also the headroom. Leave this at 0dB unless the sound starts to distort.
Close the Editor window by clicking in the close box (top left of window).
You can create more of these instruments provided you have enough processing power.
Assign a MIDI track to this instrument by selecting the instrument in the arrange window.

To use VSamp AU with Logic 5.5 (MacOS X):

Using VSamp AU with Logic 5.5 is similar to using VSamp VST with Logic 4.1 (see above).
Select VSamp AU in the audio object's insert slot.

Recent Version History:

3.3.0, 30th January 2003:

2nd beta release of VSamp VST Carbon and VSamp AU
Improved filter processor efficiency
Improved latency response
Added Level and Pan columns to bank window
Added ability to sort by columns in instruments and banks
Minor bug fixes.

3.2.7, 13th August 2002:

Smoother envelopes
Fixed crash when opening an instrument or bank whose children could not be found.
Fixed problem whereby program quitted with type 3 error when using FreeMIDI in OMS Mode.
Added command to open an instrument from the bank window.
Fixed problem with VSamp VST and hanging notes in Logic.
Fixed problem with incorrect velocity ranges and looping when importing some SoundFonts.

3.2.6, 1st March 2002:

Floating windows no longer have to be clicked twice to select a control when not the current active window.
Status of floating windows now restored after quitting.
Up and down arrows now increment/decrement keygroup in Amplitude and Tuning windows.
SampleCell 1.x instruments correctly identified when trying to import and error message given.
Fixed problem with hanging notes under OS X.

3.2.5, 3rd December 2001:

Fixed problem with importing some SampleCell instruments.

3.2.4, 12th November 2001:

Removed need for all samples in an instrument to reside in the same folder.
Increased range of filter modulation.

3.2.3, 4th September 2001:

Fixed problem whereby double-clicking on a VSamp file in MacOS 9 Finder gave an error -39 (launched OS X VSamp instead of OS 9).

3.2.2, 20th August 2001:

Support for MacOS X, including OS X CoreMIDI services.
Fixed minor problem whereby shift key was needed to release some notes in MIDI Input window.
Fixed problem whereby LFO window appeared incorrectly if old preferences file was present.
Changed behaviour after an "All Notes Off" MIDI command to improve compatibility with some keyboards.
Moved registration data to a file in the Application Support folder now shared by VSamp application and VSamp VST.

3.2.1, 28th June 2001:

Fixed problem whereby keys in keyboard window were sticking when using computer keyboard.

Floating windows now hide when VSamp is moved to background.

3.2.0, 16th June 2001:

Added importing of SampleCell 2.x and SoundFont2 samples and instrument keymaps.
Added onscreen keyboard for triggering samples by mouse or computer keyboard.
Increased samples per instrument to 128.
Added controllable amplitude modulation by note-on velocity and MIDI controller #11.
Added commands to register VSamp and VSamp VST.
Minor interface changes and bug fixes.

3.1.4, 9th April 2001:

Fixed compatibility problem between VSamp VST and Logic Audio under MacOS 9.1.
Fixed problem whereby VSamp VST window enlarged after registration dialog under Logic.

3.1.3, 26th March 2001:

Fixed problem whereby under some circumstances the message "Your demo time has expired…" appeared even though a valid serial number had been entered.

3.1.2, 19th March 2001:

Fixed problem whereby some valid serial numbers were reported as having expired.
Improved timing of Play Scale command.

3.1.1, 18th March 2001:

Increased performance(~20%).

3.1.0, 1st March 2001:

Added LFO with own editor window.
Added MIDI Inputs window.
Added assignable output to bank window.
Reorganised menus
Minor bug fixes
Added Reload button to VSamp VST
VSamp VST can now play VSamp banks with 4 assignable stereo outputs.

3.0.3, 22nd September 2000:

Fixed problem loading files from locked volumes (e.g. CDs).
Smoother envelopes.

3.0.2, 3rd September 2000:

Added Tuning window.
Fixed problems with opening locked files.
Fixed problem whereby changing an instrument setting for a currently loaded instrument would cause the instrument to be loaded on top of currently loaded settings, usually resulting in distorted output.
Increased pitch bend range to 4 octaves and smoothed response.

3.0.1, 22nd August 2000:

Fixed bug whereby instruments accessing more than one sound resource from same file would only use first resource.
Opening a bank or VST instrument that can't find an instrument now prompts to locate the instrument.

3.0, 7th August 2000:

Added resonant filters with real-time control.
Improved tuning.
Last location of envelope window now remembered correctly.

3.0b2, 1st July 2000:

Dragging a group of samples all with pitch set to middle C (MIDI 60) now adds them to successive notes from middle C and sets pitch accordingly.
Clicking on a text field now selects entire field as in version 2.
VSamp VST no longer loads an instrument when cancelling a selection after pressing 'select' button.
Revert command now works as expected.
Menu enable/disable status when envelope window is open now works as expected.
Problem fixed whereby a window wouldn't close if the file it refers to had been moved or changed.

3.0b1, 1st June 2000:

Major rewrite to update interface and program control for future MacOS.
New floating envelope window.
Separate envelope for each sample, if desired.
Play a sample with no enveloping.
Up to 4 samples sharing same MIDI Channel/Note/Velocity combination.
Support for 24-bit/96 kHz samples (VST and program) and output (VST only).
Added 'Insert Row' and 'Delete Row' commands for instrument and bank windows.
Added ability to load an instrument directly.
New VST interface for better compatibility with Logic.
Louder output for samples panned centre with more even response across panorama.
More natural velocity response.
Removed 'HiQ' switch in bank (always on).
Removed 'pitch bend' setting in bank (set in instrument).

2.7.0, 28th December 1999:

First release of VSamp VST.
VSamp bank now can locate instruments that have moved or been renamed.
Minor fixes to instrument window so that clicking on a blank box then pressing return does not give an error about an invalid value.
Loading a bank that refers to a non-existent file no longer creates the file but instead gives an error message.