Peak™

Version 4.1

Software User's Guide

bias

sound creative

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+1-707-782-1865

9AM-5PM Monday-Friday PST – excluding BIAS holidays

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Chapter 1
Introducing Peak

Peak User's Guide

Chapter 1:
Introducing Peak

BIAS Peak is an advanced audio application that provides superior tools for editing and processing digital audio on the Macintosh computer. Peak was specifically designed to meet the needs and demands of audio professionals. By combining high-quality direct-from-disk digital audio editing features with a lightning fast, completely nondestructive editing environment, Peak provides unsurpassed audio editing power, and makes a superb addition to multitrack audio applications programs, such as BIAS Deck™. Peak offers advanced sampler support, and works directly with many popular MIDI sampling keyboards and rackmount samplers. Peak is also the perfect audio complement to digital video editing programs, such as iMovie™ and Final Cut Pro™.

Peak Features

- Direct-to-disk recording and playback at all sample rates supported by the sound hardware on your Macintosh, or supported through third-party audio hardware

- User-customizable waveform display

- Support for commonly used audio document formats, including AIFF, Sound Designer II™, WAVE, QuickTime™, Raw, System 7 Sound, Sonic AIFF, Paris(tm), JAM Image, AU, MP3, and MP4 formats

- Completely non-destructive file-based editing with unlimited undo and redo

- Professional editing abilities, including user-definable fade curves, silence, and complete support for cut/copy/paste with multiple undo and redo

- By using an application that supports Apple Events, such as FileMaker Pro™, you can catalog your Peak sound files and audition them from within the application

- Support for third-party digital audio hardware, such as M-Audio™, Mark of the Unicorn™, or Digidesign™ digital audio interfaces, through Core Audio.

- Support for 8-, 16-, 24-, and 32-bit audio files

- Support for third-party VST™ & Audio Unit Plug-Ins, adding more signal processing features to Peak. Plug-Ins from companies such as BIAS, Cycling`74™, Steinberg™, Waves™, and Apple™ can be used with Peak for digital filtering, noise reduction, reverb, equalization, and other effects in real time

- The ability to create audio CDs directly from a Peak Playlist or audio document - or with Roxio Toast™ Lite, which is included with Peak

- Sophisticated Tools for looping, including Loop Surfer™, Loop Tuner™, and Guess Tempo™

- Sampler Support

- Playlist editing and mastering

- Customizable Toolbar and Keyboard Shortcuts

- QuickTime Movie window with scrubbing

Who Is Peak Designed For?

Peak is designed for a wide variety of users, ranging from composers and multimedia producers to sound designers, mastering engineers, and remix editors. Peak's comprehensive recording, editing, looping, and processing capabilities make it a powerhouse tool for virtually any aspect of digital audio production. If you are interested in sound and possess imagination and creativity, Peak is for you.

What's New in Peak 4.0/4.1?

The Peak 4.1 update offers enhanced performance and minor feature enhancements, including:

- More preference options for "floating" windows

- Peak 4.1 includes Roxio JAM™ 6

- Peak 4.1 includes SFX Machine™ LT

Features new to Peak as of version 4.0 include:

- Multi-threaded/multi-processor support

- AudioUnit plug-in support

- Direct Red Book CD burning from an audio document or playlist (no helper burning app needed)

- New brushed metal interface

- New high-contrast meters

- Resizable toolbar icons & reconfigurable toolbar (vertical, horizontal, "cluster")

- Audio documents with an expandable drawer, containing a library of reference, region, and loop markers for that document

- Transluscent cursor info overlay (follows mouse cursor when active)

- Improved Nudge Regions (region crossfade editor) window

- ImpulseVerb™ convolution-based sampling reverb

- Bit Usage Meter

- Harmonic Rotate (DSP tool mainly for sound design)

- BIAS Sqweez™ dynamic compressor/limiter VST plug-in

- Ability to use single inserts or Vbox matrix for plug-ins (Vbox hosts only VST plug-ins/Inserts can host VST or AU plug-ins, and both types can be mixed on different inserts

- Dynamic tempo change (envelope based)

- Markers from Tempo (Grid)

- "Magic" Pencil Tool mode - automatically smoothes out clicks and pops in waveform

- Higher MP3 encoding rates (up to 320 kbps)

Minimum System Requirements

To use Peak you will need:

- Any G3/G4 Macintosh or PowerBook (including iMac and iBook)

- Mac OS X v.10.2 or later

- 256 MB RAM

- A hard drive with 18ms access time or better

- Color Monitor, minimum 640x480 resolution

- CoreAudio support of third-party hardware for playback may require drivers from hardware manufacturer

Maximizing Peak's Performance

To get the best performance out of Peak and your Macintosh, do the following:

To maximize Peak performance:

- Set your monitor to no more than thousands of colors (256 colors is recommended for older Macintoshes).

- Turn File Sharing off, unless you need it.

- Disconnect your Macintosh from any networks and turn off AppleTalk, unless you need to be on a network.

- Optimize your hard drive. (See Chapter 3 to learn about proper hard disk maintenance.)

- Use a fast, dedicated hard drive for audio recording and playback.

About Your User's Guide

Peak is designed to be simple and intuitive. Your User's Guide is designed to help you set up and use Peak for digital recording and editing 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 Peak much easier and more enjoyable.

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

- Chapter 1 introduces you to Peak and explains some of the requirements for using Peak software

- Chapter 2 explains how to install Peak software and configure your Macintosh for recording and playback

- Chapter 3 introduces you to some basic concepts of digital audio and disk-based recording, as well as basic Peak operations

- Chapter 4 explains how to configure Peak for recording and playback with Apple's CoreAudio

system, as well as optional configuration information for using the Mac OS X Audio HAL & FireWire DV systems.

- Chapter 5 introduces you to the concepts and techniques of nondestructive editing with Peak

- Chapter 6 explains how to create regions and sequence their playback using Playlists, as well as how to burn audio CDs

- Chapter 7 explains how to use Peak's native DSP tools

- Chapter 8 explains how to use VST & Audio Unit plug-ins, and how to use Vbox SE to enhance Peak's audio production capabilities

- Chapter 9 explains how to use Peak's Batch File Processor as well as how to use Apple Events for file management

- Chapter 10 explains how to import samples directly from compatible samplers (to edit or process the audio using all of Peak's functions) and send the modified sample back to the sampler

- Chapter 11 describes each of the commands found in Peak's menus

- Appendix 1 lists the default Keyboard Shortcuts for Peak

- Appendix 2 provides a list of useful Peak actions not described elsewhere

- Appendix 3 includes a troubleshooting guide for common problems

- A Glossary and an Index complete your Peak User's Guide

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

About Peak LE & Peak DV

Peak LE & Peak DV are feature-limited editions of "Peak", and not all features are available. Peak LE has a feature set designed for music production, and Peak DV is designed to provide the essential tools required by a digital video editor, needing to edit the audio contained in QuickTime movie soundtracks, DV clips, and audio files commonly used in Non-Linear Editing systems.

Upgrades are available from Peak LE or Peak DV to the professional edition of Peak at discounted prices. Please contact BIAS for further information.

If you are using the limited edition (LE edition) of Peak, not all features will be available. Specifically, the following features are not available in Peak LE:

- 32 bit support

- Crossfades and VST effects in Peak LE Playlists

- Limited to a single VST insert without Vbox integration

- Loop Surfer and Loop Tuner

- Customizable Keyboard Shortcuts

- Customizable Toolbar

- Remove DC Offset

- Pitch Change

- ImpulseVerb

- Harmonic Rotate

- Bit Usage Meter

- Markers from Tempo

- Import Dual Mono

- Meters Dialog

- QuickTime movies

- Batch File Processor

- Export Regions

- Sampler Support

- Convolve

- Modulate

- Add

- Amplitude Fit

- Change Duration

- Crossfade Loop

- Dither

- Find Peak

- Mono To Stereo

- Stereo To Mono

- Phase Vocoder

- Rappify

- Repair Clicks

- Swap Channels

- Threshold

- Recording Notepad

- Recording Input Levels

- Nudge Playhead Cursor

- Specialized Apple Events for Playback from a database such as FileMaker Pro

1

If you are using the digital video (DV) edition of Peak, not all features will be available. Specifically, the following features are not available in Peak DV:

- 32 bit support

- Crossfades and VST effects in Peak DV Playlists

- Limited to a single VST insert without Vbox integration

- Loop Surfer™ and Loop Tuner™

- Customizable Keyboard Shortcuts

- Customizable Toolbar

- Remove DC Offset

- Pitch Change

- ImpulseVerb

- Harmonic Rotate

- Bit Usage Meter

- Markers from Tempo

- Import Dual Mono

- Meters Dialog

- Export Regions

- Sampler Support

- Convolve

- Modulate

- Add

- Amplitude Fit

- Crossfade Loop

- Dither

- Find Peak

- Mono To Stereo

- Stereo To Mono

- Phase Vocoder

- Rappify

- Repair Clicks

- Swap Channels

- Threshold

- Recording Notepad

- Recording Input Levels

- Nudge Playhead Cursor

- Specialized Apple Events for Playback from a database such as FileMaker Pro

Features that are not supported in Peak DV will show this icon in the manual. Features unavailable in Peak DV will appear grayed out in their menus.

Using Online Help

Peak provides two types of online help. The first type – Balloon Help – will show you the functions of each menu item as you move the mouse across different menu items. If you hold the mouse cursor over a Toolbar icon for 2 seconds, the Balloon Help for that icon's function will appear.

The second type of online help is available under the Peak menu. Choosing Help will launch your browser and load the BIAS documentation page where you can access BIAS Tutorials – you may want to visit this page from time to time, to check for availability of new tutorials. You can also use the Links menu to access BIAS documentation and technical support online.

Online Help is available in the Peak menu

Conclusion

Now that you know a little about Peak, proceed to the next chapter to learn how to install your software and get started using it.

Chapter 2
Installing & Configuring Peak

Peak User's Guide

Chapter 2:   Installing and Configuring Peak

Installing Peak

Peak's auto-installer software makes installation very easy.

Your complete Peak package includes:

- CD-ROM Installer

- Licensed Products Certificate, with the Peak serial number

Before you install Peak, please check the Minimum System Requirements in Chapter 1 of this Users Guide.

To install Peak:

1. If you are using any virus-protection software, turn it off or temporarily remove it, and restart your Macintosh.

2. Insert the Peak Install CD-ROM in your CD-ROM drive, open the Product Installers folder, and double-click the Install Peak 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 Peak, 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.   Peak will be installed onto your selected hard disk.

7. At the end of the installation, the installer will allow you to register Peak 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 (don't forget to turn back on any virus-protection software that you may be using the next time you restart the computer).

Authorization

Peak must be authorized to work on your Macintosh. To authorize Peak, you will need your Product Authorization Code (PAC) in addition to the serial number that appears on your Peak Owner's Certificate. BIAS will provide you with your Product Authorization Code when you register Peak.

You must register Peak in order to obtain your Product Authorization Code; Peak will not launch after the 14 day registration period unless you authorize Peak with your Name, Organization, Serial Number, and Product Authorization Code!

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

Peak Authorization dialog

Be sure to register! After you have installed Peak, please register online (by choosing Authorize from the Peak Menu) or send in the Registration Card included with your software to receive your Product Authorization Code, technical support, software updates, and notification of upgrades.

Peak will run, fully functionally, in Registration Mode for 14 days. This allows you the time necessary to register your product and get the Product Authorization Code from BIAS.

⚠️   *Registering online is the fastest way to receive your Product Authorization Code!*

Making Audio Connections

While it is possible to listen to Peak using a Macintosh's built-in speaker or headphones, most people will prefer to listen through a better quality external speaker system.

It is very easy to set up audio connections between your Macintosh and a mixer or speaker system. Your exact setup will differ slightly depending on whether you are using the built-in sound input and output connectors on your Macintosh, or those of a third-party audio interface.

Using the Macintosh's Built-In Inputs and Outputs

If you wish to use your Macintosh's built-in audio inputs and outputs for recording and playback, do the following:

1. Turn down the volume on your playback system. Peak can be used with a variety of playback systems, including:

    • headphones

    • a stereo receiver or amplifier and speakers

    • a mixer, amplifier, and a pair of speakers

    • a mixer and a pair of amplified (self-powered) speakers

    • or simply a pair of amplified (self-powered) speakers, smaller versions of which are often called "multimedia" speakers.

2. For recording, connect your audio source output to the Macintosh's audio input connector. Your audio source can be one of a variety of devices, such as:

    • a cassette or DAT deck output

    • a mixer output

- a stereo receiver line output (such as "tape deck record" output)

- an instrument line output (such as the output of a synthesizer or guitar pre-amp)

- microphone (built-in or external)

On most Mac models, audio input and output jacks are standard stereo mini-plug (1/8-inch) connectors. Most mixer, receiver, and amplified speaker inputs are equipped with XLR, 1/4-inch, RCA, or mini-plug jacks. To make the proper connection, you may need to use an adapter.

⚠️ *Many newer Macintoshes may not have a built-in sound input in which case you will have to use a third-party audio interface for sound input – unless using a built-in mic, such as that on a PowerBook.*

⚠️ *For advanced users: Certain professional mixing consoles, DAT decks, or other audio sources may have a nominal output level of +4 dBu, whereas the Macintosh expects to see a nominal -10 dBV level. Be aware that you may need to adjust your mixer's output levels accordingly to prevent overloading the Macintosh's input; or alternately, you may need to use a "+4 to -10" line-matching transformer.*

Common connections when using the Mac's built-in sound*

Audio Input

Receives input from any line-level audio source (mixer, amplifier, etc.)

Connects to Mac with 1/8" stereo mini-plug

Audio Output

Sends line-level audio signal out of Mac to headphones, mixer, amplifier, or self-powered speakers.

Connects to Mac with 1/8" stereo mini-plug

Macintosh CPU

Mixer Inputs

Receive audio input from Mac's audio outputs.

Common types of input connections include 1/4", XLR, or RCA – refer to your mixer's documentation to see which you should use.

Speakers

Monitor audio signals coming from Mac, or any other audio sources routed through the mixer – also allows monitoring audio signals being recorded into the Mac.

Mixer Main Outputs

Sends audio out to amplifier, or self-powered speakers.

Common types of output connections include 1/4", XLR, or RCA – refer to your mixer's documentation to see which you should use.

Mixer Auxilliary Outputs

Sends audio output to Mac's audio input.

When recording an audio signal through a mixer, the Aux Outputs allow the computer to record the signal, while the mixer's Main Outputs send the signal to the speakers/headphones, so you can monitor what you are recording.

*Diagram shows connections via a mixer, which is not required – if connecting directly to speakers, use their volume control, or the volume control on your Macintosh

3. Connect your Mac's audio output to your playback system's input.

4. Connect your playback system's output (typically an auxiliary or bus send) to your Mac's audio input.

> ⚠️ *Be very careful to avoid feedback loops (the audio signal feeds back into itself) when recording. Feedback can damage both your equipment and your hearing.*

5. Raise the volume on your mixer or playback system. Your system should now be properly configured and ready for recording and playback.

If you have a CoreAudio-compatible PCI, PCMCIA (CardBus), USB, or FireWire audio interface installed in your computer and wish to use its inputs and outputs, do the following:

1. Turn down the volume on your mixer or playback system.

2. Make sure that you have installed the third-party audio interface according to the manufacturer's instructions.

3. Install the CoreAudio drivers for your audio interface according to the manufacturer's instructions.

4. Connect your source's outputs to the inputs of your audio interface.

Third-Party Audio Interfaces
Common connections with a third-party audio hardware device*

Speakers

Monitor audio signals coming from Mac, or any other audio sources routed through the mixer – also allows monitoring audio signals being recorded into the Mac.

Audio Input

Receives input from any line-level or mic-level audio source (connections will vary with different devices)

Typically connects to Mac with RCA, 1/4", or XLR cables

Macintosh CPU

Mixer Main Outputs

Sends audio out to amplifier, or self-powered speakers.

Common types of output connections include 1/4", XLR, or RCA – refer to your mixer's documentation to see which you should use.

Audio Output

Sends audio signal out of Mac to headphones, mixer, amplifier, or self-powered speakers.

Typically connects to Mac with RCA, 1/4", or XLR cables

Mixer Inputs

Receive audio input from audio hardware's outputs.

Common types of input connections include 1/4", XLR, or RCA – refer to your mixer's documentation to see which you should use.

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Sends audio output to audio hardware's input.

When recording an audio signal through a mixer, the Aux Outputs allow the computer to record the signal, while the mixer's Main Outputs send the signal to the speakers/headphones, so you can monitor what you are recording.

*Diagram uses a PCI audio card as an example – other devices, such as USB or FireWire interfaces connect to the computer differently (ie: USB/FireWire cable), but generally have the same types of inputs & outputs, and can be connected to mixers and other audio equipment in a similar manner

5. Connect the outputs of your audio interface to the inputs of your mixer or playback systems

6. Raise the volume on your mixer or playback system. Your system should now be properly configured and ready for recording and playback.

A typical mixer/computer configuration is to have the computer outputs go to channel inputs on your mixer and to have the auxiliary or bus sends from the mixer go to the inputs of the computer. Instruments you want to record patch into other channel inputs on the mixer and can then be routed out the auxiliary or bus sends on the mixer to be recorded by the computer. The mixer's main outputs go to the amplifier/speakers.

The Apple AudioMIDI Setup Utility

2
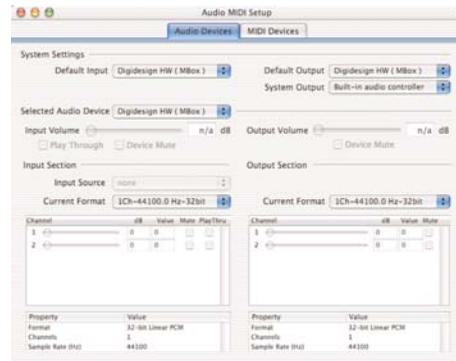
USB and FireWire Audio Interfaces

Mac OS X supports USB Audio on iMacs, iBooks, B/W G3s, and G4s. Peak supports USB audio with interfaces such as the Tascam US-428. Peak also supports compatible FireWire audio interfaces, such as the MOTU-828.

! *BIAS recommends using USB, FireWire, PCI, and PCMCIA audio hardware which is provided with dedicated software drivers by the manufacturer.*

CoreAudio

Peak can use CoreAudio – if you want to use a CoreAudio-compatible third-party audio interface with Peak, install the CoreAudio driver for the interface (if required) and launch Peak. Be sure to consult the manufacturer's instructions when installing your audio interface. For more detail on using Peak with a CoreAudio-compatible audio interface, please read Chapter 4: Playback and Recording.

Settings for CoreAudio compatible audio devices can be set up and customized using the Apple AudioMIDI Setup utility, located in /Macintosh HD/Applications/Utilities.

Conclusion

Now that you have installed Peak, and installed and configured any third-party audio interface and its drivers, proceed to the next chapter to learn several basic concepts and functions essential to using Peak.

Chapter 3
Peak Basics

Chapter 3:
Peak Basics

Introduction

This chapter explains several key Peak concepts and functions, including how to open, close, and save audio documents.

A Brief Explanation of Digital Audio

If you are new to digital hard-disk-based recording, you may wish to acquaint yourself with a few of the principles behind digital audio before you dive into using Peak software. This section explains a few key concepts that will give you a good general understanding of how Peak does what it does. What we hear as sound is actually a pattern of pressure waves that move through the air. The frequency of these waves determines the pitch of the sound - how low or high it sounds. Sound frequency is measured in cycles per second, or Hertz (Hz). The range of human hearing is generally considered to be from about 20 Hz at the low end to 20 kHz at the high end. In practice, however, most adults hear only as high as 12 kHz to 18 kHz, especially those of us who may have spent more time than we should have with headphones or at loud rock concerts.

Sampling and Sample Rate

Your Peak software-equipped Macintosh computer stores audio digitally. This means that analog electrical signals from microphones or other sources are converted into numbers by a circuit called an analog-to-digital converter and stored on hard disk. The analog-to-digital (A/D) converter uses a technique called digital sampling to convert analog electrical signals into numbers. Digital sampling is the sonic equivalent of taking a snapshot. By taking thousands of little digital samples per second and storing them to a hard drive, an A/D converter can capture an accurate sample-by-sample representation of a sound, much like a movie is a frame-by-frame representation of a moving image. The number of samples taken of the audio in a second is called the sample rate. The sample rate determines the recording's upper frequency response. A higher sample rate delivers higher frequency response. As a rule of thumb, a digital recording's upper frequency response is roughly half of its sample rate (known as the Nyquist frequency). The audio on compact discs, for example, is recorded at 44,100 samples each second, or 44.1 kHz. This sample rate is the standard for professional-quality digital audio, and provides an upper-end frequency response of approximately half the sample rate (known as the Nyquist frequency): 22.5 kHz, somewhat higher than most people's hearing range.

Bit Resolution

Another factor that affects the quality of the audio is the resolution of each sample. The greater the resolution, the better the quality. To use an analogy from the film world, just as image resolution and quality increase with film size (8 millimeter film is much lower in image quality than 70 millimeter film) greater bit resolution (8-bit, 16-bit, 24-bit, and 32-bit) results in better fidelity digital audio. Audio CDs have a resolution of 16-bits.

In practice, the bit resolution determines the recording's dynamic range – that is, how many distinct steps you have to describe a sound's level, from quiet to loud. For instance, an 8-bit recording has 256 (2^8) levels available, which is the equivalent of 48 decibels (dB) of dynamic range. On the other hand, a 16-bit recording has 65,536 (2^{16}) levels available, equivalent to 96 dB dynamic range. (The rule of thumb for determining the dynamic range in decibels is to take the bit rate and multiply it by 6.)

About Disk-Based Recording and Editing

If you are new to hard-disk-based recording, you will be impressed by the power and control that Peak software provides for recording and editing digital audio. You will encounter several new concepts and techniques for using a disk-based system such as Peak. Perhaps the most important among these is the concept of nondestructive manipulation of audio.

Non-linear Versus Linear Recording

Non-destructive audio manipulation is possible thanks to the nature of Peak's recording medium: a hard disk instead of a roll of analog tape. Unlike analog tape, which is a linear recording medium, hard disks provide a nonlinear, or random-access medium. This is because audio is stored on hard disk as digital information which the hard disk can access immediately or randomly (hence the term "random-access"), simply by moving its read/write head to the appropriate location and reading the appropriate data. This allows you to perform such miraculous feats as cutting and pasting "pieces of sound" and rearranging material long after it has been recorded.

Non-destructive v. Destructive Editing

Perhaps most impressive is the fact that with disk-based audio production you need not actually modify the original source material in any way to accomplish these feats. In most cases, by cutting and pasting you are in reality only asking the hard disk to access portions of the audio file in a slightly different order. Since Peak doesn't normally cut up, move around, or delete the actual recording on the hard drive, it's said to be a nondestructive editing system. Peak does not rewrite the file until you choose to save your edits. Other manipulations, such as playing audio material backwards, can be accomplished by reading the data in reverse order. The power and flexibility of disk-based audio production software such as Peak far surpasses the capabilities of traditional analog audio production tools.

Hard Disk Storage Requirements

The actual recording of audio to hard disk requires a sig-

nificant amount of storage. This is directly affected by the sample rate and bit resolution at which you record: the higher the fidelity, the greater the requirements for storage. As a guideline, 16-bit, 44.1 kHz audio requires roughly 5 megabytes of storage per minute of mono recording. Stereo 16-bit, 44.1 kHz audio requires roughly 10 megabytes per minute. Stereo 24-bit, 44.1 kHz audio requires roughly 15 megabytes per minute.

Hard Disk Maintenance

Because audio recording and playback is a hard disk intensive task, it is important that your hard drive be in good operating condition. In the computer world, this means keeping it from becoming fragmented by using hard drive maintenance software. Fragmentation occurs as your hard drive begins to run out of contiguous (uninterrupted) space where it can write files. If the data that makes up a file is stored at a single location on your drive, it is much easier and faster for your drive to find the data and read it. However, as contiguous space runs out, the drive may not be able to write the entire file in one location and instead must fragment the file by writing pieces of it at various locations in whatever smaller open areas it can find. This requires that the drive search near and far to read the pieces of the file. Too much fragmentation can lead to errors in recording and playback as the hard drive struggles to keep up with the demands of your audio application. In general, you should keep your hard disk below 10% fragmentation. Most hard drive maintenance software packages let you monitor the degree of fragmentation on your drive and defragment it by rewriting files into contiguous blocks of data. In addition to defragmenting your drive regularly, you should also back up your files and reformat your drive on a regular basis to keep your system in top operating condition. By doing this, you will ensure maximum

performance from your Macintosh and Peak software and keep your studio running smoothly. Now that you understand some of the basic principles behind digital audio and disk-based recording, take a few moments to learn some of the basic operations of Peak. These are covered in the sections that follow.

Creating a New Peak Document

Peak will allow you to create an empty audio file of zero duration by choosing a new mono or stereo document. However, you would typically record a new audio file in Peak or open an existing audio file into Peak for editing.
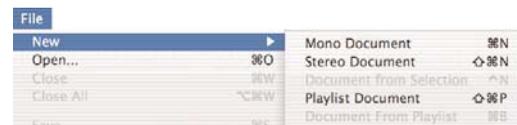
Creating a new Peak document

Peak allows you to have multiple audio documents open at the same time.

To create a new audio document:

• Choose New (⌘-N) from the File menu or Toolbar. This command provides a hierarchical menu which allows you to choose either a mono or stereo format for the new document.

Opening Existing Audio Documents

Peak allows you to open audio files created in a variety of common audio formats including AIFF, Sound Designer II, WAVE, QuickTime, .dv, Raw, System 7 Sound, Sonic

AIFF, Paris, JAM Image, AU, MP3, and MP4.

Opening Compressed Audio Documents

AIFF/AIFC and QuickTime files with compression such as MACE 3:1, MACE 6:1, IMA 4:1, QDesign, or Alaw are compatible with Peak.

To open an audio file:

1. Choose Open (⌘-O) from the File menu.

2. In the dialog that appears, locate the file that you wish to open. From this dialog, you can open AIFF, Sound Designer II, WAVE, QuickTime, .dv, Raw, System 7 Sound, Sonic AIFF, Paris, JAM Image, AU, MP3, and MP4 formatted audio files.

Open dialog

3. When you find the file you wish to open, click the Open button and Peak will open the audio file into a new audio window, displaying an overview of the entire sound. Shift-click or ⌘-click to open multiple files.
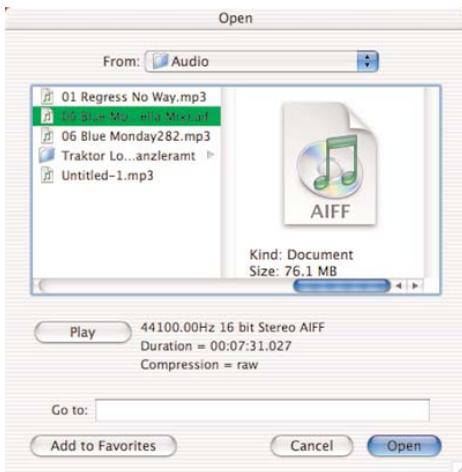
You may also preview files before opening them by clicking the Play button in the Open dialog.

Recently Opened Documents

Peak automatically remembers up to the last eight audio documents that you have opened and keeps a list of these at the bottom of the File dialog.

This allows you to easily select a document's name and reopen it without having to search on your hard drive. Peak can find and open a document even if you have changed its location on your hard drive. If you change the name of the file, the next time you open Peak, it will automatically update the name in its internal list.

Recently opened documents in the File menu

Opening "Dual Mono" Files

Certain audio applications, such as BIAS Deck and

Digidesign's Pro Tools, do not directly support stereo interleaved files, and instead use "dual mono" files, which comprise the right and left channels of stereo material. Peak allows you to open such dual mono files, and in the process creates a new interleaved stereo audio document. Because Peak actually writes a new stereo audio file to disk, this conversion process requires hard disk space equivalent to the two original mono files.

Please note that the Import Dual Mono command requires that both files be mono files and have the same sample rate.

To open a dual mono file:

1. Choose Import Dual Mono from the File menu.

2. In the dialog that appears, locate the desired files.

3. Select either half of the dual mono file and click Open. Peak imports the first file and then prompts you for the second.

4. Select the second audio file and click Open. When Peak has finished creating the new stereo audio document you can begin editing.

For simpler importing of Dual Mono files, turn on the Auto Import Dual Mono feature in the Preference menu. With this feature activated, you can automatically import dual mono files by choosing Open from the File menu and selecting one of the dual mono file's channels. Peak will then create a new stereo document containing both channels. Please note that these dual mono files must have exactly the same file name with the suffix ".L" for the left channel and ".R" for the right channel.

Peak also allows you to export your stereo audio documents in Dual Mono format, which means that it's easy to import dual mono tracks from BIAS Deck into Peak, edit and process them within Peak, and then export them as Dual Mono files to be reincorporated into your Deck sessions.

3

Dragging and Dropping Folders, Disks, and CD Audio Tracks

In addition to opening individual documents by dragging and dropping them onto the Peak application's icon, you can drag and drop entire folders or disks onto the Peak application's icon. The contents of the disk or folder(s) will be scanned for audio documents that Peak can open, such as AIFF, Sound Designer II, WAVE, QuickTime, MP3, and so on.

This feature is particularly useful when used with Peak's Batch File Processor.

Peak allows you to drag a CD audio track directly onto the Peak icon or open the track directly from the Open command under the File menu or Toolbar. When you import a CD track using one of these two methods, the entire track will be imported. If you do not want to import an entire audio track, use the Import CD track command under the File menu, which allows you to import as much or as little of a CD track as desired (covered in Chapter 4).

Saving and Closing Documents

It is good practice to save regularly throughout a project to avoid losing valuable work in the event of a power failure or other unfortunate occurrence. The Save command saves the changes you have made to your audio document by writing it to your hard disk.

The Save command cannot be undone. If you want to be able to continue to undo your edits, use the Save a Copy As command under the file menu. Peak allows you to save your audio documents in a variety of common audio file formats, each of which is described below. Be aware that different formats allow different information to be stored with the file. Peak preserves this information unless you save the file into a different file format. Saving a file in a format different from its original format may, however, cause some information stored in the file to be discarded.

Peak supports the following audio file formats:

- **AIFF:** This is Apple's Audio Interchange File Format. It is also Peak's default file format and is supported by many Macintosh software applications.

- **Sound Designer II:** This is Digidesign's audio file format for its digital audio products. Use this format if you wish to use an audio document in a Digidesign audio application.

- **WAVE/.WAV:** This is Microsoft's Windows Audio File Format. It is supported by many Windows software applications and some Macintosh applications. The WAVE format is best if you plan to use an audio document in an application that supports

or requires WAVE format files.

- **QuickTime:** This is Apple's audio file format 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 Macromedia Director™, iMovie™, or Final Cut Pro™. QuickTime includes formats such as AAC/MP4.

- **Raw:** This is the header-less raw file format that may be useful for some game platforms.

- **System 7 Sounds:** This the Apple audio file format used for legacy Macintosh Operating System Sounds.

- **JAM image files:** This is the JAM audio image file format. JAM audio image files may be created in Peak and used in Roxio JAM for burning certain types of audio CDs such as those intended for commercial replication and release.

- **Sonic AIFF:** The file format used by Sonic Solutions audio workstations.

- **.paf:** This is the file format used by E-mu's Paris audio system. Note this file format favors mono and dual mono files.

- **.au:** This file format is commonly used on the World Wide Web and in Java audio applets. It is supported by many platforms and programs.

- **MP3:** This saves your document in MP3 format.

To save a Peak document:

1. Choose Save from the File menu or press ⌘-S on your keyboard.

2. Select a file format from the pop-up File Type menu. AIFF is Peak's default audio file format.

3. Enter a name for the new audio document, select where you want to save the new file, and then click Save.

Using the Save As and Save A Copy As Commands

The Save As command allows you to save a copy of the current document under a different name, or in a different location on your hard disk. Since the Save As command closes the current document and lets you keep working on the renamed copy, it is useful for saving successive stages of a project. This allows you to save each major step under a different name. Later you can retrace your steps should you want to go back to an earlier version. The Save A Copy As command will save a copy of the file you are working on, but it will keep the copy you are working on open. This allows you to continue working on your audio and still be able to undo any edits you executed prior to using the Save A Copy As command.

The Save dialog

Both of these methods are non-destructive, as they create copies of the original file.

To save an audio document under another name:

1. Choose Save As (Shift-⌘-S) or Save A Copy As

(Option-⌘-S) from the File menu. The Save dialog appears.

2. Select the desired file format from the File Type pop-up menu. AIFF is Peak's default audio file format.

3. If you wish to save the audio document to a different bit depth resolution, click the bit depth pop-up. It is strongly recommended that you enable the POW-r™ dithering option if you are saving to a lower bit depth (e.g., 24-bit to 16-bit).

4. Enter a name for the new audio document, select where you want to save the new file, and click Save.

Using POW-r™ Dithering

Peak uses the POW-r™ (Psychoacoustically Optimized Wordlength Reduction) dithering algorithm, one of the industry-leading technologies for reducing bit depths and maintaining high-quality audio. If you are saving to a lower bit depth (e.g., 24-bit to 16-bit), it is strongly recommended that you enable the POW-r™ dithering option.
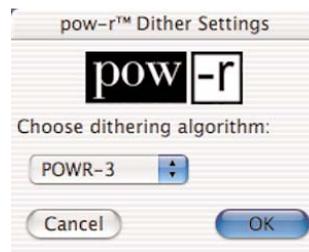
The POW-r™ dither settings dialog

Choose the POW-r™ Dither Settings from the Preference menu to adjust the settings for POW-r™ dither. For mono files, or stereo files with a narrow

stereo field (e.g., recordings of solo instruments), use POW-r 1; for more stereophonically complex material, use POW-r 2; for full-spectrum audio with a wide stereo field, use POW-r 3.

Saving Compressed Audio Documents

AIFF/AIFC and QuickTime files with compression such as MACE 3:1, MACE 6:1, IMA 4:1, QDesign, or Alaw are compatible with Peak.

⚠️ *You can only Save with file compression using AIFF or QuickTime file formats.*

⚠️ *Audio compression should be the last step in mastering your audio documents. Decompressing and re-compressing audio documents will degrade their sound quality each time they are re-compressed, so it is best not to save with compression until all editing and mastering has been completed.*

To save an audio document with compression:

1. Choose Save As (Shift-⌘-S) from the File menu. The Save As dialog appears.

2. Choose the audio compressor you wish to use from the Compressor pop-up menu. Some compression formats only work with 8-bit or 16- bit data, so the compression options may be grayed out, depending on your setting in the bit depth pop-up menu. Some of the types of available audio file compression include: MACE 3:1, MACE 6:1, QDesign Music, ALaw 2:1, 32-bit Floating Point, 64-bit Floating Point, IMA 4:1, 24-bit integer, 32-bit integer, 16-bit Little Endian, and 16-bit Big Endian.

3. Click the Options button to adjust the settings for the specified compression format, and then click OK.

4. Type the name of the new audio document, select the folder you wish to save the audio document, and click Save.

Closing Audio Documents

To close a file in Peak, choose Close from the File menu (⌘-W). If you have made any changes to your document since the last time you saved, Peak will ask you if you want to save them. If you do, choose Yes; if you do not, choose No. If you change your mind and wish to continue your session, choose Cancel. To close all files currently open in Peak, choose Close All from the File menu (⌘-Option-W).

Peak Windows and Palettes

There are several windows and palettes when you open Peak that either appear by default or are available to you under Peak's Windows menu. Windows that appear in Peak by default include an audio document window for each audio file currently opened. Windows and palettes that may be enabled or disabled include the Transport, the Toolbar, the Contents Palette, and the Movie Window. This section will cover the basic function of these Peak Windows and Palettes.

Peak Audio Document Window

Peak Audio Document windows contain a Waveform Display, an Audio File Info Bar, a Max Level Indicator in the lower left corner, and an expandable contents drawer which contains information about reference, region, and loop markers. The Waveform Display is a graphic representation of the audio file, the Audio File Info Bar shows the sample rate, bit resolution, file format and file size of the audio file, and the Max Level Indicator shows the highest amplitude level in the audio file. At the top of the Audio Document window is the File Overview, which is on by default, and can be turned off by choosing Show Overview in the Options Menu. The contents drawer is similar to the Contents palette, but offers a convenient way to view markers on a per document basis. The Audio Window is described in more detail in Chapter 5.

Peak's audio document window also contains several different tool icons representing different cursor modes. The default cursor is a standard Arrow Cursor. You can also select a Hand Cursor for moving a waveform within its window, a Pencil Tool for drawing directly on the waveform at the sample level, and a Magnifying Glass Tool for zooming the waveform view in and out. The ESC key on your computer keyboard will toggle through the four cursor modes.

To access any of these cursors or functions, just click on the corresponding icon. To change the cursor tool, click on a new icon. The various cursors and editing modes are discussed briefly below, and in greater detail in Chapter 5: Editing.

The audio document window

Blending On/Off   Vertical Lock   Hand Cursor   Pencil Tool

Horizontal Lock   Arrow Cursor   Magnifying Glass Tool   Toggle Drawer

Blending On/Off Button

When Blending is turned on, Peak creates very short crossfades between sections of audio that are cut, pasted, copied, or inserted. Blending helps to avoid clicks and pops that can occur when cutting an audio waveform at a non-zero crossing, or when combining material with significantly different amplitude. The left-most button toggles Blending on and off.

Horizontal Lock Button

The Horizontal Lock button allows both the begin & end markers in a loop or region to be moved simultaneously. This feature is very useful in situations where the duration of a selection needs to be maintained, but the selection needs to be made in a different part of an audio document. The second-from-left button toggles Horizontal Lock on and off.

Vertical Lock Button

The Verical Lock button allows multiple reference, region, and loop markers that are placed in the same location to be moved simultaneously. This feature is very useful in situations where you may have back-to-back regions - such as in mastering a live recording or DJ

mix - and you need to adjust where a track break will occur, without introducing any gaps between the two regions.

Arrow Cursor Tool

The Cursor Tool is the default tool. It is the standard "arrow" tool that lets you click and select on-screen items.

Hand Tool

The Hand Tool lets you grab and move a waveform around in its window.

Magnifying Glass ("Zoom Tool")

To use the Magnifying Glass tool, simply click on the tool in the audio document window, then move the cursor over the waveform. A "plus" (+) sign will appear inside the Magnifying Glass. Click on the waveform to zoom in; each click of the mouse will zoom in farther. To zoom out, option-click on the waveform.
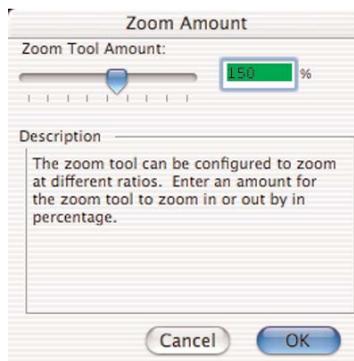
The Zoom Amount dialog

A "minus" (-) sign will appear in the Magnifying Glass, and you can click on the waveform to zoom out. Option-clicking on the Magnifying Glass will open the Zoom Amount dialog where you can specify the Zoom Amount.

Pencil Tool

The Pencil Tool lets you draw directly on the waveform at the sample level. This is very useful for drawing out clicks in the waveform. Hold down the Option key when using to bring up the "Magic" Pencil Tool, which automatically removes clicks/pops. Option-click on the Pencil Tool icon for the Drawing Tool Smoothing Settings.
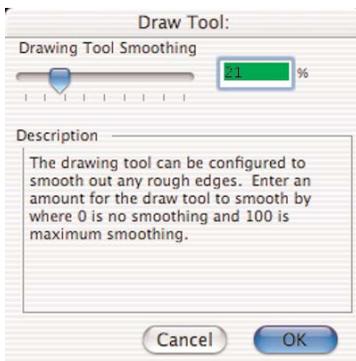
The Draw Tool dialog

Cursor and Selection Information

The lower section of the audio document window's Contents Drawer displays the X (time) and Y (amplitude) coordinates of the cursor point, Sel: the duration of any currently selected audio), DTR (Distance to Reference Marker), and BPM: the tempo in beats per minute. You can type a value in for the X, Sel, and BPM parameters.

The same information can also be displayed by toggling the translucent cursor overlay to the "on" position, which appears next to the mouse cursor, and moves along with the mouse cursor.
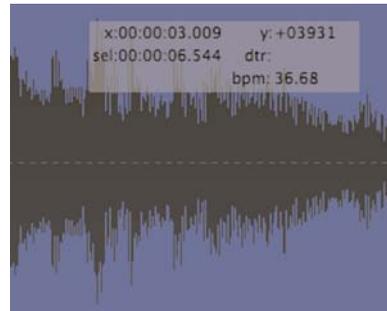
Translucent cursor overlay turned on – follows mouse cursor

Transluscent cursor information can be turned on and off under Peak's Options menu (⌘-T). Here is how to read the cursor and selection information that appears in the Cursor Location display.

> **Y** = the current cursor position along the vertical scale (amplitude) or start point of a selection

> **X** = the current cursor position in the currently specified time units (Samples, Min:Sec:ms, SMPTE, or Bars|Beats)

> **[L]** = the cursor is currently positioned over the left channel of the audio

> **[R]** = the cursor is currently positioned over the right channel of the audio

> **DTR** = distance in the currently specified time units (Samples, Min:Sec:ms, SMPTE, or Bars|Beats) to the nearest reference marker

> **Sel** = the duration of the current selec-

tion in the currently specified time units (Samples, Min:Sec:ms, SMPTE, or Bars|Beats)

+ or **-** = indicates positive or negative phase

BPM = beats per minute

The time format displayed in this field depends on which time format (Samples, Min:Sec:ms, SMPTE, or Bars|Beats) you have chosen with the Time Units command under the Preference menu.

Transport Window

The Transport window is a floating, re-sizable window. It contains three areas: a time display showing elapsed time, the Transport controls (Return to Zero, Stop, Play, Go to End, Record, and Loop during playback), and audio level meters with clip/peak indicators.

Time Display

The Time Display is like a counter. It shows elapsed time and tracks the "playback head" as audio plays. Clicking on the waveform when playback is stopped will cause the current cursor location to appear in the Time Display. This display will also show the time remaining while performing Open, Save or DSP processing actions. Clicking on the counter will bring up the Go To Time dialog, allowing you to type in a time location – when you click OK, Peak's playhead cursor is inserted at the

desired time location in the audio waveform.

