

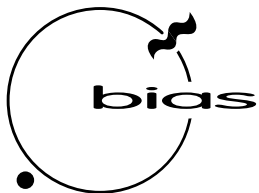


Software User's Guide

Version 1.0

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berkley integrated audio software

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User's Guide:
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Chapter 1: Getting Started

Minimum System Requirements

To use vbox you will need:

- Any PowerPC-equipped Macintosh or PowerPC-equipped PowerBook or G3/G4 Macintosh
- 64MB of RAM
- Sound Manager version 3.3 or later
- Macintosh System Software 7.6.1 or later (8.6 recommended)
- QuickTime version 3.0.2 or later
- QuickTime PowerPlug [™] installed in the Extensions folder
- A hard drive with 18ms or faster average seek time
- A 13-inch or larger monitor (color is recommended)

The vbox application runs in native mode on Power Macintosh and G4 computers. vbox can also take advantage of ASIO compatible sound cards in addition to sound cards with Apple Sound Manager drivers.

About Your User's Guide

vbox is designed to be simple and intuitive. Your User's Guide is designed to help you set up and use vbox as quickly and easily as possible.


This User's Guide assumes that you are familiar with standard Macintosh operating techniques, including:

- Setting up, starting, and using your Macintosh

- Choosing commands from menus
- Double-clicking, selecting, Shift-selecting, and dragging with the mouse
- Opening, copying, saving and deleting files
- Opening, closing, scrolling, moving, re-sizing, and selecting Macintosh windows

If you don't know how to perform these tasks, please refer to your Macintosh User's Guide and spend a little time learning about your Macintosh before going any further. This will make using vbox much easier and more enjoyable.

The Chapters in your vbox User's Guide are arranged in the order in which you would typically perform tasks when embarking on an audio production project.

 *Look for important tips and notes whenever you see this exclamation mark.*

Conventions

The vbox User's Guide uses the following conventions to indicate menu choices and key commands:

<u>Convention</u>	<u>Action</u>
File > Save	Choose Save from the File menu.
Command-S	Hold down the Command key and press the S key.
Option-click	Hold down the Option key and click with the mouse.

Installing vbox

vbox's auto-installer software makes installation very easy. Your complete vbox system consists of:

- CD-ROM Installer
- vbox serial number and Product Authorization Code (PAC)

Before you install vbox, please check the Minimum System Requirements described above.

To install vbox:

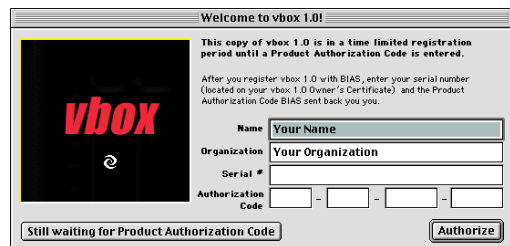
1. If you are using any virus-protection software, turn it off or temporarily remove it, and restart your Macintosh.
2. Insert the vbox Install CD-ROM in your CD-ROM drive, open the Product Installers folder, and double-click the Install vbox icon.
3. When the Installer dialog appears, read the Read Me for late-breaking information concerning the Installer, then click Continue to proceed.
4. Select where you would like to install vbox, using the Switch Disk pop-up menu.
5. Click Install at the bottom right of this dialog.
6. After you have clicked Install, follow the on-screen instructions. vbox will be installed into a folder named vbox 1.0 on your selected hard disk.
7. At the end of the installation, the installer will allow you to register vbox electronically, which you may find more convenient than mailing your registration card.
8. When the installation is complete, a message will appear indicating that the installation was successful. Click Quit to quit the Installer, or click Continue to install copies additional copies (don't forget to turn back on any virus-protection software that you may be using the next time you restart the computer).

If you don't register vbox, you will not be eligible for technical support and you won't be notified about updates, upgrades and other important news from BIAS!

vbox Authorization

vbox must be authorized to work on your Macintosh. To authorize vbox, you will need your Product Authorization Code (PAC) in addition to the serial number that appears on your vbox Owner's Certificate. BIAS will provide you with your Product Authorization Code when you register vbox. You must register vbox in order to obtain your Product Authorization Code; vbox will not launch after the 14 day registration period unless you authorize vbox with your Name, Organization, Serial Number, and Product Authorization Code!

When you first launch vbox, it will prompt you to authorize it by entering your Name, Organization, Serial number, and Product Authorization Code.



Send in Your Registration Card! After you have installed vbox, please send in the Registration Card included with your software to receive your Product Authorization Code, free technical support, software updates and notification of upgrades. vbox will run, fully functional, in Registration Mode for 14 days. This allows you the time necessary to register vbox and get the Product Authorization Code from BIAS Technical Support.

Technical Support

Should you encounter a problem that you cannot solve with the vbox User Guide, you can contact BIAS Technical Support for assistance.

Online Technical Support documents and frequently asked questions: <http://www.bias-inc.com>

Email Technical Support: support@bias-inc.com

The BIAS technical support hotline (707-782-1866) is staffed Monday through Friday, Pacific Standard Time.

Chapter 2:

Using vbox as a Plug-in

Installing vbox in your host application

VST compatible host applications allow you to use VST plug-ins on audio tracks within the application. Examples of some VST host applications are Peak 2.5, Deck 3.0, Cubase VST, and Logic Audio. Most VST compatible host applications have a folder called VstPlugIns that you can copy your VST plug-ins into:



Follow the plug-in installation recommendations of the host application and then launch the host application. In most cases, you will simply need to copy the vbox SE plug-in into the host application's VstPlugIns folder.

Instructions for how to apply VST plug-vary among different host applications and will require you to follow the host application's User Guide instructions.

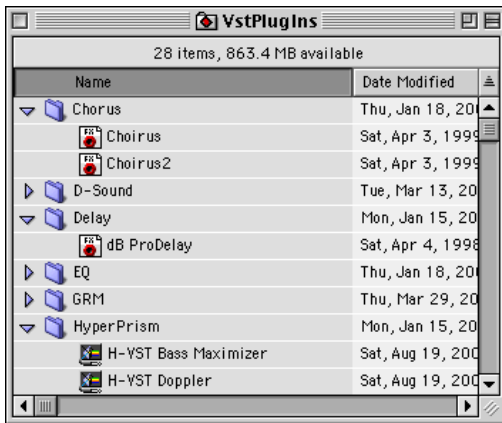
You can skip to Chapter 4 for information on how to use vbox if you do not plan to use the vbox application.

Chapter 3:

The vbox Application

Organizing your VST Plug-ins with Folders

vbox allows you to organize your VST plug-ins into folders inside the VstPlugIns folder. Each folder you create inside the VstPlugIns folder can store groups of plug-ins or other folders of plug-ins.



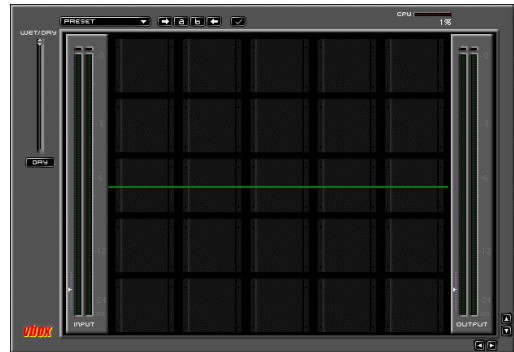
Organizing VST plug-ins with Folders

Starting vbox

vbox is an Macintosh application, so you can easily just double click on the vbox application's icon to get started. The first time vbox is launched, you may need to enter your registration and authorization information. Follow the instructions in Chapter 1 for registering and authorizing vbox.