Meters

Peak's meters are much like the VU or LED meters on a mixing board or tape recorder. They are bar graph meters that show the relative volume or loudness in decibels (dB), of audio as it plays. They are also designed to show peak volume and whether the signal has "clipped," or distorted.
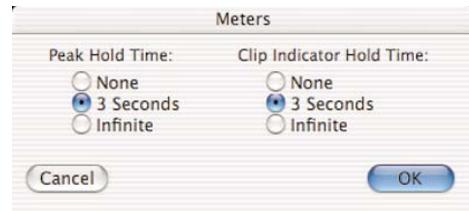
Meters dialog

You can configure the Meters display by choosing Meters from the Audio menu, or by clicking the appropriate button in the Toolbar. Using the Meters dialog, you can select the Peak Hold time and Clip Indicator Hold Time. The Peak Hold indicators appear as yellow bars at the far right of each of the bar graphs as audio plays, and selecting a hold time causes the indicator to pause for easy reading of the peak value during playback. The Clip Indicators appear as red bars at the far right of each of the bar graphs as audio plays, and are triggered when audio distorts, or "clips", and selecting a hold time causes the indicator to pause for easy reading of any clipping or distortion that occurs during playback. Setting the Peak Hold and Clip Indicator Hold Times to None turns

Transport window - contains counter, transport controls, precision VU meters, and master fader

these features off.

The Meters dialog is not available in Peak LE.

The Meters dialog is not available in Peak DV.

Progress Bar

The Meters display changes to a progress bar during audio processing, and while saving or opening audio files.

Progress bar

Contents Palette

Peak has a floating Contents Palette that will display all Regions, Markers, and Loops contained in any open audio documents.

The Peak Contents Palette

There are three buttons at the bottom of the palette that allow you to select which items to view-from left to right: the Region Button, the Marker Button and the Loop Button. Option-double-clicking on any item in the Contents window will bring up the Edit Region or Edit Marker dialog.

To resize the Contents Palette:

• Click and drag on the lower right hand corner of the Contents window to resize the Contents Palette.

To resize columns in the Contents Palette:

• Click and drag to the right of the column's title bar that you want to resize. For example, to make the Name column wider, click and drag the line between Name and Time to the right.

To sort columns in the Contents Palette:

• Click the title of the column by which you want to sort. For example, to sort by Time, click on Time.

To change the sort order in the Contents Palette:

• Click the sort order button in the column title to change the sort order.

Setting Preferences

You can customize a number of Peak's parameters so you can work with the program in a way that best suits you. These parameters are found in the Preference dialog and Options menu. These include the controls for playing back audio documents, the selection of the icons in the Toolbar, and the colors that you want for the audio document window.
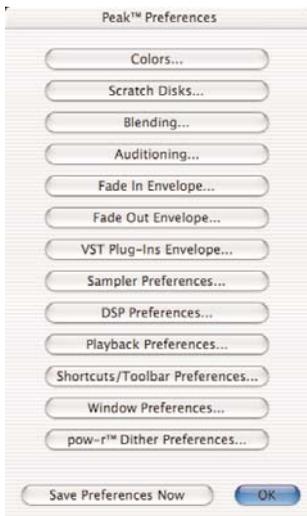
The Preference dialog

Once you have set these preferences as you like, they will stay that way until you decide to change them again.

This section explains how to set several of these parameters. For any menu items not covered here, please refer to Chapter 11: Peak Menus. There you will find explanations of each command in the Preference dialog and other Peak menus. Items from the Preference dialog and Options menu are also covered throughout this manual where their discussion is relevant.

The Options Menu

Setting Peak's Playback Parameters

Peak's Playback Preferences dialog allows you to control the master output volume, hard disk playback buffer size, and window buffer size.
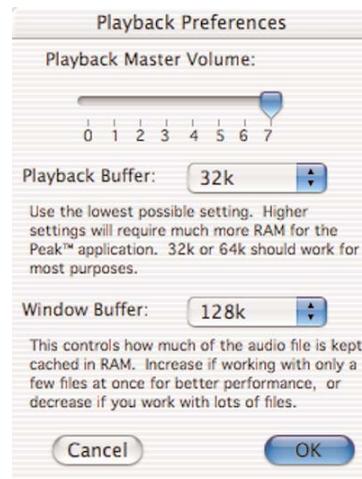
Peak Playback Preferences dialog

Playback Master Volume

Peak provides a master volume control for audio playback. In the Playback Preferences dialog, set Peak's output volume to the level that you desire by adjusting the slider or entering a number value from 0 (silent) to 7 (loudest). If you are controlling your playback volume with the volume control of your playback system, you'll probably want to leave the output level set to 7.

Playback Buffer

Peak allows you to control the amount of RAM the program uses when playing back audio documents. In general, lower is better. A playback buffer of 32k is a good place to start. If you are experiencing clicks in your playback, working with fragmented files, using processor-intensive real-time DSP, or are using a slow hard drive, you may need a larger playback buffer setting.

Window Buffer

Peak also allows you to control the amount of RAM the program uses to cache audio data and the size of each processing chunk. Use larger values if you are working with a few large files, and smaller values if you are working with many smaller files.

Dynamic Scrub Time

Peak provides a unique audio auditioning technique called dynamic scrubbing. This feature is very useful for precisely pinpointing and selecting a desired location in an audio document. Dynamic scrubbing allows you to drag the mouse forward or backward over a waveform while Peak plays a short loop (between 10 and 600 mil-

liseconds) at the scrub location. When you have found the location you are looking for, let go of the mouse and the insertion point will be exactly where you want it to be. Peak allows you to choose the length of this playback loop with the Dynamic Scrub Time command in the Options menu. You can also select Tape-Style Scrubbing in this dialog. For a full description of scrubbing audio in Peak, please see Chapter 5.

To select a loop duration for dynamic scrubbing:

1. Choose Dynamic Scrub Time from the Options menu, and choose a duration from the hierarchical submenu. Typically, a value of between 40 to 80 milliseconds works well.

2. You can also select Tape-Style Scrubbing by selecting it in this submenu. To deselect Tape-Style Scrubbing, just click any duration value in the submenu.

> ⚠️ *Tape-Style Scrubbing requires using the Mac OS X Audio HAL engine and is not available when using CoreAudio.*

Scroll During Playback

With the Scroll During Playback command enabled, Peak will "scroll" through the audio document as playback progresses. This allows you to visually follow the progress of audio playback. A check next to this menu item indicates that it is enabled.

1. Select Scroll During Play from the Options menu. A check next to this item indicates it is enabled.

2. To disable Scroll During Playback, simply re-select Scroll During Play from the Options menu. The absence of a check next to this item indicates it is disabled.

Move Waveform During Playback

With the Move Waveform During Play command enabled, Peak will move the waveform under the cursor as playback progresses, so that the playbar is always in the middle of the waveform display. A check next to this menu item indicates that it is enabled.

To enable Move Waveform During Playback:

1. Select Move Waveform During Play from the Options menu. A check next to this item indicates it is enabled.

2. To disable Move Waveform During Playback, simply re-select Move Waveform During Play from the Options menu. The absence of a check next to this item indicates it is disabled.

Show Marker Times

With the Show Marker Times command enabled, all Peak markers will show a time value as well as the marker name.

To enable Show Marker Times:

1. Select Show Marker Times from the Options menu. A check next to this item indicates it is enabled.

2. To disable Show Marker Times, simply deselect Show Marker Times from the Options menu. The absence of a check next to this item indicates it is disabled.

Auditioning

Peak's Auditioning command allows you to audition a selection along with a specific amount of audio preceding or following it.
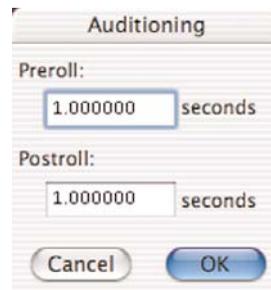
The Auditioning dialog

The Auditioning dialog allows you to select a desired amount of pre-roll or post-roll when you play the selection. To play a selection with the selected amount of pre- and postroll, press ⌘-Spacebar.

To configure Auditioning:

• Select Auditioning from the Preference dialog. Enter the desired amount of Pre-roll and Post-roll into the dialog boxes. Click OK to exit the dialog.

Blending

Blending is an automatic crossfade function with a user-editable envelope. Peak can apply blending to areas of an audio document when they are modified by cutting, deleting, or other editing processes in order to smooth

abrupt transitions between waveform amplitudes. It can be very useful for creating a smooth transition between edits that would otherwise sound too abrupt. If you have cut, pasted, or inserted audio into a document, you may wish to enable blending to smooth things out a bit. It can be toggled on or off by clicking the Blending button in the Audio Document Window, or by using the caps lock key on your keyboard.

To configure blending:

1. Select Blending from the Preference dialog. Enter the Duration over which you wish Blending to occur into the dialog box.

2. To edit the Blending Envelope, click on the Edit Blending Envelope button. Click OK to exit the dialog and click Save Preferences Now to save the change.

For detailed instructions on how to use blending or how to edit the blending crossfade envelope, see Chapter 5: Editing.

Auto-Import Dual Mono

Certain audio applications, such as BIAS Deck and Digidesign's Pro Tools, do not directly support interleaved stereo files, and instead use "dual mono" files-a pair of files, one for the left channel and one for the right channel. These files have typically been exported with the suffix ".L" for the left channel, and the suffix ".R" for the right channel. Auto-Import Dual Mono, when selected, will allow you to select just one channel of the dual mono file in the Open dialog. Peak will automatically "grab" the other half of the file, and convert both files into a single stereo Peak document.

Please note that the Import Dual Mono command requires that both files be mono files, have the same sample rate and bit depth, and the must have the exact same name followed by the suffixes ".L" and ".R".

3

To enable Auto-Import Dual Mono:

1. Select Auto-Import Dual Mono from the Options menu. A check next to this item indicates it is enabled.

2. To disable Auto-Import Dual Mono, simply reselect Auto-Import Dual Mono from the Options menu. The absence of a check next to this item indicates it is disabled.

Choosing Colors for the Audio Document Window

Peak allows you to customize the colors used to display the elements in audio documents. You can use this dialog to set the background color, waveform color, and colors for markers and loops. You can select either a preset color combination, or individual colors for each element in the audio document window, as well as picking your own custom colors from a color palette. You can also choose to have the waveform display shading for a 3-D look, as well as select the amount of shading. Changes made using the Colors dialog affect both the current audio document's colors, and any subsequent new audio document's colors.

To customize the colors and shading of the waveform display:

1. Choose Colors from the Preference dialog.
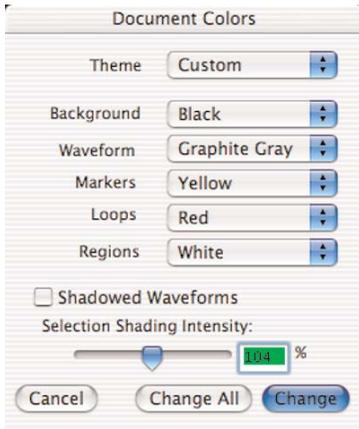
The Colors dialog

2. To select a preset color combination, click the Theme pop-up menu and choose the preset that you desire.

3. Alternatively, to select individual colors for each element in the audio document window, choose Custom from the Theme pop-up menu and then select the desired colors from the Background, Waveform, Markers, Loops, and Regions pop-up menus.

4. If you wish, you can use this dialog to further customize any element in the audio document window. Pick an element to customize, choose Custom from the Theme pop-up menu, and select User Color. A standard Macintosh color palette will appear. Use this wheel to select any color you wish. Click OK to return to the Colors dialog.

5. You can also customize the degree of shading, or darkness, of audio selections in the waveform display. Use the Selection Shading slider or enter a

percentage in the number box to choose the degree of shading you wish to see in selected portions of audio.

6. Another way to enhance the look of audio waveforms in Peak is by giving them a 3-D look. Use the Shadowed Waveform checkbox to turn the waveform shadow on or off.

7. To close this dialog, click Change (to change one color) or Change All (to change the colors for all open audio documents). The audio document window is now set to the colors and look you've selected.

Choosing a Time Format

The Units command allows you to choose a time format for the audio timeline in Peak's audio document window. You can choose samples, seconds, SMPTE frames, and Bars|Beats. The format you choose will depend on the nature of the project that you are working on.

To choose Peak's time format:

1. Choose Time Units from the Options menu.
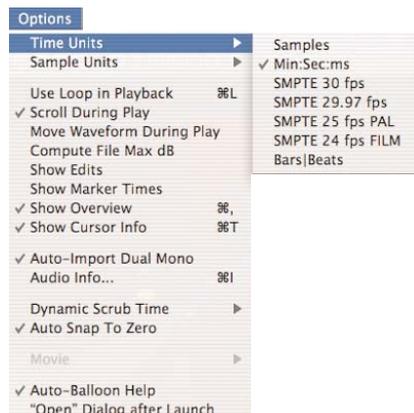
Choosing a time format with the Time Units command

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2. From the submenu, choose the time format that you desire: samples, Min:Sec:ms, SMPTE frames, or Bars|Beats. The timeline in Peak's audio document window and Transport switches to the format that you choose.

Audio File Meter, Tempo, and Timestamp Settings

If your audio document is using bars|beats as its units, you will want to tell Peak what the tempo of the audio document is. Use the Audio Info command from the Options menu – or enter the BPM in the Cursor info sectionof the file drawer – to set the tempo of the audio document. You can also enter the meter of an audio document using the Audio Info dialog. The numerator represents the number of beats per measure, and the denominator represents the value of a beat, where 4=quarter note, 8=eight note, 16=sixteenth note, and so forth.
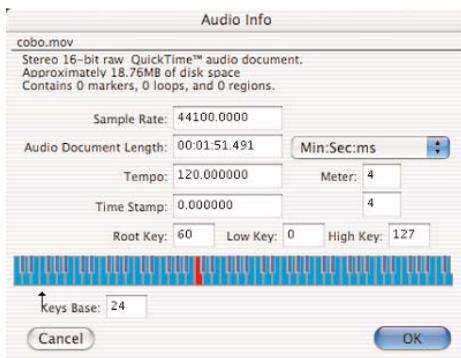
Audio Document Info

You may also enter a timestamp for the audio document in seconds. If the audio document has a timestamp, then the displayed time in an audio document will be offset from this time rather than starting at zero. For example, if the timestamp for an audio document is four seconds, then the first sample in the audio document will appear in the audio document with a time of 4 seconds instead of zero seconds.

Choosing a Scratch Disk

Because audio data can be very large, Peak utilizes a portion of your hard disk's free space to hold audio data that has been cut or copied, as well as for temporary or scratch files for undo purposes. If your hard disk is short on space, you may not be able to cut, copy, or modify large selections. If you have more than one hard drive attached to your Macintosh, the Scratch Disks section in the Preferences dialog allows you to choose the hard drives (or "scratch disks") that you wish to use for these temporary files. Peak allows you to select which disk you want to have as your default, or "Primary" disk for this purpose-usually you would select the disk that has the most free space. If you are connected to a file server, you can utilize available storage on the server by clicking the Allow Servers checkbox. Any available servers will then appear in the Scratch Disks pop-up menu. This feature is recommended only if you have access to a high speed Ethernet, Media Net, or other fast server.

To choose a scratch disk for temporary files:

1. Choose Scratch Disks from the Preference dialog. The Scratch Disks dialog appears.

The Scratch Disks dialog

2. The Scratch Disks dialog will show all hard drives currently connected to your Macintosh. Choose the hard drive(s) that you wish Peak to use when it creates temporary files by clicking the checkboxes next to the drives in the list. To choose the Primary Disk, or the default disk for temporary files, click on the Primary button next to that disk.

If you are connected to a file server and would like to use storage available there as well, enable the Allow Servers checkbox.

3. Click OK to close this dialog. Peak will use the disk you have selected as your Primary scratch disk, and, if it becomes full, will then use the other disks you've chosen.

⚠ *The hard drive with the original audio file must have the equivalent amount of free space (i.e., a 60MB file would require that there be an additional 60MB of free space on the hard drive on which the file resides).*

⚠ *You must have write permissions for the selected Scratch Folders and Disks or else Peak will report an error. Contact your System Administrator if you need assistance changing Directory or Disk permissions.*

Keyboard Shortcuts

Peak allows you to customize any Peak menu item with a keyboard shortcut. To change your keyboard shortcuts, go to the Preferences dialog and select the Shortcuts and Toolbar item. Preferences are stored in a file called Peak

4.0 Shortcuts, located in the following directory:

MacintoshHD/Users/<YourUserAccount>/Library/Preferences

Peak's default Keyboard Shortcuts are listed in Appendix 1 at the end of this manual.

To add a new Keyboard Shortcut:

1. Choose Shortcuts & Toolbar in the Preferences dialog.

2. Scroll through the list of menu items, or, with the list box selected, simply type in the first few letters of the menu item you wish to assign. Then click on the name of the Peak menu item you wish to assign a new keyboard shortcut.

3. Use the Shortcut Key box to enter the letter you wish to use for a shortcut. You may select the Command, Option, Shift or Control keys as additional modifiers by clicking on the checkboxes in this dialog.

4. Close the Shortcuts/Toolbar Preferences dialog.

To remove a Keyboard Shortcut:

1. Choose Keyboard Shortcuts in the Preference dialog.

2. Scroll through the list of menu items, and click on the name of the Peak menu item for which you wish to remove a keyboard shortcut.

3. Click on the Clear button.

4. Close the Shortcuts/Toolbar Preferences dialog.

🚫 *User-defined Keyboard Shortcuts and Toolbox customization are not supported in Peak LE.*

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10. FileMaker Pro will add the records to the database.

11. Use the Print option in FileMaker Pro's File menu to print out your keyboard shortcuts. You can also sort the imported keyboard shortcut commands by description or shortcut. Consult your FileMaker Pro User's Guide for more information on importing records, sorting records, and printing.

Making a Keyboard Shortcuts "Cue Card"

It's easy to make a "cue card" that you can keep on your desk with all the Peak shortcuts you've assigned. Using the supplied FileMaker Pro template, you can import all of your shortcuts from a text file describing each keyboard shortcut generated from Peak.

FileMaker Pro is not included with Peak.

To Create A Custom "Cue Card" of your Keyboard Shortcuts:

1. Choose Shortcuts/Toolbar Preferences in the Preferences dialog.

2. Click on the Save As Text button.

3. Enter the name of the keyboard shortcuts text file you wish to save, and choose the disk and folder you wish to save into. Click Save.

4. Switch to the Finder and Launch FileMaker Pro.

5. Choose Open from the File menu in FileMaker Pro.

6. Open the supplied "Peak Shortcuts Template" FileMaker Pro template.

7. Choose Import Records from the File menu in FileMaker Pro.

8. In the pop-up menu at the bottom of the Open dialog in FileMaker Pro, choose Tab-Delimited.

9. Find the shortcuts text document you saved in step 3 and click Open.

The Toolbar

Peak allows you to select almost any Peak command for the Toolbar. The Shortcuts & Toolbar menu allows you to group together the functions you use most often, so that you can simply click a button instead of going to the menus. For example, if you frequently use Normalize and Pitch Change, you can choose to have the icons for these functions in the Toolbar, so that all you have to do to use one of them is to make an audio selection and click a button. The Toolbar is an easy way to make your work in Peak faster and more efficient, allowing you to customize the program to suit the way you work.

To add or subtract items from the Toolbar, use the Shortcuts & Toolbar item in the Preferences dialog. Toolbar selections are stored in a Preference file called "Peak 4. Shortcuts" located in:

MacintoshHD/Users/<YourUserAccount>/Library/Preferences

You can reshape and resize the Toolbar by clicking on the lower right corner of the Toolbar window and dragging to the desired shape and size. The Toolbar can be arranged horizontally, vertically, or as a "cluster" of buttons. Icons in the Toolbar can be sized anywhere between 16 x 16 pixels to 64 x 64 pixels.

To add a new icon to the Toolbar:

1. Choose Shortcuts/Toolbar Preferences in the Preferences dialog.

2. Scroll through the list of menu items, and click on the name of the Peak menu item you wish to have appear in the Toolbar.

3. Click on the "Place In Toolbar" checkbox to select the icon to add to the Toolbar. If there is no icon, the menu item cannot be placed in the Toolbar.

4. Close the Shortcuts/Toolbar Preferences dialog.

To remove an icon from the Toolbar:

1. Choose Shortcuts/Toolbar Preferences in the Preferences dialog.

2. Scroll through the list of menu items, and click on the name of the Peak menu item you wish to remove from the Toolbar.

3. Click on the checkbox to uncheck the item you wish to remove..

4. Close the Shortcuts/Toolbar Preferences dialog.

  Customizable Toolbar is not supported in Peak LE.

  Customizable Toolbar is not supported in Peak DV.

To resize icons in the Toolbar:

1. Choose Shortcuts/Toolbar Preferences in the Preferences dialog.

2. Move the Toolbar Icon Size slider to the left for smaller icons, or to the right for larger icons.

3. Close the Shortcuts/Toolbar Preferences dialog.

Quitting Peak

When you have finished a project or wish to end an editing session, the Quit command allows you to quit Peak and return to the Finder. If you haven't saved changes, Peak will warn you before allowing you to quit.

To quit Peak:

• Choose Quit from the Peak menu (⌘-Q).

If you have made any changes to your document since the last time you saved, Peak will ask you if you want to save them. If you do, choose Yes; if you don't, choose No. If you change your mind and wish to continue your session, choose Cancel.

  If you wish to close all currently open windows without saving, hold down the Option key and click Don't Save.

Conclusion

You now know how to create, open, import audio files, export, close, and save Peak documents. You also know how to set the preferences for operating Peak. The next chapter explains how to use your Peak software to record audio to disk.

3

Chapter 4
Playback & Recording

Chapter 4:
Playback & Recording

In this chapter you'll learn how to record and playback audio with Peak. Peak allows you to capture sound from external sources through your Macintosh's built-in audio input or by using third-party audio hardware. If your Macintosh is equipped with a CD-ROM drive, you can also import audio directly from an audio CD.

Recording and Playback using CoreAudio

CoreAudio is Apple's new high performance audio engine. There are numerous advantages to using CoreAudio – including low latency, multiple channels of audio, high bit depths and sample rates, and the ability to share hardware devices between multiple audio applications. BIAS recommends using CoreAudio (which Peak defaults to), though there may be some situations in which you may want to use the Mac OS X Audio HAL or FireWire DV audio engines. Details for using the other audio engines appear later in this chapter.

Installing and configuring your device:

1. If applicable, install your third-party audio interface and its software according to the manufacturer's instructions.

2. Open System Preferences/Sound – If the audio hardware device shows up in System Preferences/Sound then it will be available in Peak.

OS X System Preferences Sound Output

3. To see the sample rates and bit depths that your hardware supports, open the AudioMIDI Setup utility and select the hardware device in the "Selected Audio Device" drop down menu. Some devices also include a separate control panel as well.
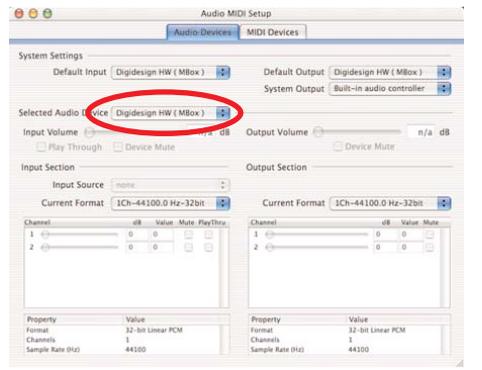
The AudioMIDI Setup Utility

Configuring Peak for Playback

1. Launch Peak.

2. Choose Hardware Settings from the Audio menu, to open the CoreAudio Settings dialog.

CoreAudio Hardware Settings dialog

3. Select your audio hardware device as both the input and output.

4. Close the Hardware Settings.

Playing Audio with Peak

The Transport Controls

The Transport Controls that appear in the Transport window are useful tools for initiating both playback and recording. They function much as the controls on a tape recorder would. As they appear below, from left to right, they are Return to Zero, Stop, Play, Go to End, and Record.

Return to Zero   Stop   Play   Go to End   Record

Use Loop in Playback
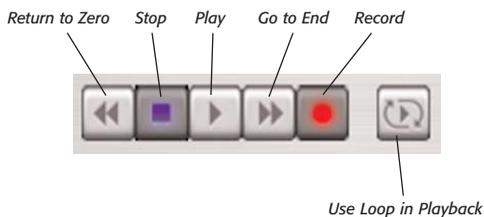
The Transport Controls

To start playback from the beginning of a document:

1. Press the Spacebar, or click the Play button in the Transport. Playback begins from the beginning of the document.

2. To stop playback, press the Spacebar again or click the Stop button in the Transport.

To rewind playback to the beginning of a document:

• Click the Stop button twice, or click the Rewind button in the Transport. You can also press the Return key if playback has been stopped.

To start playback from a specific point in a document:

1. Click the cursor at the desired location in the audio document and press the Spacebar on your computer keyboard. Playback begins from the cursor location and continues to the end of the document.

2. Alternatively, double-click the mouse at the desired location in the audio document. Playback begins from the location that you double-clicked and continues to the end of the document.

3. You can also click anywhere in the Audio Waveform Overview to begin playback from that point.

4. To stop playback, press the Spacebar.

Triggering Playback of Multiple Audio Documents

As explained earlier, Peak allows you to have multiple audio documents open at the same time. Peak assigns each of these documents a number based on the order in which it was opened. Peak provides you with a con-

venient way of triggering playback of any open audio document by pressing a number key on your computer keyboard. This can be a very useful feature for applications such as "live" sound effects playback, since you can open multiple audio documents and play them from your Macintosh keyboard.

To trigger sequential playback of multiple audio documents:

1. Open several audio documents, taking note of the number that Peak assigns them in the Windows menu. (This is based on the order in which the documents were opened.)

2. Press the number which corresponds to the document(s) you wish to play. (Note: the numeric keypad will not work for this function, you must use the numbers at the top of the keyboard). You don't need to wait until a document has finished playing to press the next number: typing a numerical sequence on your keyboard will "cue up" all of the corresponding files. They will then play in the order you choose.

3. If you wish to stop playback and jump to the next document in line, press the Return key. Peak initiates playback of the next document in sequence.

Configuring Peak for Recording

To record in Peak with CoreAudio you will first need to have configured Peak for playback with CoreAudio. The Record Settings dialog can be accessed from under the Audio menu (Option-R) as well as from the Toolbar. The next few steps show how to configure for recording, and include information about various recording options available at each stage:

1. Open the Record settings from the Audio menu or toolbar, and configure the following:

The Record Settings dialog

Record Disk

The Record Disk pop-up menu allows you to choose which hard drive you would like to record to. If you have more than one hard drive connected to your Macintosh, use this pop-up to select your record drive. (This option will default to the largest drive currently available to your Macintosh unless you select otherwise.) Peak requires that you save the audio file to the same drive on which it was recorded.

File Format

The File Format pop-up menu allows you to select the file format for the incoming audio. You can choose from AIFF or Sound Designer II. If you need the newly recorded audio file to be in a different format, you can always use the Save As function to save it as a another format once recording is complete. If you do not select a file format for recording, Peak will default to AIFF.

Auto Gain Control

The Auto Gain Control checkbox allows you to disable the Automatic Gain Control feature used by the Mac OS X Audio HAL system with some Macintosh microphone inputs. If the recording device you are using supports this feature, check the Auto Gain Control checkbox.

⚠️ *This will be grayed out unless you are using the HAL option from the Sound Out menu (using this option is covered later in this chapter)*

Monitor

The Monitor checkbox allows you to monitor the audio throughput while you are recording.

Split Stereo

The Split Stereo Files checkbox allows you to record the incoming stereo audio as dual mono files rather than a single stereo file. Dual mono files are used in programs like Pro Tools, or BIAS Deck, so this option is useful if you need to record dual mono files (i.e., split stereo).

Append

The Append to document checkbox allows you to record into an existing audio document. To record new audio into an existing document, place the insertion point in the existing audio document at the point where you want to insert the new audio. If the insertion point is at the beginning of the file, the newly recorded audio will be inserted at the beginning of the file. If the insertion point is at the end of the file, the newly recorded audio will be appended to the end of the existing file. If the insertion point is somewhere in the middle of the file, the newly recorded audio will be inserted at that point.

If you make a selection of audio, the Append to document feature will allow you to replace the current audio with newly recorded audio from the beginning of the selection through the end of the document or wherever you stop the recording.

Record Timer

The Record timer checkbox allows you to designate a specific duration for recording. Peak will stop recording after this set time and then open the Save dialog for your audio recording. Checking the Record timer checkbox will bring up the Recording Time dialog. In the Recording Time dialog, designate the duration for recording in seconds and click OK.

The Recording Time dialog

Open after Save

The Open after saving checkbox determines whether the audio document is opened in Peak after it is recorded.

Record Through VST Plug-Ins

If you have VST plug-ins installed, you can record through them in real-time when using CoreAudio. This is

useful if you want to use a noise reduction, equalizing, or dynamics plug-in during recording.
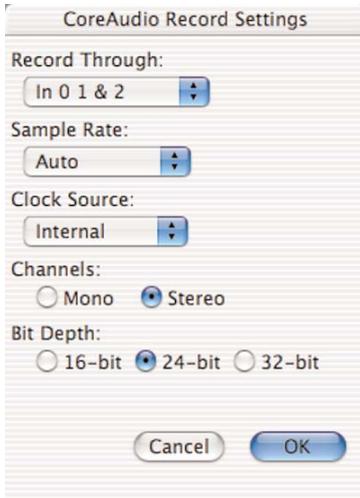
CoreAudio Record Settings dialog

Record Through

Using the CoreAudio Record Through pop-up menu you can choose the source for recording.

Sample Rate

Using the CoreAudio Sample Rate pop-up menu you can select the sample rate at which you wish to record. Some sample rates may not be available depending on the limitations of the audio card and its CoreAudio driver. Please note that if you are recording from a digital source you will want to be sure that you record at the same sample rate as your digital source. For more information on sample rates, see the Glossary.

Clock Source

Be sure to set the Clock Source to digital in the CoreAudio dialog if you plan to record via CoreAudio from a digital source.

> ⚠️ *Some third party devices do not provide the option for Peak to configure the clock source*

Channels

You may also choose to record a mono or stereo file using the radio buttons under the Channels heading.

Bit Depths

Choose the bit depth using the radio buttons under the Bit Depth heading. Please note that you will be limited to recording at bit depths that are supported by your audio hardware and its CoreAudio driver. For more information on bit depths, see the Glossary.

3. Click the Hardware Settings button in the the Record Settings Dialog to change your input device

Hardware settings will have already been set up when configuring for playback, but can easily be accessed from the Record Settings window, should any changes need to be made.

> ⚠️ *For example, if you experience clicks or digital distortion in your recordings, you may need to raise/adjust your audio hardware's buffer size, which can be adjusted in the Hardware Settings dialog*

You are Ready to record!

The Record Dialog

When you select Record from the Audio menu (⌘-R), Transport, or Toolbar, the Record dialog appears. There are transport buttons along the bottom to Start, Pause and Stop the recording, an Audio Source display that shows you the waveform as it is being recorded, and a Notepad window. There are also text displays showing you the sample rate, bit depth, and number of channels you selected in the Record Settings dialog, as well as the amount of time you have left to record on the selected Record Disk.
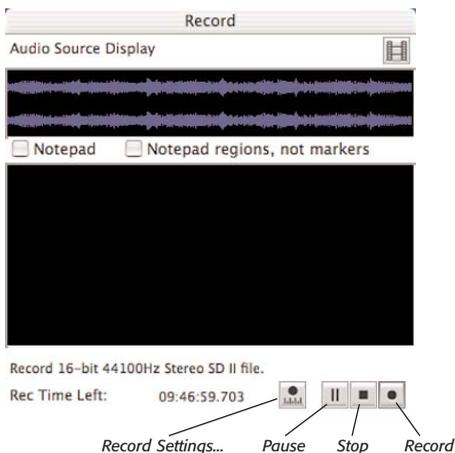
The Record dialog – showing the record transport controls

Record Transport

In the lower left portion of the record dialog are a set of transport controls. From left to right, these controls are for Record Settings, Pause, Stop, Record.

Notepad Cues

The Notepad feature in the Record dialog allows you to type in text descriptions, transcribe a recording, or type

in comments called Notepad Cues at specific points during the recording of an audio document. The Notepad feature is available from the Record dialog and may be used once a recording starts.

If you enable the Notepad checkbox, you can create markers while recording. Each time you press the Return key, a new Notepad Cue (marker) is generated for the current recording time. You may then begin typing text to describe the audio recording at that time (i.e., naming the marker). When you hear the next significant event in the recording, press the Return key to create another cue, and so forth.

When you are finished recording, Peak will create markers in the audio document that correspond to each Notepad Cue you have entered. If you also enable the Notepad regions, not markers checkbox, Peak will create regions during recording.

Notepad Cues are not available in Peak LE.

Notepad Cues are not available in Peak DV.

Record Bit Depth, Sample Rate, File Format, Recording Time Left

The lower left portion of the record dialog displays information about the current record settings, and will show the bit depth, sample rate, file format of the current recording. Just below this display is a counter that displays the amount of recording time left, based on the amount of available hard drive space.

Proper Levels for Recording

To obtain the best possible fidelity when recording digital audio, it is important to record your audio signal at the highest possible level without introducing clipping (distortion). The reasons for this are twofold: If your audio input level is too low, the recorded audio may contain a significant amount of noise which can manifest itself as hiss. Conversely, if your audio input level is too high, it may clip and cause audible crackling or other types of distortion. You should avoid digital distortion at all costs because unlike its analog counterpart - which can sometimes sound "warm" and appealing - digital distortion sounds terrible. In order to prevent this from happening, always leave a little headroom (6 dB or so) when you set levels so that you don't hit maximum input levels and clip.

Recording

To start recording:

1. Turn down the volume of your instrument or audio source.

2. Connect the instrument or audio source to the audio input jack on the rear of your Macintosh. If you are using an audio card, use the connectors on this card; however, many audio cards have an external interface box which contains the input and output connectors, if this is the case, use these.

3. Choose Record Settings from the Audio menu (Option-R) or Toolbar, and configure the settings as described in the previous section. Make sure

that you have checked Monitor in the Record Settings dialog, so that you can listen to your audio source as it is recorded into Peak.

4. Select Record from the Audio menu (⌘-R) or the Record button in the Transport. The Record dialog will open.

5. Play your instrument or audio source. You should see the signal levels register on Peak's Audio Meters in the Transport window.

6. Adjust the output of your audio source so that its signal registers relatively high on the meters but never hits top (indicated by the red Clip Indicators.). Remember to always leave 6 dB or so of headroom on the meters so that you don't clip. Use the yellow and orange meter lights and red Clip indicators to help you make this adjustment.

7. Click the Record button in the Record dialog. You are now recording to disk. You should see the audio waveform begin to scroll in the Audio Source Display window.

8. To stop recording, click the Stop button. To pause, click the Pause button.

9. Once you have stopped recording, the Save dialog appears and prompts you to name the audio document. You must save the audio document to the same hard drive you selected in the Record Settings dialog. Enter a name and click Save. Peak automatically saves the document in the audio file format you selected in the Record Settings dialog. If you wish to later save the document in a different audio file format, use the Save As command.

To play back the recording:

1. Press the Spacebar on your computer keyboard (or the play button in the Transport window) Playback

begins.

2. To stop playback, press the Spacebar again (or the stop button in the Transport window).

3. To start playback from a specific point in the recording, with the Cursor Tool selected in the Cursor Palette, double-click on the waveform at the point from which you want playback to begin, or click the mouse at the desired point and press the Spacebar.

Importing a Track from an Audio CD

If you own a Macintosh computer that is equipped with a compatible CD-ROM drive, you can use Peak to import audio directly from an audio CD.

Import CD Audio dialog

This process is sometimes referred to among multimedia developers as audio extraction, or audio-across-SCSI.

If you own an Apple or non-Apple external CD-ROM drive, you may also be able to take advantage of this feature.

Please note that not every CD-ROM drive supports audio extraction, and that even among drives of the same model, one drive's firmware (the internal operating software) may support audio extraction, while another's may not. If you are unsure as to whether or not your drive supports Apple-standard audio extraction, your best bet is to try the instructions that follow. If this doesn't work, please contact the CD-ROM drive's manufacturer to establish whether your drive (and your drive's firmware) will support Apple-standard audio extraction.

To import tracks from an audio CD:

1. Insert an audio CD in your CD-ROM drive.

2. Choose Import CD Track from the File menu or click the CD button in the Toolbar.

3. In the dialog that appears, select the CD track that you wish to import and click Mark. You may mark multiple tracks for import. If you wish to import all of the tracks on the CD, click on the Mark All button.

4. To name a selected CD track, click the Track Name button.

The Name Track dialog

If iTunes is installed and you are connected to the internet, Peak will recognize the track names by their ISRC codes as they are registered on the CDDB™ online CD database.

5. To select only a portion of the track, click on Set Import Times button or double-click on the track in the list. The Audio CD Import Options dialog will appear.

Audio CD Import Options dialog

6. By adjusting the Start and End time controls at the bottom of this dialog you can import the entire CD track, or a just specific portion of the track. The slider in this dialog assists you in locating start and end times. Click Play to audition the CD track (or selected portion of the CD track). Click OK when you are happy with the selection.

7. Check the Open tracks after importing checkbox if you want the CD track(s) you are importing to open in Peak. If you prefer to import the CD track(s) straight to disk, be sure to deselect the Open tracks after importing checkbox.

8. Click the Import button in the Import CD Audio dialog to import the selected tracks and the Save dialog appears. Use the pop-up menu at the top of the dialog to navigate to the hard drive where you wish to save the audio file. Click Save to save the file to disk. Peak will save the file(s) in the AIFF audio format.

Recording into a silent QuickTime movie

1. Create a new stereo or mono document (from the File menu>New)

2. Open the movie

3. Set record settings to append to document
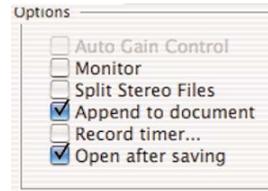
Check the Append to Document checkbox in the Record Settings dialog

4. Record (click movie icon to have movie play along)

The Movie button in Peak's Record Dialog

5. When finished recording, save with a name

6. Choose Save As... and select QuickTime as the file format.

Optional Recording Settings

In Peak's Audio Menu>Sound Out, there are alternate options – Mac OS X Audio HAL, Mac OS X Audio HAL (System), and FireWire DV. Peak defaults to using CoreAudio, and BIAS recommends using this configura-

tion. You may at some point want to switch the audio output settings in the following cases:

FireWire DV

- If you need to connect a FireWire device, such as a DV camera, to be used for audio input or output, select FireWire DV from Peak's Audio Menu>Sound Out.

Mac OS X Audio HAL/Mac OS X Audio HAL (System)

Selecting this will use whatever device you have selected in the OS X Audio preferences in the System preferences.

You may want to select Mac OS X Audio HAL in the following cases:

- You need to access Tape-Style scrubbing – Tape-Style scrubbing is not available when using CoreAudio.

- You are using Peak's Change Pitch DSP tool, and need to access real-time preview – Real-time pitch change preview is not available when using CoreAudio.

Configuration for Mac OS X Audio HAL & FireWire DV

When using the Mac OS X Audio HAL or FireWire DV audio engines, there are some differences in configuration. Most notably, when in the Record Settings dialog, clicking the Device and Sample Format button, and the Hardware Settings button will bring up different dialogs compared to when using CoreAudio.

These different configuration dialogs are:

Compression
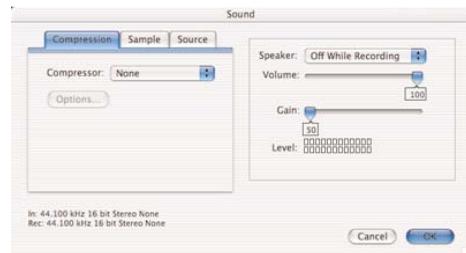
The Sound dialog: Compression

⚠️ *The compression option is not supported in Peak, so leave Compression set to none.*

Sample
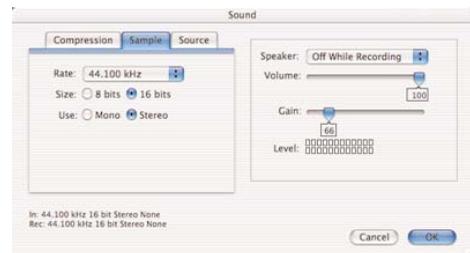
The Sound dialog: Sample

Selecting Sample from the Sound dialog pop-up menu allows you to choose the sample rate and bit depth, as well as whether the incoming audio will be recorded as a Stereo or Mono file. To some degree, the choices that appear here will depend on your audio hardware. For more information on bit-depths and sample rates, see the Glossary.

Source
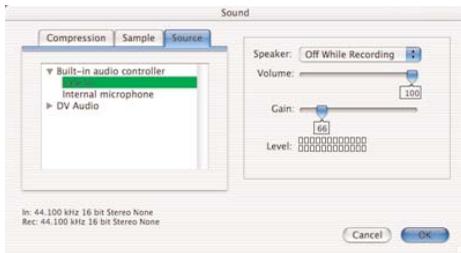
The Sound dialog: Source

Selecting Source from the Sound dialog pop-up menu allows you to select and configure the audio input you wish to use for recording. If you are using third-party audio hardware with your Macintosh, you can select it as the input device using the Device pop-up. Use the Input pop-up to select the hardware inputs you wish to record through.

> ⚠️ *Your exact setup will differ slightly depending on the input device that you are using with Peak. You can use either your Macintosh's built-in audio inputs, or, if you are using third-party audio hardware, you may wish to use its audio inputs and outputs.*

Once you have configured the options in the Sound dialog to your liking, click OK to return to the Recording Settings dialog.

> ⚠️ *If you are using third-party audio hardware, it may or may not include a dedicated driver. If it does not include a driver, it will need to be natively supported by the Mac OS, and will need to be configured to use the Mac OS X Audio HAL system. If it does include a dedicated driver, this will be a CoreAudio driver, and will need to be configured to use the CoreAudio system, described earlier in this chapter.*

Hardware Settings

Clicking on the Hardware Options button in the Record Settings dialog brings up a dialog appropriate to the audio hardware that you are using with your Macintosh. Note that in many instances there may be no settings for a given device (including the Apple Built-In Sound). Some audio hardware drivers have control panels or utility applications that will launch when you click on the Hardware Options button. The Duo preferences dialog for the M-Audio Duo is shown below, but the actual third-party dialog will differ depending on the specific audio hardware you have.

M-Audio Duo Preferences dialog

Conclusion

You have now learned how to record and playback audio to and from hard disk using CoreAudio, Mac OS X Audio HAL, and FireWire DV. You have also learned how to import audio tracks from CDs. In the next chapter, you will learn how to edit audio with Peak's powerful set of digital editing tools.

Chapter 5
Editing

Peak User's Guide

Chapter 5: Editing

This chapter introduces you to the concept of digital audio editing. You will learn how to edit digital audio with Peak's many powerful editing tools.

Editing Audio with Peak

Peak provides you with a powerful interactive, nondestructive environment for editing and manipulating audio. In this environment, not only are virtually all editing actions completely "undo-able" and "redo-able," but they can be performed interactively while audio playback is engaged.

Interactive Editing

Interactive editing means that you can cut, paste, loop, and process audio with DSP functions and Plug-Ins even while playing back the very audio that you are editing. For example, you can start playback, cut a selection of audio and paste or insert it later in the document, and when Peak reaches the location of the inserted audio, it will play it as if it were there all along. This revolutionary capability makes Peak a supremely fast and flexible audio production tool that makes conventional recording and editing methods, such as analog tape and a razor blade or Sound Designer, seem primitive and archaic by comparison.

Nondestructive Editing

Peak's nondestructive editing capabilities mean that the edits you perform to an audio document do not permanently change the original source recording until you finally save the document. Thus, you can cut, copy, paste, fade in and out of, and otherwise completely change a recording, and still be able to return back to square one - the original untouched state of the recording - up until the time that you save the document to disk. At that time, all edits are permanently written into the document.

Unlimited Undo and Redo

As an editing session progresses, Peak maintains an internal list of the edits that you perform. Changes that you make to an audio document are not permanently applied to the file until you ultimately save it. This is what gives Peak its unprecedented unlimited undo and redo capability. Through the use of the Macintosh's standard Undo and Redo commands, you can undo or redo your actions sequentially, or by using the Edits command, using a "playlist-style" editing event list. This is a very exciting technology that allows you to maintain complete creative freedom of choice-right up until the last moment before you save your project to disk.

5

The Audio Document Window

The heart of Peak's powerful editing capabilities is the audio document window. The audio document window provides you with a "window into sound," allowing you to make good use of both your eyes and ears to perform extremely precise editing tasks. The Audio Document window gives you a time-domain representation of sound, that is, you see the amplitude of the sound over time.

An audio waveform

An Audio Waveform

If you have never seen sound displayed in a visual format before, it may not be immediately obvious how to "read" an audio waveform. It is actually quite easy to navigate through a recording with a waveform as your road map. The peaks in the waveform are areas of high amplitude (loud spots). The valleys in the waveform are areas of low amplitude (quiet spots). If the audio material is music with a pronounced, regular beat, it is generally very easy to pick out where the beats are simply by looking for peaks. Using this information, and the guidelines given shortly in the "A Selection" section, you will be able to successfully locate and select a desired portion of the audio document and perform the edits that you wish. The cursor marks the current location, and also serves as an insertion point.

Vertical Scaling

Peak allows you to control the vertical magnification of audio waveforms. This feature is useful if you are editing and viewing a document with very quiet audio material.

To increase the vertical scaling magnification:

- Hold the Control key down and press the Up Arrow key.

To decrease the vertical scaling magnification:

- Hold the Control key down and press the Down Arrow key.

Audio Waveform Overview

Peak provides an Overview display of the entire audio waveform along the top of the screen under the menu bar. This provides you with a convenient visual reference of the overall document when you are editing only a portion in the audio document window. The highlighted area in the Overview display shows the area of the audio waveform currently visible in the audio document window. If desired, you can hide the Overview display to allow the audio document window to occupy more of the computer screen.

To show the Audio Waveform Overview:

- The Overview display appears along the top of the audio document window under the title bar. Check Show Overview in the Options menu, or click the disclosure triangle in the upper left corner of the audio document window. A check next to this item indicates it is enabled.

- To hide the Audio Waveform Overview, uncheck Show Overview in the Options menu, or click the disclosure triangle in the upper left corner of the audio document window.
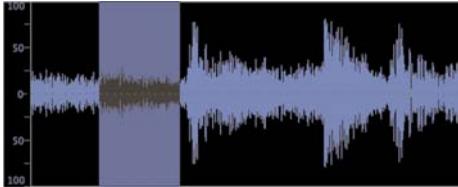
A waveform with selected audio

A Selection

A selection is just what it sounds like: a portion of audio that you have selected by clicking and dragging with the mouse. You must select audio in order to perform an editing action on it. To make good selections for editing, the best rule of thumb is to begin a selection just before a peak in the waveform and end it just after a peak in the waveform. In other words, try to make selections start and end in areas of low amplitude ("valleys" in the waveform).

It is also important, when possible, to begin and end a selection at a point where the waveform meets the zero crossing line (the center line through the waveform). This helps you avoid creating pops and clicks if you later cut or paste the audio because the point at which the waveform meets the zero crossing is a point of no amplitude in the sound wave. Pops and click generally only occur if you make a careless selection and begin or end on a portion of the sound wave where the amplitude is high (where the waveform is high above the center

point). Enable Auto-Snap to Zero in the Options menu to have Peak nudge your selection to the nearest zero crossings automatically.

The Zoom In function helps you make very precise selections by letting you zoom in to a higher magnification and select exactly the portion of the waveform you desire. Also, once you have made a selection, you can adjust the beginning or the end of the current selection by holding down the Shift key and clicking with the mouse. Your selection will be shortened or lengthened accordingly.

Channel Independent Processing

To select only the Left channel, move the cursor over it. The cursor will show a small "L" at the insertion point. To select only the Right channel, move the cursor over it. The cursor will show a small "R" at the insertion point. You can process one channel of an audio document using Peak's native DSP or third-party plug-ins.

> ⚠ *Peak allows you to select and process the left and right channels of a stereo file independently, but you cannot edit (i.e., Cut, Paste, Delete, etc.) the left and right channels of a stereo file independently.*
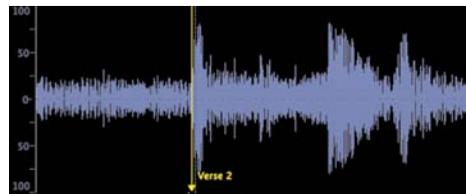
A waveform with a Marker (named "Verse2")

A Marker

A marker can be placed in a document to identify a point of importance. A marker appears as a line with a solid triangular base. Peak allows you to place markers into a document in order to mark a given location or region in a document for later selection, navigation, or editing. Markers can be moved, named and renamed, "anchored" to a particular location on a waveform, and given other attributes. The use of markers is covered in greater detail later in this chapter.

A waveform with loop markers

A Loop

A loop refers to a section of audio that is bounded on either side by loop markers. In the illustration above, the area that falls between the loop markers "beg loop" and "end loop" is looped. Loops are used to sustain or repeat a section of audio. They can be used for material that you intend to transfer to a sampler, or simply for playback within Peak itself. Peak allows you to create one loop per audio file.
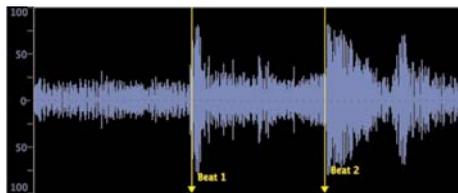
A waveform with 2 adjacent markers (named "Beat 1 and Beat 2)

Audio Between Adjacent Markers

Audio between adjacent markers refers to a section of audio that is bounded by markers. In the illustration above, the area that falls between the Beat #1 and Beat #2 markers is audio between markers. (Note: A selection of audio between markers is different than an audio Region. Regions are described later in this chapter, as well as in Chapter 6, Playlists and Audio CD Burning.)

Audio Info Area

In the lower left corner of each Peak Audio Document is the Audio Info Area. The Info Area shows the maximum amplitude, sample rate, bit resolution, file format, and file size of the audio file.

Audio Info Area

Clicking on the Max dB section of the Audio Info Area will open the Change Gain dialog, so that you can change the gain for the entire audio file, or the current selection. For more information on the Change Gain DSP function, please refer to Chapter 7, DSP. Clicking on any other portion of the Audio Info Area will open the Audio Info dialog.

Audio Info dialog

Selecting Audio Info from the Preference menu (⌘-I), will open the Audio Info dialog. The Audio Info dialog allows you to change the sample rate, duration, root key (for use in a sample playback instrument), and high and low key range. Note that by changing the sample rate,

the pitch and duration of the audio will be affected. (To change the sample rate of an audio document without changing the pitch, use the Convert Sample Rate command from the DSP menu, or click on the appropriate Toolbar icon.) The Audio Info dialog is described in more detail later in this chapter, as well as in Chapter 11: Menus.
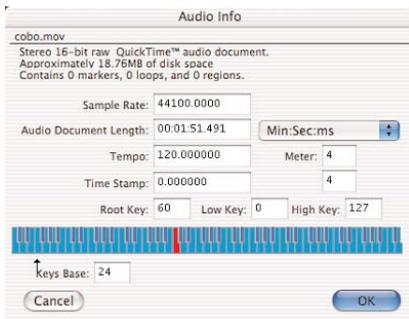
Audio Info dialog

Selecting Audio

In order to perform any type of editing action on an audio document, first you must select the portion of the document that you wish to modify. Peak has several techniques for making and modifying selections.

To make a selection with the mouse:

- Click the cursor at the desired location in the audio document and drag to select the desired range.

To extend or shorten a selection:

1. Make a selection with the mouse as explained above.

2. Hold down the Shift key and click on the end of the selection that you wish to modify.

3. Drag the mouse to extend or shorten the selection. When you are satisfied with the length of the selection, release the mouse.

To select audio between two markers:

1. Hold down the Command key (⌘) and click anywhere in between two markers. (Markers are explained in detail in the next section.) Peak selects the audio between the markers.

2. If there are additional markers in the document and you wish to extend the selection to encompass other portions of audio that fall between the markers, hold down the Shift key and the Command key, and click between another two markers. The selection will extend from the originally selected audio to the audio that you just added.

3. Repeat as desired to navigate to and select additional audio between markers.

To select audio between two markers with the Tab key:

1. Create markers at several locations in the document with one of the techniques explained in the next section.

2. Press the Tab key on your computer keyboard. Peak selects the portion of the waveform that lies between the first two markers in the document.

3. Press the Tab key again to select the portion of audio between the next two markers. (If you hold down the Shift key while tabbing the selection through the audio file, you can add each successive area to the selection.)

4. Repeat as desired to navigate to and select additional audio.

To select all audio in a document:

- Choose Select All from the Edit menu or press

  ⌘-A on your Macintosh keyboard.

Auditioning Audio

It is often useful to audition a selection along with just a bit of audio preceding or following it-without actually including this material in the selection itself. Peak's Auditioning command allows you to do this by specifying a desired amount of pre-roll or post-roll when you play the selection.

To audition audio with pre-roll or post-roll:

1. Choose Auditioning from the Preferences dialog. The Auditioning dialog appears.
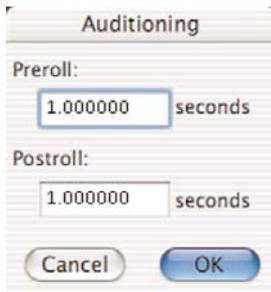
The Auditioning dialog

2. Enter the desired amount of pre-roll and post-roll and click OK.

3. Click the cursor in the audio document and drag to select the desired range.

4. Press Control-Spacebar. Peak plays the selection, adding the amount of pre-roll and post-roll that you specified.

Scrubbing

Dynamic Scrubbing

Peak provides a unique audio auditioning technique called dynamic scrubbing. This feature is very useful for precisely pinpointing and selecting a desired location in an audio document. Dynamic scrubbing allows you to drag the mouse forward or backward over a waveform while Peak plays a short loop (between 10 and 600 milliseconds) at the scrub location. When you have found the location you are looking for, you can commence editing. Peak allows you to choose the length of this playback loop with the Dynamic Scrub Time command in the Options menu. Peak provides two type of dynamic scrubbing: dynamic shuttle scrubbing and dynamic jog scrubbing. Both are described below.

To select a loop duration for dynamic scrubbing:

- Choose Dynamic Scrub Time from the Options menu, and choose a duration from the hierarchical submenu. Typically, a value of between 40 to 80 milliseconds works well.
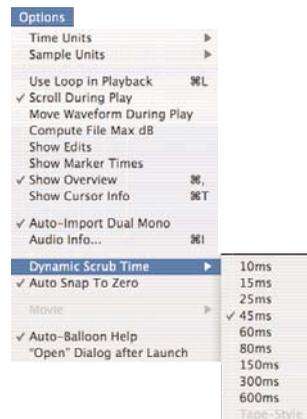
Setting the Dynamic Scrub feature's loop time

To use dynamic "Shuttle-type" scrubbing:

1. Hold down the Control key and click and drag the mouse across an area of the audio document in the audio document window. As you drag the mouse, Peak plays a short loop of the audio at the insertion point. You can control the tempo and direction (forward or backward) of playback by dragging the mouse slower or faster, forwards, or backwards.

2. Release the mouse button to stop scrubbing. The insertion point will be exactly where you left off scrubbing.

3. To make a selection starting at the current scrub point, stop scrubbing, hold down the Shift key, and click the mouse to extend the selection from the insertion point to the desired location.

Jog Scrubbing

Peak provides a variation of the dynamic scrubbing feature which is similar to a technique known in recording studios as jog scrubbing. With this technique, Peak actually engages playback and moves through the file at its normal pace, but allows you to control the playback point by dragging the mouse. You can control the direction (forward or backward) of playback by dragging the mouse forwards or backwards. This scrubbing mode affords a greater degree of control when you are "zoomed out" in the audio document window.

To use dynamic "jog" scrubbing:

1. Hold down the Control key and Option key and drag the mouse across an area of the audio document in the audio document window. As you drag the mouse, Peak engages playback while it loops a short portion of the audio at the insertion point. Dragging the cursor farther away from the current

insertion point increases the velocity of scrubbing.

2. Release the mouse button to stop scrubbing. The insertion point will be exactly where you left off scrubbing.

3. To make a selection starting at the current scrub point, stop scrubbing, hold down the Shift key, and click the mouse to extend the selection from the insertion point to the desired location.

Since jog scrubbing mode is engaged by pressing the Option key in combination with the Control key, it is possible to toggle back and forth between jog and shuttle modes simply by pressing or releasing the Option key.

Tape-Style Scrubbing

In addition to dynamic scrubbing feature, Peak provides tape-style scrubbing. To enable tape-style scrubbing, set the Dynamic Scrub Time under the Options menu to Tape-Style.

> ⚠️ *Tape-style Scrubbing requires using the Mac OS X Audio HAL audio engine. To set this, go to the Audio menu>Sound Out and choose Mac OS X Audio HAL.*

To start tape-style scrubbing:

• Hold down the Control key on your keyboard, and then click and drag the mouse at the location where you wish to begin scrubbing.

To deactivate tape-style scrubbing:

• Release the mouse and Control key.

To control tape speed in tape-style scrubbing:

1. As you drag the mouse towards the right, scrubbing speed will increase.

2. As you drag the mouse toward the left, scrubbing will slow down.

3. If you drag the mouse to the left of the point where you started scrubbing, the scrub direction will change from forward playback to backwards playback.

The playback bar will show the scrubbing speed at the top of the playbar. Playback speed can vary from minus four times (-4.0x) to four times (+4.0x) original playback speed.

Using Unlimited Undo and Redo

Peak maintains an internal list of the edits that you perform during the course of an editing session. These changes are not permanently applied to the file until you save it. This gives Peak unlimited undo and redo capability. Through the use of the Macintosh's standard Undo and Redo commands, you can undo and redo your actions sequentially; or by using the Edits command, using a "playlist-style" editing event list. This powerful capability allows you to maintain complete creative freedom of choice-right up until the last moment before you save your project to disk. The only limitation in using Redo is that if you insert a new action when a redo action is available, you will no longer be able to redo. Remember, as soon as you perform an editing action other than Undo in Peak, Redo is no longer available.

To undo an action:

1. Perform an edit (such as cutting audio or moving a

marker).

2. Choose Undo from the Edit menu (⌘-Z) or Toolbar. The action is undone.

3. You can continue undoing actions until you return to the original state of the audio document (the state at which it was last saved). When there are no actions left to undo, the Undo menu item will appear grayed out.

To redo an action:

1. If you wish to redo the action that was undone, choose Redo from the Edit menu (⌘-Y) or Toolbar. The action is redone.

2. You can continue redoing actions until there are none left to redo. When there are no actions left to redo, the Redo menu item will appear grayed out.

Using the Edits Command to Undo a Series of Actions

Peak's Edits command provides you with a second unique and powerful method of undoing virtually any number of editing actions performed on an audio document since you last saved it. You can think of the Edits command as a kind of "event list-based" undo with a list of all your editing actions since you last saved. Using this list, you can navigate back in time to the point at which you performed a particular edit, and if you wish, undo it. Once you have returned to an earlier state in the project, you are free to start editing from that point on.

> ⚠️ *Be aware that if you do go back to a past action and perform a different action at that state in the project, any edits that originally occurred after will be gone, and you won't be able to redo them.*

1. Perform several edits. (Don't use the Save command or you won't be able to undo any edits that occurred before you saved.)

2. Choose Edits from the Edit menu. A dialog appears listing the edits you have performed since you last saved the document.

3. In the list, double-click on the description of the action you wish to return to (or click the Revert to Item button). Peak returns the document to the state it was in at the time of that edit.

4. If you wish to undo a particular action, locate the action that immediately precedes the one you wish to undo, and double-click it. Peak returns the document to that state.

5. When you have finished, click Done.

Please note that Peak will remain in the state of the action that you last selected in the Edits dialog. If you begin new edits from this point, you will change the original sequence of edits that followed this point in the editing session.
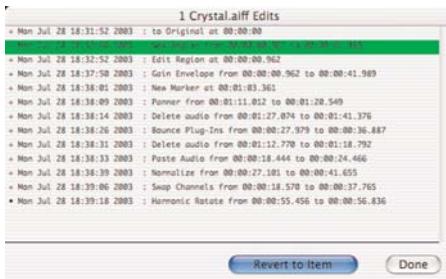
The Edits dialog

Essential Editing Functions

Peak supports all of the Macintosh's essential editing functions such as cut, copy, and paste and provides several more specifically designed for audio editing. This section explains how to use each of these functions.

Because Peak allows you to have multiple audio documents open at the same time, it is possible to conveniently cut, copy, paste, and insert audio between documents. This makes combining material from several audio documents very fast and easy.

Scratch Disks

Because audio data can be very large, Peak utilizes a portion of your hard disk's free space to hold audio data that has been cut or copied, as well as for temporary or scratch files for undo purposes. If you have more than one hard drive attached to your Macintosh, the Scratch Disks command in the Preference menu allows you to choose the hard drives (or "scratch disks") that you wish to use for these temporary files. Peak allows you to select which disk you want to have as your default, or "Primary" disk for this purpose—ideally you would select the disk that has the most free space.

The Scratch Disks dialog

If you are connected to a file server, you can utilize available storage on the server by clicking the Allow Servers checkbox (that is if you have a very fast server connection). Any available servers will then appear in the Scratch Disks pop-up menu. This is recommended only if you have access to a high-speed ethernet, Media Net, or other fast server.

Clearing the Clipboard to Reclaim Disk Space

If you no longer need the clipboard contents, you can free up the disk space occupied by the clipboard by choosing the Clear Clipboard command from the Edit menu.

Cutting Audio

The Cut command (⌘-X) allows you to cut a selected range out of a audio document. Audio that occurs after the cut slides over to fill in the gap. By cutting and pasting "pieces" of audio, you can freely rearrange material in an audio document. This can be a powerful tool for creating audio remixes for music-oriented applications, as well as an indispensable tool for general sound design tasks. When you cut a selection, the Macintosh holds the cut audio data in its internal memory (the Clipboard) in case you wish to paste it elsewhere. Because all real time editing you do with Peak is nondestructive, the audio isn't actually removed from the original audio document until you finally save the file to disk with the Save command. At that time, all edits are saved and any changes that you have made are permanently saved to the audio document.

To cut a selection:

1. Click the cursor at the desired location in the audio document and drag to select the desired range.

2. Choose Cut from the Edit menu (⌘-X) or Toolbar.

3. The selected range is removed from the audio document(s) and held on the Clipboard. Audio occurring after the cut slides over to fill in the gap.

Deleting Audio

If you wish to remove a section of audio from an audio document without using the Cut command, you can use the Delete key, or the Delete button on the Toolbar. As with the Cut command and other editing functions, the audio isn't actually removed from the original audio document until you save the file to disk.

To delete a selection:

1. Click the cursor at the desired location in the audio document and drag to select the desired range.

2. Press the Delete key, or click the Delete button on the Toolbar.

3. The selection is removed from the audio document. Audio occurring after the deleted section slides over to fill in the gap.

Copying Audio

The Copy command (⌘-C) copies the current selection to the Macintosh's Clipboard (or internal memory buffer) so that you can paste it, insert it, or use it with optional "Clipboard-based" processing such as Add,

Convolve, Mix, Modulate, and ImpulseVerb. As with the Cut command, copying and pasting "pieces" of audio, allows you to freely rearrange material in a document. This can be a powerful tool for creating audio remixes for music-oriented applications, and an indispensable tool for sound design.

To copy a selection:

1. Click the cursor at the desired location in the audio document and drag to select the desired range.

2. Choose Copy from the Edit menu (⌘-C) or Toolbar.

3. The selection is copied to the Clipboard.

At this point, you can use either the Paste, Insert, or Duplicate commands to place the copied audio into an audio document. Each of these commands are explained below.

Pasting Audio

The Paste command (⌘-V) allows you to paste the contents of the Clipboard into a location that you choose by placing an insertion point. Pasting audio deletes any selected audio and inserts the clipboard audio at the insertion point. Blending can be used with the Paste command if you have made a selection-the Pasted audio will be crossfaded with the audio on either side of the selection according to the Blending Envelope and Duration.

By cutting and pasting pieces of audio, you can freely rearrange material in an audio document. In musical applications, this gives you the freedom to entirely "rewrite" compositions by changing the order of things,

repeating desired sections, and so on. In sound design applications, this gives you the power to "compose" with sound by creating audio collages.

To paste audio into an audio document:

1. Click the cursor at the point where you wish to paste the audio data in an audio document or make a selection of audio you want to delete and replace with the contents of the clipboard.

2. Choose Paste from the Edit menu (⌘-V) or Toolbar.

The Clipboard contents are pasted into the audio document(s), beginning immediately after the insertion point. Any selected audio at the location of the paste is overwritten when the pasted data is inserted into the audio document.

Replacing Audio

The Replace command allows you to paste audio data over existing audio-to paste audio into an audio document without pushing all data to the right of the insertion point farther to the right (later in time) to accommodate the newly pasted audio. The Replace command is useful for "laying over" a portion of audio while maintaining the timing of the original document.

To replace audio into an audio document:

1. Click the cursor at the point where you wish to replace the audio data in an audio document.

2. Choose Replace from the Edit menu or Toolbar. All data to the right of the replaced audio maintains their time position.

Inserting Audio

The Insert command (⌘-D) allows you to paste audio data into an audio document without overwriting any existing data at the insertion point. When you paste data with the Insert command, all data to the right of the insertion point or selection start is pushed farther to the right (later in time) to accommodate the newly pasted audio. The Insert command is one of Peak's most useful tools for restructuring the contents of an audio document. It is particularly good for "composing on the fly" since it allows you to cut and insert pieces of audio-musical phrases, riffs, or simply textural sounds-to create a composition or soundscape.

To insert audio into an audio document:

1. Click the cursor at the point where you wish to insert the audio data in an audio document.

2. Choose Insert from the Edit menu (⌘-D) or Toolbar. All data to the right of the insertion point is pushed farther to the right (later in time) to accommodate the newly pasted range.

Duplicating Audio

The Duplicate command allows you to paste multiple copies of audio data into an audio document without overwriting any existing data at the insertion point. When you paste data with the Duplicate command, all data to the right of the insertion point or selection start is pushed farther to the right (later in time) to accommodate the newly pasted audio. The Duplicate command allows you to specify how many times you would like to Duplicate the audio data contained in the clipboard. The Duplicate command is very useful for creating longer audio documents that need to repeat a certain piece of audio, such as creating a 4 bar drum loop out of a 1 bar drum loop.

To Duplicate audio:

1. Select a range of audio, and choose Copy from the Edit Menu (⌘-C).

2. Click the cursor at the point you wish to insert duplicate copies of the audio selected in step 1.

3. Choose Duplicate from the Edit menu.

4. Use the Duplicate slider to indicate how many copies should be inserted, or type in the number of desired copies.

5. Click the OK button. All data to the right of the insertion point is pushed farther to the right (later in time) to accommodate the newly pasted range.

Cropping a Selection

The Crop command (⌘-`) allows you to make a selection in an audio document and quickly and easily remove all other audio from the audio document except the selection. The Crop command is a particularly useful tool for editing material to be used as samples or sound effects, since it allows you to isolate and save just the desired portion of a recording.

To crop a selection:

1. Click the cursor at the desired location in the audio document and drag to select the desired range.

2. Choose Crop from the Edit menu (⌘-`). All audio but the selection is removed from the audio document.

New Document from Selection

The New Document from Selection command will automatically create a new Audio Document containing the selected audio from the source document.

To create a new document from a selection:

1. Make a selection in any open audio document that you want to have as its own document.

2. Choose Document from Selection from the New submenu under the File menu (Control -N).

3. A new audio document will be created with the selected audio.

Silencing a Selection

The Silence command (⌘-E) replaces the selected audio in the audio document's selection with silence. This feature is very useful for silencing nonessential portions of a recording that contain an unusual amount of noise. This can be used very successfully with spoken material such as dialog or narration to remove noise between words or during pauses in speech. It can also be used to remove pops or clicks that occur in such material.

To silence a selection:

1. Click the cursor at the desired location in the audio document and drag to select the desired range.

2. Choose Silence from the Edit menu (⌘-E). The selected audio is replaced with silence.

Inserting Silence into a Document

The Insert Silence command allows you to insert a specific amount of silence into an audio document at the current insertion point. This feature is very useful for inserting pauses of a desired duration into a recording, and can be particularly useful in adjusting the timing or rhythm of spoken material such as dialog or narration. When you choose this command, Peak will prompt you to enter the amount of silence you wish to insert. You can enter this value in samples, milliseconds, or seconds. All audio occurring after the insertion point is moved later in time by the amount of the silence that you insert.
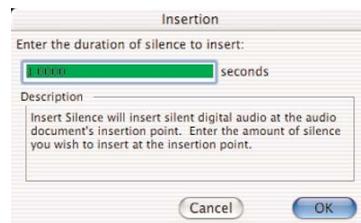
The Insert Silence dialog

To insert silence of a specific duration into a document:

1. Click the cursor at the desired location in the audio document.

2. Choose Insert Silence from the Edit menu.

3. In the dialog that appears, enter the amount of silence that you wish to insert into the audio document. Peak inserts the specified amount of silence into the document.

Show Edits

When you enable the Show Edits command Peak indicates areas of an audio document that you have edited by enclosing these areas with hatched lines. This provides you with a convenient visual reference to portions of the document that have been affected by your editing actions. Once you save a document, the edits are saved, and these indicators will no longer appear.

To enable Show Edits:

- Choose Show Edits from the Options menu. A check next to this item indicates it is enabled.

To disable Show Edits:

- Choose Show Edits again from the Options menu. The absence of a check next to this item indicates it disabled.

Using Crossfades and Blending to Smooth Edits

Blending is an automatic crossfade function with a user-editable envelope. Peak can apply blending to areas of an audio document where they are modified by cutting, deleting, pasting, or other editing processes in order to smooth abrupt transitions between waveform amplitudes. It can be very useful for creating a smooth transition between edits that would otherwise sound too abrupt. If you are going to edit (i.e., Cut, Paste, Delete, etc.) a document, you may wish to enable blending to smooth things out a bit. You can toggle blending on or off by clicking the Blend enable/disable button in the Audio Document Window, or by pressing the Caps Lock key on your keyboard.

The Blending Enable/Disable button in the Audio Document Window
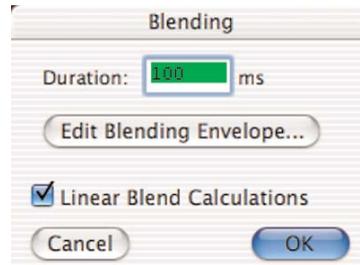
The Blending dialog

Be aware that Blending can interfere with certain DSP processes available under Peak's DSP menu, such as Fade In/Out and Normalize. You will typically only want to enable Blending only when you intend to make an edit in which Blending may be desirable.

To enable blending:

- Click the blending button in the audio document window, or press the Caps Lock key on your keyboard. The blending button will light up in blue when blending is turned on.

To disable blending:

- Click the blending button in the audio document window, or press the Caps Lock key on your keyboard. The blending button will not be illuminated when blending is turned off.

To set blending parameters:

1. Choose Blending from the Preferences dialog.

2. Enter a value in milliseconds in the Duration field. Peak will apply a crossfade of this duration across the edit.

3. If you wish to edit the shape of the crossfade that the blending function applies, click the Edit Blending Envelope.

4. Peak's Crossfades are calculated logarithmically to preserve volume levels for crossfaded material. If you want Peak to calculate the Blending Crossfade linearly, check the Linear Blend Calculations checkbox.

5. Click OK when you have finished.
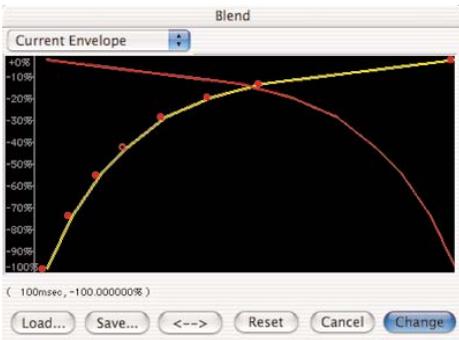
The Blending Envelope Editor

To select and edit the blending envelope:

1. Choose Blending from the Preference dialog and click the Edit Blending Envelope button. The Blending Envelope Editor appears. The envelope shape shown here represents the shape of the crossfade. Peak also comes with several commonly used preset envelopes that appear in the pop-up at the top of all of Peak's Envelope Editing windows (see also Editing a Fade In/Out Envelope). These

are stored in the Peak Envelopes folder in your Peak folder.

2. Click anywhere on the line and a new moveable "breakpoint" will appear.

3. Drag the breakpoint to the desired location.

4. Continue creating and dragging breakpoints until you have created the envelope that you desire. If you wish to delete a breakpoint, click on it with the cursor and press the Delete key on your computer keyboard.

5. If you wish to reverse the shape of the envelope you have created, click the "<->" button. This creates a mirror image of the envelope.

6. If you would like to save your custom envelope for later use, click on the Save button before exiting the envelope editor. Your custom envelopes will be stored in the Peak Envelopes folder, and will appear in the pop-up at the top of the envelope editor.

7. When you are satisfied with your new envelope shape, click Change to confirm your edits and close the envelope editor. Peak will use this envelope until you change it again.

> ⚠️ *Note that the Blending Envelope will only be applied to an edit if it is configured prior to making the edit.*

> ⚠️ *If Linear Blend Calculations is checked in the Blending dialog, the Equal Power X-fade envelope is very effective for a smooth crossfade that will not result in a dip in the energy of the audio data.*

Creating Fade Ins and Fade Outs

Peak allows you to create fade ins or fade outs at any point in an audio document. Fade ins/outs can be very useful for smoothly fading in or out of an audio document, or for fading out of one type of audio material into another. Very short fade ins can also be useful for smoothing or removing clicks and pops in a recording. Peak allows you to control the exact "shape" of the fade in/out by providing you with preset envelope shapes as well as very precise user-definable envelope controls for the fade. Peak also comes with several commonly used preset envelopes that appear in the pop-up at the top of the Envelope Editing windows. These are stored in the Peak Envelopes folder in your Peak folder.

To create a Fade In:

1. Click the cursor at the desired location in the audio document and drag to select the range you desire. The Fade In will be applied to the audio within this selection.

2. Choose Fade In Envelope from the Preferences dialog.

3. In the dialog that appears, you can use the default envelope, edit the envelope, or load any envelopes included with Peak or that you have created yourself. ("Editing Fade In/Fade Out Envelopes" is covered in the next section.) Click Change to apply the new envelope.

4. Choose Fade In from the DSP menu. Peak applies the Fade In to the selection you have made in the audio document.

5. To hear the completed Fade In, press Option-Spacebar. You will hear the selected audio complete with your Fade In.

To create a Fade Out:

1. Click the cursor at the desired location in the audio document and drag to select the range you desire. The Fade Out will be applied to the selected audio.

2. Choose Fade Out Envelope from the Preferences dialog.

3. In the dialog that appears, you can use the envelope, create your own, or load any envelopes that you have saved to your hard disk. ("Editing Fade In/Fade Out Envelopes" is covered in the next section.) Click Change to apply the new envelope.

4. Choose Fade Out from the DSP menu. Peak applies the Fade Out to the selection you have made in the audio document.

5. To hear the Fade Out, press Option-Spacebar. You will hear the selected audio complete with your Fade Out.

Editing a Fade In/Fade Out Envelope

Peak allows you to control the exact shape of Fade Ins/Outs by providing you with controls for editing the Fade In/Out envelope. These are found in the Fade In Envelope and Fade Out Envelope sections in the Preferences dialog.

To edit and save a Fade In/Fade Out envelope:

1. Choose Fade In Envelope (or Fade Out Envelope) from the Preferences dialog. The Fade Envelope Editor appears. The envelope shape shown here represents the shape of the fade, and overlays the selected audio to show where the curve is graphically applied to the waveform representation of the audio.
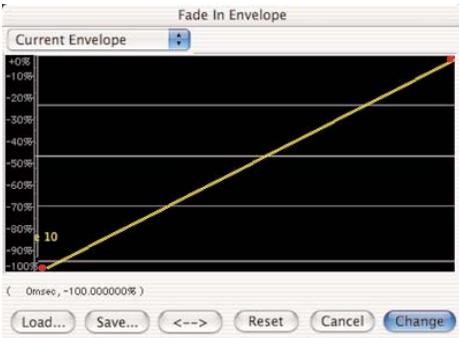
The Fade Envelope Editor (a Fade In is shown)

2. Click anywhere on the line and a new moveable "breakpoint" will appear.

3. Drag the breakpoint to the desired location on the envelope's curve.

4. Continue creating and dragging breakpoints until you have created the fade envelope that you desire. If you wish to delete a breakpoint, click on it with the cursor and press the Delete key on your computer keyboard.

5. If you wish to reverse the shape of the envelope you have created, click the "<->" button. This creates a mirror image of the envelope.

6. If you would like to save your custom envelope for later use, click on the Save button before exiting the envelope editor. Your custom envelopes will be stored in the Peak Envelopes folder, and will appear in the pop-up at the top of the envelope editor.

7. When you are satisfied with your new envelope shape, click Change to confirm your edits and close the envelope editor. Peak will use this envelope every time you apply a Fade In (or Fade Out) until you change it again.

⚠ *Note that the Fade In/Fade Out Envelope will only be applied to a selection if it is configured prior to applying the Fade In/Fade Out DSP function.*

To load a Fade In/Fade Out envelope:

1. Choose Fade In Envelope (or Fade Out Envelope) from the Preferences dialog. The envelope editor appears.

2. Click the Load button.

3. In the dialog that appears, locate and select the fade envelope that you desire, and click Open.

4. Click Change to confirm this new envelope and close the envelope editor. Peak will use this envelope until you change it again.

Creating and Using Markers

Peak has a very powerful set of features to control the placement and modification of markers. Markers are locations in an audio document that you define as important. By marking specific locations in a recording, you can navigate easily to a location for selection, editing or playback purposes.

Markers can also be made into loops. Loops are used to sustain or repeat a section of audio. They can be used for material that you intend to transfer to a sampler, or simply for playback within Peak itself. Peak allows you to create one loop per audio file. Loops are covered in detail later in this chapter.
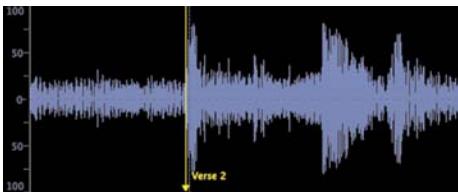
A marker in the Waveform Display
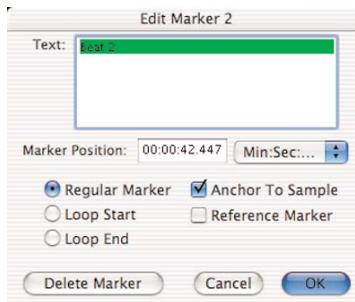
The Edit Marker dialog

Creating Markers

As we'll describe in detail on the next few pages, there are a number of ways to create markers: by dropping them "on the fly" during playback, inserting them during recording with Notepad Cues, defining them with the mouse when playback is stopped, creating markers using the Threshold DSP command, or using the Markers from Tempo command to insert multiple markers at regular intervals. Of the various ways to create markers, the mouse method is perhaps the more precise. However, since it is possible to fine tune the location of a marker at any time by dragging it, (or by using the Edit Marker dialog, explained later) all methods work equally well - the method you choose to insert markers will depend largely on the task at hand.

⚠️ *Remember that if Auto Snap To Zero is enabled the insertion point will snap to the nearest zero-crossing. This will cause your marker be placed at the nearest zero crossing when you use the mouse to create or place a marker.*

Once you have created a marker, you can assign or edit the marker's attributes in the Edit Marker dialog. Double-click the triangular base of the marker to open the Edit Marker dialog.

Text

You may wish to give markers meaningful names (up to 256 characters long) based on their locations in an audio document. Peak gives markers default numeric names based on the name of the audio document and the order in which the marker was defined. To name or rename a marker, simply type the new name in to the Text field of the Edit Marker dialog.

⚠️ *You can easily find any marker, region, or loop that you have named by simply typing the first few letters of its name. For example, if you want to locate a marker called "Solo," just type s-o-l, and Peak will automatically scroll to the marker called "Solo." If you hit Enter or Return after typing the characters, Peak will also automatically place the insertion point at that marker. If more than one marker matches the letters you type in, Peak will locate the first marker with that name. (Note that numerical marker name entries will only work from the keypad, not the numbers keys along the top of your keyboard.)*

Marker Position

The Marker Position field allows you to move a marker to

a specific time location in an audio document by entering the desired value. The pop-up menu to the right of this field allows you to choose a time format (samples, minutes:seconds:miliseconds, etc.) for the value that you enter in the Marker Position field.

Marker, Loop Start, and Loop End

These three radio-style buttons allow you to define whether the marker is a regular marker or a loop marker. If you choose to designate the marker as loop marker, you can define it as either the loop start or the loop end by clicking on the corresponding radio button. Remember, Peak allows only one loop per audio file.

Anchor To Sample

When you insert or delete audio that is near a marker, you may want the marker to move with that particular location on the waveform. This will compensate for the insertion or deletion, so that the marker remains with the particular portion of audio you want it to be associated with. By enabling the Anchor feature for a marker, you can assure that Peak will "tie" the marker to a location on a waveform, causing it to stay with that location even when audio is inserted or deleted into the document. By default, Peak enables this feature for markers, loops and regions.

Reference Point

By defining a marker as a reference point, you can use the marker as a reference when you make selections or move other markers. Selecting or dragging the marker will then automatically display the distance to the closest reference marker in whatever time format (samples or seconds) is currently selected in the Peak application. This may be useful, for instance, if you know that you want a particular sound event (such as a car door slam) to happen a certain number of seconds before or after another sound event (such as a tire squeal).

Delete Marker

The Delete Marker button allows you to remove the currently selected marker from an audio document.

The following section explains how to create markers and define their attributes.

To create a marker when playback is stopped:

1. Click the mouse at the desired location in the audio document. A dotted vertical line appears, indicating the insertion point.

2. Press ⌘-M on your computer keyboard or choose New Marker from the Action menu or Toolbar. Peak will drop a marker at that location.

To create a marker during playback:

1. Begin playback of an audio document.

2. At the desired point during playback, press ⌘-M on your computer keyboard. Peak will drop a marker at that location.

3. Repeat as desired as playback continues. Each marker will appear at the appropriate location in the audio document window.

To create a marker using dynamic scrubbing:

1. Hold down the Control key (or Control-Option for jog-type scrubbing) and drag the mouse across the desired location to scrub playback.

2. At the desired point during playback, release the mouse to stop scrubbing.

3. Press ⌘-M on your computer keyboard. Peak will

5

drop a marker at that location.

To name a marker or set other marker attributes:

1. Double-click on the triangular base of the marker that you wish to edit. The Edit Marker dialog appears.

2. Enter a name for the marker.

3. Change other attributes of the marker as desired. For an explanation of each of these attributes, refer to the beginning of this section.

4. When you have finished, click OK to close the Edit Marker dialog. The marker now has the attributes you selected.

To move a marker to a new location:

1. Click on the triangular base of the marker and drag it to the desired location.

2. To make a marker's position snap to a zero-crossing (the point at which a waveform crosses the center phase line) as you drag it, hold down the Shift key while you drag.

To move a marker to a new location numerically:

1. Double-click on the triangular base of the marker. The Edit Marker dialog appears.

2. Choose the desired time units (samples, seconds, or milliseconds) from the time format pop-up menu.

3. In the Position field, enter the precise time location that you wish to move the marker to.

4. Click OK to close this dialog. Peak moves the marker to the location you entered in the dialog.

To nudge a marker or a selection of markers to a new location:

1. Make a selection that includes the marker (or markers) that you wish to nudge.

2. Choose Nudge Markers from the Action menu or Toolbar. The Nudge Markers dialog appears.
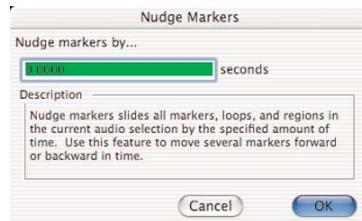
The Nudge Markers dialog

3. In the Nudge Markers by field, enter the number of seconds (positive or negative) by which you wish to nudge the marker.