After double-clicking on the vbox application icon, the

vbox window and matrix will appear:



The vbox window and matrix

Configuring Sound Manager or ASIO I/O

Sound Manager

Under the vbox menu, select "Sound Manager" under the AudioSetup menu. Selecting Sound Manager will cause vbox to play audio through the Sound Output device selected in your Macintosh Sound Control Panel. When vbox is using Live Input, the Sound Input device selected in the Sound Control panel will be used.

ASIO

vbox will perform the best when it's Audio Setup is configured to use an ASIO driver. This section of the manual will describe how to install and configure your ASIO driver for use in vbox.

Installing ASIO Drivers

vbox uses ASIO drivers that are placed in the folder

named "ASIO Drivers". The ASIO Drivers folder is located in the same folder as the vbox application's folder.



Run your audio hardware interface's installation software to install ASIO drivers. The installation software may automatically detect the vbox ASIO Drivers folder and install it's ASIO drivers there. If it does not, you may need to manually copy the ASIO driver into the vbox ASIO Drivers folder.

Activating an ASIO Driver

Choose the "ASIO..." menu item under the vbox menu's Audio Setup menu. The ASIO I/O dialog will appear:



The ASIO I/O Dialog

All drivers that were detected in the ASIO Drivers folder will appear under the "Driver" pop-up menu. Select the ASIO driver you wish to use. You can press the "Driver Setup..." button to activate the driver's control panel for additional settings.

Play Through and Record Through pop-up menus select which channels on your audio interface the audio is played or recorded through.

The Clock Source pop-up menus determine which clocking source the audio interface will use when synchronizing audio during playback or recording.

Check the Active in Background option if you wish vbox to continue using the ASIO driver when another application is in the foreground. This option should be turned off if you plan to use Peak or Deck with vbox and the same ASIO device, as the ASIO driver will be deactivated each time the vbox application is placed in the background and reactivated when vbox is brought into the foreground.

Check the Deactivate for Previewing option if you want vbox to deactivate the ASIO driver before the Loop Audio File dialog appears. This may be necessary to preview audio through the Sound Manager in the open document dialog using the Preview button.

Opening Audio Files

vbox supports AIFF and SDII, mono and stereo 16-bit audio files. If you are using Sound Manager as your Audio Setup, sample rates between 3kHz and 65kHz are supported. If you are using ASIO as your Audio Setup, you can use audio files with sample rates supported by your ASIO driver.

To open an audio file and start it playing, press Command-O or choose the "Loop Audio File..." command under the File menu. The open dialog will appear and wait for you to select an AIFF or Sound Designer II audio file to loop. Note you will need to

give vbox enough RAM to hold the audio file in memory. To assign more RAM to vbox, use the Finder's Get Info command on the vbox application when vbox is not running.

Once the audio file starts playing in vbox, press Command-. to stop the audio file from playing.

Bouncing/Recording

vbox allows you save your live audio input or audio file with the effects of the vbox matrix to a new audio file. To record, press Command-B, or select "Bounce/Record" from the vbox menu. A standard Save As... dialog will appear asking you where to save the recorded file for a file name. vbox saves the audio as a Sound Designer II file.

1x

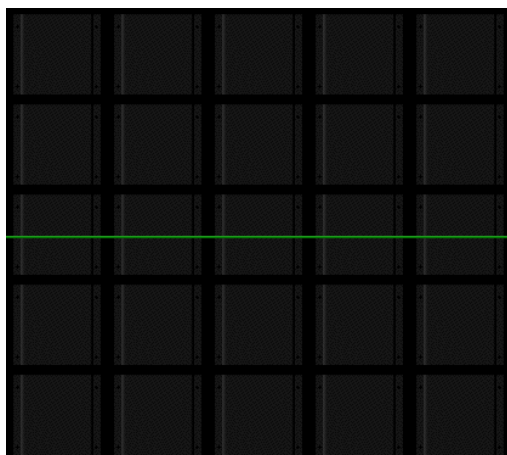
Press the "1x" checkbox to record the audio file that is looping playback with a single pass (without looping). Otherwise, the recording will continue until you press Command-. or select "Stop" under the vbox menu. Note if you are using Live input, this option will not be available.

Chapter 4:

vbox Basics

The vbox Matrix

The large area inside the vbox window with 5 rows and 5 columns of smaller boxes inside it is the vbox matrix. You can assign, route, and modify VST plug-in inside the vbox matrix:



The vbox matrix

The actual size of the vbox matrix may be larger than the 5x5 grid shown in the vbox window. You can scroll through the vbox matrix using the arrow controllers located at the lower-right hand corner of the vbox window:



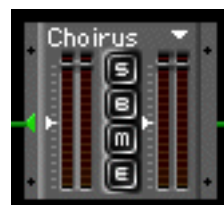
matrix arrow controllers

Box Controls

Each of the smaller boxes inside the vbox matrix is an individual box. Each box can be assigned a VST plug-in, depending on your computer's processing capabilities. When a box has a VST plug-in assigned to it, it is activated. If there is not a plug-in assigned to a box, it is deactivated:



a deactivated box

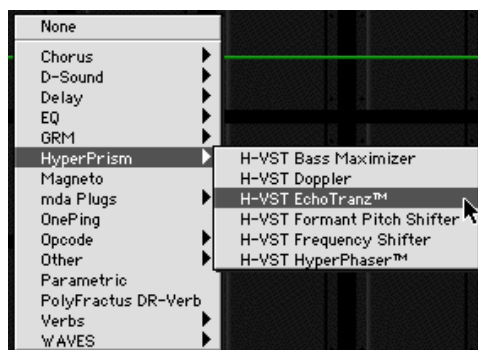


an activated box

An activated box has several features including the name, input level control, output level control, solo button, bypass button, mute button, edit button, input meters, output meters, and input source.

Effect Assignment Pop-up

To assign a VST plug-in on a deactivated box, click on the box. A pop-up menu displaying all the VST plug-ins stored in the VstPlugins folder will appear, allowing you to assign a particular VST plug-in to the box.



To assign or deactivate a VST plug-in on an active box, click on the name of the currently assigned plug-in. The VST plug-ins pop-up menu will appear, allowing you to choose "None" to deactivate the box, or choose a different VST plug-in.

Level controls

The small white triangular indicator located next to the input and output meters allow you to cut or boost the input or output of the box. Click and drag the indicator up or down to cut or boost the audio $\pm 6\text{dB}$ ($\pm 100\%$). The center position of the indicator is 0dB cut/boost. Hold down the option key on your keyboard and click the indicator to return it to the center position.

Meters with Clip Indicators

On the left and right side of the box are input and output meters. These meters show the audio levels input to the plug-in and output from the plug-in. The lights at the tops of the meters are clipping indicators. If the audio clips (reaches maximum level for more than 2 consecutive samples), the clip indicators will come on and stay lit for a few moments.

Mute

The mute button mutes all audio output from the box. You can toggle the mute button on or off by pressing this button.

Bypass

The bypass button prevents the VST plug-in from processing the audio input to the box. The audio will flow through the box directly to the outputs.

Solo

The solo button bypasses all the plug-ins on the same row. This allows you to audition just one box without processing the audio through the other boxes on the row.

Edit

The Edit button brings up the VST plug-in editor for

the box. Depending on whether you are using the vbox application or the vbox SE plug-in, the result of pressing this button will differ. If you are using the vbox application, the VST plug-in editor will appear in a new window. If you are using the vbox SE plug-in, the vbox window will change to the VST plug-in's editor and a new button "Return To Matrix" will appear.