4. Click OK to close this dialog. Peak nudges the marker by the value you entered in the dialog.

To delete a marker:

1. Double-click the triangular base of the marker. The Edit Marker dialog appears.

2. Click the Delete button. The marker is deleted from the audio document.

3. Click OK to close the Edit Marker dialog.

To delete markers in a Selection:

1. Make a selection in the audio document that contains the markers you want to delete.

2. Choose Delete All Except Audio (Option-Delete) from the Action menu and all markers, regions, and loops in the selection will be deleted.

Regions

Regions are portions of an audio document defined by Region Markers using the New Region command from the Action menu (⌘-Shift-R) or Toolbar. Regions present in currently open audio documents will be listed in the Contents window.

Peak's use of Regions will be discussed further in the chapter on Playlists and CD Burning.

⚠️ *Regions can be saved only into AIFF and Sound Designer II files created by Peak. However, Peak will also read Regions stored from other programs in Sound Designer II files. The method Peak uses to store Regions in AIFF files is specific to Peak and is not necessarily supported by other software applications. If you are using Regions with other programs, you will want to store your files as Sound Designer II files.*
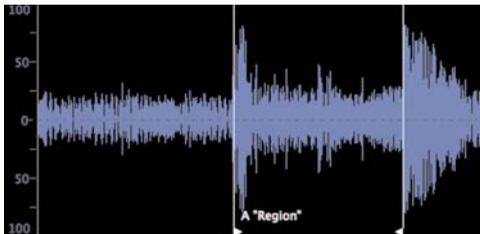
An audio Region (named "A Region")

To define a new Region:

1. Make a selection in an opened audio document.

2. Choose New Region from the Action menu (⌘-Shift-R) or Toolbar.

3. Type the name of the Region and click OK. The new Region will appear in the audio document.

To modify the length of the Region by changing the start or end:

• Drag the start or end marker of the Region in the audio document window.

To move a Region without changing its length:

• Hold down the Option key and drag either the start or end marker of the Region.

To edit a Region's start, end, or length manually:

1. Double-click on either the start or end marker of the Region in the audio document window. The Edit Region dialog will appear.
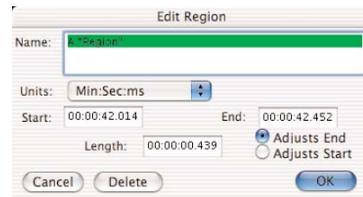
The Edit Region dialog

2. Enter new values for Start, End, or Length times, then click OK.

To change the name of a Region:

1. Double-click on either the start or end marker of the Region in the audio document window. The Edit Region dialog will appear.

2. Type the new name of the Region into the dialog and click OK.

To locate a Region:

• Double-click the region's name in the Contents Palette or in the audio document window's File Drawer. The Region will automatically snap into view, with the region selected.

Creating Loops

If you're editing music or other rhythmically-based material, it is generally a good idea to test a selection to make sure it contains an even number of beats before you cut, copy, or paste it. A good way to do this is to loop the selection and listen to the loop as it plays. As described in the next section, Peak includes Loop Surfer, which can automate the process of finding a rhythmically "correct" length of audio to loop, assuming you know the tempo and the number of beats you wish to loop. You can also use the Loop Tuner, found in the DSP menu, to adjust the loop start and end points. The Loop Tuner is also described in the next section.

Loops are useful in material that you plan to transfer to a sampler. Loop markers created with Peak are recognized by samplers as sustain loops. Peak allows you to create only one loop per audio document.

To play a loop in Peak, select Use Loop in Playback command (⌘-L) from the Options menu or click the loop button in the Transport window, begin playback, and when Peak reaches the loop, it will continue to repeat until you stop playback. If Use Loop in Playback is not enabled, Peak will simply play right through the loop to the end of the audio document or selection.

To create a loop from a selection:

1. Click the cursor at the desired location in the audio document and drag to select the range you want.

2. Choose Loop This Selection from the Action menu (⌘-Shift-"-") or Toolbar. Your selection is now looped. Loop markers appear at the beginning and end of the loop.

3. To listen to the loop, choose the Use Loop in Playback command (⌘-L) from the Options menu (a check next to this menu item indicates it is enabled), or click the Loop button in the Transport window, and start playback by pressing the Spacebar on your keyboard.

4. You can interactively fine tune a loop by dragging the loop start or end markers while loop playback is engaged. As you drag a loop marker to a new location, Peak will adjust the playback loop to reflect the changes you make. You can also use the Loop Tuner to call up a dialog that allows you to visually fine tune the loop, and even play the loop while adjusting it to listen to the changes.

To change regular markers into loop markers:

1. Create markers in a audio document.

2. Double-click on the triangular base of the marker that you wish to define as the loop start point. The Edit Marker dialog appears.

3. Click the Loop Start button and click OK. The marker becomes a Loop Start marker.

4. Double-click on the triangular base of the marker that you wish to define as the loop end point. The Edit Marker dialog appears.

5. Click the Loop End button and click OK. The marker becomes a Loop End marker. You have now defined a loop in your audio document.

To move a pair of loop markers together:

•   Hold down the Option key and drag one of the loop markers to the desired location. Both markers move in tandem as you drag.

•   Select the loop by choosing Select Loop from the Edit menu (⌘-"-"), or by command-clicking

between the two loop markers, and then clicking the Horizontal Lock button in the audio document window. Both markers move in tandem as you drag. Be sure to turn off Horizontal Lock to move the loop markers independently.

The Horizontal Lock button

To listen to the loop only:

1. Choose Select Loop (⌘-"-") from the Edit menu to select the loop.

2. Make sure loop playback is enabled using the Use Loop in Playback command from the Options menu (a check next to this menu item indicates it is enabled), or by pressing the Loop button on the Cursor Palette.

3. Press the Spacebar to begin playing back the loop.

Crossfading Loops

Peak allows you to crossfade the start and end points of a loop. Crossfading a loop can be very useful for smoothing the transition between the end of the loop and its beginning as it repeats. Peak allows you to control the envelope of the crossfade, the duration, and other parameters in the Crossfade Loop dialog.

To Crossfade a Loop:

1. Create a new loop or choose and existing loop.

2. Select the loop by ⌘-clicking between the loop markers.

3. Choose Crossfade Loop from the DSP menu or the Toolbar.

4. The Crossfade Loop dialog appears.
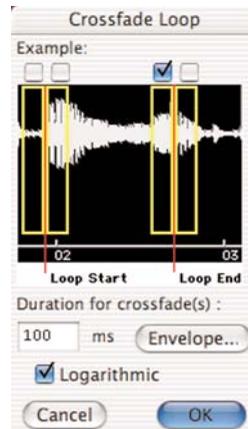
The Crossfade Loop dialog

5. Choose where you want crossfades to be applied using the check boxes along the top of the Crossfade Loop dialog. Typically, the default for this works well – for more information, see the Crossfade Loop section of Chapter 7, DSP.

6. Enter the Duration for the crossfade(s) in milliseconds.

7. Check whether or not you want the crossfade calculated logarithmically or not (i.e., linearly).

The Crossfade Loop dialog is not available in Peak LE.

The Crossfade Loop dialog is not available in Peak DV.

To edit a Crossfade Loop Envelope:

1. Click on the Envelope button in the Crossfade Loop dialog and the Blending Envelope Editor appears.
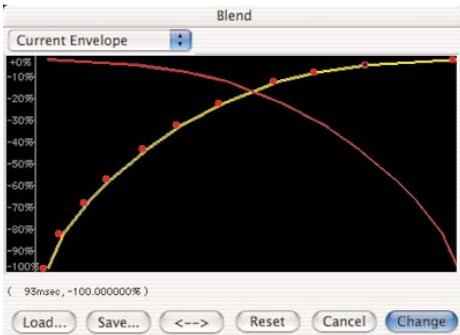
The Bending Envelope Editor

⚠ *Note that this is the same Blending Envelope Editor that is accessed from the Blending dialog.*

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2. Click anywhere on the line and a new moveable "breakpoint" will appear.

3. Drag the breakpoint to the desired location.

4. Continue creating and dragging breakpoints until you have created the envelope that you desire. If you wish to delete a breakpoint, click on it with the cursor and press the Delete key on your computer keyboard.

5. If you wish to reverse the shape of the envelope you have created, click the "<->" button. This creates a mirror image of the envelope.

6. If you would like to save your custom envelope for later use, click on the Save button before exiting the envelope editor. Your custom envelopes will be stored in the Peak Envelopes folder, and will

appear in the pop-up at the top of the envelope editor.

7. When you are satisfied with your new envelope shape, click Change to confirm your edits and close the envelope editor. Peak will use this envelope until you change it again.

To hear the completed crossfade, choose Select Loop from the Edit menu, select Use Loop in Playback from the Options menu or click the Loop button on the Toolbar, and press the Spacebar. You will hear the loop, complete with your crossfade.

Using Loop Surfer

Peak's Loop Surfer feature automates some of the steps for setting up loop points. Loop Surfer allows you to "Loop Surf" (adjust your loops during playback) quickly, easily and in a musically intuitive manner.

If you're working with music, and know the music's tempo in beats per minute, you can use Loop Surfer to create a loop which lasts for a rhythmically "correct" length of time.

The Loop Surfer dialog

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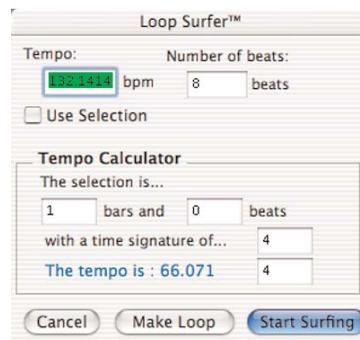
1. Place the cursor where you wish to begin the loop (it's okay to place it approximately, rather than exactly, where you wish to start).

2. Choose Loop Surfer from the Action menu (⌘-J). The Loop Surfer dialog appears.

3. Type in the music's tempo. If you are not sure of the tempo, you can use the Tempo Calculator to determine the tempo. Simply select a portion of audio, and type in the number of bars and beats in the selection. The calculator will determine the tempo based on your selection. If you are unsure, and have used a drum machine or sequencer to create the music, you might wish to refer back to its settings determine the time signature and tempo. Additionally, you can use the Threshold command from the DSP menu to select a portion of audio that should correspond to the beat; see "To use Loop Surfer based on a selection" below.

4. Type in the number of beats that you wish the loop to last. The beats are based upon quarter-notes, in terms of musical time. For instance, if your song was in a 4/4 time signature, typing "4" beats would mean the loop would be one measure in length; if the song were in 7/4 time, typing "14" would mean the loop would be two measures in length. (If you are interested in exploring syncopations, however, there's no reason why you can't type a beat value that doesn't correspond to the time signature, such as "5" if the music is actually in "3/4" time.)

5. If you then select the Start Surfing button (the default), Peak will automatically:

   a) close the Loop Surfer dialog box;

   b) extend the selection from the cursor insertion point to a calculated length, based upon the tempo and number of beats;

   c) change the cursor insertion point to a Loop Start marker;

   d) drop a Loop End marker at the end of the newly calculated selection;

   e) turn on (if it hasn't already been turned on) the Use Loop In Playback option under the Options menu.

   f) begin looped playback of the audio selection, stopping only once you hit your keyboard's Spacebar or press Stop on the Toolbar.

6. If you select the Make Loop button, Peak will automatically:

   a) close the Loop Surfer dialog box;

   b) extend the selection from the cursor insertion point to a calculated length, based upon the tempo and number of beats;

   c) change the cursor insertion point to a Loop Start marker;

   d) drop a Loop End marker at the end of the newly calculated selection;

   e) turn on (if it hasn't already been turned on) the Use Loop In Playback option under the Options menu.

   f) At this point, you must start playback manually using the Spacebar or the Toolbar if you wish to begin Loop Surfing.

While you're Loop Surfing (adjusting your loop during playback), you're free to perform all of the standard looping functions as described in the previous section, including adjusting the Loop Start and End points during playback. Most importantly, however, since you'll now

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have a selection that lasts for a period of time that matches the beat, try moving the markers in tandem, by holding down the Option key and clicking and dragging one of the loop markers to the desired location with the mouse. You'll find it's a great way to set up interesting rhythms and syncopations! Peak's interactive editing capabilities also allow you to use the Loop Surfer dialog while a loop plays to adjust the tempo, beats and so on.

If you're not working with music (or if you simply don't know the tempo of the music you're working with), you might choose to Loop Surf based upon a selection (or use the Threshold feature), rather than starting at a cursor insertion point.

To use Loop Surfer based on a selection:

1. Place the cursor where you wish to begin the loop, and using the mouse, select the portion of audio you wish to loop. (You can make your selection in a variety of other ways, also, as described earlier, including selecting between markers by ⌘-clicking with the mouse).

2. Select Loop Surfer from the Action menu. The Loop Surfer dialog appears.

3. If you check the Use Selection box and select either the Start Surfing or Make Loop button, Peak will automatically:

   a) close the Loop Surfer dialog box;

   b) extend the selection from the cursor insertion point to a calculated length, based upon the tempo and number of beats;

   c) change the cursor insertion point to a Loop Start marker;

   d) drop a Loop End marker at the end of the

newly calculated selection;

   e) turn on (if it hasn't already been turned on) the Use Loop In Playback option under the Options menu;

   f) begin looping and playing. The selection will begin looped playback (if you have selected Start Surfing);

   or:

   g) wait for you to start playback manually using the Spacebar or the Toolbar if you wish to begin Loop Surfing (if you have selected Make Loop).

Loop Surfer is not available in Peak LE.

Loop Surfer is not available in Peak DV.

Using the Guess Tempo and Threshold commands to find tempo

If you are working with music and don't know the tempo-and your music has a relatively pronounced or obvious beat-you can use the Guess Tempo command to have Peak automatically guess the tempo of a selection. Make a selection and choose Guess Tempo from the Action menu. There will be a pause while Peak scans your selection and calculates the tempo for you. A dialog will then appear showing you the estimated tempo in BPM, or beats per minute. You can then enter the estimated tempo in BPM in the Loop Surfer dialog's Tempo field or in the Audio Information dialog's Tempo field, or

click Loop-It to automatically place the guessed tempo value into the Loop Surfer dialog.

You can also use the Threshold command (described later in this chapter) to define a number of markers or Regions based on amplitude peaks. If you then select audio with start and end points that correspond to these sections, you should have a selection that precisely matches the musical beat. Using Loop Surfer, you could then automate the process of looping the selection by following the steps described directly above.

Guess Tempo works best with audio selections that contain one full measure of audio with pronounced attacks on the beats, which appear visually on the waveform as taller sections of the audio. Using the Normalize feature on the selection prior to Guess Tempo can improve the accuracy of its deduction.

Guess Tempo is not available in Peak LE.

Guess Tempo is not available in Peak DV.

Using the Loop Tuner

Peak's Loop Tuner provides a way to visually line up the start and end points of your loop to get a smooth transition at the loop points. Loop Tuner also allows you listen to the effects of these adjustments as you make them. If you wish to "tune" a loop you've made, simply select

Loop Tuner from the DSP menu or Toolbar, and a dialog will appear.
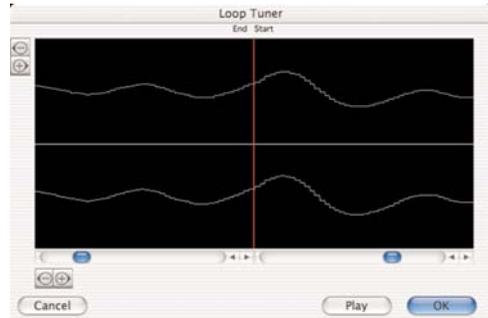
The Loop Tuner dialog – showing a smooth transition between the end of the loop and the beginning

The waveform display in the Loop Tuner dialog shows the Start and End points of the loop, which you can visually adjust with the scroll bars at the bottom of the window. The two zoom buttons-magnifying glass icons-in the upper left of the Loop Tuner dialog allow you to adjust the vertical zoom up of the waveform. The two zoom buttons in the lower left hand corner of the Loop Tuner dialog allow you to adjust the zoom view in and out all the way down to the sample level. You can listen to the effects of the adjustments as you make them by clicking on the Play button. To exit this dialog, click on OK to accept the changes, or Cancel to leave the original loop unaffected.

Loop Tuner is not available in Peak LE.

Loop Tuner is not available in Peak DV.

Exporting Regions

If you have placed markers or Regions in an audio document, Peak's Export Regions command allows you to export those regions from the source document and save each of these regions as a separate audio document. This feature is very convenient if you wish to divide a larger file into regions and transfer them as samples into a sample playback instrument, or divide a live concert record into regions and export those regions as separate files. Furthermore, you can use Peak's Batch File Processor to process a file's regions with any of Peak's DSP functions and third party plug-ins during the automatic exporting of regions into new files.

The Export Regions dialog

To export regions from an audio document:

1. Select the regions that you wish to export. (You can use the Tab key, Shift-Tab, or if you wish to select the entire document, press ⌘-A.)

2. Choose Export Regions from the File menu.

3. In the Export Regions dialog, choose the parameters that you wish to use for selecting the regions to export.

4. Using the Region Detection options, choose which regions are to be exported.

5. Using the Output Format options, choose the format and resolution you wish for the exported regions.

6. Using the Output Directory options, choose the destination for the exported regions.

7. If you wish the newly exported regions to appear as new open Peak documents, choose Output to new windows.

8. To save the exported regions to disk, select Save To Disk and choose whether you would like to save the regions into the same folder as the source files, or to a different folder. If you prefer to save to a new folder, use the Set Path button.

9. To export the regions, click Begin. Peak exports each of the regions into its own audio document.

Region Detection area

To export all regions in an audio document, click the Export Regions button. To export audio between adjacent markers, click the Export Audio between Markers button. To export only regions that are bounded by specific marker names, click the Only Regions button and enter the parameters that you wish to use to select the desired regions. For instance, if you wish to only export only regions bounded by markers with the word "hit" in them, click the pop-up menu, choose containing, and type the word "hit" in the field next to the pop-up. Conversely, if you wish export all regions except those with the word "hit" in them, click the pop-up menu, choose not containing, and type the word "hit" in the field next to the pop-up menu.

Output Format area

Choose the file format, bit depth resolution, and Stereo or Mono from these pop-up menus for the resulting exported audio documents. You can set the Sample rate in kHz for the resulting files in the Rate field (please note that this will not do sample rate conversions). You can also designate whether the resulting audio documents contain Regions or Markers or not.

Output Directory area

Resulting audio documents can either be output to new open audio document windows or saved to the hard drive. Choose Output to new windows if you want to have the resulting audio documents open in Peak or choose Save To Disk if you just want to write the new audio files to disk without opening them in Peak. If you Save To Disk, you can simply choose to use the original audio document's folder or you can specify another folder on you hard drive(s) to save the resulting audio documents by choosing Set Path. The Name Prefix field allows you to include a specified prefix to all the resulting audio documents. The default prefix is the name of the file. Each and every one of the resulting audio documents will be named with the prefix plus the name of the individual region.

> *Be aware that the Name Prefix plus the name of the region being exported cannot exceed the maximum number of characters for a file name allowed by the Mac OS or Peak will return an error and the Region will not be saved.*

Another exciting feature of the Export Regions function is that you can Export Regions through Peak's Batch File Processor. First configure the Batch File Processor and turn it on, then, go to Export Regions and check the Use Batch File Processor checkbox. When you begin exporting regions, each region exported will be processed by the DSP processes you choose in the Batch File Processor dialog (see Chapter 7: DSP & Plug-Ins).

> *Do not save the output of the Batch File Processor to input directory (i.e., a folder that is or is inside a folder of files that are being Batch Processed).*

> *Export Regions is not available in Peak LE.*

> *Export Regions is not available in Peak DV.*

Editing QuickTime Soundtracks in Peak

Peak allows you to edit QuickTime movie soundtracks. While you cannot edit QuickTime video in Peak, you can use Peak as a full-featured audio post-production tool for QuickTime movies. This makes Peak an ideal tool for editing and cleaning up soundtracks, as well as adding sound effects or music to QuickTime movies.

How to open and edit QuickTime sound tracks in Peak:

1. Select Open from the Edit menu (⌘-O) or Toolbar.

2. In the dialog that appears, locate the QuickTime movie that you wish to open.

3. Click the Open button, and Peak will open the

The Peak Movie Window

QuickTime movie in a movie window, and open the movie's audio track in an audio document window. Use the QuickTime Sound Tracks from the Preferences menu to Enable or Disable the movie's other audio tracks. You can also use this dialog to toggle multiple soundtracks contained in a movie on and off to check balances or "solo" certain tracks. Click on the Set button to accept the changes, or Cancel to leave the movie unaffected. To toggle the Movie Window on or off, choose Movie from the Window menu. A check next to this item indicates it is enabled.
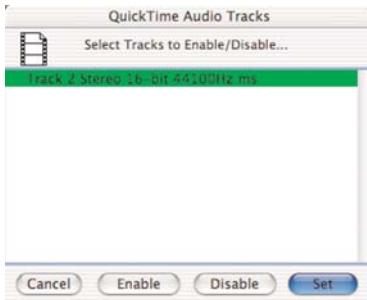
The Movie Sound Tracks dialog

4. You may now edit the movie's audio track as you would any other audio document. The movie will "scrub" along with the audio, and the placement of the insertion point in the audio document window will also scroll the movie to that point.

5. When you are finished editing the QuickTime sound track, use Peak's "Save As" command to save the movie with its new sound track.

> ⚠️ *Be careful not to change the duration of the audio using cut, delete, or insert, as this will cause the audio and video to fall out of sync.*

Peak can add audio to, or record audio into a QuickTime movie that contains no audio.

To add audio to a silent QuickTime movie:

1. Open the audio document

2. Open the movie

3. Choose save as... and select QuickTime as the file format

> ⚠️ *Recording audio into a silent QuickTime movie is covered in Chapter 4: Recording and Playback*

> 🚫LE *QuickTime Movie support is not available in Peak LE. Peak LE can open and edit QuickTime audio, but it will not open the QuickTime Movie window.*

Conclusion

You have now learned how to manipulate audio with Peak's various editing tools, including how to work with Markers, Loops, and Regions. In the next chapter you will learn more about the use of Regions in Playlists.

Chapter 6
Playlists & CD Burning

Chapter 6: Playlists and CD Burning

Introduction

This chapter explains how to use Peak's Playlist feature to sequence audio events. A Playlist is a list of Regions strung together in a specific order. The Peak Playlist is merely a set of instructions that tell the hard disk which regions to "read" in what order. Playlist editing does not permanently alter the original audio data on your hard disk. No matter how many changes you make, your original recordings remain intact. This type of nondestructive editing is one of Peak's most significant and powerful features.

When you edit an audio file within Peak's Playlist window you are not really deleting, moving, replacing, and adding actual audio as you would if you were cutting and splicing analog tape. Instead, Peak is merely creating a "map" of your audio file. This map, or "playlist," simply describes the order in which you want portions of the recording to be played. If you'd like to hear the middle of a song first, the end next and the beginning last, then so be it. Peak will read (e.g., play) from the hard disk (where the audio data is stored) from any number of possible points designated by Region markers, and these Regions can be auditioned in the Playlist in any number of possible arrangements.

Playlist editing allows you to adjust and re-sequence segments of audio (e.g., Regions) with fluidity and ease. Edits can be heard as soon as you perform them. In addition, Peak allows you to apply VST plug-ins to playlist events, using the included "Vbox SE" VST plug-in routing matrix. Peak's Playlist offers a fast, flexible, and powerful approach to editing and processing digital audio.

Peak burns Disk At Once (DAO) audio CDs from its Playlist, or directly from an audio document window. You can also use Peak's Playlist to create a Jam Image file for burning with Roxio's Jam™ software (Jam is sold separately). Please consult Roxio for compatible CD-Burners using Jam. You can also bounce (i.e., write to disk) your Peak Playlist as a Sound Designer II file and then import the Playlist Events as Regions into other third party software.

Regions

The audio events that are played back in a Playlist are Regions-portions of an audio document defined using the New Region command from the Action menu (⌘-Shift-R) or Toolbar. A Region is defined by Region Markers in the audio document window. All Regions defined in open audio documents will appear in that document's file drawer, and will also appear in the Contents Palette - a global listing of all regions in all files.

The file drawer is not available in Peak LE

The file drawer is not available in Peak DV

The main windows you will use to organize Regions are the audio document's file drawer, the Contents Palette, and the Playlist.

The Contents Palette

The Contents Drawer

The Contents Palette is available under the Window menu, and will show all of the regions in any open audio documents at a glance. You can drag and drop Region names from the Contents Palette into the Playlist. To display the regions in open documents, click the disclosure triangle to the left of each audio document's name in the Contents Palette. A list of regions will appear beneath the document's name. If you drag and drop an Audio Document's name from the Contents Palette into the Playlist, it will add all the Regions in that Audio Document to the Playlist.

In a similar manner, each audio document's file drawer contains a list of regions contained in that document, and these may also be dragged into a Playlist for arranging prior to burning an audio CD.
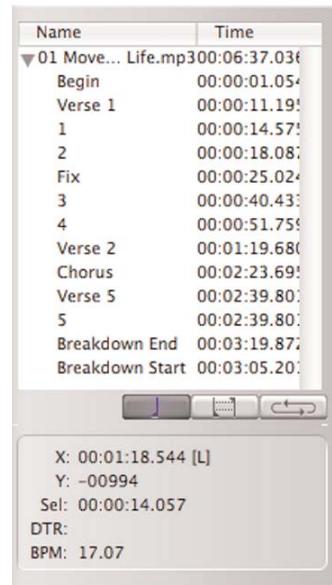
Regions can only be saved in AIFF, Sound Designer II, and JAM Image file formats created by Peak. However, Peak will also read Regions stored from other programs in Sound Designer II files. The method Peak uses to store Regions in AIFF files is specific to Peak and is not supported by other software applications. If you are planning to use Regions created with Peak in other programs, you will usually want to save your files in Sound Designer II file format.

To define a new Region:

1. Make a selection in an opened audio document.

2. Choose New Region from the Action menu or Toolbar (⌘-Shift-R). The Edit Regions dialog will appear.

3. Type the name of the Region and click OK. The new Region will appear in the audio document.

To define a new Region and have it automatically placed into a Playlist:

1. Select Playlist Document from the New submenu under the File menu (⌘-Shift-P). An empty playlist document will appear.

2. Make a selection in an opened audio document.

3. Choose Capture Region to Playlist from the Action menu (⌘-K)

To modify the length of the Region by changing the start or end:

• Drag the start or end marker of the Region in the audio document window.

• Double-click the triangular base of one of the Region markers and type in a new start time, end time, or duration, and click OK.

To move the start and end points of the region together:

• Option-drag on the start or end marker of the Region.

• Or, click on the Horizontal Lock button in the audio document window, and drag the Region to the desired position.

⚠️ *Be sure to turn off Horizontal Lock when you are finished, by clicking the button again - when this feature is turned on, the Horizontal Lock button lights up in blue*

To change the name of a Region:

1. Double-click on either the start or end marker of the Region in the audio document window, or Option-double-click on the Region name in the Contents Palette or file drawer.

The Edit Region dialog

The Edit Region dialog will appear.

2. Type the new name of the Region into the dialog and click OK.

To move a Region without changing its length:

• Hold down the Option key and drag either the start or end marker of the Region.

• Or, click on the Horizontal Lock button in the audio document window, and drag the Region to the desired position.

To edit a Region's start, end, or length manually:

1. Double-click on either the start or end marker of the Region in the audio document window or Option-double-click on the Region name in the Contents Palette or file drawer. The Edit Region dialog will appear.

2. Enter new values for Start, End, or Length times, then click OK.

To locate a Region:

• Double-click the Region you wish to locate in the Contents Palette or file drawer. The audio document will scroll automatically to display the region and the Region will become the current selection in the audio document.

Creating a Playlist

To create a new Playlist:

• Select Playlist Document from the New submenu under the File menu (⌘-Shift-P). An empty playlist document will appear. The top of the playlist has category titles for each column of information. The bottom of the playlist shows total duration of the playlist.
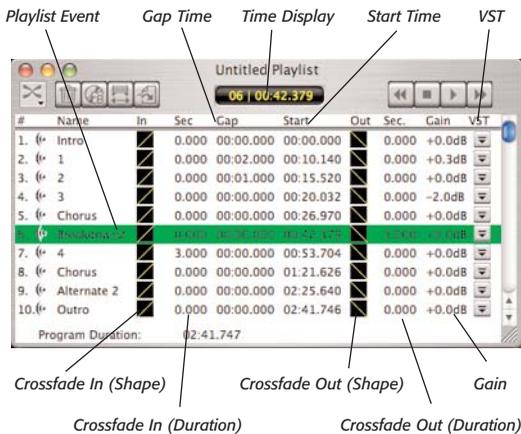
The Playlist Document window

To add an item to the playlist:

1. Make sure the Playlist is the front-most document in Peak (⌘-P). Select the Contents Palette from the Window menu if it is not already open.

2. Drag and drop the names of the Regions from the Contents Palette or file drawer into the Playlist to add Regions to the Playlist. Each Region you add to the Playlist becomes a Playlist Event. The center of the Playlist window shows Playlist Events as a sequential list. You may use Regions from multiple audio documents. Any audio documents containing Regions used in the current Playlist must be open in Peak to be available to the Playlist.

To automatically add regions to a playlist:

1. Select the desired area in an audio document's waveform.

2. Choose Capture Region to Playlist from the Action menu (⌘-K)

3. The selected range is automatically turned into a Region, and is added to the current Playlist.

⚠️ *All audio documents referenced by the Playlist must have the same sample rate, number of channels (i.e., mono or stereo), and bit-depth.*

The controls along the top of the Playlist window give you access to most of the Playlist functions.

In the top left, you will find buttons to control Crossfade Select, Delete, Burn CD, Nudge Regions (Crossfade Editor), and Bounce Playlist. In the top middle of the Playlist window is a Region/track number & time display.
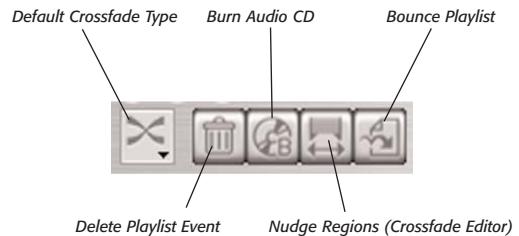
Playlist function buttons

At the top right of the Playlist are transport controls that allow you to audition Regions. From left to right, these controls are for previous track, stop, play, and next track.
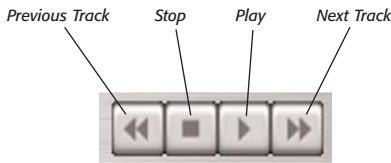
Playlist transport controls

A playlist event has several properties that can be modified: crossfade in, gap time, crossfade out, gain, and VST plug-ins. Since the transitions between one audio event to another can be abrupt, a playlist crossfade can be used to smooth the transition from one audio event to another.

Crossfades between Playlist Events fade out the first region while fading in the next region. Each Playlist Event has separate controls for crossfade in, crossfade out, crossfade-in time, and crossfade-out time. The curve stored in crossfade in is used to fade in the current region. The curve stored in crossfade out is used to fade out into the next region.

Crossfades are stored on disk and are computed before playback. When a crossfade is being calculated, the watch cursor may appear.
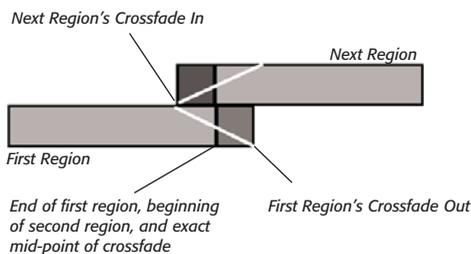
Crossfade Diagram

The illustration above shows how crossfades are used in playlist events. The audio material from each region overlaps beyond the region boundaries. Overlapping areas are darker in the illustration above. The white diagonal lines correspond the crossfade in and out curves. As the first region ends, the next region's audio material begins to fade in. When the next region begins playing, the first region continues to fade out.

It is very important to understand that the Region marker in the referenced Audio Document is the exact midpoint of the fade. Consequently, there must be sufficient audio data on either side of the Region marker. That is, if you have a 60 second crossfade between two Playlist Events, there must be at least 30 seconds of audio data following the end Region marker of the first Playlist Event and at least 30 seconds of audio data proceeding the begin Region marker of the second Playlist Event.

Using the separate crossfade in and crossfade out curves, Peak provides you with the flexibility to create many common crossfade types. These include "Linear Crossfade," "Equal Power Crossfade," "Slow in but fast out Crossfade," "Fast in but slow out crossfade," and "Overlap transition." Peak is also flexible in allowing you to control crossfade in and crossfade out durations separately. All crossfades are based on overlapping audio from the previous or subsequent regions and then mixing the overlapping material after applying the crossfade curves.

A linear crossfade actually sounds like an equal power crossfade (i.e., no loss of energy in the audio signal), since Peak playlist crossfades are calculated logarithmically.

A Playlist event's gain setting can be used to control the balance of the event in a Playlist. You may need to raise

the volume or lower the volume of some Playlist events to maintain a proper balance of volume levels. You can make adjustments to the gain of individual Playlist Events as you play back the Playlist.

> ⚠ *Be careful not to set a Playlist event's gain too high as you may overload the signal and cause clipping to occur. You may also introduce clicks between Playlist events if the difference in gain between the two playlist events is too large. Crossfades can help smooth these transitions.*

To select items in the Playlist:

• Click on the item in the Playlist that you wish to select. You may use the Shift key to select several items in the Playlist.

To hear the playlist:

• To hear your playlist, use the Play button in the Playlist window. The Playlist will begin playback from the current selected playlist event.

To preview transitions between Regions:

1. Select the playlist event in which you wish to hear the transition.

2. Use the Playlist's Play button or press the Spacebar while holding down the Command key (⌘). The pre-roll setting from the Auditioning dialog in the Preferences dialog will be used to audition from the end of the previous playlist event through the transition into the selected playlist event.

To scrub in the Playlist window:

• While playing audio in a Playlist, hold down the control key and press the forward or reverse but-

tons in the playlist. The audio will advance "CD-style" in larger increments. Release the mouse when you find the spot you wish to hear. This is useful for moving around quickly in the Playlist's audio to test gain levels and VST effects for potential clipping. You can also click and drag right or left in the Playlist Window's Time Display.

To select next or previous Playlist event:

• With the Playlist as the front-most window (⌘-P), you can use the arrow keys (up and down arrows) to select the next or previous playlist event. While playing audio in a Playlist, you can use the arrow keys to move playback to the next or previous event in the Playlist during playback. Note that the arrow keys don't work with the control key to scrub during playback. You can also use the Tab key to select the next Playlist event, even during playback.

Modifying Playlist Events

To move items in the playlist:

• Click and drag the Playlist event to the new location. A green line will indicate the new position for the playlist event. Release the mouse button when the green line is at the location you wish to place the event.

To delete items in the Playlist:

1. Select the Playlist event you wish to delete by clicking on it.

2. Press the Delete key on your keyboard, or click on the Trash Can icon in the Playlist window. The event will be removed from the playlist, and the audio events below the event will move up. This

operation will, of course, decrease the length of the Playlist.

To edit a crossfade in or out:

• Double-click on the Playlist event's Crossfade In or Crossfade Out icon. The Fade Envelope Editor dialog will appear, where you may edit the Fade Envelope for that particular Playlist Event's Fade In or Fade Out.
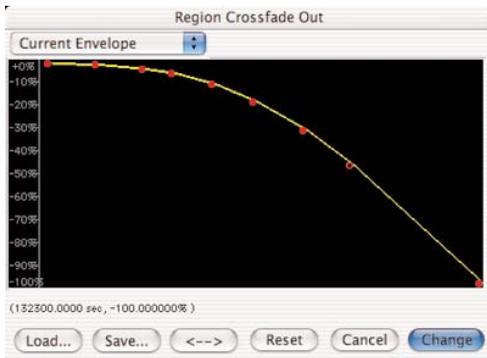
Fade Envelope Editor

To change Crossfade In or Out duration:

• Double-click on the Playlist event Crossfade In time or Crossfade Out time. A dialog will prompt you to enter the duration in seconds for the Playlist Event's Crossfade In or Out.

⚠️ *The default setting for crossfade duration in Peak Playlists is 0.*

🚫*LE* *Crossfades are not available in Peak LE Playlists.*

🚫*DV* *Crossfades are not available in Peak DV Playlists.*

To modify the gap time:

• Double-click on the Playlist event Gap Time (i.e., the time between the beginning of one Playlist Event and the end of the previous one). A dialog will prompt you to enter the desired Gap Time for the selected Playlist Event.

The Nudge Regions Dialog

The Nudge Regions function opens a crossfade editor window, and is useful for fine-tuning the start and end times of Regions in the Playlist as well as adjusting the crossfade times. Access the Nudge Regions dialog by clicking on the Nudge Regions icon in the Playlist window. In this dialog you can dynamically adjust start and end times of selected regions by scrolling in the windows, and listen to the changes as you make them by clicking on the Play button.

You can set the Pre-roll and Post-roll in seconds for auditioning the crossfade. If the Preserve Timing checkbox is checked, the duration between the Region markers will remain fixed. If the Preserve Timing checkbox is not checked, the Region markers can be moved independently of one another. The Zoom tools at the left of the window allow you to zoom in to the sample level, or out for a larger view. You can also allocate region Pre-roll and post-roll times in this dialog. By clicking and dragging in the window, you can adjust the fade times for the Fade Out (on top) and the Fade In (on the bottom).

6

The Nudge Regions Dialog
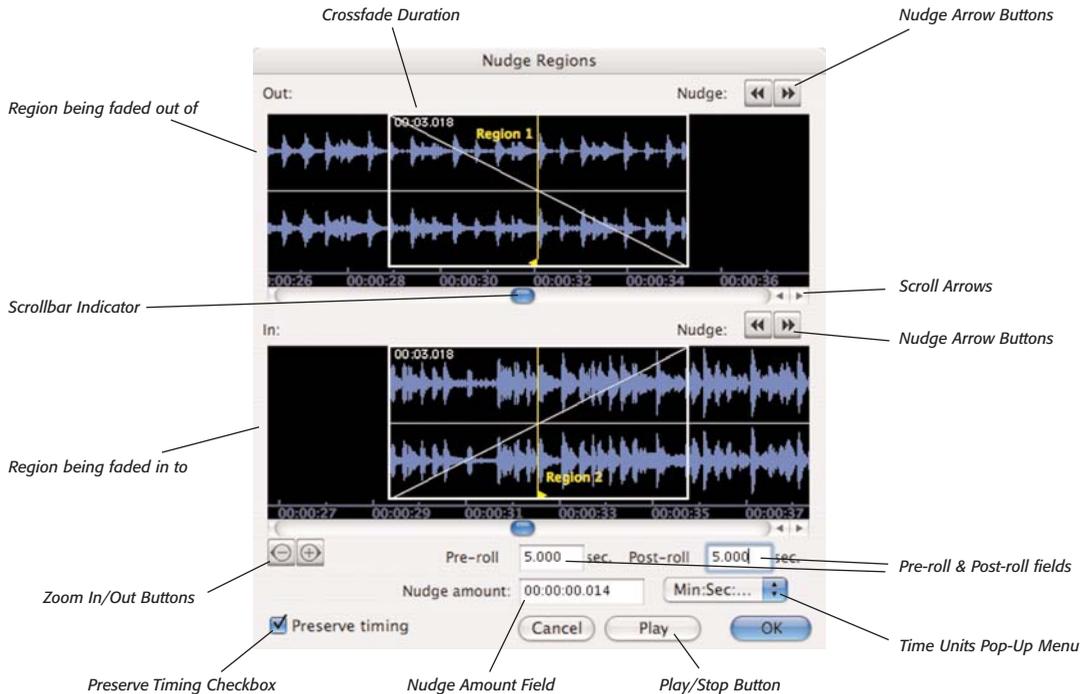
Peak's Nudge Regions Window (Graphical Crossfade Editor)

The duration of a crossfade depends on a number of factors, such as the length of the referenced audio document, the length of the region contained in it, as well as how much audio lies outside of the region markers. (The crossfade diagram on page 113 illustrates this concept).

To Access the Nudge Regions Window:

1. In the Playlist window, locate the two regions (Playlist Events) that will be crossfaded together.

2. Select the Region (Playlist Event) that will be faded into – For example, if there are only two events in

the Playlist, a crossfade would fade out of the first region, and into the second – in this case, you would select the second region.

3. Click the Nudge Regions button in the upper left of the Playlist window – the Nudge Regions window appears.

Nudging (Adjusting) Regions with Scrollbars/Scroll Arrows

The scrollbars that control region nudging have multiple modes of operation, depending on where you click.

- Dragging the scroll indicator moves the region markers coarsely, and not by any specific nudge amount.

- Dragging within the scrollbar (not on the indicator), moves the region marker from one zero crossing to the next.

- Clicking the scrollbar arrows moves the region markers sample by sample.

Nudging Regions with Nudge Arrow Buttons

The Nudge Arrow Buttons allow you to nudge region markers by a specific amount of time. The nudge amount, and type of time unit used are user-definable.

To Nudge Regions with Nudge Arrow Buttons:

1. In the Nudge Amount Time Units pop-up menu, select the desired type of time units – (Samples, Min:Sec:ms, SMPTE units, etc)

2. In the Nudge Amount field, enter the value you wish to nudge region markers by with each click of the Nudge Arrow Buttons

3. Click the Nudge Arrow Button to adjust the position of a region's end marker (upper waveform that is being faded out of), or a region's begin marker (lower waveform that is begin faded into).

> ⚠️ *If the Preserve Timing checkbox is checked, nudging the position of one region's marker will adjust the other region's marker by the same amount, keeping the duration of the entire Playlist intact. If you wish to independently adjust the position of either the end of the region that's being faded out of, or the region that's being faded into, you must un-check the Preserve Timing checkbox.*

To Nudge Both Regions Simultaneously:

1. Make sure the Preserve Timing checkbox is checked

2. Use the Nudge Arrow buttons or scrollbars/scroll arrows to adjust the position of either the end of the region that's being faded out of (upper waveform display), or the beginning of the region that's being faded into (lower waveform display) – it doesn't matter which you move, as both region markers will move simultaneously – overall Playlist duration remains unchanged.