Return To Matrix

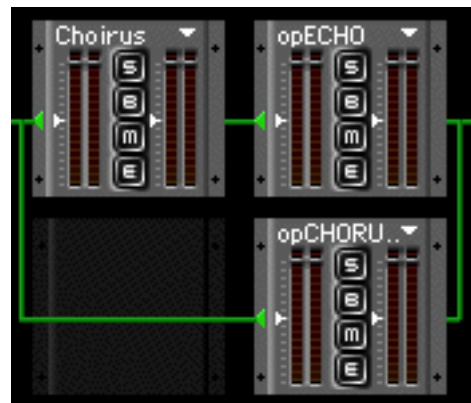
If you are using the vbox SE plug-in and press the Edit button for a box, the vbox window will change to the VST plug-in's editor. Press the "Return To Matrix" button to make the vbox matrix reappear in the vbox window.

Moving Boxes

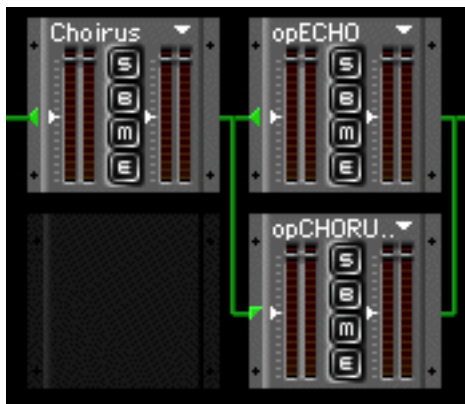
To move a box from one position to another position in the vbox matrix, click on the meters for the box and drag the box to a deactive box.

Changing Input Routing

vbox allows you to change the signal flow into parallel box configurations. To move an input from left-neighbor to upper-left neighbor, click on the green input indicator on the left center of the box.



left-neighbor input



upper-left neighbor input

Creating a Serial Effects Chains

vbox will automatically assume you wish to create serial chains of boxes. Simply activate boxes in rows, making sure there are not deactivated plug-ins between the first and last plug-in in the row.

Creating Parallel Effects Chains

Use the input indicator on the left center of a box to create parallel effect chains, as described in "Changing Input Routing," above.

The vbox Window

Master Wet/Dry Controls

The slider in the vbox window labeled "Wet/Dry" allows you to control the combination of dry signal with signal passed through the vbox matrix. Drag the slider indicator upward to hear more signal from the vbox matrix (wet) or downward for more dry audio. Click on the "Dry" button to hear the original audio source only, without any processing through the vbox matrix.

Master Input/Output Levels

The small white triangular indicators at the bottom of the master input and output meters control

input and output levels. Click and drag the indicator up or down to cut or boost the audio $\pm 6\text{dB}$ ($\pm 100\%$). The center position of the indicator is 0dB cut/boost. Hold down the option key on your keyboard and click the indicator to return it to the center position.

Loading and Restoring vbox Presets



You can save your vbox matrix as a preset or restore a vbox matrix by clicking on the Presets pop-up menu at the top of the vbox matrix. Any presets you save into the Presets folder (in the same folder as the vbox application) will appear in the Presets pop-up menu.

A/B Comparisons



You can do A/B comparisons of different vbox matrices. Press the right arrow button to store the current vbox matrix into storage location "A". Press the left arrow button to store the current vbox matrix into storage location "B". Press the "A" or "B" button to restore a saved matrix.

Editing VST Plug-in Parameters

When you press the "E" button on a box to open it's editor, you will be able to adjust the VST plug-ins parameters. You can modify the parameters and save your presets into the a preset file using the "L" and "S" buttons at the bottom of the plug-in editor's window. The arrow buttons allow you to move through any presets that the plug-in has built-in:



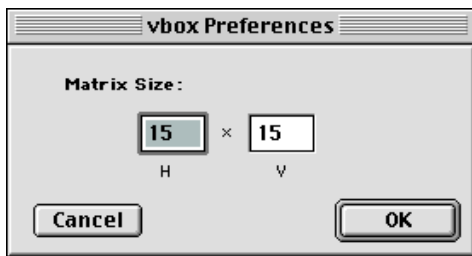
A plug-in editor window with preset arrows and buttons to load/save presets

Chapter 5: vbox Preferences

Vbox Preferences



You can control how size of the vbox matrix by pressing on the Preferences button at the top of the vbox matrix. Enter the height and width of the matrix you wish to build. Note the new matrix size will not take effect until the next time you launch vbox. The vbox matrix can grow as large as 99x99!



The vbox Preferences dialog

Glossary

AIFF

Apple's Audio Interchange File Format used for recording and storing digital audio. It is also vbox's default file format and is supported by many Macintosh software applications.

ASIO

An audio engine developed by Steinberg Software und Hardware GmbH.

audio card (third-party audio card, audio expansion card; audio recording/playback card)

A third-party expansion card that plugs into a NuBus or PCI or PCMCIA slot in your Macintosh. These cards enhance a computer's audio recording and playback capabilities. Using Apple's Sound Manager software, vbox works with a variety of Macintosh audio cards from Digidesign, Digigram, Echo, Korg, Lucid, Mark of the Unicorn, MIDI Man, and others. In some cases, special Sound Manager Driver software or ASIO Driver software may be needed from the audio card's manufacturer to work properly with vbox.

bit resolution (bit rate)

Describes how many bits—as in “0s” and “1s”—are available to describe a digital recording. In practice, the bit resolution defines the dynamic range of a sound, whereas the sample rate defines the frequency range. 16-bit audio is the professional Compact Disc standard; 8-bit audio is suitable for less demanding applications, such as multimedia presentations. More bits result in better quality, but also require more hard drive storage space. Also refer to dynamic range, frequency, and sample rate.

clipping

A type of audio distortion that occurs when a source

signal (such as from an audio CD player) is recorded at such a high level that the recording device runs out of “headroom.” It can also occur when a signal is played back from an audio source into an audio destination at an excessive level, such as when a mixing console feeds a signal to a power amplifier at an extremely high level. In either case, clipping represents a mismatch in level between an audio source and an audio destination. When digital clipping occurs, such as during digital recording, the results can be a harsh “crackling” or “raspy” sound. When you use vbox, you can avoid digital clipping by adjusting the input and output levels, as indicated on the meters. vbox's Clip indicator will easily show any clipping that occurs. Also refer to headroom.

dB (decibel)

This is the most common unit used for measuring the level of audio. The greater the number of decibels, the higher the audio signal. “dB” can be used to describe the relative gain of different passages of audio, or to describe the available headroom during recording. Also refer to gain and headroom.

DSP

DSP stands for digital signal processing. In the world of audio, DSP refers to manipulating a digital audio signal by processes such as level changes, reverberation, delay, or other such effects.

dynamic range

In audio recording terminology, dynamic range refers to the range in level between the quietest and loudest passages of a selection of audio. It is usually expressed in decibels. Bit resolution determines a recording's dynamic range. An 8-bit recording has 256 available levels, which translates into a dynamic range of 48dB. This may be suitable for some applications, but it may also sound noisy, since the difference in gain between

the loudest passages and the quietest passages (which may contain hiss and other potential noise) is not that great. A 16-bit recording has 65,536 available levels, which translates into a high-quality dynamic range of 96dB. As a rule of thumb, you can calculate dynamic range in decibels by multiplying the bit rate by “6.” Also refer to bit resolution, decibel, and gain.

frequency

Sound consists of waves, which occur in cycles. Frequency refers to how frequently these wave cycles occur in a given period of time (generally, one second). The higher the frequency of a sound, the higher its “pitch” as perceived by human ears. Frequency is measured in Hertz (Hz), or cycles per second. Roughly speaking, humans are able to hear sounds in the frequency range between 20Hz and 20,000Hz (20kHz).

gain

1) The process of amplifying a signal. 2) A way to express relative signal levels for audio. For instance, by adding 6 decibels of level to a signal, we double the perceived loudness of the signal. Also refer to decibel and headroom.

headroom

Describes how much gain is left before a signal induces clipping or distortion. When recording with Peak, the record meters indicate how much headroom is left before clipping. When playing back audio in vbox, the input and output meters will indicate this as well. Most professional audio engineers leave between 3dB and 12dB of headroom while recording, to minimize the possibility of clipping. If you leave too much headroom, however, your signal may be recorded at too low a level, and you may end up with excessive noise or hiss. Also refer to clipping, decibel, and gain.