To Nudge a Region Independently:

1. Make sure the Preserve Timing checkbox is not checked.

2. Use the Nudge Arrow buttons or scrollbars/scroll arrows to adjust the position of the desired region – either the region that's being faded out of (upper waveform display), or the beginning of the region that's being faded into (lower waveform display) – only the region marker that's being adjusted moves, and overall Playlist duration is altered.

> ⚠️ *You do not need to press the Return or Enter Key after entering a nudge amount. You can enter values in samples, min:sec.millisec, samples, bars/beats, or SMTE frames.*

Previewing Crossfades in the Nudge Regions Window

As you fine-tune a crossfade in the Nudge Regions window, you can preview it to be sure that the desired effect is being produced. You can also set a custom pre-roll and post-roll value, so as to hear a bit of audio before and after the crossfade – this helps to put the crossfade in context with the audio that precedes and follows it.

Generally, it's a good idea to set the pre-roll and post-roll values to be slightly higher than the duration of the crossfade being previewed.

To Preview a Crossfade:

1. Drag the crossfade envelope display to the desired length.

⚠ *Dragging the crossfade envelope display is the equivalent to typing in a crossfade duration within the Playlist – either technique can create a crossfade, but creating the crossfade within the Nudge Regions window gives the added benefit of having a waveform display for reference.*

2. Enter pre-roll and post-roll values that are a few seconds longer than the duration of the crossfade – For example, if the crossfade duration is 5 seconds, try using pre/post-roll values of 8 seconds – you can fine tune these values to your liking.

3. Click the Play button to hear your crossfade – it will automatically loop until you click the Stop button.

⚠ *If there is not sufficient audio before or after the region end of the outgoing region or region start of the incoming region, you will not be able to nudge any further. Peak's crossfades are centered around these points, as described in the manual on page 113.*

To Preview Multiple Consecutive Crossfades:

1.Select multiple consecutive regions (Playlist Events)

⚠ *The very first region (Playlist Event) should never be selected – such multiple selections will always use the second region (Playlist Event) – or later – as the first selected region (Playlist Event).*

2. Click the Nudge Regions button in the upper left of the Playlist window – the Nudge Regions window appears

3. Using the techniques described earlier, make any desired adjustments, preview crossfade transitions, etc.

4. When the first selected crossfade transition is as you like it, click the OK button – the Nudge Regions window refreshes, and shows the next selected crossfade transition.

5. Using the techniques described earlier, make any desired adjustments to this next crossfade, preview crossfade transitions, etc.

6. Click the OK button to move on to the next crossfade transition – and so on – the Nudge Regions window will continue to refresh and display the next crossfade transition, until it reaches the last of the selected crossfade transition that were selected in the Playlist window.

🚫 *LE*   *Nudge Regions is not available in Peak LE*

🚫 *DV*   *Nudge Regions is not available in Peak DV*

Applying VST Plug-Ins to the Playlist

Peak will let you use VST plug-ins on any Playlist event in real-time. For more information on using VST plug-ins with Peak, see Chapter 8: Plug-Ins.

To apply VST effects to a Playlist Event:

1. Bring the playlist to the foreground by selecting Playlist from the Windows menu (⌘-P).

2. Choose Insert 1 from the Plug-Ins menu and choose the Vbox SE plug-in routing interface, and then choose a plug-in within Vbox SE.

3. Configure the desired VST plug-in (or multiple plug-ins) within Vbox SE.

⚠ *VST plug-in snapshots are only available when using plug-ins within the Vbox SE interface*
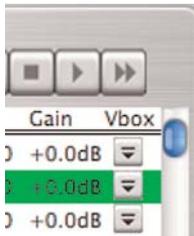
Playlist VST Plug-Ins pop-up menu

Use the Playlist VST Plug-Ins pop-up menu to take a "snapshot" of the current VST plug-in configuration for a particular Playlist Event. A snapshot is the current settings of a plug-in (or the arrangement of multiple plug-ins within the Vbox SE matrix).

⚠ *When using plug-ins loaded into Vbox SE note that clicking may occur between Playlist Events if VST plug-ins are loaded or unloaded when changing from one snapshot to the next. This is because Vbox SE bypasses the audio stream when making plug-ins active or inactive. Therefore, it is recommended that if you want to use different VST plug-in configurations for each Playlist Event, configure Vbox SE with all the plug-ins you want to use for all Playlist Events, and then create snapshots for each Playlist Event with the plug-ins that you don't want to use on that Playlist Event muted or bypassed. (For more information on using Vbox SE, please refer to Chapter 8: Plug-Ins)*

To take a "snapshot" of the current VST plug-in settings:

• Select Set from the Playlist VST Plug-Ins pop-up menu for an individual Playlist event to take a snapshot and assign it to this playlist event.

Playlist VST Plug-Ins submenu, showing the Set command

To make a Playlist Event's "snapshot" active:

• Select Make Active from the Playlist VST Plug-Ins pop-up menu to activate the snapshot for the specific Playlist event in Vbox.
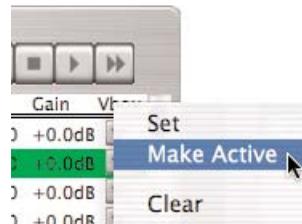
Playlist VST Plug-Ins submenu, showing the Make Active command

To clear a "snapshot" for a specific Playlist Event:

• Select Clear from the Playlist VST Plug-Ins pop-up menu to remove the snapshot from this playlist event.

Playlist VST Plug-Ins submenu, showing the Set command

To set, make active, or clear a "snapshot" for all Playlist Events:

• With the Playlist in the foreground, select all Playlist events (⌘-A), then Shift-click on any VST Plug-Ins pop-up menu in the playlist to select Set, Make Active, or Clear for all Playlist events.

The Playlist will playback with any active VST plug-in snapshots. To write a new audio file to disk from the Playlist with VST plug-ins applied, "bounce" the playlist.

 VST plug-ins are not available in Peak LE Playlists.

 VST plug-ins are not available in Peak DV Playlists.

Creating a New Audio Document from a Playlist

After you have finished working on a Playlist, you may wish to "bounce" the Playlist (i.e., write to disk) as a new audio document, including all the Playlist's VST effects and crossfades. In other words, the new audio document will be the equivalent of digitally recording the output of the playlist. Additionally, Peak automatically places markers or regions into the new document that correspond to each Playlist event boundary with names that match the name of the source region.

To create a new Audio Document from the playlist:

1. Shift-click to select the playlist events you wish to bounce to a new audio document, or use the Select All command from the Edit menu (⌘-A).

2. Choose New Document from Playlist under the File menu's New submenu (Shift-⌘-B), or click the Bounce Playlist button in the Playlist window. The following dialog will appear:

The Bounce dialog

3. In the resulting dialog, select whether you want to bounce the playlist to a new AIFF file, a new Sound Designer II file, or a JAM Image file. Use the radio buttons to select whether you want Playlist Events to appear in the new document defined by Regions, Markers, or Nothing.

4. A new audio document, with VST effects and cross-fades will be generated from the selected playlist events. Peak automatically places markers into the

audio document that correspond to each playlist event boundary. The markers have names that match the name of the source Region. For full compatibility with Roxio's JAM, choose "Regions."

Exporting the Playlist as a Text Document

If you wish to keep a text record of your playlist, you may export the playlist into a new text document. The text document will show the playlist events, times, crossfade times, and gain levels.

To export a playlist as text:

1. Open the playlist document you wish to save as a text file.

2. Choose Export as Text from the File menu. The Save dialog appears.

3. Enter a name to save the playlist under and a location to store the file, and click Save.

Saving and Opening Playlists

To save a playlist:

1. Choose Save from the File menu. If the playlist has not yet been saved, it will prompt you to save it and name it when you close the Playlist.

2. Alternatively, you can save a copy of the playlist with the Save As command.

To open a playlist:

• Choose Open from the File menu. Select the playlist you wish to open with the Open File dialog. Peak will automatically open any audio documents that the playlist refers to. If the audio documents that the playlist refers to are deleted, you will be unable to use the playlist document. If Peak is unable to locate the audio document containing a referenced Region, you will be prompted to locate it.

If you remove the regions used in a playlist, you may not be able to use the playlist that refers to those regions. If you delete a file that a playlist refers to, you also will not be able to use the playlist.

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Burning Audio CDs

Peak allows you to burn Red Book audio CDs either directly from an audio document, or from a list of regions compiled in a Playlist. When regions are present in an audio document, they can be defined as individual tracks on the finished CD. Burning from a Playlist creates one CD track for each item in a Playlist. You can also use Peak Playlists to create a Jam Image file to create audio CDs using Roxio Jam (Jam is included with Peak 4.1). If you want to do PQ subcodes, ISRC codes, and other more specific tasks in producing a CD master, you should use Jam. Most CD burners are supported, but check with Roxio for any specific questions regarding compatible CD Burners.

Peak is bundled with Roxio Toast lite, which can also be used for audio CD burning. To burn audio CDs with Toast lite, simply open Toast lite, drag the desired audio documents into the Toast lite window, and click the Record button. Toast lite is also very useful for file backups, archiving, etc.

Burning from an Audio Document

To burn an audio CD from a Peak Audio Document:

1. Open the desired audio document.

2. Create regions if desired.

3. From the File menu, choose Burn Audio CD (or click the Burn Audio CD button in the Toolbar).

⚠️ *If regions are present when burning from an audio document window, Peak will prompt you as to whether regions should create CD track boundaries. If you want each region to become a discrete CD track, select Yes. If you simply want to burn the audio document as a single CD track, select No.*

---

4. The Burn Audio CD dialog appears – here you can select which burner to use (if you have more than one burner connected to your Macintosh), burn speed, and whether POWr dithering and CD verification should be used. When you have selected the desired options, click Burn.

5. Peak will prompt you to insert blank media into your burner (if none is present) – click OK to burn your CD.

Burning from Peak's Playlist

To burn an Audio CD directly from Peak's Playlist, select the Playlist Events you want to burn as Tracks to CD, or simply select All from the Edit menu (⌘-A) if you want all of the Playlist Events to appear as tracks on the audio CD. Then, click the Burn Audio CD button at the top of the Playlist window and Peak will burn an audio CD. A Peak Playlist is a "blueprint" of a finished audio CD. Before burning, you can preview a Playlist as if it were an audio CD. Be sure that gap times between tracks, gain changes, effects, and crossfades are exactly as you like them. To preview items in the Playlist, you can use the Playlist's transport controls at the top right of the Playlist window. The Playlist's transport controls function much like those on a CD player.

To burn an audio CD from a Peak Playlist:

1. Create a Playlist with the tracks as you want them to appear on the CD.

2. In Peak, click on the Burn Audio CD button in the Playlist window.

3. The Burn Audio CD dialog appears - here you can select which burner to use (if you have more than one burner connected to your Macintosh), burn speed, and whether POWr dithering and CD verification should be used. When you have selected the desired options, click Burn.

4. A dialog appears instructing you to insert a blank CD into your CD Burner and click OK.

5. Peak will burn your Peak Playlist as an audio CD.

⚠️ *If you burn audio CDs from a Peak Playlist containing plug-ins and encounter skips in the resulting audio CDs – you will need to lower the burning speed. This typically will occur with slower CPUs, when burning at speeds faster than 1x, when many plug-ins are used in the Playlist. The CPU is trying to process the plug-in effects in real-time, and burn the audio CD faster than real-time – depending on the CPU's speed, and the processing requirements of the plug-ins used, the CPU may not be able to keep up!*

Regions and the JAM Image file format

A Jam Image file represents an entire CD to the CD-writing software Jam from Roxio. When you create a Jam image with Peak, Jam will interpret the Regions created in Peak as CD tracks. Any audio between one region's end and the next region's start will be interpreted as gap times. Finally, any markers you create in a Jam image file will become indexes in Jam.

You can assign Peak as the external waveform editor for Jam in Jam's preferences. You can also open Jam Image files created by Peak back into Peak for further editing as needed. By using these features, assembling and editing a CD in Peak prior to burning with Jam is both easy and versatile.

To burn an audio CD from a Jam Image File:

1. Create a Peak Playlist with each track as you want them to appear on the CD.

2. Use the Select All command from the Edit menu (⌘-A) or Toolbar.

3. Choose New Document from Playlist under the File menu's New submenu, or click the Bounce Playlist button in the Playlist window. The Bounce Playlist dialog will appear.

4. In the pop-up at the top of the Bounce Playlist dialog, select Jam Image. Use the radio buttons to select Playlist events to appear in the new document as Regions.

5. A new audio document, with VST effects and crossfades will be generated from the selected playlist events. Peak automatically places regions into the audio document that correspond to each playlist event boundary. The regions have names that match the name of the source Region.

6. Close the new audio document (a Jam Image file format) and open it with Jam to burn a red-book format, Disk-at-Once, audio CD.

⚠ *Roxio JAM 6 is included with Peak 4.1!*

Conclusion

You have now learned about creating Regions and Playlists, as well as how to create new mixes, splice together multiple takes, bounce Playlists as new audio documents, and how to create audio CDs. In the next chapter, you will learn about the native DSP (digital signal processing) functions in Peak.

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Chapter 7
DSP

Chapter 7: DSP

Introduction

Peak allows you to transform your audio with a variety of powerful Digital Signal Processing (DSP) tools. You can apply these tools at any time by first making a selection in an audio document and then choosing the desired menu command from the DSP menu.

Processing Audio with Peak's DSP Tools

The following general procedure describes how to process a selection in an audio document, or the entire document, with a particular DSP function. The specific capabilities and parameters of the DSP function will vary.

To process audio with a DSP function:

1. Select the portion of the audio that you wish to process with the DSP function. If no selection is made, the entire document will be processed.

2. Select the type of process you wish to use from the DSP menu.

3. A dialog appears allowing you to set the parameters for the DSP function.

4. Set the parameters for the DSP function as desired and click OK. Peak processes the selection with the DSP function or plug-in.

⚠️ *Note that if no selection is made, Peak will apply processing to the entire audio document.*

Peak's Audio Processing Tools

Peak's DSP capabilities provide composers and professional sound designers with many interesting audio effects and processing tools. Peak's DSP functions include Add, Bit Usage, Change Duration, Change Gain, Change Pitch, Convert Sample Rate, Convolve, Crossfade Loop, Invert, Fade In, Fade Out, Find Peak, Gain Envelope, Harmonic Rotate, ImpulseVerb™ Loop Tuner, Mono to Stereo, Stereo To Mono, Mix, Modulate, Normalize, Panner, Phase Vocoder, Rappify™, Repair Click, Repair Clicks, Remove DC Offset, Reverse Boomerang™, Reverse, Swap Channels, and Threshold. The following sections explain how to use each of these functions.

Add

The Add command adds any selection of audio copied to the clipboard into the audio document at the selection point. To use the Add command, you must first copy a selection of audio. The copied material can then be mixed into the target audio material. The Add command can also be customized using an envelope. If you wish to Add material with a variable level, click the envelope button in the Add dialog.

1. Select the audio that you wish to Add to another audio document and choose Copy from the Edit menu (⌘-C) or Toolbar.

2. Select the audio that you wish to mix the copied material into.

3. Choose Add from the DSP menu or Toolbar.

4. In the dialog that appears, use the slider to adjust the amount of the copied signal that you wish to add into the target audio document. To add copied material with a variable level, click the envelope
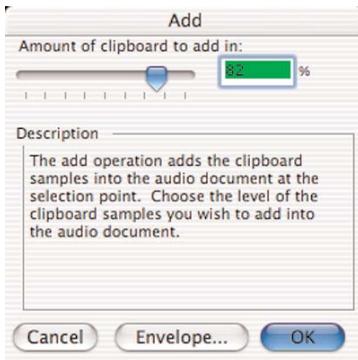
The Add dialog

button, create the desired envelope, and then click the Change button, and then click the Add button. Be careful not to adjust too high an amount which can potentially clip the signal.

5. Click OK. Peak mixes the two signals together.

6. To hear the results, press the Spacebar.

  Add is not available in Peak LE.

  Add is not available in Peak DV.

Amplitude Fit

Amplitude Fit provides granular normalization of an audio selection on a grain-by-grain basis. Grains are small groups of samples, often around 30ms. As each grain is read in, it is normalized according to the Amplitude Fit Envelope-each normalized grain crossfaded with the previous grain and written out as the result. Amplitude Fit can be used to maximize the volume level of an audio selection, or to make quiet passages as loud as louder passages.
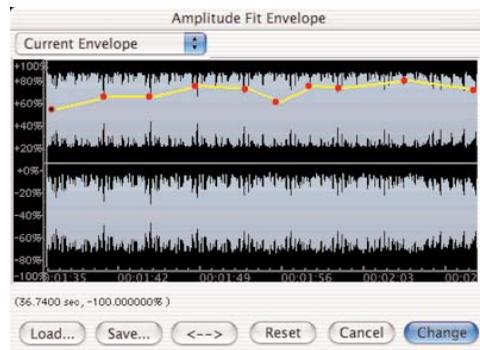
The Amplitude Fit Envelope editor

To apply the Amplitude Envelope to an audio selection:

1. Select the audio material you wish to process.

2. Choose Amplitude Envelope from the DSP menu.

3. Draw the amplitude envelope you wish to apply to the audio selection in the envelope editor. Points above and below the 0% line will normalize the selected audio using the grain-by-grain normalization technique.

  Amplitude Fit is not available in Peak LE.

Bit Usage

The Bit Usage meter allows you to monitor bit satura-tion, degradation, and the "true" bit depth of a file.

The Bit Usage meter

To use the Bit Usage meter:

1. Select the desired range of audio you wish to examine.

2. Choose Bit Usage from the DSP menu - The bit usage meter will appear, and plot a graph showing the status of bit usage in the selected area of audio.

Change Duration

The Change Duration command allows you to slow down or speed up the selected material by a specified amount without changing its pitch. You can specify the change in duration by a value in seconds, a percentage of the original, or, for rhythmically-oriented material, beats per minute. A change in duration by a reasonable amount, about 85% to 115%, can be very convincing. Exaggerated time stretching, 200% or more, can result in some very interesting granular textures. Try experiment-ing with the Change Duration function on drums, rhythm loops, speech, sampled instruments or sound effects to achieve a wide variety of useful effects.

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The Change Duration dialog

1. Select the portion of the audio that you wish to process.

2. Choose Change Duration from DSP menu. The Change Duration dialog appears.

3. Click the radio button for one of the following fields, and enter the value that you wish for the change in duration:

   • In the Seconds field, type the new duration in seconds.

   • In the Percentage field, type the per centage you wish to slow down or speed up the selected audio. For example, typing "50%" will speed up the selection to half its original duration, typing "200%" will slow down the selection to twice its original duration.

   • In the Beats per minute field, type the old tempo for the selected audio and then the desired new tempo, and Peak will compute the correct new duration. Use this field to change the duration of rhythmically-oriented material.

   • Or, click the Advanced button bring up a standard Peak envelope editor window. In Advanced Change Duration mode, you can apply dynamic duration change, which speeds up or slows down audio playback dynamically, according to the envelope you create.
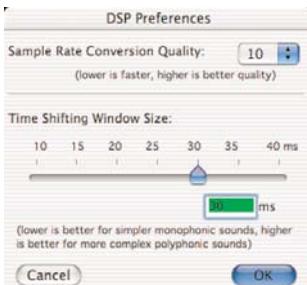
4. If you wish to adjust the quality of the pitch change, click on the Prefs button. The DSP Preferences dialog will appear, allowing you to choose the size of the Time Shifting Window that will be used in processing. A lower value is best for simpler, monophonic sounds, while a higher value yields the best results for more complex, polyrhythmic sounds. One you have set these preferences to your liking, click OK to exit the DSP Preferences dialog.

5. Click OK when you have finished. Peak changes the duration of the selection according to the settings that you chose.

Change Duration is not available in Peak LE.

Change Gain

The Change Gain function changes the gain (i.e., amplitude) of a selection. You can specify the amount of gain change either in decibels (dB) or as a percentage.

The DSP Preferences dialog
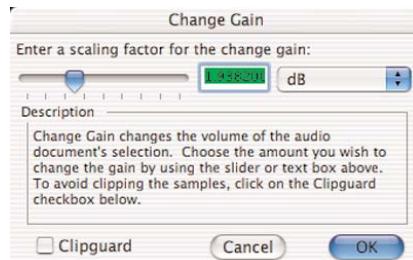
The Change Gain dialog

If you wish to double the volume of a sound, you must apply approximately 6 dB of gain change, or add 200%. Enable the Clipguard checkbox in the Change Gain dialog to protect against the possibility of clipping. Clipguard will search through the audio document or selection for the maximum peak in amplitude, and then limit the Change Gain slider's range based on the maximum peak it finds in the audio document or selection.

To change the gain of a selection:

1. Select the portion of the audio that you wish to process.

2. Choose the Change Gain command from the DSP menu or from the Toolbar. The Change Gain dialog appears.

3. Enter the number of decibels or percentage by which you wish to change the amplitude of the selection by.

4. If you wish to protect against the possibility of clipping, enable Clipguard by checking the Clipguard checkbox.

5. Click OK when you have finished. Peak will change the gain of the signal by the amount you specified.

Change Pitch

Peak's Change Pitch function allows you to alter the pitch of an audio selection by as much as an octave. The Change Pitch dialog uses a pitch slider that allows you to choose a new pitch by musical interval, and "fine tune" the pitch change by smaller increments called "cents." (Cents are divisions of a musical octave – one octave is equivalent to 1200 cents – thus, 100 cents is a semi-tone, 50 cents a quarter-tone, etc.) You can also choose to alter the length, or duration, of the selection just as you

would by slowing down or speeding up analog tape, or you can choose to preserve the duration of the selection (something not possible with analog tape!).

To change the pitch of an audio selection:

1. Select the portion of the audio that you wish to process.

2. Choose Change Pitch from the DSP menu or from the Toolbar. The Change Pitch dialog appears.

3. Select the interval of transposition up or down by entering a positive or negative value in cents in the "Change Pitch" field or by using the pitch slider. Fine tune the interval of transposition by entering a positive or negative value in cents in the "Fine Tune by" field or by using the Fine Tune slider. If you wish to audition the transposition, click on the Play button to preview the results of the pitch change in real time. Check on the Preserve Duration checkbox to retain the original duration of the selected audio

The Change Pitch dialog

4. If you wish to adjust the quality of the pitch change, click on the Prefs button. The DSP

Preferences dialog will appear, allowing you to choose the size of the Time Shifting Window that will be used in processing. A lower value is best for simpler, monophonic sounds, while a higher value yields the best results for more complex, polyrhythmic sounds. One you have set these preferences to your liking, click OK to exit the DSP Preferences dialog.

5. Click OK when you have finished. Peak transposes the pitch of the selected audio up or down by the amount you specified.

Change Pitch is not available in Peak LE.

Change Pitch is not available in Peak LE.

Convert Sample Rate

The Convert Sample Rate command allows you to change the sample rate of a sound without changing its pitch. This feature is very useful for converting audio material into lower or higher sample rates as required by other applications. Please note that sample rate conversion is applied to an entire document. It cannot be applied to just a selection within a document. Refer to Chapters 3 and 4 for an explanation of commonly used sample rates.

To change the sample rate of a document:

1. Choose Convert Sample Rate from the DSP menu or Toolbar. The Convert Sample Rate dialog

appears.

2. Type in the sample rate that you wish to convert the audio document to, or click the down arrow to select from a pop-up of commonly used sample rates.

3. Click OK. Peak converts the entire audio document to the selected sample rate.
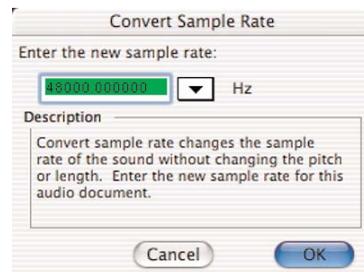
The Convert Sample Rate dialog

The Macintosh's built-in audio hardware is typically limited to sample rates from 11 kHz to 64 kHz, and support will vary depending on the model of Macintosh. Higher sample rates are possible with CoreAudio depending on the particular audio hardware device and its CoreAudio drivers.

Convolve

The Convolve command is a unique and powerful sound design tool that allows you to apply the sonic (i.e., spectral) characteristics of one sound onto another. Convolution works by multiplying the frequency spec-

trum of the impulse contained in the clipboard and that of the target audio document, reinforcing the frequencies that are in common between the two. The results are always interesting and often quite unlike anything you've heard before. This is especially true when the character of the two sounds are very different, and when the clipboard impulse is harmonically rich (imagine, for example, convolving a rainfall sample with piano tinkling!). To use the Convolve DSP command, you must first copy a selection of audio. The copied material will provide the spectral "character" that you will apply to the target audio material. Convolution can be very useful not only for creating new and unusual sound, but also for giving an audio selection a sense of space-try copying a small amount of room noise to the clipboard and then Convolve it with a selection of audio and the convolved audio will sound like is being played in that room.

Because the clipboard contents that provide the spectrum for this process must be held in RAM, small clipboard impulses should be used, unless a large amount of RAM is available. This process can use a lot of RAM!

To use Convolve:

1. Select the audio with the characteristics you wish to apply and choose Copy (⌘-C) from the Edit menu or Toolbar.

2. Select the audio that you wish to modify with the copied audio impulse.

3. Choose Convolve from the DSP menu. Peak applies the spectral character of the copied material to the selection.

4. To hear the results, press the Spacebar.

Convolve is not available in Peak LE.

Convolve is not available in Peak DV.

Crossfade Loop

The Crossfade Loop function applies a "smoothing" effect to loops made in Peak audio documents. Crossfade Loop fades the end of the loop into the beginning of the loop to make the loop sound smoother. (It uses the Blending envelope you've set in Peak's Preference dialog's Blending dialog.) Use the Crossfade Loop dialog to select the length of the crossfade in milliseconds.

To create a crossfaded loop:

1. Create a loop using one of the techniques explained earlier in this chapter.

2. Choose Crossfade Loop from the DSP menu.

3. In the Crossfade Loop dialog that appears, enter a duration for the crossfade-in milliseconds and click OK.

4. To hear the completed crossfade, choose Select Loop from the Edit menu, select Use Loop in Playback from the Options menu (⌘-L) or click the Loop button on the Toolbar, and press the Spacebar. You will hear the loop, complete with your crossfade.

The Crossfade Loop dialog

Crossfade positioning options – different uses for loops may call for different loop crossfade settings – With crossfade position "C" checked a crossfade is applied as indicated by the red "X"
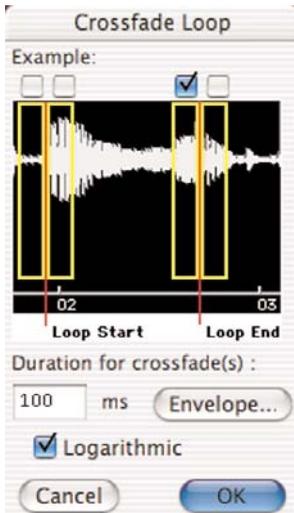
⚠️ *The four checkboxes at the top of the Crossfade Loop dialog allow you to customize how the end of the loop is faded into the beginning of the loop. These boxes indicate where in the loop the crossfade is applied. For most loops, you should be able to leave the default checkbox checked and get good results.*

Crossfade Variation in the Crossfade Loop Dialog

If you consider the crossfades "A", "B", "C", and "D" from left to right, then:

"A" = Crossfade between A and C

"B" = Crossfade between B and D

"C" = Crossfade between C and A

"D" = Crossfade between D and B

The way these crossfade variations are configured depends on where the loop is destined to be used – for most purposes the default crossfade position (Position "C") works well – if however, you plan on transferring these loops to a sample playback instrument such as a SMDI sampler, then you may want to experiment with different crossfade positions/combinations.

Some hardware based samplers offer advanced playback controls, allowing loops to be played forward, backward, and in various other ways. By changing where in the loop crossfades are applied, you can customize your audio content for a particular sampler and for the desired effect.

Another application that may require using loop crossfade position(s) other than the default position "C", are when creating audio loops intended to be used in a proprietary video game audio engine. Depending on the requirements of a particular video game's audio engine, users may need to adjust the position of the crossfades used in their loops, to achieve the desired effect.

Depending on the application requiring crossfades, users may need "loop with release" (plays the tail of the audio document – the section of audio that lies outside the loop markers – after the loop stops playing/sam-

pler's key is released) or "loop hold" (doesn't play the audio after the loop when the key is released). Because of these different modes, users may need to turn some crossfades on or off

LÉ   *Crossfade Loop is not available in Peak LE.*

DV   *Crossfade Loop is not available in Peak DV.*

Fade In & Fade Out

The Fade In and Fade Out commands allow you to apply an amplitude envelope to an audio selection. The Fade In and Fade Out DSP functions, and the Fade Envelope Editor dialog are described at length in Chapter 5.

To create a Fade In:

1. Click the cursor at the desired location in the audio document and drag to select the audio you want to fade. The Fade In will be applied to the audio within this selection.

2. Choose Fade In Envelope from the Preferences dialog.

3. In the Fade Envelope Editor dialog that appears, you can use the default envelope, edit the envelope, or load any envelopes included with Peak or that you have created yourself.

4. Choose Fade In from the DSP menu. Peak applies

the Fade In to the selection you have made in the audio document.

5. To hear the completed Fade In, press ⌘-Spacebar. You will hear the selected audio complete with your Fade In.

To create a Fade Out:

1. Click the cursor at the desired location in the audio document and drag to select the audio you want to Fade. The Fade Out will be applied to the selected audio.

2. Choose Fade Out Envelope from the Preferences dialog.

3. In the dialog that appears, you can use the envelope, create your own, or load any envelopes that you have saved to your hard disk.

4. Choose Fade Out from the DSP menu. Peak applies the Fade Out to the selection you have made in the audio document.

5. To hear the Fade Out, press ⌘-Spacebar. You will hear the selected audio complete with your Fade Out.

Find Peak

The Find Peak operation will place the insertion point at the sample with the maximum amplitude value that it locates in the audio selection.

To find the maximum amplitude point in an audio selection:

1. Select the audio in which you wish to locate the maximum amplitude.

2. Choose Find Peak from the DSP menu.

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3. A dialog will appear telling you what the peak value is, and where it is located. The insertion point will be placed at the sample where the greatest amplitude was located.

4. Press the left arrow to bring the insertion point into view or the Shift key to the view of the insertion point at the sample level

Find Peak is not available in Peak LE.

Find Peak is not available in Peak DV.

Gain Envelope

The Gain Envelope operation allows you to enter an amplitude envelope to be applied to an audio selection. The selected audio's amplitude will be boosted and/or attenuated according to the envelope you draw in the Gain Envelope editor. It is easy to cause samples to clip when using this feature, so use it carefully.
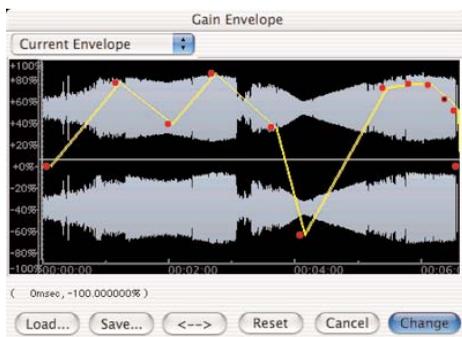
The Gain Envelope dialog

To apply variable gain and attenuation to an audio selection:

1. Select the audio material you wish to process.

2. Choose Gain Envelope from the DSP menu.

3. Draw the gain envelope you wish to apply to the audio selection in the envelope editor. Points above the 0% line will amplify the selected audio. Points below the 0% line will attenuate the selected audio. Note that the waveform display in the Gain Envelope editor will change according the envelope you draw.

4. To process the audio selection using the gain envelope, press Change.

Harmonic Rotate

The Harmonic Rotate tool is excellent for sound design experimentation. This command allows the frequency spectrum in a selected range of audio to be rotated around a horizontal axis, which has the effect of taking frequencies that were previously associated with one section of a file with a particular amplitude, and assigning them to different areas of audio with different amplitudes.

The Harmonic Rotate command can be previewed in real time, so that desired setting can be found before spending time processing. Options for processing include checkboxes for using Real & Imaginary calculations, and a slider & text field to set amount of rotation.

To apply Harmonic Rotate to an audio selection:

1. Select the audio material you wish to process.

2. Choose Harmonic Rotate from the DSP menu.
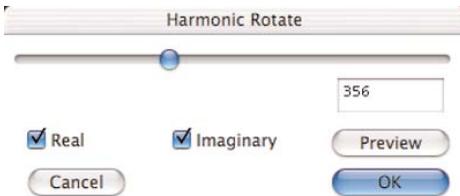
The Harmonic Rotate dialog

3. Click the Preview button, and select the desired settings for Real or Imaginary frequency spectrum calculation, and move the slider/enter in the desired value.

4. When you've made the desired settings, click OK.

Harmonic Rotate is not available in Peak LE!

Harmonic Rotate is not available in Peak DV!

ImpulseVerb™

ImpulseVerb is an extremely high-quality reverb processing tool, that utilizes actual reverb impulses recorded in real spaces, such as performance halls, cathedrals, caves, and other spaces that have various reverberation qualities.

The same convolution technology that is used in Peak's Convolve DSP tool allows these natural reverb impulses to be applied to dry audio signals, giving the impression that a file was actually recorded in a particular environment. ImpulseVerb offers real time preview, so that the ideal settings can be found before processing. In addi-

tion, ImpulseVerb offers an editable Space envelope, which controls reverb length and decay characteristics, and a Wet/Dry slider to control the amount of reverb being applied.

To apply reverb using ImpulseVerb:

1. Select the audio material you wish to process.

2. Choose ImpulseVerb from the DSP menu.
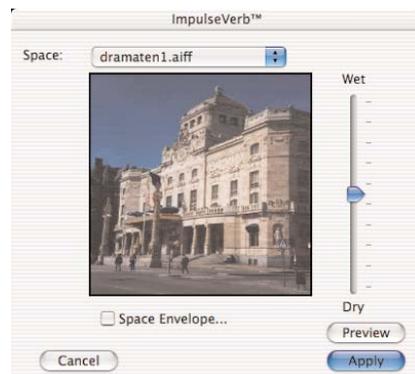
The ImpulseVerb dialog

3. Select a Space using the Space pop-up menu, or choose clipboard to use the contents of the clipboard.

4. Click the Preview button, and adjust the Wet/Dry slider to the desired position.

5. To apply the current reverb characteristics, click the Apply button.

To modify reverb characteristics:

• Click the Space Envelope checkbox - a standard Peak envelope editor appears.

• The example below shows a recommended setting for shortening the amount of reverb that will be applied.
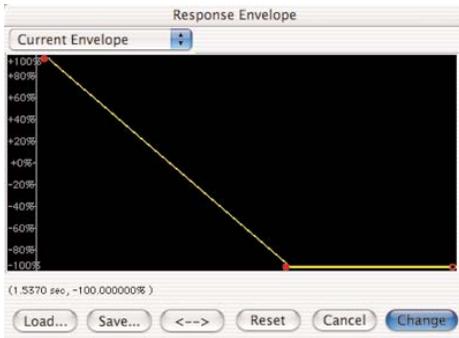
The Space Envelope editor, showing settings for a shortened reverb

⚠ *While the settings above describe how to simply shorten the amount of reverb, other types of settings may be useful for creative sound design. When using the ImpulseVerb interface for real time convolution, experiment with the type of Space Envelope used - especially when the content used is a non-impulse response file.*

⚠ *The ImpulseVerb dialog can also be used as a real time convolution tool, and is not limited to using impulse response files to create reverb effects. Any selection that is copied to the clipboard can be convolved with the selected range of audio. To add audio files to the Space pop-up menu within the ImpulseVerb dialog, simply save the desired file as a 24-bit Sound Designer II format file, and place into the Peak Impulses folder within:*

/Macintosh HD/Library/Application Support/BIAS/Peak

🚫LÉ *ImpulseVerb is not available in Peak LE!*

🚫DV *ImpulseVerb is not available in Peak DV!*

Invert

The Invert function allows you to invert the phase of a selection or an entire audio document.

To invert the phase of a selection:

1. Select the portion of the audio that you wish to invert.

2. Choose Invert from the DSP menu. Peak inverts the phase of the selected audio.

Loop Tuner

Peak's Loop Tuner provides a way to visually line up the start and end points of your loop and listen to the effects of these adjustments as you make them. If you wish to "tune" a loop you've made, simply select Loop Tuner from the DSP menu or Toolbar, and a dialog will appear.
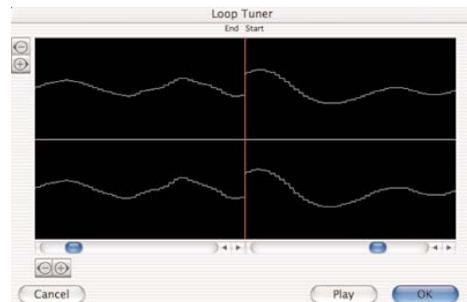
The Loop Tuner dialog with a bad, abrupt transition

The waveform display in the Loop Tuner dialog shows the Start and End points of the loop, which you can visually adjust with the scroll bars at the bottom of the window to achieve a natural transition at the loop point by carefully adjusting the slope alignment.
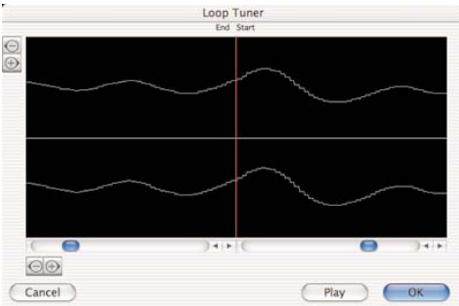
The Loop Tuner dialog with a good, smooth transition

The arrows of the slider will move the loop markers sample by sample and clicking in the body of the slider will move the loop markers to the next zero crossing. The two zoom buttons (magnifying glass icons) in the upper left of the Loop Tuner dialog allow you to adjust the vertical zoom up of the waveform. The two zoom buttons in the lower left hand corner of the Loop Tuner dialog allow you to adjust the zoom view in and out all the way down to the sample level. You can listen to the effects of the adjustments as you make them by clicking on the Play button. To exit this dialog, click on OK to accept the changes, or Cancel to leave the original loop unaffected.

Loop Tuner is not available in Peak LE.

Loop Tuner is not available in Peak DV.

Mono To Stereo/Stereo To Mono

These two DSP commands may be used to easily convert an audio document between one and two channel formats.

To change an audio document from mono to stereo:

1. Select the entire audio document with the Select All command from the Edit menu (⌘-A).

2. Choose Mono To Stereo from the DSP menu or Toolbar.

3. In the dialog that appears, adjust the slider to adjust the left and right-channel balance in the mix.

Mono to Stereo Conversion dialog

4. Click OK. Peak converts the mono document to a stereo document.

To change an audio document from stereo to mono:

1. Select the entire audio document with the Select All command from the Edit menu (⌘-A).

2. Choose Stereo To Mono from the DSP menu or Toolbar.

3. In the dialog that appears, adjust the slider to adjust the left- and right-channel balance in the mix.

Stereo to Mono Conversion dialog

4. Click OK. Peak converts the stereo document to a mono document.

Mono To Stereo/Stereo To Mono is not available in Peak LE.

Mono To Stereo/Stereo To Mono is not available in Peak DV.

While automatic Mono To Stereo/Stereo To Mono conversion is not available in Peak LE & DV, you can achieve the same end result manually, by selecting all in an open mono or stereo document, and then opening a new, empty document. If you copy an entire document, open a new empty document, and attempt to paste in the contents of the clipboard, Peak will detect if there is a different number of channels, and will prompt you to enter a Left/Right panning value, and will then allow you to paste in the clipboard contents.

Mix

The Mix command allows you to mix material that you have copied to the clipboard with a target selection. This function can be used as a kind of "sound-on-sound" capability for mixing audio tracks together, or for blending sound elements. The Mix command is similar to the Add command, but it does not have the potential to clip because the target and clipboard contents are attenuated before mixing. To use the Mix command, you must first copy a selection of audio. The copied material can then be mixed into the target audio material. The Mix command also allows an envelope to be applied to the copied material. This can be useful when the content being mixed needs to have variable levels in it.

To use the Mix command:

1. Select the audio you wish to mix into another audio document and choose Copy from the Edit menu or Toolbar (or press ⌘-C).

2. Select the audio that you wish to mix the copied material into.

3. Choose Mix from the DSP menu.
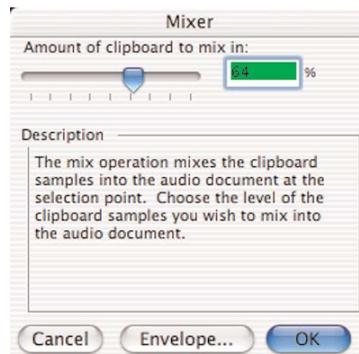
The Mixer dialog

4. In the dialog that appears, use the slider to adjust

the amount of the copied signal that you wish to mix into the target audio document. To mix copied material with a variable level, click the envelope button, create the desired envelope, and then click the Change button, and then click the Mix button.

5. Click OK. Peak mixes the two signals together.

6. To hear the results, press ⌘-Spacebar.
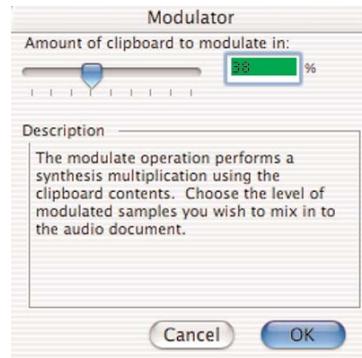
Modulate

The Modulate command functions as a "ring modulator" which multiplies two audio signals together (e.g., the material copied to the clipboard and the currently selected audio). The resulting audio includes the sum and difference tones of the frequency components of the modulated audio and the modulating audio. These are generally very complex timbres that often have a "metallic" (i.e., inharmonic) character to them.

> ⚠ *Try using generated tones, like sine, swept sine, square, or saw-tooth waves with the Modulate command.*

To use the Modulate command:

1. Select the desired source audio and choose Copy from the Edit menu or Toolbar (or press ⌘-C).

2. Select the destination audio.

3. Choose Modulate from the DSP menu.

4. In the dialog that appears, use the slider to adjust the amount of the copied signal that you wish to use to modulate the destination audio document.

The Modulator dialog

5. Click OK. Peak processes the two signals.

6. To hear the results, press the Spacebar.

> *LE̸* *Modulate is not available in Peak LE.*

> *DV̸* *Modulate is not available in Peak DV.*

Normalize

This command allows you to optimize the volume of a selection or an entire audio document so that it is at its maximum possible amplitude without clipping. The normalize function is very useful for boosting the volume of material that was recorded at too low a level, or if used on multiple audio documents, for making sure that the amplitude of each of the documents is uniform.