Hz (Hertz)

This is the unit of measurement for frequency, and refers to the number how many “cycles per second” a sound wave generates. In the world of sound, the

higher the number of Hertz, the higher the frequency of a sound and hence the higher its “pitch” as perceived by human ears. A thousand Hertz can be expressed as 1kHz (one kilohertz), so that 20,000 Hertz may also be referred to as 20kHz.

loop

Loops are used to sustain or repeat a section of audio.

Plug-Ins

Plug-Ins are optional software enhancements for host applications—such as BIAS Deck, Peak, or vbox—that are available from BIAS and other developers. vbox both hosts the Steinberg VST plug-in standard and can function as a VST plug-in itself (vbox SE).

QuickTime

This is an audio format developed by Apple Computer for QuickTime-based multimedia. It is supported by all Macintosh software applications that support QuickTime. The QuickTime format is best if you plan to use an audio document in multimedia applications that support QuickTime, such as Adobe Premiere or Macromedia Director.

sample

(verb) Sampling refers to the act of recording audio material digitally by a sampling instrument or other digital recording device. See sampler and sample rate.

sample

(noun) A sample refers to audio material which has recorded digitally or “sampled” by a sampling instrument or other digital recording device. Sample also refers to a single wave-cycle” snapshot” of sound. See also sample rate.

sample rate

Sample rate describes how frequently an analog audio signal is been “sampled” or analyzed as it is recorded and converted to a digital medium. Sample rate directly affects audio fidelity in terms of upper frequency response: the higher the sample rate, the

higher the available frequency response. A fundamental principle of sampling states that to accurately capture a sound, the sample rate must be at least twice the highest frequency in the sound. The standard sample rate for Compact Discs is 44.1 kHz. The following are common sample rates which are supported by many Macintosh computers and vbox software.

96.000kHz This is the standard sample rate for Digital Video Disc (DVD) audio, and is often used by sound editors working in audio post-production for DVD. This rate results in an upper frequency response of 48kHz — well above the range of human hearing.

48.000kHz This is one of two standard sample rates for digital audio tape (DAT) recorders, and is often used by sound editors working in audio post-production for video or film. This rate results in an upper frequency response of 24kHz — well above the range of human hearing.

44.100kHz This is the standard sample rate for Compact Discs, digital audio tape (DAT) recorders, and high-fidelity audio applications on Macintosh and PC-compatible computers with 16-bit playback capability. It is colloquially called “forty-four one” (as in 44.1kHz). Most sound engineers working in music production — or anything that may be distributed on a CD — work at this rate. This rate results in an upper frequency response of 22,050Hz — above most people’s hearing range.

22.050kHz & 11.025kHz These sample rates are sometimes used for lower-fidelity audio playback on Macintosh and PC-compatible computers. Many games, web-sites and other multimedia productions utilize 22.050kHz (or lower) 8-bit audio, since it uses half the disc space of CD-quality audio. The 22.050kHz sample rate results in an upper frequency response of 12.025kHz; this may sound “muffled,” since most people can

hear considerably higher frequencies than 12.025kHz.

Also refer to bit resolution, frequency, and Hertz.

Sound Designer II™

This is an audio file format developed by Digidesign for use with its digital audio products. The format can also be read by a wide variety of Macintosh-based audio editing and multimedia development programs, including vbox. Use this format if you wish to interchange audio documents with a Digidesign audio application.

VST

VST (Virtual Studio Technology) is an audio plug-in format developed by Steinberg Software und Hardware GmbH.