Note that because normalization uniformly changes the amplitude of a selection (i.e., the proportions between loud and soft stay the same), it does not have the same effect as compression/limiting (which makes the soft parts louder and does not allow the loud part to exceed a specified amplitude).

To normalize a selection:

1. Select the audio that you wish to normalize. If you wish to normalize the entire audio document, choose Select All from the Edit menu (⌘-A).

2. Choose Normalize from the DSP menu.

3. In the dialog that appears, use the slider to adjust the percentage of normalization from the maximum level.
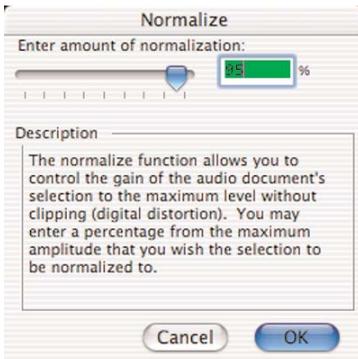
The Normalize dialog

4. Click OK. Peak normalizes the selected audio.

Panner

The Panner allows you to adjust the panning, or left-to-

right movement, of a stereo document by drawing an envelope in the Panner dialog. Left is at the top of the graph, and right is at the bottom.

To adjust the panning of a selection:

1. Select the stereo document that you wish to adjust. If you wish to select the entire document, choose Select All from the Edit menu (⌘-A).

2. Choose Panner from the DSP menu.
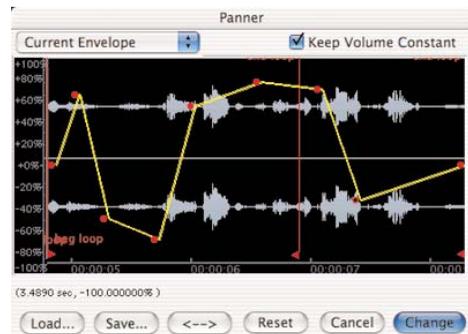
The Panner editor dialog

3. In the Panner editor dialog that appears, use the envelope to "draw in" the panning you desire.

4. Click OK. Peak will change the panning of the document to reflect the changes you've made.

Panner is not available in Peak LE.

Panner is not available in Peak DV.

Phase Vocoder

The Phase Vocoder is a type of audio spectrum analysis/resynthesis tool that allows you to modify the duration and/or pitch of an audio selection.

To use the Phase Vocoder:

1. Select the audio that you wish to process. If you wish to select the entire document, press ⌘-A.

2. Choose Phase Vocoder from the DSP menu. The Phase Vocoder dialog appears.
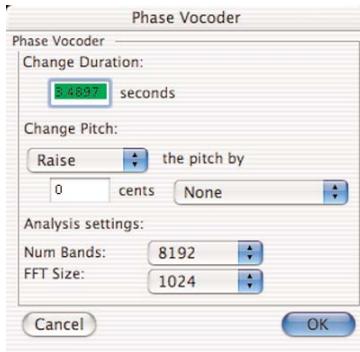
The Phase Vocoder dialog

3. In the Change Duration field, you can enter a new duration for the selection by typing the time in seconds.

4. In the Change Pitch field, you can change the pitch of the selection by entering a new value in cents. (Cents are divisions of a musical octave-one octave is equivalent to 1200 cents.) Common musical intervals are stored in the interval pop-up menu, allowing you to enter a major third, octave, or other intervals. Use the direction pop-up menu to control whether the pitch is shifted upward or downward.

5. In the Analysis Settings field, select the number of bands and FFT (Fast Fourier Transform) size to determine the quality of the output. The Phase Vocoder works by analyzing the frequency content of the audio selection and placing the found frequencies into tracks. These tracks are then used to control an oscillator-based resynthesis that uses the pitch and duration modifications you enter. In general, using a smaller FFT size brings less smearing of the audio output than higher FFT sizes. Using a larger number of bands setting used increases the accuracy while tracking of harmonic content of the source sound. In general, setting the FFT size larger than the number of bands will give undesirable results. Due to the nature of the Phase Vocoder's algorithm, optimum results are achieved when it is used with solo instruments and steady state sounds (such as a voice or solo flute line) rather than complex tones (such as an orchestra playing).

6. Click OK. Peak processes the audio. To hear the results, initiate playback.

Phase Vocoder is not available in Peak LE.

Phase Vocoder is not available in Peak DV.

Rappify

The Rappify command applies extreme dynamic filtering to a selection. As one Peak user described it, "Rappify can turn your hi-fi into lo-fi!" If the target material has a

pronounced beat, this has the effect of reducing the material to its most essential rhythmic components. Try using this function with a variety of different music material for some surprising and exciting results.

1. Select the audio that you wish to process. If you wish to select the entire document, press ⌘-A.

2. Choose Rappify from the DSP menu.
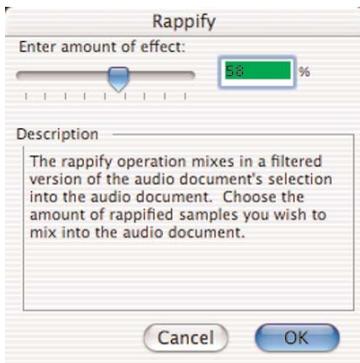
The Rappify dialog

3. In the dialog that appears, select the amount of "rappification" you wish to mix back into the original, with 100% being entirely rappified and 0% being unchanged.

4. Click OK. Peak processes the audio. To hear the results, initiate playback.

Rappify is not available in Peak LE.

Rappify is not available in Peak DV.

Repair Click

The Repair Click command will eliminate a selected click or "spike" in the waveform using the setting designated in the Repair Clicks dialog (explained next).

To repair a single click:

1. Place the Insertion Point diretly over the click you wish to repair.

2. Choose Zoom To Sample Level from the action menu (Shift-Left arrow).

3. Select the click in the waveform. Please be sure that your selection is no more than 100 samples.

4. Choose Repair Click from the DSP menu.

Repair Click is not available in Peak LE.

Repair Click is not available in Peak DV.

Repair Clicks

The Repair Clicks command allows you to find and repair pops or clicks in an audio document. The Repair Clicks dialog automates the process of finding and removing clicks (usually indicated by a sharp "spike" in a waveform), much like a search and replace dialog in a word processor.

The Repair Clicks dialog

The Repair Clicks operation works by looking for any significant discontinuity from sample to sample. For example, a sample value of -100 followed by a sample value of 10,000 is likely to be a click. Once the area of the click is identified, a smoothing technique is used to maintain the original shape of the area being repaired.

If you are working with mostly digitally induced clicks, the Repair Clicks dialog will become an indispensable tool. Extremely damaged signals such as those of a scratching and popping vinyl record will require more careful repair in addition to using the Repair Clicks dialog, such as Change Gain, Delete, and the Pencil Tool. Clicks such as those of a scratching and popping vinyl record loose their detectability once they are sampled using Analog to Digital converters.

Smoothing Factor

Smoothing Factor determines how much smoothing is applied to the click. Material with high frequency information may require lower smoothing factors to preserve the high frequencies. In general, a setting of 40-60 percent will repair most clicks.

Detection Setting

The Detection Setting value determines how the clicks are located. Higher values locate only the most severe clicks, while lower values will detect less severe clicks. Note that lower values such as 10% also have a greater chance of misjudging audio for a click. In general, a setting of 40-80% works well.

Repair Size

The Repair Size setting affects how many samples

around the click are used in determining the new shape of the repair. Repair size can vary from 5 to 100 samples, with a repair size of 50 samples working well in most circumstances. Peak will then interpolate what the correct waveform should be, and repair the click.

Buttons along the bottom of the Repair Clicks dialog allow you to control repairing, auditioning, and undoing click repairs:

- Click the Repair button when you wish to repair a click found by the Next Click button.

- Use the Next Click button to search for the next potential click in the audio selection.

- Once a click is located, you may listen to the click using the Audition button. The Audition button plays the click using the Pre-roll and Post-roll settings from the Auditioning dialog in the Preferences dialog.

- If you repair a click and are unsatisfied with the results, simply click on the Undo button.

- If you would like to repair all of the clicks in the audio document's selection without having to repair each one individually, click the Repair All button.

Be sure not to confuse repair size with the size of the selection containing the audio you want to scan and repair. The repair size refers to the size of each individual repaired click.

To repair multiple clicks in an audio document:

1. Select the entire audio document or the area in the audio document you wish to repair click.

2. Choose Repair Clicks from the DSP menu.

3. Click the Next Click button. Peak will search for any clicks. If none are found, you can try again with a lower detection setting.

4. Audition the click using the Audition button. The click should sound in the middle of the auditioned area.

5. Once the click is found, click the Repair button. Click the Audition button to make sure the click was adequately repaired. If it was not adequately repaired, use the Undo button, modify the smoothing factor or repair size and click the Repair button again.

6. Proceed from step 3 until all clicks are removed, or simply click the Repair All button. If you wish to stop the Repair All process, press ⌘-period.

To repair a single click from an audio document:

1. Select the area around the click, centering the click in the selection.

2. Choose Repair Clicks from the DSP menu or use Repair Click and skip step 3.

3. Click the Repair button. Then click the Audition button to make sure the click was adequately repaired. If it was not adequately repaired, use the Undo button, modify the smoothing factor or repair size and click the Repair button again.

You may need to lower the detection setting in the Repair Clicks dialog to find some clicks, depending upon their severity. Be careful not to lower the detection setting dramatically-lower it gradually for the best results.

Repair Click & Repair Clicks are not available in Peak LE.

Repair Click & Repair Clicks are not available in Peak DV.

Remove DC Offset

This function allows you to remove any DC Offset in your audio file. Peak scans the audio for DC offset and then removes it. Peak will scan the left and right channels of a stereo file independently. DC Offset is usually caused by problems in the analog to digital conversion process. The result is that the waveform is not centered on the base line – it is offset either higher or lower than the center line.

To use Remove DC Offset:

1. Select the audio that you wish to process. If you wish to select the entire document, choose Select All from the Edit menu (⌘-A).

2. Choose Remove DC Offset from the DSP menu. Peak will scan the audio, and automatically remove any DC offset that might be present.

Remove DC Offset is not available in Peak LE.

Remove DC Offset is not available in Peak DV.

Reverse Boomerang

The Reverse Boomerang command mixes a reversed copy of the selected audio with the original. This creates a variety of interesting and useful results. Try using Boomerang on drum loops, voice, and sound effects.

To use Reverse Boomerang:

1. Select the audio that you wish to process. If you wish to select the entire document, choose Select All from the Edit menu (⌘-A).

2. Choose Reverse Boomerang from the DSP menu.

3. In the dialog that appears, select the amount of reversed sound you wish to mix back into the original, with 100% being entirely reversed, and 0% being unchanged.
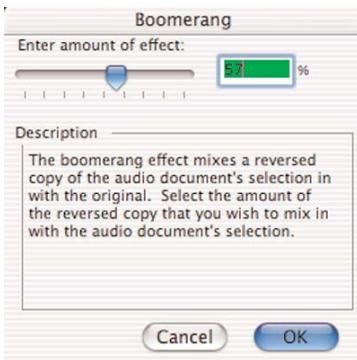
The Reverse Boomerang dialog

4. Click OK. Peak processes the audio. To hear the results, press the Spacebar to initiate playback.

Reverse

The Reverse command reverses the current selection. In a reversed selection, the last sample becomes the first sample, the second-to-last sample becomes the second sample, and so-forth. The effect is similar to playing a record or cassette tape backwards.

To reverse a selection:

1. Select the audio that you wish to reverse. If you wish to select the entire document, choose Select All from the Edit menu (⌘-A).

2. Choose Reverse from the DSP menu. Peak reverses the selected audio. To hear the results, start playback.

Swap Channels

The Swap Channels command reverses the left and right channels in a stereo selection.

To swap channels for a stereo selection:

1. Select the audio that you wish to reverse. If you wish to select the entire document, choose Select All from the Edit menu (⌘-A), or place the insertion point at the beginning of the stereo audio document.

2. Choose Swap Channels from the DSP menu. Peak swaps the left channel for the right channel and the right channel for the left channel. To hear the results, start playback.

Swap Channels is not available in Peak LE.

Swap Channels is not available in Peak DV.

Threshold

The Threshold command allows you to split up an audio document into its component parts by analyzing the amplitude levels in the audio document and setting a cutoff or threshold amplitude.
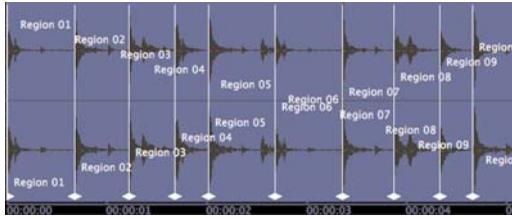
A drum loop, divided into individual beats, using the Threshold command, set to make regions

For instance, you might use the Threshold command on an audio document that contains successive notes from a musical instrument to split them up, or on a drum loop to break it up into its component parts. You can save the segments with Markers, or as Regions.

To use the Threshold command:

1. Select the audio you wish to process and choose Threshold from the DSP menu. After Peak analyzes the amplitudes in the selection, the Threshold dialog will appear, allowing you to select a threshold amplitude for both attack and release values.

The Threshold Regions dialog

2. Drag the threshold indicator left or right to set the threshold amplitude. As you drag the indicator, new markers will appear in the audio document forming markers or regions, depending on your settings. The Offset sliders allow you to "nudge" the onsets of markers or regions by plus or minus 0 to 512 samples.

3. Select Create Regions to create regions instead of markers. The separate Release Threshold, attack and nudge settings affect the region end points, allowing you to eliminate silence from the region end points.

4. Adjust the Attack value. This setting sets the amount of time that audio must stay above the given threshold to qualify as a new marker or region.

5. When you have finished, click OK.

6. After the audio document has been "thresholded" to your satisfaction, you can use the Export Regions command in the File menu to export the separated regions into new windows or files.

7. To select and play regions in order from left to right, press the Page Up key on your computer keyboard. To select and play regions in order from right to left, press the Page Down key.
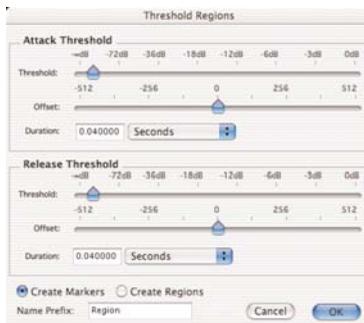
⚠️ *Use the Threshold command to create several looping points. To convert a marker to a Loop Start or Loop End point, double-click on the marker and change it to "Loop Start" or "Loop End" in the Edit Marker dialog. Also, try rearranging the regions generated by the Threshold function in the Playlist or by using Cut and Paste to create new interesting compositional and rhythmic ideas!*

LE *Threshold is not available in Peak LE.*

DV *Threshold is not available in Peak DV.*

Conclusion

You have now learned how to manipulate and process audio using Peak's native DSP capabilities. In the next chapter, you will learn how to use VST & Audio Unit plug-ins with Peak.

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Peak User's Guide

Chapter 8
Plug-Ins

Peak User's Guide

Chapter 8: Plug-Ins

Introduction

Peak supports "carbonized" and "Mach-O" VST 1.0, and Audio Unit format plug-ins. VST ("Virtual Studio Technology") is a standard audio plug-in technology developed by Steinberg Media Technologies, AG. Audio Unit plug-ins are an emerging standard from Apple Computer, Inc.

Both VST & Audio Unit plug-ins offer an exciting array of real-time effects by companies like Arboretum, BIAS, Cycling 74, Steinberg, Waves, Maxim Digital Audio, and others. VST & Audio Unit plug-ins are real-time, host-based audio plug-ins that run on your computer without any additional hardware.

Installing VST Plug-Ins

VST plug-ins can be installed in two locations - either in:

/Macintosh HD/Library/Audio/Plug-Ins/VST

or:

/MacintoshHD/Users/<YourUserAccount>/Library/Audio/Plug-Ins/VST

Be sure to consult the documentation that came with your VST plug-ins for the manufacturer's installation instructions.

Using VST Plug-Ins

Inserts

Peak can access VST plug-ins in two different ways - using "Inserts" or through Vbox SE. An insert can contain a single plug-in, and up to 5 inserts are available. When using inserts, signal flows through the effect in each insert in the order of the insert number. For example, if an equalizer plug-in is used on Insert 1, and a reverb plug-in is used on Insert 2, the output of the equalizer plug-in will flow into the input of the reverb plug-in. Inserts are typically more convenient when using a small number of plug-ins is required.

Vbox SE

Peak includes BIAS' Vbox SE for managing and mixing VST plug-ins. Think of Vbox SE as a virtual effects box, in which you can combine, repatch, and mix your VST plug-ins in real-time. Using its unique effects matrix, Vbox SE lets you combine multiple individual plug-ins. Vbox SE can patch plug-ins in series, in parallel, or in series and parallel, and you can hot-swap plug-ins. Vbox SE has controls for each plug-in to mute, solo, and edit parameters. Vbox SE also provides input and output gain controls both globally and for each individual plug-in, and a control for the global Wet/Dry mix. Use Vbox SE's A/B comparison feature to get just the right settings, and use

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Vbox SE's presets to store configurations and settings for later use.

⚠️ *To use multiple VST plug-ins within Vbox SE, you must select Vbox SE from an available insert. While Vbox SE can be used on one insert, and other VST plug-ins can be used on other inserts, it is recommended to use multiple plug-ins within the Vbox SE matrix, as it offers much more control and flexibility.*

Using Peak with Inserts

To open a VST plug-in on an insert:

1. Select Insert 1 from the Plug-Ins menu.

2. Select VST from the submenu.

3. Select the plug-in you wish to use from the   .
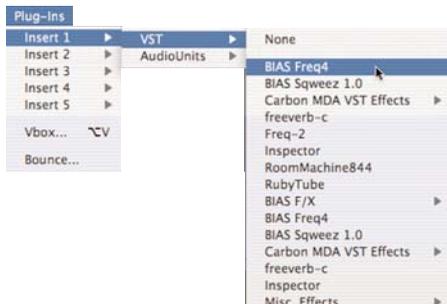
Opening a VST plug-in

To close a plug-in:

1. Select Insert 1 from the Plug-Ins menu.

2. Select VST from the submenu.

3. Select None from the second submenu.

To preview a plug-in:

1. With an audio document open, open the desired VST plug-in as described above.

2. Configure the plug-in's settings as desired (plug-ins from different manufacturers may have knobs, buttons, sliders and other types of controls).

3. Audition the audio document, and make any adjustments to the plug-in's controls, if necessary. VST plug-ins operate in real time, so any adjustments to controls are heard instantly.

To apply a VST plug-in:

1. Follow the steps described above, for previewing VST plug-ins.

2. Select Bounce from the Plug-Ins menu. Peak will apply the current plug-in settings to the audio document in the foreground.

3. When processing ("Bouncing") is finished, Peak will display a dialog asking if the plug-in should be disabled. If you are finished using the plug-in for the time being, click Yes. If you have additional files to process with the same plug-in, click No.

🚫*LE* *Peak LE supports a single insert and can only host one plug-in at a time.*

🚫*DV* *Peak DV supports a single insert and can only host one plug-in at a time.*

Using Peak with Vbox SE

To open Vbox SE in Peak:

1. Select Vbox SE from the Plug-Ins menu.

2. The Vbox SE matrix appears.

⚠️ *Peak LE & DV do not include Vbox SE. Peak LE & DV users may purchase Vbox SE separately to add support for multiple VST plug-ins in parallel or serial combinations.*

The Vbox SE Matrix

The large area inside the Vbox SE window with 4 rows and 4 columns of smaller boxes inside it is the Vbox SE matrix. You can assign, route, and modify VST plug-in inside the Vbox SE matrix.

The actual size of the Vbox SE matrix may be larger than the 4x4 grid shown in the Vbox SE window. You can scroll through the Vbox SE matrix using the arrow controllers located at the lower-right hand corner of the Vbox SE window.

The Vbox SE Matrix Graphical User Interface
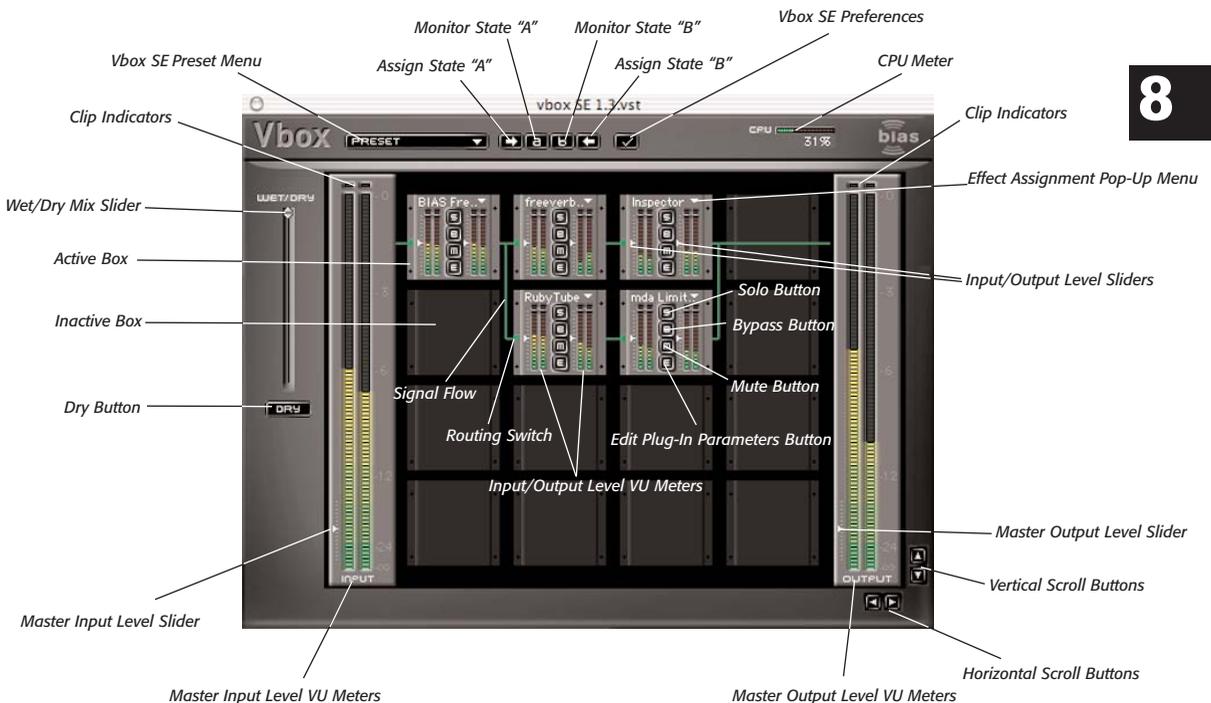
The Vbox SE matrix with 5 plug-ins active

An inactive box

An activated box

Box Controls

The Vbox SE matrix is made up of individual boxes. Each box can be assigned a VST plug-in. When a box has a VST plug-in assigned to it, it is activated. If there is no a plug-in assigned to a box, it is inactive:

An activated box has several features including the name of the assigned plug-in, 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 system's VST plug-in folder will appear, allowing you to assign a particular VST plug-in to the box.

Assigning a VST plug-in in Vbox SE

To assign a VST plug-in:

1. Click in an inactive box for the Effect Assignment pop-up menu.

2. Select the desired VST plug-in from the pop-up menu. The pop-up menu will display all VST plug-ins currently installed in the system's VST plug-ins folder.

⚠ *If you playback with more VST plug-ins than your CPU can handle, audio may begin to playback erratically. The CPU meter at the top right of the Vbox SE window allows you to monitor CPU usage.*

Organizing VST Plug-ins with Folders

Peak allows you to organize your VST plug-ins into folders inside the VST plug-ins folder.
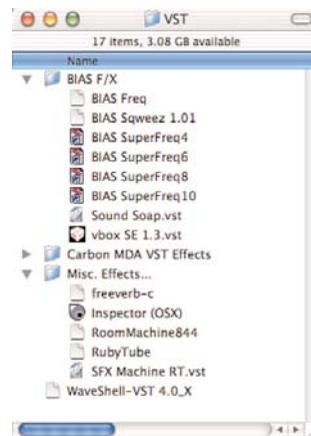
Organizing VST plug-ins with Folders

Each folder you create inside the VST plug-ins folder can store groups of plug-ins that will appear as submenus in the Effect Assignment pop-up menu in Vbox SE.

To deactivate a VST plug-in on an active box:

1. Click on the name of the currently assigned plug-in.

2. Choose None from the Effect Assignment pop-up menu.

To "hot swap" a VST plug-in on an active box:

1. Click on the name of the currently assigned plug-in.

2. Select a different VST plug-in.

⚠ *When shopping for plug-ins, be sure that they are Mac OS X compatible. Peak supports both "carbonized" and "Mach-O" format VST 1.0 effects plug-ins.*

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.
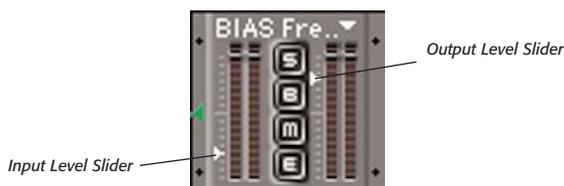
Output Level Slider

Input Level Slider

Click and drag the indicator up or down to cut or boost the audio +/-6 dB (+/-100%). The center position of the indicator is 0 dB 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.

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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 in the row.

Edit

The Edit button brings up the VST plug-in editor for the box. The VST plug-in editor will appear in a new window.

Moving Plug-Ins

Vbox SE lets you move plug-ins from any active box to any other box, active or inactive, in the Vbox SE matrix.

To move a plug-in from one box to another:

- Click on the meters of the active box, the cursor will change to a grabbing hand, and drag and drop it on any other box. There is no need to precisely align the plug-in within the borders of the target box, just drag and drop the plug-in to the middle of the target box and it will snap into place.
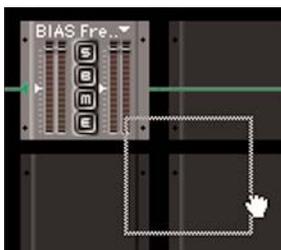
Moving a plug-in from one box to another

Moving a plug-in to an inactive box will simply move the plug-in from one box to the other. Moving a plug-in to an active box will replace the plug-in in the target box.

Changing Input Routing

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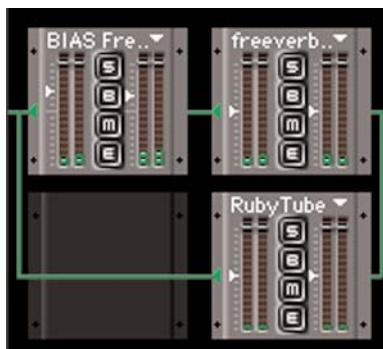
Left-box input
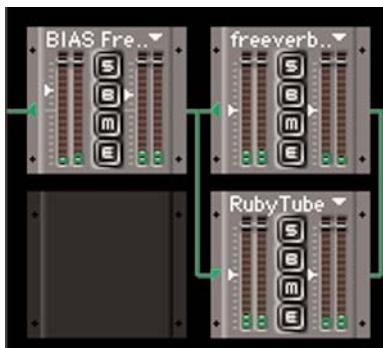
Upper-left box input

Creating Serial Effects Chains

Vbox SE will automatically assume you want to create serial chains of boxes. Simply activate boxes in rows, making sure there are no inactive boxes between the first and last active plug-ins in the row.

Creating Parallel Effects Chains

Use the input indicator on the left center of a box to create parallel effect chains.

Master Wet/Dry Controls

Wet/Dry Mix Slider

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

Master Input/Output Levels

Master Input & Output Level VU Meters

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 +/-6 dB (+/-100%). The center position of the indicator is 0 dB 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 SE Presets

Vbox SE Presets Pop-Up Menu

You can save your Vbox SE matrix as a preset or restore a Vbox SE matrix by clicking on the Presets pop-up menu at the top of the Vbox SE matrix. Any presets you save into the Vbox SE Presets folder will appear in the Presets pop-up menu. The Vbox SE Presets folder resides in the following directory on OS X.

/Users/<YourUserAccount>/Library/Preferences/

A/B Comparisons

A/B Comparison Control Buttons

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

Vbox SE Preferences

You can control the size of the Vbox SE matrix by pressing on the Preferences button at the top of the Vbox SE 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 SE. The Vbox SE matrix can grow as large as 99x99!
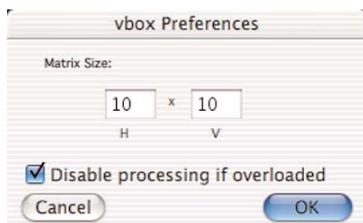
The Vbox SE Preferences dialog

Editing VST Plug-In Parameters

Pressing the Edit button on an active box opens its editor. You will be able to adjust the parameters of the specific VST plug-in.

A plug-in editor window (BIAS SoundSoap – not included with Peak)

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 existing presets for the plug-in, or click on the name of the preset for the Presets pop-up menu.

A plug-in editor window's controls for scrolling through factory presets, Loading/Saving custom presets, and bypassing signal through the plug-in

BIAS Freq
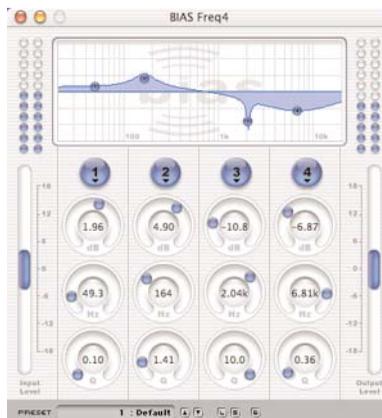
BIAS Freq

BIAS Freq is a professional-caliber 4-band EQ included with Peak 4. Freq supports -18 dB to +18 dB Gain Values, 0.1 to 10 Q (bandwidth) values, and sweep-able frequencies from 20 Hz to 20 kHz. Freq has Peak, Notch, High-Shelf, and Low-Shelf filters available for each band. Freq also includes individual band bypass buttons, and

24 dB stereo input and output meters. For more information on using BIAS Freq, please refer to the BIAS Freq User's Guide.

Peak LE includes a 2-band edition of Freq

BIAS Sqweez

BIAS Sqweez™ Compressor/Limiter

BIAS Sqweez™ is a professional quality compressor/limiter that is included with Peak 4. Sqweez offers independent input/output meters, threshold, gain, attack, release, ratio, and knee controls, as well as auto-gain and soft clip modes. For more information on using BIAS Freq, please refer to the BIAS Sqweez User's Guide.

Peak LE does not include the Sqweez plug-in

Peak DV does not include the Sqweez plug-in

Bouncing VST Plug-Ins

Once you have the right settings for your VST plug-ins, you will probably want to apply the effects to the audio document. The process to do this is called "bouncing." Bounce the audio file to process the audio document with any active VST plug-ins. Bouncing changes the audio data stored on disk, allowing you to use the Save command to permanently apply the plug-in effects to your audio document.

To bounce VST plug-ins:

1. Make a selection in the audio document. If you choose not to make a selection, the bounce will be applied to the entire audio file.

2. Choose Bounce from the Plug-ins menu. The VST plug-ins are applied to the selection. This process may take a while, depending on the number of VST Plug-Ins you are applying and also depending on the size of selection in the audio file.

Choosing Bounce from the Plug-Ins menu

3. You will be prompted to disable all VST Plug-Ins after the bounce. If there are no additional audio documents you wish to bounce with the same VST settings, click Yes. Otherwise, click No. Note that if you leave the VST effects active after the bounce, playback will sound like you are processing the audio through the VST plug-ins twice.

4. You can now save the audio document using the Save command under Peak's File menu, or undo the bounce using the Undo command under the Edit menu.

VST Envelope

Peak allows you to apply VST effects gradually according to a specified envelope.

To apply VST effects variably over time:

1. Make a selection of the audio document you want to process.

2. Choose VST Envelope from the Preferences dialog.

VST Envelope dialog

3. A dialog appears allowing you to draw a breakpoint envelope to control how much of the VST effect is applied over time. Points at the top of the graph

represent 100% wet, while points at the bottom of the graph represent 0% wet (dry).

4. When you are finished drawing an envelope, click Change.

5. Configure the VST plug-ins you want to apply.

6. Choose Bounce from the VST Plug-ins menu.

VST Plug-In Delays

To compensate for VST plug-in delays when bouncing VST effects on a selection, hold down the Option key when choosing Bounce VST Effects and enter the delay compensation you want in samples.

To determine VST delay compensation:

1. Bounce VST effects.

2. Measure the silence inserted by the bounce by selecting the silence and viewing the duration of the selection in samples.

3. Undo the bounce.

4. Hold down the Option key while choosing Bounce VST Effects.
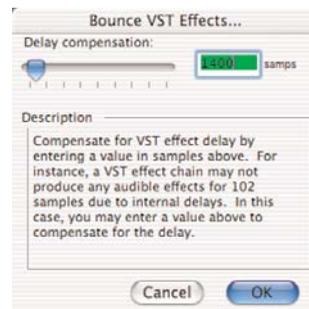
The Bounce VST Effects dialog

5. Enter the VST delay compensation amount from step 2.

6. Click OK or press Return.

Recording Through VST Plug-Ins

Peak will let you use record through your VST plug-ins. This can be a very useful, timesaving step for processing audio.

To record through VST plug-ins:

1. Open an Audio Document.

2. Select VST Plug-Ins from the VST Plug-Ins menu and configure Vbox SE with the VST plug-ins you want to record through.

3. Choose the Record Settings from under the Audio menu.

4. Enable Record Through VST Plug-in in addition to any other Record Settings you want. Click OK.

5. Choose Record from the Audio menu to open the Record dialog and begin recording.

Using VST Plug-Ins with the Batch File Processor

Peak will let you use your VST plug-ins with the Batch File Processor (see Chapter 9: Batch File Processor & Apple Events for a detailed description of the Batch File Processor). This can be a very powerful and timesaving

processing option if you need to apply the same VST plug-in(s) to many audio files.

To use VST plug-ins with the Batch File Processor:

1. Open an Audio Document.

2. Select VST Plug-Ins from the VST Plug-Ins menu and configure Vbox SE with the VST plug-ins you want to use in the batch process.

3. Choose the Batch File Processor from under the File menu.

4. Choose any other processes you want to use for the Batch File Processor and Set the Batch File Processor's Output directory folder.

5. Add Bounce VST Effects from the Available Processes to the list of Selected Processes for Batch.

6. Turn the Batch File Processor On and click OK.

7. Go to the Finder and drag and drop the Audio Files/Folders that you want to batch process over the Peak icon.

8. Peak will batch process these files and save them to the designated directory folder.

 Peak LE does not support Batch File Processing.

Using Audio Unit Plug-Ins

To open a Audio Unit plug-in on an insert:

1. Select Insert 1 from the Plug-Ins menu.

2. Select Audio Unit from the submenu.

Opening an Audio Unit plug-

3. Select the plug-in you wish to use from the second submenu.
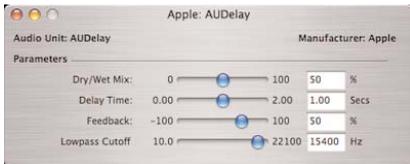
Audio Unit plug-in editor window (Apple AUDelay)

To close an Audio Unit plug-in:

1. Select Insert 1 from the Plug-Ins menu.

2. Select Audio Unit from the submenu.

3.Select None from the second submenu.

To preview an Audio Unit plug-in:

1. With an audio document open, open the desired Audio Unit plug-in as described above.

2. Configure the plug-in's settings as desired (plug-ins from different manufacturers may have knobs, buttons, sliders and other types of controls).

3. Audition the audio document, and make any adjustments to the plug-in's controls, if necessary.

Audio Unit plug-ins operate in real time, so any adjustments to controls are heard instantly.

To apply an Audio Unit plug-in:

1. Follow the steps described above, for previewing Audio Unit plug-ins.

2. Select Bounce from the Plug-Ins menu. Peak will apply the current plug-in settings to the audio document in the foreground.

3. When processing ("Bouncing") is finished, Peak will display a dialog asking if the plug-in should be disabled. If you are finished using the plug-in for the time being, click Yes. If you have additional files to process with the same plug-in, click No.

Using Audio Unit Plug-Ins with the Batch File Processor

Peak will let you use your Audio Unit plug-ins with the Batch File Processor (see Chapter 9: Batch File Processor & Apple Events for a detailed description of the Batch File Processor). This can be a very powerful and time-saving processing option if you need to apply the same Audio Unit plug-in(s) to many audio files.

To use Audio Unit plug-ins with the Batch File Processor:

1. Open an Audio Document.

2. Select the desired Audio Unit Plug-Ins from the Plug-Ins menu and configure them as desired for use in the batch process.

3. Choose the Batch File Processor from under the File menu.

4.   Choose any other processes you want to use for the Batch File Processor and Set the Batch File Processor's Output directory folder.

5.   Add "Bounce" from the Available Processes to the list of Selected Processes for Batch.

6.   Turn the Batch File Processor On and click OK.

7.   Go to the Finder and drag and drop the Audio Files/Folders that you want to batch process over the Peak icon.

8.   Peak will batch process these files and save them to the designated directory folder.

LÉ   *Peak LE does not support Batch File Processing.*

Conclusion

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You have now learned how to manipulate and process audio using VST & Audio Unit plug-ins with Peak. In the next chapter, you will learn how to use Peak's powerful Batch File Processor as well as how to use Apple Events with Peak for file management.

Chapter 9
Batch File Processor & Apple Events

Peak User's Guide

Chapter 9:
Batch File Processor and Apple Events

Introduction

Peak allows you to process any number of audio files at once with any number of possible processes using the Batch File Processor. Peak also supports Apple Events, which allows you to manage whole libraries of audio files quickly and easily with database applications such as FileMaker Pro.

Batch File Processor

Peak's Batch File Processor is one of the most powerful, versatile, and useful features in Peak. Using the Batch File Processor, you can integrate any series of Peak processes (called a batch script), and apply these scripts to any number of audio files.
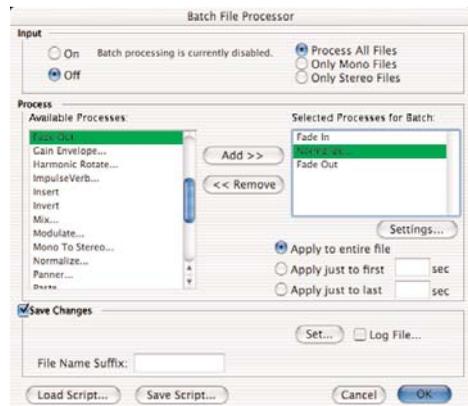
> ⚠️ *The currently open audio document and selection you make will be used for previewing processes sequenced into your batch script.*

To use Batch File Processing, go to the File menu and select Batch Processor. The Batch File Processor dialog appears.

Peak's Batch File Processor is split into three areas: Input, Process, and Save Changes. Sequence a series of steps for Peak to execute in the Process section, then set your output file settings in the Save Changes area. Once Peak's Batch File Processor is configured, you may turn on the Batch File Processor in the Input area.

Peak's Batch File Processor

Once the Batch File Processor is configured and turned on, any files you drop onto the Peak application's icon (or an alias) will be batch processed according to your settings. You can even drop folders or disks onto Peak's icon and all of the supported audio contents will be batch processed. You can continue dropping files, folder, or disks, onto the Peak icon for batch processing while the Batch File Processor is turned on. All subfolders within folders or disks you drag onto the Peak applica-

tion for Batch File Processing will be recreated in the Batch File Processor's output directory, preserving all organization of your files. Audio documents opened using the Open command from the File menu will not be batch processed.

You can also have the Batch File Processor run in the background while you continue work in any other application.

Supported contents include all file formats that Peak can read, including AIFF, Sound Designer II, WAVE, QuickTime, Raw, JAM image files, System 7 Sound, AU, and MP3 & MP4 files.

New audio documents created with the Batch File Processor will have the same file name as the original input audio document or with a suffix.

Input Area

The Input Area allows you to enable or disable batch file processing. Once the Batch File Processor is configured, you may turn it on with the On button. If you have finished batch processing and no longer need to batch process files, you can use the Off button to disable batch file processing.

You can include/exclude mono or stereo files from the batch process by using the Process All Files, Only Mono Files, and Only Stereo Files buttons. Process All Files is the default setting. To have Peak's batch processor only work with mono files, click the Only Mono Files button. Similarly, to only process stereo files (excluding mono files), engage Only Stereo Files.

⚠️ *If you are going to process both stereo and mono audio documents, open a stereo audio document and make a selection before configuring the batch processor. This will allow most processes to make the correct decisions on how to process both mono and stereo input files using the Batch File Processor.*

The Process Area shows two lists. The list on the left, labeled Available Processes allows you to select processes that will be used in your batch script. Almost every process or plug-in available in Peak will appear in this list. The list on the right is labeled Selected Processes For Batch and contains the Peak processes in the current batch script. Double-click on a process in the Available Processes list to add it to the Selected Processes for Batch list. Alternatively, click on a process in the Available Processes list and then click the Add >> button. To remove items from the Selected Processes for Batch list, click on the items and then click on the << Remove button.
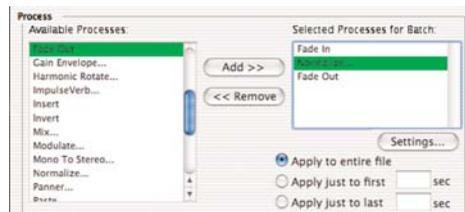
Process Area

When you add a process to the Available Processes list, you may be required to supply settings for the process. The front-most audio document and selection will be used for any previewing the process may support. Peak's batch processor allows you to use multiple instances, or occurrences, of a single process-each with its own settings.

You may also specify which part of the file to apply the process to. Once a process has been added to the Selected Processes for Batch list, you may use one of the buttons Entire File, Apply Just To First x Seconds, or Apply Just To Last x Seconds. Use these buttons to configure how to apply the selected process to an audio document. For instance, if you are using a Fade In process and only wish to apply it to just the first three seconds of the audio document, click the Fade In process from the Selected Processes for Batch list and then type a "3" into the Apply Just to First x Seconds edit text field. All processes are applied by default to Entire File unless you configure the process otherwise.

Save Changes Area

Use the Save Changes Area to configure how your audio documents will be stored after they have been saved using your batch script. Click the Set button to specify the output document format and settings.

After clicking Set you will be asked to provide the output file format, bit depth, and compression options using the Save As dialog described in Chapter 3. Choose which folder to save the processed audio files into with the Save As dialog.

You can create a text Log File during batch processing to keep track of which files have been processed. This is useful for lengthy batch processing sessions where the possibility of a power failure or other circumstance could prevent the batch process from completing. Click on the Log File checkbox to specify that a log file should be created for the batch process. After turning the Log File feature on, Peak will ask you to provide a destination for the

log file. The log file can be viewed using TextEdit or any application that can view text files. The Batch File Processor will divert any error messages to the log file if it is enabled. This is useful because any errors Peak encounters during batch file processing will not require user attention during processing. However, Peak will issue a System Beep sound if an error occurs during Batch File Processing. If this happens, check the log file for errors.

If you want the output audio files of your Batch Process to be appended with a suffix, such as .WAV, simply enter the suffix you want appended in the File Name Suffix field. All resulting audio file names will be appended with the suffix you specify.

Make sure that the output directory (folder) is not set to the input directory or Peak's Batch File Processor may get caught in a loop. Peak's Batch File Processor does not support overwriting input files.

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Save Script

Peak allows you to save your batch script into a settings file that can be recalled later. This feature is useful if you frequently process files using a specific sequence of processes. After configuring the Batch File Processor, click Save Script to save your batch sequence into a Batch Script file. You will be prompted for a saving location and name for the batch script. The settings file holding your batch script will store the processes, each process' settings, the and output file format.

Load Script

To recall a batch script settings file that was stored using the Save Script feature (as described above), click this button. For example:

To convert a folder of files into AIFF IMA 4:1 files Normalized to 95% with a Log:

1. Choose the Batch Processor command from the File menu.

2. Double-click the Normalize item in the Available Processes list. Enter "95" in the following normalization settings dialog.

3. Click Set in the Save Changes Area of the Batch File Processor. Choose AIFF from the File Format pop-up menu. Choose IMA 4:1 from the Compression pop-up menu.

4. Choose the folder to save the output files into. Click Save.

5. You will be back in the Batch File Processing dialog. Click Log and choose the output folder to save the log file into.

6. Click the On button in the Input Area of the Batch File Processor. The Batch File Processor is now turned on.

7. Click OK to close the Batch File Processor dialog.

8. Switch to the Finder, and drag and drop a folder full of audio documents onto the Peak application's icon.

9. Peak will process all audio files in the folder that was dropped onto the Peak application icon.

10. Once the files have been processed, open an audio document, choose the Batch Processor command from the File menu. You may then turn off the Batch File Processor by clicking Off in the Batch Processing dialog.

Errors and Cancelling Batch Processes

Any errors during Batch File Processing will produce a System Beep to notify you of the trouble. If an error occurs during Batch File Processing, Peak will not place an error dialog on the screen. This happens so that processing can continue. If you have specified that you wish to create a log file, errors messages that would appear in an error dialog will appear in the log file indicating where in the batch file process the error occurred.

Once the batch file processor has started, it will continue to process files as quickly as possible. If you find it necessary to halt the batch process, press ⌘-Period. A dialog will appear allowing you to cancel the batch process. If you choose to cancel the batch process, Peak will finish processing the current file and then ignore any other files to be processed. Once batch processing has been cancelled, Peak will turn the batch file processor Off.

Batch File Processing is not available in Peak LE.

Peak's Audio Librarian Tools

Peak's Audio Librarian Tools are ideal for anyone who maintains a large number of sound effects and other audio files. Through Apple Events, the Peak allows users to catalog and audition sounds from ordinary database applications, such as FileMaker Pro (several ready-made templates are included). Peak also includes Batch Region Processing (via the Export Regions command in the File menu).

Apple Events Support

Peak understands a vocabulary of Apple Events. Apple Events can automate procedures for you, such as triggering the playback of an audio document.

The standard suite of Apple Events that "savvy" applications must understand includes the "odoc" (open document) event. For example, when you double-click on a Microsoft Word document, the Macintosh Finder sends an "odoc" Apple Event to the application Microsoft Word. Unfortunately, "odoc" requires the complete document path of the document you wish to open. You can use "odoc" with Peak, but Peak has another feature that makes opening and playing your documents much easier: simplified document descriptions instead of entire document paths. To illustrate this difference, compare the following:

Full Document Path:

John's HD:Sounds:Brass:Trombones:With Mutes:C5A6.aiff

Simplified Document Path:

Volume Name: John's HD:
Document Name: C5-A6.aiff

Using the simplified document path, Peak searches the indicated volume for the first occurrence of a document matching the name described (called a Find File operation). Once it is found, it is opened up and ready for playback.

"Savvy" Core Suite of Apple Events (event class = 'aevt')

odoc

Open Document

The "odoc" event instructs Peak to open an audio document with the document path provided in the data following the event.

quit

Quit Peak

The "quit" event Quits Peak.

Peak has its own class of events that it understands, all of which have the ID "furp." This class descriptor must be present for Peak to understand the events you send to it.

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Peak events (event class = 'FURP')

sff

Set FindFile Volume

The "sffv" event tells Peak to use the data following the event (a string of text) as the Volume name to search when providing a simplified document path. When specifying volumes, don't use colons in the name of the volume.

sfff

Set FindFile File

The "sfff" event tells Peak to use the data following the event as the name of the document to find when specifying a simplified document path.

offf

Open the FindFile File

The "offf" event tells Peak to find the document on a volume specified by the most recent "sfff" and "sffv" events. If the document is found, it is opened in a window. If the document is not found, Peak will beep once.

stop

Stop any currently playing audio

The "stop" event takes no additional data and instructs Peak to stop playing any audio that is currently playing.

clos

Close the front-most window

The "clos" event takes no additional data and instructs Peak to close the front-most window, if one exists.

play

Play the front most window

The "play" event initiates playback of the front most opened audio document. Use the "stop" event to stop playback, or wait until the document completes it's playback.

Example Scripts

The FileMaker Pro documents included in the Peak Extras folder are intended to illustrate Peak's functionality in an audio document database environment. To try out the scripts, open one of the FileMaker Pro documents, type in the Volume Name (the exact name of the hard disk the audio document resides on) and Document Name for an audio document on one of your hard drives, hit Enter and press the graphic play button. If the document is found, Peak will play the audio document. You can type in new records with the ⌘-N keystroke from FileMaker Pro to get a new empty record.

Below is an example Script Definition from FileMaker Pro that might be used to create a Play Button. There are six steps to this Script Definition:

1. Stop any currently playing audio documents (STOP).

2. Close any open digital audio windows (CLOS).

3. Pass the FindFile Volume name to Peak from some FileMaker Pro field (SFFV).

4. Pass the FindFile File name to Peak from some FileMaker Pro field (SFFF).

5. Tell Peak to find and open the document described by steps 3 and 4, above (OFFF).

6. Tell Peak to Play the front-most audio document (PLAY) (most likely opened in step 5).

FileMaker Pro is not included with Peak.

Sample Script Definition from FileMaker Pro

Apple Events are not supported in Peak LE.

Apple Events are not supported in Peak DV.

Conclusion

You have now learned how to batch process audio using Peak's Batch File Processor as well as using Apple Events to manage whole libraries of audio files with database software such as FileMaker Pro. In the next chapter, you will learn how to use Peak to edit and transfer samples with Samplers.

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Chapter 10
Samplers

Chapter 10:
Samplers

Introduction

Peak allows you to import samples directly from compatible samplers, edit or process the audio using all of Peak's powerful editing and processing functions, and then send the modified sample back to the sampler, all in the digital domain. This capability allows you to use Peak as a powerful sample editing and sound design tool, giving you access to audio processing capabilities far more advanced than those typically found on sample playback instruments.

Peak supports SMDI samplers, including the Kurzweil K2000 and K2500 series, the Peavey SP/SX, and several E-mu samplers, including the ESI-32, the E-64, and the E-IV (requires a SCSI cable between the sampler and the Macintosh).

The following sections explain how to transfer audio documents between your sampler and your Macintosh.

⚠️ *Some samplers have a different interpretation of loop points than Peak does. To compensate, you may need to use the Sampler preference dialog to adjust loop points forward or backward by plus or minus one sample. You may enter independent settings for sending and receiving loop points, as well as loop start and loop end offsets for each. To adjust loop point offsets, select Sampler from the Preferences dialog.*

Working with SMDI Samplers

Peak's SMDI Sampler Support makes it possible to transfer several audio documents at once to or from your SMDI sampler.

SMDI Samplers supported in Peak (at time of printing):

- E-mu - E-IV, ESI-32, ESI-4000, E-64, E5000

- KURZWEIL - K2000, K2500, K2600

- PEAVEY - SP/SX

- YAMAHA - A3000, A4000, A5000

SMDI Samplers

SMDI Samplers, such as the Kurzweil K2500 or the E-mu E-IV, use SCSI to transfer samples between devices. In order to transfer samples between the Macintosh and your sampler using SMDI, you must connect a SCSI cable between your Macintosh and the sampler. Consult your sampler's owner's manual for instructions on how to connect the cable to your Macintosh with proper termination. Always use high-quality SCSI cables to avoid data transmission errors.

Peak allows the user to turn fast Asynchronous SCSI transfers On or Off in the Sampler dialog. Turn Asynchronous transfers OFF if you are having trouble transmitting samples to a SMDI device, or if your

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Macintosh does not support Asynchronous SCSI transfers

To use the SMDI Sampler dialog:

• Choose SMDI Sampler or the name of your sampler from the Sampler menu. The SMDI Sampler Transfer dialog appears.
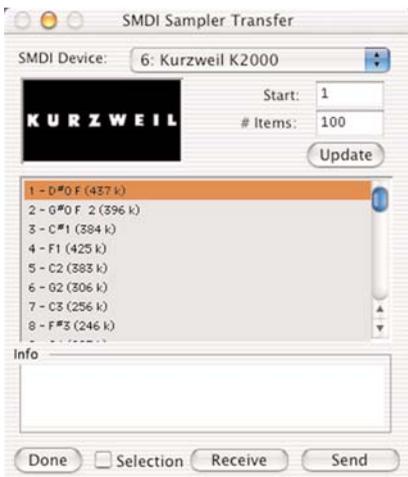
The SMDI Sampler Transfer dialog

List of Samples

This dialog features a list of samples stored in the SMDI device. Since there are hundreds of sample locations in a SMDI device, an exact range of samples to display is used. You may click on items in the list to view detailed information about the sample in the Info portion of the SMDI Sampler Transfer dialog. You may also Shift-click or ⌘-shift-click to select multiple items in the list of samples.

Update

The Update button rebuilds the list of samples shown in the SMDI Sampler Transfer dialog. Peak will scan the SMDI device starting at the sample number indicated in the Start edit text field until the number of samples entered in # Items edit text field have been scanned.

SMDI Device

Any SMDI devices Peak detects attached to your Macintosh will show up in this pop-up menu. Choose the device using the pop-up menu. Peak will scan the device for sample information starting at the sample number indicated in the Start edit text field.

Start

Enter the first sample number stored in your sampler that you wish to view in the list of samples. If you change this value, you must click on the Update button for the list of samples to be updated. Some SMDI samplers start their samples at sample number zero, others start at 200. Refer to your SMDI Sampler's manual for information on how samples are stored in your particular device.

Items

The # Items edit text field controls how many samples are displayed in the list of samples. If you change this value, you must click on the Update button for the list of samples to be updated.

Send

To send the front-most Peak audio document to the SMDI Sampler, click on the sample in the list of samples that you wish to send the sample to and press the Send button. If a sample already exists at the chosen location in the SMDI Sampler, it will be replaced.

Receive

To receive a sample from the SMDI sampler, click on the sample in the list of samples that you wish to receive and press the Receive button.

⚠️ *To receive multiple samples from your SMDI Sampler, shift-click or ⌘-click multiple destinations in the list of samples and click the Receive button.*

To send an audio document to your SMDI sampler:

1. Choose Open from the File menu to locate and open the audio document you wish to send to your SMDI sampler. Alternatively, open the audio document by double-clicking it in the Finder.

2. Choose the SMDI Sampler command from the Sampler menu. If Peak finds a SMDI sampler connected to your Macintosh, the SMDI Sampler Transfer dialog appears.

3. Make sure the correct SMDI device is selected in the SMDI Device pop-up menu.

4. Click on the sample in the List of Samples that you wish to replace.

5. Click Send. Peak will send the sample to your SMDI sampler.

6. When you are finished using the SMDI Transfer dialog, click the close box of the dialog or click the Cancel button.

To send a SMDI sample to Peak:

1. Choose the SMDI Sampler command from the Sampler menu. If your SMDI sampler is properly connected to the Macintosh SCSI chain, you will see the SMDI Sampler Transfer dialog appear.

2. Make sure the correct SMDI device is selected in the SMDI Sampler pop-up menu.

3. Click on a sample in the List of Samples that you wish to receive.

4. Click the Receive button. Peak will transfer the sample you identified to the Macintosh and place it into a new audio document window. Audio documents created by bringing samples over from a SMDI device are not saved until you use the Save command from the File menu.

5. When you are finished, click the SMDI Sampler Transfer dialog's close box or click the Cancel button.

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- Click on a sample in the List of Samples. If your SMDI device has a sample stored at this sample number location, Peak will retrieve the information about the sample including its sample rate, size, bit depth, stereo/mono format, and loop points and display the information in the Info area of the SMDI Transfer dialog. If there is not a sample stored in the SMDI device with the sample number, "(Empty)" will appear in the sample Info area of the SMDI Transfer dialog.

SMDI Sampler Error Messages & Troubleshooting

If a SMDI device cannot be found connected to your Macintosh, Peak will display the message "No SMDI devices could be found connected to this Macintosh." If this happens, and your SMDI device is connected to your Macintosh with a SCSI cable, try the following:

- Make sure your SCSI cables are properly connected. SCSI cables can come loose if they are not tightened down using the cable's connector screws. Make sure you connect the SCSI cables to your Macintosh only when it is turned off.

- Make sure there is not another SCSI device connected to your Macintosh using the same SCSI ID as your SMDI device. Consult your SMDI device's owner manual for information on how to change the SCSI ID of your SMDI device.

- You may need to turn on your SCSI devices in the correct order. Turn all of the SCSI devices connected to your Macintosh on first, then turn on the Macintosh and launch the Peak application.

A note about the Yamaha A3000

Peak supports the Yamaha A3000 digital sampler. You can access the A3000 sampler using either the Yamaha A3000 or SMDI menu selection under Peak's Sampler menu. Please note the A3000 cannot replace existing samples, and any transfers to the A3000 will be placed in at the next available empty sample in RAM, regardless of where you instruct Peak to place the sample. When "BulkProtect" is turned on, the A3000 does not respond to SMDI messages. "BulkProtect" is at UTILITY mode, MIDI function, Bulk page. BulkProtect is always ON after you turn on the A3000, so you will need to turn it off before you can do SMDI transfers.

You can access the Sampler Preferences from Peak's Preferences dialog to set Loop Offsets and Asynchronous SCSI transfer.
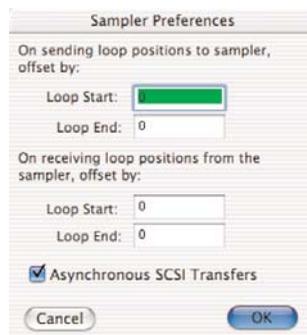
The Sampler Preferences dialog

Conclusion

You have now learned how to import samples directly from compatible samplers (to edit or process the audio using all of Peak's functions) and send the modified samples back to the sampler. In the next and final chapter,

you will find detailed descriptions of every Peak menu
item.

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Chapter 11
Peak Menus

Peak User's Guide

Chapter 11:

Peak Menus

This chapter explains each of the commands found in Peak's menus. For step-by-step instructions on implementing these commands, refer to the index, and go to the appropriate chapter where use of the command is covered.

Peak Menu

About Peak...

This menu shows information about the particular version of Peak you are using, including the exact version number and your serial number.

Help

This command will launch your web browser, and take you to the Documentation section of the BIAS website, where you can download manuals, tutorials, and access online technical support information.

Authorize Peak

This menu option will automatically take your contact information from the OS X Address Book application, and fill out Peak's Authorization screen. You will need to enter your Peak serial number. Once submitted, your information will be sent to BIAS, your copy of Peak will be registered in your name, and your Product Authorization Code will be returned to the email address you specified in the Authorization screen.

Preferences...

The Preferences command opens Peak's Preferences dialog, which contains many of the customizable elements of the application. Preferences details are listed below, for each category of Preferences found in Peak's Preferences dialog.
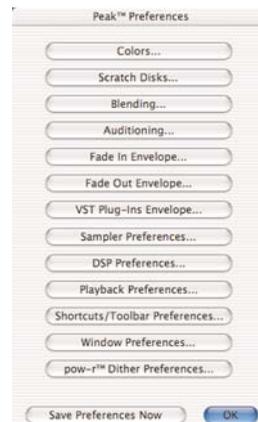
Peak's Preferences dialog

Colors

Peak allows you to customize the colors used to display the elements in audio documents. You can use this dialog to set the background color, waveform color, and colors for markers and loops. You can select either a preset color combination, or individual colors for each element in the audio document window, as well as picking your own custom colors from a color palette. You can also choose to have the waveform display shading for a 3-D look, as well as select the amount of shading. Changes made using the Colors dialog affect both the current audio document's colors, and any subsequent new audio document's colors. See Chapter 3 for more information on this feature.

Document Colors dialog

Scratch Disks

Because audio data can be very large, Peak utilizes a portion of your hard disk's free space to hold audio documents that have been cut or copied, as well as for temporary or "scratch" files for undo purposes. If your hard disk is short on space, you may not be able to cut, copy, or modify large selections. If you have more than one hard drive attached to your Macintosh, the Scratch Disks command in the Preference dialog allows you to choose the hard drives (or "scratch disks") that you wish to use for these temporary files. Peak allows you to select which disk you want to have as your default, or "Primary" disk for this purpose-usually you would select the disk that has the most free space. If you are connected to a file server, you can utilize available storage on the server by clicking the Allow Servers checkbox. Any available servers will then appear in the Scratch Disks pop-up menu. This feature is recommended only if you have access to a high speed Ethernet, Media Net, or other fast server.

Scratch Disks dialog

Blending

Blending is an automatic crossfade function with a user-editable envelope. Peak can apply blending to areas of an audio document when they are modified by cutting, pasting or other editing processes in order to smooth abrupt transitions between waveform amplitudes. It can be very useful for creating a smooth transition between edits that would otherwise sound too abrupt. If are going to cut, paste, or insert audio into a document, you may wish to enable blending to smooth things out a bit.

It can be toggled on or off by choosing this command or by clicking the Blend enable/disable button at the top right of the audio document window. For detailed instructions on how to use blending or how to edit the blending crossfade envelope, see Chapter 5: Editing.
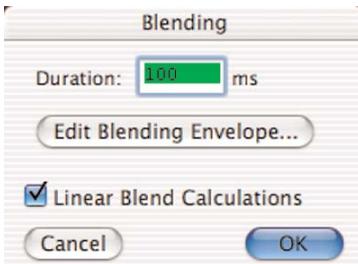
The Blending dialog

Auditioning

Peak's Auditioning command allows you to audition a selection along with a specific amount of audio preceding or following it. The Auditioning dialog allows you to select a desired amount of Pre-roll or Post-roll when you play the selection.
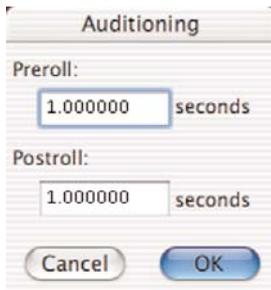
The Auditioning dialog

Fade In Envelope

The Fade In Envelope command allows you to edit Peak's fade-in envelope. Fade-ins can be very useful for smoothly fading into an audio document, or for fading into one type of audio material from another. Very short fade ins can also be useful for smoothing or removing clicks and pops in a recording. The Fade In Envelope dialog allows you to control the exact shape of a fade in by providing you with user definable envelope controls. For detailed instructions on how to create fade ins and edit their envelopes, see Chapter 5: Editing.
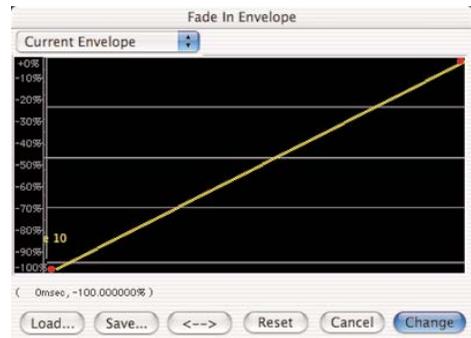
Fade In Envelope

Fade Out Envelope

The Fade Out Envelope command allows you to edit Peak's fade-out envelope. Fade-outs can be very useful for smoothly fading out of an audio document, or for fading out of one type of audio material into another. The Fade Out Envelope dialog allows you to control the exact shape of a fade out by providing you with user-definable envelope controls. For detailed instructions on how to create fade out and edit their envelopes, see Chapter 5: Editing.

VST Plug-Ins Envelope

This command allows you to apply VST plug-in effects gradually according to the envelope you create in the Envelope Editor dialog. This is very useful for applying effects over time.

VST Plug-Ins Envelope

Sampler Preferences

The Sampler command allows you to set an offset of one sample, for those samplers that require it, as well as choose SCSI preferences. See Chapter 10: Samplers, for more on the Sampler Preferences dialog.
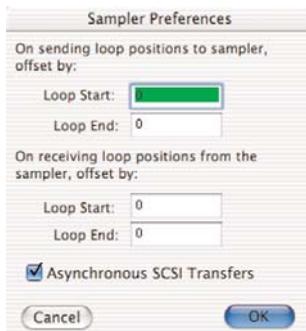
The Sampler Preferences dialog

DSP Preferences

Peak DSP Preferences allow you to set the size of the "window" used in time shifting, and the quality of sample rate conversion.
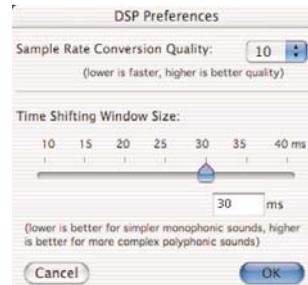
The DSP Preferences dialog

Playback Preferences

Peak's Playback Preferences dialog contains the following controls:
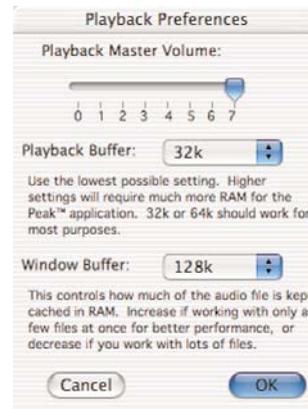
Playback Preferences Dialog

Playback Master Volume

Peak provides a master volume control for audio playback. In the Playback Preferences dialog, set Peak's out-

put volume to the level that you desire by adjusting the slider or entering a number value from 0 (silent) to 7 (loudest). If you are controlling your playback volume with the volume control of your playback system, you will most likely want to leave the output level set to 7.

Playback Buffer

Peak allows you to control the amount of RAM the program uses when playing back audio documents. In general, lower is better. A playback buffer of 32k is a good place to start. If you are experiencing clicks in your playback, working with fragmented files, using processor-intensive real-time DSP, or are using a slow hard drive, you may need a larger playback buffer setting.

Window Buffer

Peak also allows you to control the amount of RAM the program uses to keep audio documents buffered in RAM. Use larger values if you are working with a few large files, and smaller values if you are working with many smaller files. Experiment to find the best settings for your system and working style.

Shortcuts/Toolbar Preferences

Peak allows you to customize any Peak menu item with a keyboard shortcut. To change your keyboard shortcuts, go to the Preference menu and select the Shortcuts and Toolbar item.   Keyboard shortcuts are stored in a preference file in the directory /Users/<YourUserAccount>/Library/Preferences/.

Peak's default Keyboard Shortcuts are listed in Appendix 1.

You may also customize the Peak Toolbar using the Shortcuts & Toolbar dialog. Just scroll to a function in the dialog list, and use the checkbox to toggle the icon on and off. This allows you to group only the items you use most frequently on the Toolbar for easy access.

The Shortcuts & Toolbar dialog

Customized Shortcuts & Toolbar are not available in Peak LE

Customized Shortcuts & Toolbar are not available in Peak DV

Window Preferences

Peak's Window Preferences allow you to designate which windows "float" above open documents. Use the Floaters dialog to specify which windows (Transport, Contents, Movie, or VST plug-ins) float or not.

Also contained in the Window Preferences dialog is a checkbox for Live Document Resizing. Live Document Resizing scales an audio document's contents when the window is resized, allowing you to see the audio waveform's size change as you change the size of the window. A check in the Live Document Resizing box indicates that the preference is turned on - an absence of a check indicates that it is turned off.
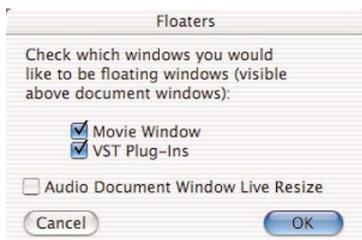
The Floaters dialog

POW-r™ Dither Preferences

Choose the POW-r Dither Settings from the Preference dialog to adjust the settings for POW-r Dither.

If you use Save As command to save an audio document to a lower bit depth (e.g., saving a 24-bit file to a 16-bit file), be sure to enable the POW-r Dither checkbox. The file will then be saved to the specified bit depth using POW-r Dither according to the type of dithering selected in the POW-r Dither Settings dialog.
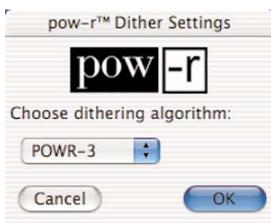
POW-r Dither settings dialog

Hide Peak

Temporarily puts Peak into the background, and hides all windows. Peak can be brought back into the foreground by choosing its icon from the Dock.

Hide Others

Temporarily puts any other open applications into the background. This is a useful command if you have several applications open, and want to focus on working in Peak. Other applications can be brought back into the foreground by clicking on their icon in the Dock.

Quit Peak

Choosing Quit Peak closes the Peak application. If you haven't saved changes to a currently open audio document, Peak will prompt you to do so before quitting.

File Menu

This menu contains all of the standard Macintosh commands for opening, closing, and saving files, as well as several additional commands specific to the Peak application.

New

This command allows you to create a new Peak audio document. When you choose this command, a submenu menu appears which allows you to choose either a mono or stereo format for the new audio document, or to cre-

ate a Playlist document or a new audio document from an open Playlist document.

Mono Document

Choosing Mono Document (⌘-N) creates a mono (one channel) audio document.

Stereo Document

Choosing Stereo Document (Shift-⌘-N) creates a stereo (two channel) audio document.

Document From Selection

Choosing Document From Selection (Option-N) creates a new audio document from any selected audio in an open audio document.

Playlist Document

Choosing Playlist Document (Shift-⌘-P) creates a new Playlist document.

Document From Playlist

Choosing Document From Playlist (⌘-B) creates a new audio document from an open Playlist document.

Open

The Open command (⌘-O) allows you to locate and open an audio document. Peak can open audio documents in a variety of formats including AIFF, Sound Designer II, WAVE, QuickTime, .dv, Raw, System 7 Sound, Sonic AIFF, Paris, JAM Image, AU, MP3, and MP4. Peak allows you to have as many documents open at the same time as RAM permits. The more free memory that is available, the more documents you will be able to open and work with simultaneously.

The Open dialog

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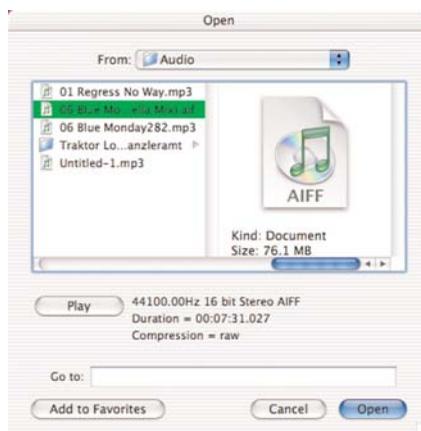
Close

The Close command (⌘-W) closes the currently active Peak audio document. If you haven't saved changes, Peak will prompt you to do so before it closes the document. If you have many documents open and don't wish to save any of the changes you've made, option-click on the prompt dialog's Don't Save button.

Close All

The Close All command (Option-⌘-W) closes all open Peak audio documents. If you haven't saved changes, Peak will prompt you to do so before it closes the documents. If you don't wish to save any of the changes you've made, option-click on the prompt dialog's Don't Save button.

Save

The Save command (⌘-S) saves the current audio document. Peak can save audio documents in a variety of audio file formats including:

- **AIFF:** This is Apple's Audio Interchange File Format. It is also Peak's default file format and is supported by many Macintosh software applications.

- **Sound Designer II:** This is Digidesign's audio file format for its digital audio products. Use this format if you wish to use an audio document in a Digidesign audio application.

- **WAVE:** This is Microsoft's Windows Audio File Format. It is supported by many Window's software applications and some Macintosh applica-

tions. The WAVE format is best if you plan to use an audio document in an application that supports or requires WAVE format files.

- **QuickTime:** This is Apple's audio file format 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™.

- **Raw:** This is the headerless raw file format that may be useful for some game platforms.

- **System 7 Sounds:** This the Apple audio file format used for legacy Macintosh Operating System Sounds.

- **Sonic AIFF:** The file format used by Sonic Solutions audio workstations.

- **.paf:** This is the file format used by E-mu's Paris audio system.

- **JAM image files:** This is the JAM audio image file format. JAM audio image files may be created in Peak and used in Roxio JAM for burning audio CDs. (See Chapter 6: Playlists & CD Burning for more information.)

- **.au:** This file format is commonly used on the World Wide Web and in Java audio applets. It is supported by many platforms and programs.

- **MP3:** Saves audio as MP3 encoded audio.

Different formats allow different information to be stored with the file. If you open a file created in a format other than Peak's default AIFF format, Peak will preserve any format-specific information unless you save the file

into a different file format. Saving a file in a different format than its original format, however, may cause some information stored in the file to be discarded. For instance, Sound Designer regions cannot be stored in QuickTime, AU, System 7, or MP3 files; nor can copyright, author, or other file format-specific information be saved in a format which doesn't support it.

The Save As dialog

Save As

The Save As (Shift-⌘-S) command allows you to save a copy of the current audio document under a different name, in a different location on your hard drive, or in a different audio file format. The saved copy will become the active open audio document.

You can save the document with a variety of audio compression schemes. For detailed instructions on using this feature, see Chapter 3: Peak Basics.

Save A Copy As

The Save A Copy As command (Option-⌘-S) allows you to save a copy of the currently active open audio document under a different name without replacing the active open audio document.

Import CD Track

The Import CD Track command allows you to import tracks from an audio CD. CD tracks imported to Peak will be saved as AIFF files. For more detail on importing CD audio with Peak, see Chapter 4: Playback & Recording.
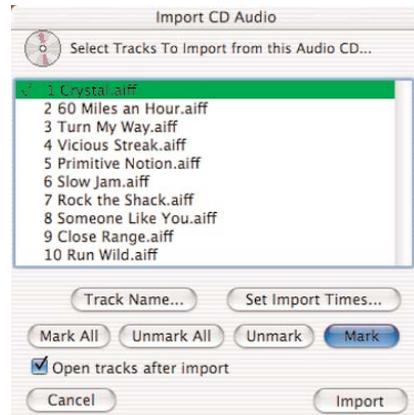
Import CD Audio dialog

Import Dual Mono

The Import Dual Mono command lets you import two mono files and create an interleaved stereo file. Certain audio applications, such as BIAS Deck, do not directly support stereo interleaved files, and instead use "dual mono" files, which comprise the right and left channels of stereo material. Peak allows you to open such dual mono files, and in the process creates a new stereo audio document. Because Peak actually writes a new stereo audio file to disk, this conversion process requires hard disk space equivalent to the two original mono files. For more information on opening dual mono files, see Chapter 3: Peak Basics.

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Export Dual Mono

The Export Dual Mono command allows you to save a stereo audio document as separate mono digital audio documents. This feature is convenient if you intend to use the audio document in a multitrack audio application, such as BIAS Deck or Pro Tools, which does not directly support stereo audio files. When you choose this command Peak will prompt you to name both the left and right sides with a Save dialog.

Export Regions

If you have placed markers or Regions in an audio document, Peak's Export Regions command allows you to save each of these regions as a separate audio document. This feature is very convenient if you wish to divide a larger file into regions and transfer them as samples into a sample playback instrument, or divide a live concert record into regions and export those regions as separate files. Furthermore, you can use Peak's Batch File Processor to process a file's regions with any of Peak's DSP functions and third party plug-ins during the automatic exporting of regions into new files. For more information on exporting regions, see Chapter 5: Editing.
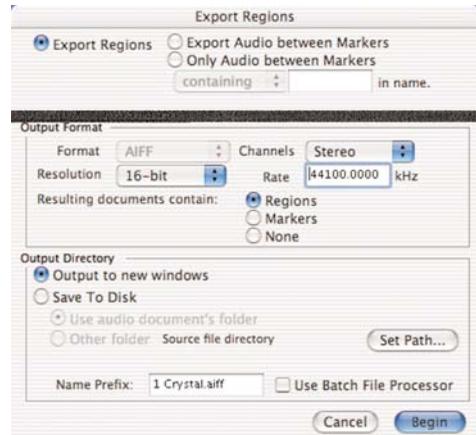
The Export Regions dialog

Export as Text

If you wish to keep a text record of your Playlist, you may export the Playlist into a new text document. The text document will show names, times, crossfade times, and gain levels of each Playlist Event.

Batch Processor

Peak's Batch File Processor is one of the most powerful, versatile, and useful features in Peak. Using the Batch File Processor, you can integrate any series of Peak processes (called a batch script), and apply these scripts

to any number of audio files.

To use Batch File Processing, go to the File menu and select Batch Processing. The Batch File Processor dialog appears.
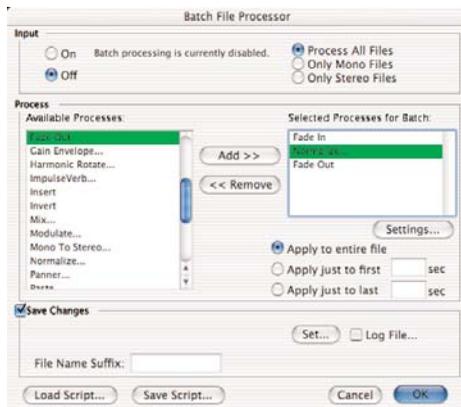
Batch File Processor

Peak's Batch File Processor is split into three areas: Input, Process, and Save Changes. Sequence a series of steps for Peak to execute in the Process section, then set your output file settings in the Save Changes area. Once Peak's Batch File Processor is configured, you may turn on the Batch File Processor in the Input area.

Once the Batch File Processor is configured and turned on, any files you drop onto the Peak application's icon (or an alias) will be batch processed according to your settings. You can even drop folders or disks onto Peak's icon and all of the supported audio contents will be batch processed. You can continue to dropping files, folder, or disks, onto the Peak icon for batch processing while the Batch File Processor is turned on. All subfolders within folders or disks you drag onto the Peak application for Batch File Processing will be recreated in the Batch File Processor's output directory, preserving all

organization of your files. Audio documents opened using the Open command from the File menu will not be batch processed.

Batch File Processor is not available in Peak LE.

Burn Audio CD

Choosing the Burn Audio CD command will burn the foreground audio document as an audio CD. If regions are contained in the document, Peak will prompt you as to whether these should be used to designate different tracks on the finished audio CD.

Recently Opened Documents

Peak automatically remembers the last several audio documents or playlists that you have opened and keeps a list of these at the bottom of the File dialog. This allows you to easily select a document's name and reopen it without having to search for it on your hard drive. Peak can find and open a document even if you have changed its location on your hard drive, too. And if you change the name of the file, the next time you open Peak, Peak will automatically update the name in its internal list.

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Edit Menu

This menu contains all of the standard Macintosh commands for cutting, copying, and pasting, as well as several other commands specific to Peak.

Undo

The Undo command (⌘-Z) undoes the last action that you performed. Since Peak features unlimited undo and redo capability, repeatedly choosing this command will undo each action that you have performed on your audio document. If you wish, you can continue undoing actions until you return to the original state of the audio document. When there are no actions left to undo, the Undo command will be unavailable and appear grayed out.

Redo

The Redo command (⌘-Y) "undoes" the undo command. If you wish, you can continue redoing actions

until there are no items left to redo. In this case, the Redo command will be unavailable and appear grayed out. The only limitation in using the Redo command is that if you insert a new action when a redo action is available, you will no longer be able to redo. In other words, as soon as you perform an editing action other than Undo, Redo is no longer available

Edits

The Edits command provides you with a second unique and powerful "unlimited undo" feature. You can think of the Edits command as a kind of "random access" undo with a list of all your editing actions since you last saved. Using this list, you can navigate back in time to the point at which you performed a particular edit, and if you wish, undo it. Once you have returned to an earlier state in the project, you are free to start editing from that point on, if you wish.
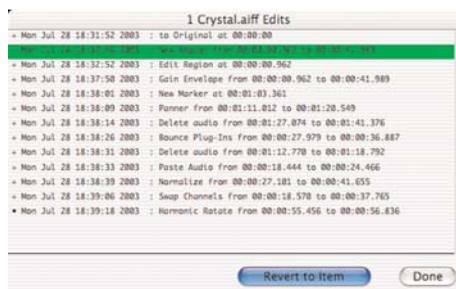
The Edits dialog

Be aware that if you do go back to a past action and perform a different action at that state in the project, any edits that originally followed will be gone and you won't be able to redo them.

Cut

The Cut command (⌘-X) cuts selected data from an audio document and places a copy of it on Peak's Clipboard. Once you have cut a portion of an audio document, you can paste it or insert it at another location in the same document or a different document.

Copy

The Copy command (⌘-C) copies selected audio into Peak's Clipboard. Once you have copied a portion of an audio document, you can paste it or insert it at another location in the same document or a different document.

Paste

The Paste command (⌘-V) allows you to paste the contents of the Clipboard into a location that you choose by placing an insertion point. Pasting audio deletes any selected audio and inserts the clipboard audio at the insertion point.

Replace

The Replace command allows you to paste audio over existing audio-to paste audio into an audio document without pushing all data to the right of the insertion point farther to the right (later in time) to accommodate the newly pasted audio.

Insert

The Insert command (⌘-D) allows you to paste audio

into an audio document without overwriting any existing data at the insertion point. When you paste data with the Insert command, all audio to the right of the insertion point or selection start is pushed farther to the right (later in time) to accommodate the newly pasted audio.

Insert Silence

The Insert Silence command allows you to insert a specific amount of silence into an audio document at the current insertion point. When you choose this command, Peak will prompt you to enter the amount of silence you wish to insert. You can enter this value in samples, milliseconds, or seconds. All audio occurring after the insertion point is moved later in time by the amount of the silence that you insert.
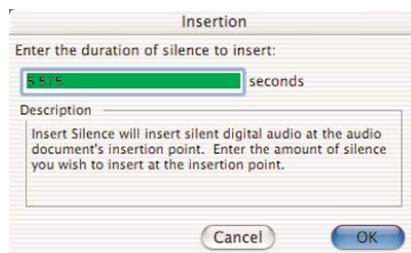
The Insert Silence dialog

Silence

The Silence command (⌘-E) replaces the selected audio in the audio document's selection with silence.

Delete

The Delete command (the Delete key) allows you to cut an audio selection without transferring it to the

Clipboard.

Delete Except Audio

The Delete Except Audio command (Option-Delete) allows you to easily remove all markers, region markers and loops in the current audio document selection without removing the audio.

Crop

The Crop command (⌘-`) allows you to remove all other audio from the audio document except the selection.

Clear Clipboard

Peak utilizes a portion of your hard disk's free space to hold audio that has been cut or copied. The Clear Clipboard command allows you to free up disk space occupied by the contents of the clipboard if you no longer need the audio contained there.

Select All

The Select All command (⌘-A) selects all audio in the audio document.

Insertion Point at Selection Start/End

The Insertion Point at Selection Start command (Up Arrow) places the insertion point at the beginning of a

selection. The Insertion Point at Selection End command (Down Arrow) places the insertion point at the end of a selection.

Set Selection

The Set Selection command allows you to precisely edit the length, start and end times of an audio selection by entering numerical values ion the Set Selection dialog. Use the Units pop-up menu at the top of the dialog to select the time units you want, and use the radio buttons to select whether you want to affect the Start or End of the selection.

The Set Selection dialog

Select Loop

The Select Loop command (⌘-"-") will automatically select the audio within the loop start and loop end markers, if you have defined a loop in a document.

Previous Selection/Next Selection

If you have made a selection in an audio document, then made another selection, you can use Previous Selection

(⌘-Left Arrow) to jump back to the previous selection. You can then use Next Selection (⌘-Right Arrow) to jump ahead again. This works for multiple selections.

Action Menu

This menu provides several commands for zooming in and out of the audio document window, creating loops, markers and regions, and navigating to specific locations in an audio document.
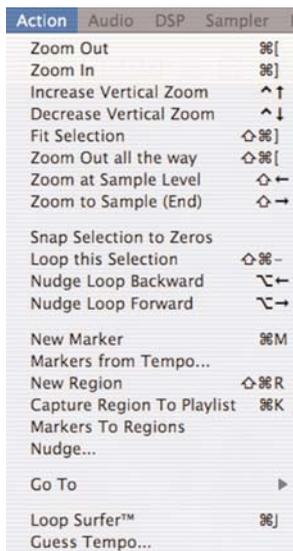
Zoom Out

The Zoom Out command (⌘-[) zooms the waveform view out allowing you to see more of the entire waveform, but in less detail. The Zoom Out command is useful for obtaining a better "big picture" view of audio material. To zoom progressively out from a waveform, select this command repeatedly or press ⌘-[repeatedly on your computer keyboard.

Zoom In

The Zoom In command (⌘-]) zooms the waveform view in so that you can view audio data in greater detail. The Zoom In command is essential when you wish to select and edit audio with great precision. To view a waveform in progressively greater detail, select this command repeatedly or press ⌘-] repeatedly on your computer keyboard. Holding down the Option key while you make a selection will zoom the waveform view in so that your selection fills the audio document window after you release the mouse button.

Increase Vertical Zoom

The Increase Vertical Zoom command (Control-Up Arrow) makes the waveform "taller," or increases the vertical zoom. The Increase Vertical Zoom command is useful for obtaining a better "big picture" view of quieter audio material.

Decrease Vertical Zoom

The Decrease Vertical Zoom command (Control-Down Arrow) makes the waveform "shorter," or decreases the vertical zoom.

Fit Selection

The Fit Selection command (Shift-⌘-]) will zoom the

view so that your selection fills the audio document window.

Zoom Out All the Way

The Zoom Out all the way command (Shift-⌘-[) zooms the audio document window to show an overview of the entire audio document.

Zoom at Sample Level

The Zoom at Sample Level command (Shift-Left Arrow) zooms the audio document window to the single-cycle level, allowing you to view the waveform a single sample at a time. This is useful for drawing on the sample with a pencil tool, or fine-tuning loops and markers.

Zoom at Sample Level (End)

The Zoom at Sample Level (End) command (Shift-Right Arrow) zooms the audio document window to the single-cycle level and places the insertion point at the end of the audio selection.

Snap Selection to Zeros

The Snap Selection to Zeros command will cause the beginning and end of the current selection to move to the nearest zero-crossings.

Loop This Selection

The Loop This Selection command (Shift-⌘-"-") auto-

matically creates a loop from the current selection by placing loop markers on either side of the selection. Since Peak supports a single loop per audio document, choosing this command in a document with a loop already defined will cause the loop markers to move to the current selection.

Nudge Loop Backward

The Nudge Loop Backward command (Option-Left Arrow) pushes, or "nudges," the loop point backward. This allows you to fine-tune the loop.

Nudge Loop Forward

The Nudge Loop Backward command (Option-Right Arrow) pushes, or "nudges," the loop point forward. This allows you to fine-tune the loop.

New Marker

The New Marker command (⌘-M) creates a new marker at the current insertion point in an audio document. Markers are locations in an audio document that you define as important. By marking specific locations in a recording, you can navigate easily to a location for selection, editing or playback purposes.

Once you have defined a marker, you can assign or edit a number of its attributes with the Edit Marker dialog that appears when you double-click the marker. This dialog and the attributes contained within are explained in Chapter 5: Editing.
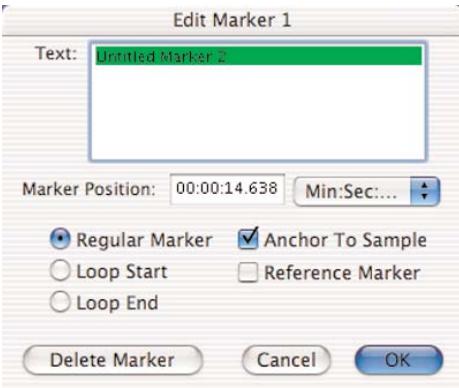
The Edit Marker dialog

Markers from Tempo

The Markers from Tempo command will automatically create reference markers at regular intervals based on the tempo that is entered. To use Markers from Tempo, you will either need to know the tempo of the audio material you are working with, or you can use Peak's Guess Tempo feature to figure it out. Place Peak's insertion point in the waveform at the point you wish to have the first marker placed. Designate whether you prefer to have markers placed every Beat or Bar, and then indicate the duration for which you wish to have markers placed. Peak will place markers either for the duration of a selected range of audio, or you can enter a specific value. Click OK to create markers. Markers from Tempo is described in more detail in Chapter 5: Editing.

> ⚠️ *When working with audio material with a pronounced beat, it's best to place the insertion point just before a downbeat. This ensures that all following reference markers will also be placed just before beats for the duration you choose.*

New Region

The New Region command (Shift-⌘-R) defines a selection as a new region and adds it to the Regions menu. Locate a region by double-clicking the name of a Region in the Contents Palette or Contents Drawer. The audio document will automatically scroll to display the selected region, and the region will become the current selection in the audio document. For more detail on using Regions in Peak, see Chapter 6: Playlists & CD Burning.

Capture Region to Playlist

The Capture Region to Playlist command (⌘-K) will create a region based on a selection made in an audio document and automatically enter it into a Playlist. This feature is very useful when you need to quickly create regions that will also be used immediately in a Playlist.

Markers to Regions

The Markers to Regions command will convert any markers in a selection to Regions. If you make a selection containing two markers, they will be converted to one Region with the name of the first marker. If you make a selection containing three or more markers, the markers will be converted to contiguous, butt-spliced Regions. For example, if you have three markers named "Foo 1", "Foo 2", and "Foo 3" and select them and apply Markers to Regions, the resulting two regions will be named "Foo 1" and "Foo 2"-wherein the first marker has become the begin Region marker of Region "Foo 1", the second marker has become the end Region marker of Region "Foo 1" and the begin Region marker of "Foo 2", and the third marker has become the end Region marker of Region "Foo 2".

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Alternatively, hold down the option key down when selecting the Markers To Regions command to make each marker a region that ends at the next marker.
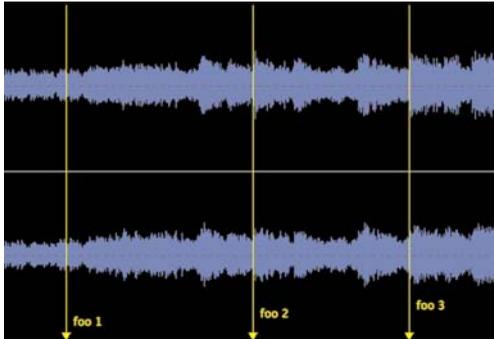
Three Markers named "Foo"
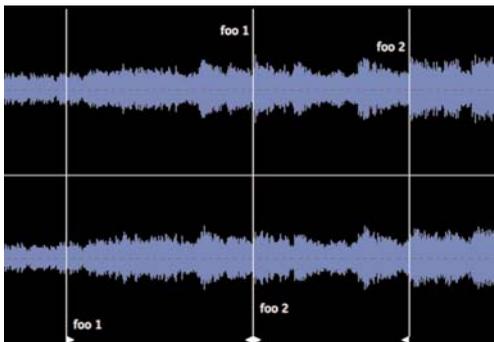
Two Regions named "Foo"

Nudge

The Nudge command allows you to nudge all markers, loops and regions in the current audio document selection by the number of seconds entered in the Nudge Markers dialog. Type either positive or negative numbers, and Peak nudges the marker by the value you entered in the dialog.
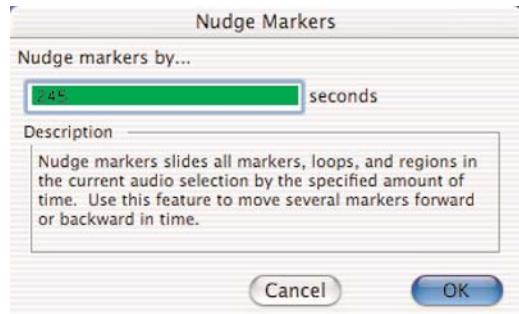
The Nudge dialog

Go To

The Go To command (⌘-G) allows you to quickly and precisely navigate to a the start or end of a selection, the start or end of a loop, a specific marker, or a specific time location in an audio document. This command is essential for speedily locating any of these important locations in an audio document. Choosing the Go To Time command allows you to enter the exact time location that you wish to navigate to. In addition, the Location submenu lists all markers, regions and loops.

The Go To Time dialog

In addition, the Location submenu lists all markers, regions and loops.
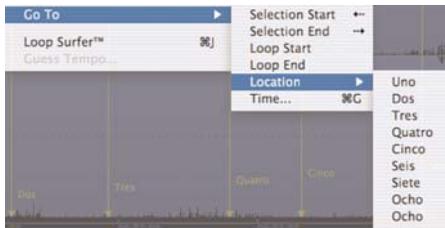
The Go To Location submenu

Loop Surfer is not available in Peak LE.

Loop Surfer is not available in Peak DV.

Loop Surfer

Peak's Loop Surfer feature (⌘-J) automates some of the steps for setting up loop points. Loop Surfer allows you to "Loop Surf" (adjust your loops during playback) quickly, easily and in a musically intuitive manner.
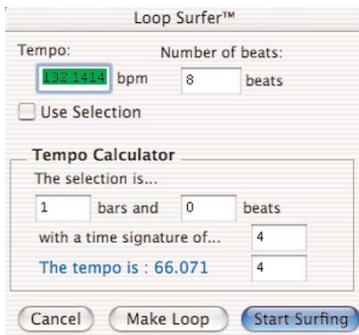
The Loop Surfer dialog

If you're working with music, and know the music's tempo in beats per minute, you can use Loop Surfer to create a loop which lasts for a rhythmically "correct" length of time. For more detail regarding Loop Surfer, see Chapter 5: Editing.

Guess Tempo

If you are working with music and don't know the tempo-and your music has a relatively pronounced or obvious beat-you can use the Guess Tempo command to have Peak automatically guess the tempo of a selection. Make a selection and choose Guess Tempo from the Action menu. There will be a pause while Peak scans your selection and calculates the tempo for you. A dialog will then appear showing you the estimated tempo in BPM, or beats per minute. You can then enter the estimated tempo in BPM in the Loop Surfer dialog's Tempo field or in the Audio Information dialog's Tempo field or press the Loop It button to create a loop at the current insertion point with the detected BPM.

Audio Menu

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The Audio menu contains commands for playing back and recording audio, as well as configuring Peak's Recording Settings, your audio hardware, and Peak's Meters.

Stop/Rewind

The Stop/Rewind command (Return) stops playback and places the insertion point at the beginning of the audio document.

Play/Pause

The Play/Pause command (Spacebar) starts playback of the audio file from the insertion point or pauses playback.

Play Selection

The Play Selection command plays only the selected portion of an audio document.

Play w/Auditioning

The Play w/Auditioning command (⌘-Spacebar) plays the selected portion of an audio document with pre-roll and post-roll. The pre-roll and post-roll times are designated in the Auditioning dialog in the Preference dialog.

Stop & Extend Selection

The Stop & Extend Selection command stops playback and extends any selection from the point at which playback was initiated. The Stop & Extend Selection command can also be used to start playback from the insertion point or selection start.

Fast-Forward

The Fast-Forward command places the insertion point at the end of the audio document.

Record

The Record command (⌘-R) opens the Record window. This window allows you to start and monitor recording.

When you select Record from the Audio menu (⌘-R), Transport, or Toolbar, the Record dialog appears. There are transport buttons-Record Settings, Pause, Stop, and Record-along the bottom, an Audio Source display that shows you the waveform as it is being recorded, and a Notepad window. The sample rate, bit depth, and number of channels you selected in the Record Settings dialog are also displayed, along with the amount of time you have available to record on the selected Record Disk with the recording settings you have chosen.
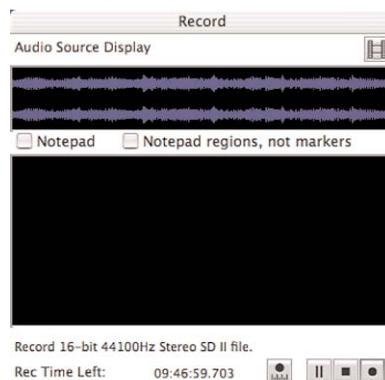
The Record dialog

The Notepad feature in the Record Dialog allows you to type in text descriptions, transcribe a recording, or type in comments called Notepad Cues at specific points during the recording of an audio document. The Notepad feature is available from the Record dialog and may be used once a recording starts. For more information on Notepad Cues, please see Chapter 4.

Notepad Cues are not available in Peak LE.

Notepad Cues are not available in Peak DV.

Record Settings

When you select Record Settings (Option-R) from the Audio menu or Toolbar, the Record Settings dialog appears. This dialog is used to configure your settings for recording with Peak.
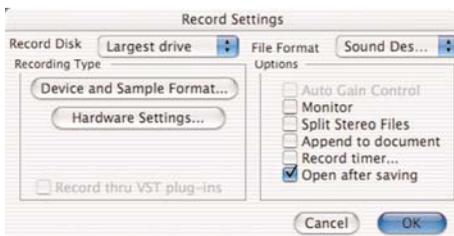
The Record Settings dialog

You will notice several pop-up menus, buttons, and checkboxes in the Record Settings dialog. These allow you to select which hard drive to record to, what file format you'd like to record in, sampling rate, source input, and so on. You may also wish to record through VST plug-ins. The next few paragraphs describe how to set all

of these parameters using the Record Settings dialog.

Record Disk

The Record Disk pop-up menu allows you to choose which hard drive you would like to record to. If you have more than one hard drive connected to your Macintosh, use this pop-up to select your record drive. (This option will default to the largest drive currently available to your Macintosh unless you select otherwise.)

File Format

The File Format pop-up menu allows you to select the file format for the incoming audio. You can choose from AIFF or Sound Designer II. (If you need the newly recorded audio file to be in a different format, use the Save As function to save it as a another format once recording is complete.) If you do not select a file format for recording, Peak will default to AIFF.

Auto Gain Control checkbox

The Auto Gain Control checkbox allows you to disable the Automatic Gain Control feature used by the Apple OS X Audio HAL system with some Macintosh microphone inputs. Auto Gain Control adjusts input gain automatically to get maximum recording levels. If the recording device you are using supports this feature, check the Auto Gain Control checkbox.

Monitor checkbox

The Monitor checkbox allows you to monitor the audio source while you are recording.

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Split Stereo Files checkbox

The Split Stereo Files checkbox allows you to record the incoming stereo audio as dual mono files rather than a single stereo file. Dual mono files are used in programs like Digital Performer, Pro Tools, or BIAS Deck, so this option is useful if you need to record dual mono files (i.e., split stereo).

Append to document checkbox

The Append to document checkbox allows you to record into an existing audio document. To record into an existing audio document, place the insertion point in the existing audio document at the point where you want to insert the new audio. If the insertion point is at the beginning of the file, the newly recorded audio will be inserted at the beginning of the file. If the insertion point is at the end of the file, the newly recorded audio will be appended to the end of the existing file. If the insertion point is somewhere in the middle of the file, the newly recorded audio will be inserted at that point. If you make a selection, the Append to document feature will allow you to replace the selection with newly recorded audio from the beginning of the selection through the end of the selection or wherever you stop the recording.

Record timer checkbox

The Record timer checkbox allows you to designate a specific duration for recording. Peak will stop recording after this set time and bring up the Save dialog for your audio recording. Checking the Record timer checkbox will bring up the Recording Time dialog. In the Recording Time dialog, designate the duration for recording in seconds and click OK.

The Recording Time dialog

Open after saving checkbox

The Open after saving checkbox determines whether the audio document is opened in Peak after it is recorded.

Device and Sample Format

Clicking on the Device and Sample Format button will open a different dialog depending on which audio engine Peak is using (i.e., Mac OS X Audio HAL, CoreAudio, or FireWire DV).

Hardware Options

Clicking on the Hardware Options button in the Record Settings dialog brings up a dialog for the audio hardware you selected in the Source dialog. Note that in many instances there may be no settings for a given device (including the Apple Built-In Sound!). Some sound card's drivers have control panels or utility applications that will launch when you click on the Hardware Options

button. The actual third-party dialog will differ depending on the type of audio hardware you have.

Record Through VST Plug-In

If you have VST plug-ins installed in your system's VST Plug-Ins folder, you can record through them in real-time when using CoreAudio. This is useful if you want to use a noise reduction, equalizing, or dynamics plug-in during recording.

For complete instructions on recording audio in Peak, please see Chapter 4.

Hardware Settings

The Hardware Settings command brings up a dialog for the audio hardware you selected in the Source dialog. Note that in many instances there may be no settings for a given device (including the Apple Built-In Sound!). Some sound card's drivers have control panels or utility applications that will launch when you choose Hardware Settings. The actual third-party dialog will differ depending on the type of audio hardware you have.

Meters

The Meters command opens the Meters dialog, which allows you to configure the Meters display. Using the Meters dialog, you can select the Peak Hold time and the Clip Indicator Hold Time. The Peak Hold indicators appear as yellow bars at the far right of each of the bar graphs, and selecting a hold time causes the indicator to pause for easy reading of the peak value during playback. The Clip Indicators appear as red bars at the far right of

each of the bar graphs, and are triggered when audio distorts, or "clips", and selecting a hold time causes the indicator to pause for easy reading of any clipping or distortion that occurs during playback. Setting the Peak
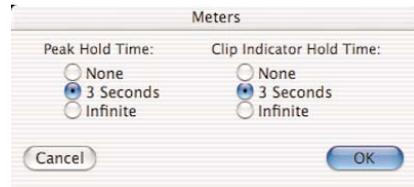
The Meters dialog

Hold and Clip Indicator Hold Times to None turns these features off.

DSP Menu

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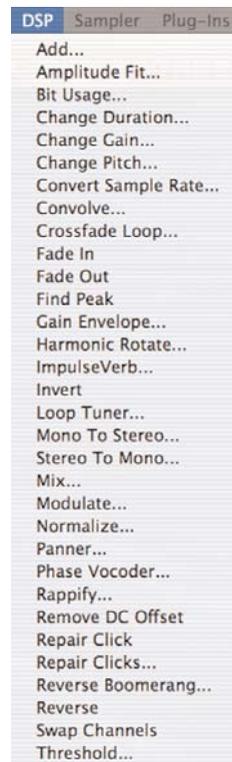
This menu contains Peak's DSP-based audio processing and advanced editing tools. A complete description of Peak's DSP functions and instructions on how to use them are given in Chapter 7: DSP.

Add

The Add command adds any selection of audio copied to the clipboard into the audio document at the selection point. To use the Add command, you must first copy a selection of audio. The copied material can then be mixed into the target audio material. To add copied material with a variable level, click the envelope button, create the desired envelope, and then click the Change button, and then click the Add button. Be careful not to adjust too high an amount which can potentially clip the signal.
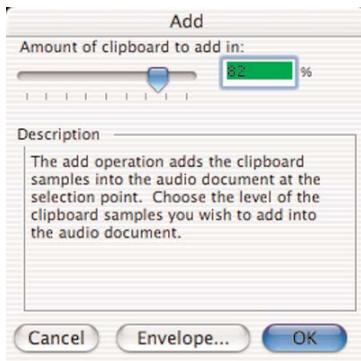
The Add dialog

Add is not available in Peak LE.

Add is not available in Peak DV.

Amplitude Fit

Amplitude Fit provides granular normalization of an audio selection on a grain-by-grain basis. Grains are small groups of samples, often around 30ms. As each grain is read in, it is normalized according to the Amplitude Fit Envelope-each normalized grain crossfaded with the previous grain and written out as the result. Amplitude Fit can be used to maximize the volume level of an audio selection, or to make quiet passages as loud as louder passages.
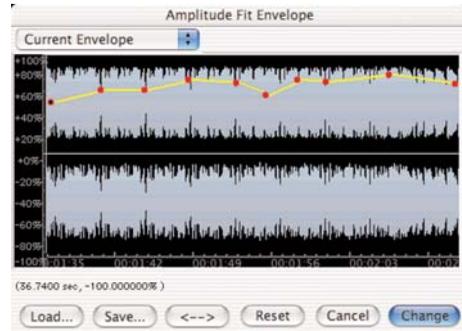
The Amplitude Fit Envelope editor

Amplitude Fit is not available in Peak LE.

Amplitude Fit is not available in Peak DV.

Bit Usage

The Bit Usage meter allows you to monitor bit saturation, degradation, and the "true" bit depth of a file.

To use the Bit Usage meter:

1. Select the desired range of audio you wish to

examine.

2. Choose Bit Usage from the DSP menu - The bit usage meter will appear, and plot a graph showing the status of bit usage in the selected area of audio.

Change Duration

The Change Duration command allows you to slow down or speed up the selected material by a specified amount without changing its pitch. You can specify the change in duration by a value in seconds, a percentage of the original, or, for rhythmically-oriented material, beats per minute. A change in duration by a reasonable amount, about 85% to 115%, can be very convincing. Exaggerated time stretching, 200% or more, can result in some very interesting granular textures. Try experimenting with the Change Duration function on drums, rhythm loops, speech, sampled instruments or sound effects to achieve a wide variety of useful effects.

The Change Duration dialog

Change Duration is not available in Peak LE.

Change Gain

The Change Gain function changes the gain (i.e., ampli-
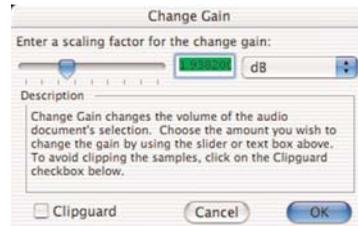
The Change Gain dialog

tude) of a selection. You can specify the amount of gain change either in decibels (dB) or as a percentage. If you wish to double the volume of a sound, you must apply approximately 6 dB of gain change, or add 200%. Enable the Clipguard checkbox in the Change Gain dialog to protect against the possibility of clipping. Clipguard will search through the audio document or selection for the maximum peak in amplitude, and then limit the Change Gain slider's range based on the maximum peak it finds in the audio document or selection.

Change Pitch

Peak's Change Pitch function allows you to alter the pitch of an audio selection by as much as an octave. The Change Pitch dialog uses a pitch slider that allows you to choose a new pitch by musical interval, and "fine tune" the pitch change by smaller increments called "cents." (Cents are divisions of a musical octave – one octave is equivalent to 1200 cents – thus, 100 cents is a semi-tone, 50 cents a quarter-tone, etc.) You can also choose to alter the length, or duration, of the selection just as you would by slowing down or speeding up analog tape, or you can choose to preserve the duration of the selection

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(something not possible with analog tape!).

The Change Pitch dialog

Change Pitch is not available in Peak LE

Change Pitch is not available in Peak DV

Convert Sample Rate

The Convert Sample Rate command allows you to change the sample rate of a sound without changing its pitch. This feature is very useful for converting audio material into lower or higher sample rates as required by other applications. Please note that sample rate conversion is applied to an entire document. It cannot be applied to just a selection within a document. Refer to Chapters 3 and 4 for an explanation of commonly used sample rates.

Peak LE is limited to a maximum sample rate of 96kHz

Peak LE is limited to a maximum sample rate of 96kHz

Convolve

The Convolve command is a unique and powerful sound design tool that allows you to apply the sonic (e.g., spectral) characteristics of one sound onto another. Convolution works by multiplying the frequency spectrum of the impulse contained in the clipboard and that of the target audio document, reinforcing the frequencies that are in common between the two. To use the Convolve DSP command, you must first copy a selection of audio. The copied material will provide the spectral "character" that you will apply to the target audio material.

Convolve is not available in Peak LE.

Convolve is not available in Peak DV.

Crossfade Loop

The Crossfade Loop function applies a "smoothing" effect to loops made in Peak audio documents. Crossfade Loop fades the end of the loop into the beginning of the loop to make the loop sound smoother. (It uses the Blending envelope you've set in Peak's Preference dialog 's Blending dialog.) Use the Crossfade

Loop dialog to select the length of the crossfade in milliseconds.
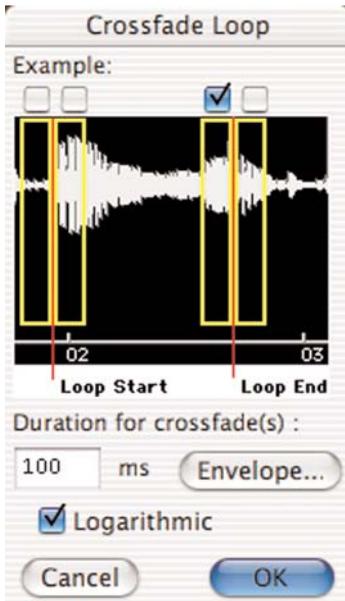
The Crossfade Loop dialog

Crossfade Loop is not available in Peak LE.

Crossfade Loop is not available in Peak DV.

Fade In & Fade Out

The Fade In and Fade Out commands allow you to apply an amplitude envelope to an audio selection. The Fade In and Fade Out DSP commands, and the Fade Envelope Editor dialog are described in detail in Chapter 5: Editing.

Find Peak

The Find Peak operation will place the insertion point at the sample with the maximum amplitude value that it locates in the audio selection.

Find Peak is not available in Peak LE.

Find Peak is not available in Peak DV.

Gain Envelope

The Gain Envelope operation allows you to enter an amplitude envelope to be applied to an audio selection.

The selected audio's amplitude will be boosted and/or attenuated according to the envelope you draw in the Gain Envelope editor.

The Gain Envelope dialog

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Harmonic Rotate

The Harmonic Rotate tool is excellent for sound design experimentation. This command allows the frequency spectrum in a selected range of audio to be rotated around a horizontal axis, which has the effect of taking frequencies that were previously associated with one section of a file with a particular amplitude, and assigning them to different areas of audio with different amplitudes. The Harmonic Rotate command can be previewed in real time, so that desired setting can be found before spending time processing. Options for processing include checkboxes for using Real & Imaginary calculations, and a slider & text field to set amount of rotation.

The Harmonic Rotate dialog

Harmonic Rotate is not available in Peak LE.

Harmonic Rotate is not available in Peak DV.

ImpulseVerb

ImpulseVerb is an extremely high-quality reverb processing tool, that utilizes actual reverb impulses recorded in real spaces, such as performance halls, cathedrals,

caves, and other spaces that have various reverberation qualities. The same convolution technology that is used in Peak's Convolve DSP tool allows these natural reverb impulses to be applied to dry audio signals, giving the impression that a file was actually recorded in a particular environment. ImpulseVerb offers real time preview, so that the ideal settings can be found before processing. In addition, ImpulseVerb offers an editable Space envelope, which controls reverb length and decay characteristics, and a Wet/Dry slider to control the amount of reverb being applied.

The ImpulseVerb dialog

The ImpulseVerb dialog can also be used as a real time convolution tool, and is not limited to using impulse response files to create reverb effects. Any selection that is copied to the clipboard can be convolved with the selected range of audio. To add audio files to the Space pop-up menu within the ImpulseVerb dialog, simply save the desired file as a 24-bit Sound Designer II format file, and place into the Peak Impulses folder within /Macintosh HD/Users/Library.

ImpulseVerb is not available in Peak LE!

ImpulseVerb is not available in Peak DV!

Invert

The Invert function allows you to invert the phase of a selection or an entire audio document.

Loop Tuner

Peak's Loop Tuner provides a way to visually line up the start and end points of your loop and listen to the effects of these adjustments as you make them. The waveform display in the Loop Tuner dialog shows the Start and End points of the loop, which you can visually adjust with the scroll bars at the bottom of the window to achieve a natural transition at the loop point by carefully adjusting the slope alignment.
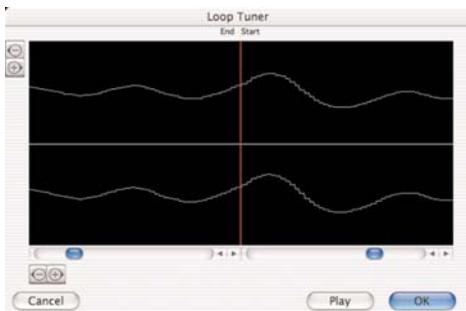
The Loop Tuner dialog

The arrows of the slider will move the loop markers sample by sample and clicking in the body of the slider will move the loop markers to the next zero crossing. The two zoom buttons-magnifying glass icons-in the upper left of the Loop Tuner dialog allow you to adjust the vertical zoom up of the waveform. The two zoom buttons in the lower left hand corner of the Loop Tuner dialog allow you to adjust the zoom view in and out all the way down to the sample level. You can listen to the effects of the adjustments as you make them by clicking on the Play button. To exit this dialog, click on OK to accept the changes, or Cancel to leave the original loop unaffected.

Loop Tuner is not available in Peak LE.

Loop Tuner is not available in Peak DV.

Mono To Stereo/Stereo To Mono

These two DSP commands may be used to easily convert an audio document between one and two channel formats.

Mono to Stereo Conversion dialog

Stereo to Mono Conversion dialog

Mono To Stereo/Stereo To Mono is not available in Peak LE.

Mono To Stereo/Stereo To Mono is not available in Peak LE.

While automatic Mono To Stereo/Stereo To Mono conversion is not available in Peak LE & DV, you can achieve the same end result manually, by selecting all in an open mono or stereo document, and then opening a new, empty document. If you copy an entire document, open a new empty document, and attempt to paste in the contents of the clipboard, Peak will detect if there is a different number of channels, and will prompt you to enter a Left/Right panning value, and will then allow you to paste in the clipboard contents.

Mix

The Mix command allows you to mix material that you have copied to the clipboard with a target selection. This function can be used as a kind of "sound-on-sound" capability for mixing audio tracks together, or for blending sound elements. The Mix command is similar to the Add command, but it does not have the potential to clip because the target and clipboard contents are attenuated before mixing. To use the Mix command, you must first copy a selection of audio. The copied material can then be mixed into the target audio material.

The Mixer dialog

Modulate

This Modulate command functions as a "ring modulator" which multiplies two audio signals together (e.g., the material copied to the clipboard and the currently selected audio). The resulting audio includes the sum and difference tones of the frequency components of the modulated audio and the modulating audio. These are generally very complex timbres that often have a "metallic" (i.e., inharmonic) character to them.
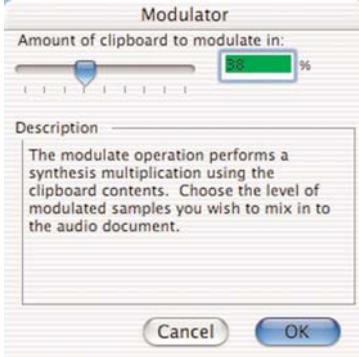
The Modulator dialog

Modulate is not available in Peak LE.

Modulate is not available in Peak DV.

Normalize

This command allows you to optimize the volume of a selection or an entire audio document so that it is at its maximum possible amplitude without clipping.
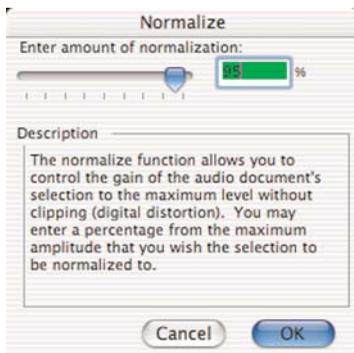
The Normalize dialog

The normalize function is very useful for boosting the volume of material that was recorded at too low a level, or if used on multiple audio documents, for making sure that the amplitude of each of the documents is uniform.

Panner

The Panner allows you to adjust the panning, or left-to-right movement, of a stereo document by drawing an envelope in the Panner dialog. Left is at the top of the graph, and right is at the bottom.
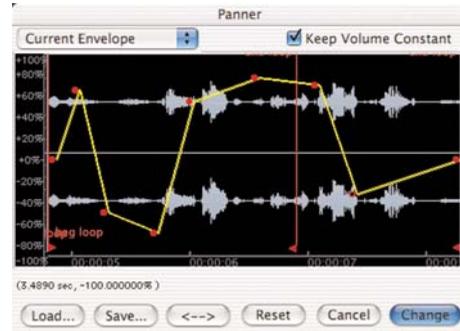
The Panner editor dialog

Panner is not available in Peak LE.

Panner is not available in Peak DV.

Phase Vocoder

The Phase Vocoder is a type of audio spectrum analysis/resynthesis that allows you to modify the duration

and/or pitch of an audio selection.
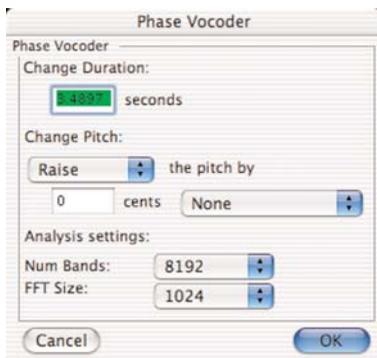
The Phase Vocoder dialog

Phase Vocoder is not available in Peak LE.

Phase Vocoder is not available in Peak DV.

Rappify

The Rappify command applies extreme dynamic filtering to a selection. As one Peak user described it, "Rappify can turn your hi-fi into lo-fi!"

The Rappify dialog

If the target material has a pronounced beat, this has the effect of reducing the material to its most essential rhythmic components. Try using this function with a variety of different music material for some surprising and exciting results.

Rappify is not available in Peak LE.

Rappify is not available in Peak DV.

Repair Click

The Repair Click command will eliminate a selected click or "spike" in the waveform using the setting designated in the Repair Clicks dialog (explained next).

Repair Click is not available in Peak LE.

Repair Click is not available in Peak DV.

Repair Clicks

The Repair Clicks command allows you to find and repair pops or clicks in an audio document. The Repair Clicks dialog automates the process of finding and removing clicks (usually indicated by a sharp "spike" in a waveform), much like a search and replace dialog in a word processor.

The Repair Clicks operation works by looking for discontinuity from sample to sample. For example, a sample value of -100 followed by a sample value of 10,000 is likely to be a click. Once the area of the click is identified, a smoothing technique is used to maintain the original shape of the area being repaired.

If you are working with mostly digitally induced clicks, the Repair Clicks dialog will become an indispensable tool. Extremely damaged signals such as those of a scratching and popping vinyl record will require more careful repair in addition to using the Repair Clicks dialog, such as Change Gain, Delete, and the Pencil Tool. Clicks such as those of a scratching and popping vinyl record loose their detectability once they are sampled using Analog to Digital converters.

The Repair Clicks dialog

Smoothing Factor

Smoothing Factor determines how much smoothing is applied to the click. Material with high frequency information may require lower smoothing factors to preserve the high frequencies. In general, a setting of 40-60 percent will repair most clicks.

Detection Setting

The Detection Setting value determines how the clicks are located. Higher values locate only the most severe clicks, while lower values will detect less severe clicks. Note that lower values such as 10% also have a greater

chance of misjudging audio for a click. In general, a setting of 40-80% works well.

Repair Size

The Repair Size setting affects how many samples around the click are used in determining the new shape of the repair. Repair size can vary from 5 to 100 samples, with a repair size of 50 samples working well in most circumstances. Peak will then interpolate what the correct waveform should be, and repair the click.

Buttons along the bottom of the Repair Clicks dialog allow you to control repairing, auditioning, and undoing click repairs:

- Click the Repair button when you wish to repair a click found by the Next Click button.

- Use the Next Click button to search for the next potential click in the audio selection.

- Once a click is located, you may listen to the click using the Audition button. The Audition button plays the click using the Pre-roll and Post-roll settings from the Auditioning dialog under the Preference menu.

- If you repair a click and are unsatisfied with the results, simply click on the Undo button.

- If you would like to repair all of the clicks in the audio document's selection without having to repair each one individually, click the Repair All button.

You may need to lower the detection setting in the Repair Clicks dialog to find some clicks, depending upon

their severity. Be careful not to lower the detection set-ting dramatically - lower it gradually for the best results.

Repair Clicks is not available in Peak LE.

Repair Clicks is not available in Peak DV.
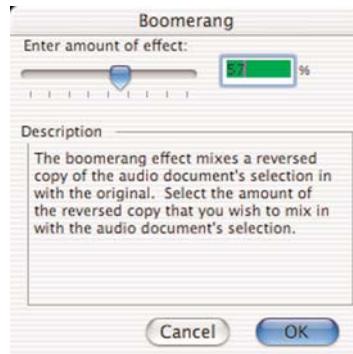
The Reverse Boomerang dialog

Remove DC Offset

This function allows you to remove any DC Offset in your audio file. Peak scans the audio for DC offset and then removes it. Peak will scan the left and right chan-nels of a stereo file independently. DC Offset is usually caused by problems in the analog to digital conversion process. The result is that the waveform is not centered on the base line-it is offset either higher or lower than the center line.

Remove DC Offset is not available in Peak LE.

Remove DC Offset is not available in Peak DV.

Reverse Boomerang

The Reverse Boomerang command mixes a reversed copy of the selected audio with the original. This creates a variety of interesting and useful results. Try using Boomerang on drum loops, voice, and sound effects.

Reverse

The Reverse command reverses the current selection. In a reversed selection, the last sample becomes the first sample, the second-to-last sample becomes the second sample, and so-forth. The effect is similar to playing a record or cassette tape backwards.

Swap Channels

The Swap Channels command reverses the left and right channels in a stereo selection.

Swap Channels is not available in Peak LE.

Swap Channels is not available in Peak DV.

Threshold

The Threshold command allows you to split up an audio document into its component parts by analyzing the amplitude levels in the audio document and setting a cutoff or threshold amplitude. For instance, you might use the Threshold command on an audio document that contains successive notes from a musical instrument to split them up, or on a drum loop to break it up into its component parts. You can save the segments with Markers, or as Regions. See Chapter 7: DSP for more info on using the Threshold command.
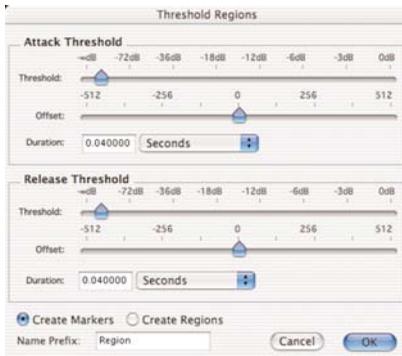
The Threshold Regions dialog

 Threshold is not available in Peak LE.

 Threshold is not available in Peak DV.

Sampler Menu
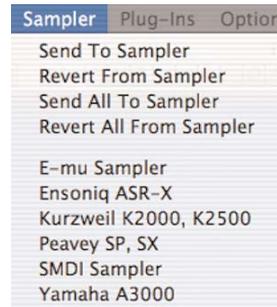
This menu allows you to import samples directly from compatible samplers, edit or process the audio using all of Peak's functions, and send the modified sample back to the sampler. Peak supports SMDI samplers. For detailed information on using Peak with SMDI samplers, see Chapter 11: Samplers.

Send to Sampler

The Send to Sampler command will send the previously received sample from Peak to your sampler using the Sampler dialog.

Revert from Sampler

The Revert from Sampler command will revert to the previously received sample from Peak to your sampler using the Sampler dialog.

Send All to Sampler

The Send All to Sampler command will send all previously received samples from Peak to your sampler using

the Sampler dialog.

Revert All from Sampler

The Revert All from Sampler command will revert all previously received samples from Peak to your sampler using the Sampler dialog. E-mu, Ensoniq ASR-X, Kurzweil, Peavey, Yamaha Sampler

A large number of samplers support SMDI sample transfer. Choosing the name of your sampler from the Sampler menu will open the Sampler dialog. SMDI Samplers, such as the Kurzweil K2500 or the E-mu E-IV, use SCSI to transfer samples between devices. In order to transfer samples between the Macintosh and your sampler using SMDI, you must connect a SCSI cable between your Macintosh and the sampler. Consult your sampler's owner's manual for instructions on how to connect the cable to your Macintosh with proper termination. For detailed information on using Peak with Samplers, see Chapter 10: Samplers.
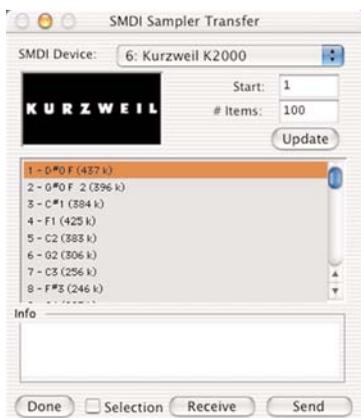
The SMDI Sampler Transfer dialog

Sampler Support is not available in Peak LE.

Sampler Support is not available in Peak DV.

Plug-Ins Menu

The Plug-Ins menu provides access to any VST or Audio Unit plug-ins that are installed in your system.

Peak can access VST plug-ins in two different ways - using "Inserts" or through Vbox SE. An insert can contain a single plug-in, and up to 5 inserts are available. When using inserts, signal flows through the effect in each insert in the order of the insert number. For example, if an equalizer plug-in is used on Insert 1, and a reverb plug-in is used on Insert 2, the output of the equalizer plug-in will flow into the input of the reverb plug-in. Inserts are typically more convenient when using a small number of plug-ins is required.

Vbox SE

Peak includes BIAS' Vbox SE for managing and mixing VST plug-ins. Think of Vbox SE as a virtual effects box, in which you can combine, repatch, and mix your VST plug-ins in real-time. Using its unique effects matrix, Vbox SE lets you combine multiple individual plug-ins. Vbox SE can patch plug-ins in series, in parallel, or in series and parallel, and you can hot-swap plug-ins. Vbox SE has con-

trols for each plug-in to mute, solo, and edit parameters. Vbox SE also provides input and output gain controls both globally and for each individual plug-in, and a control for the global Wet/Dry mix. Use Vbox SE's A/B comparison feature to get just the right settings, and use Vbox SE's presets to store configurations and settings for later use.

> ⚠️ *To use multiple VST plug-ins within Vbox SE, you must select Vbox SE from an available insert, or simply select the Vbox command from the Plug-Ins menu – this automatically instantiates the Vbox SE interface on Plug-In Insert 1. While Vbox SE can be used on one insert, and other VST plug-ins can be used on other inserts, it is recommended to use multiple plug-ins within the Vbox SE matrix, as it offers much more control and flexibility.*
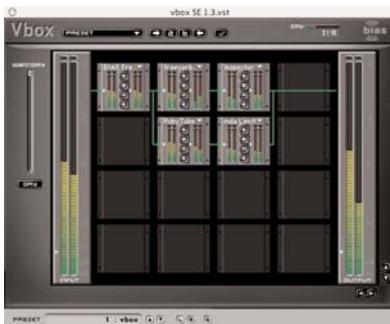
The Vbox SE effects routing matrix for VST Plug-Ins

Inserts (1-5)

Any installed VST or Audio Unit plug-in may be assigned to any insert. Each insert can contain a single plug-in. VST & Audio Unit plug-ins may be mixed and matched. When more than one plug-in/insert is active, the output of Insert 1 flows into the input of Insert 2, the output of

Insert 2 flows into the input of Insert 3, and so on.

Using the Vbox SE matrix requires using 1 insert – by instantiating the Vbox SE matrix on a single insert, you can then open as many plug-ins as desired within the Vbox SE matrix. The Vbox SE matrix can hold a virtually unlimited number of plug-ins – in reality, the amount of simultaneous plug-ins that can be used depends on the speed of your Macintosh's CPU.

> ⚠️ *Peak LE & Peak DV support only a single Insert, and can host only one plug-in at a time. Peak LE & Peak DV users may purchase BIAS Vbox separately to add multiple plug-in capability.*

Bounce

Once you have the right settings for your plug-ins, you will probably want to apply the effects to the audio document. This process is called "bouncing." Bounce the audio file to process the audio document with any active plug-ins. Bouncing changes the audio data stored on disk, allowing you to use the Save command to permanently apply the plug-in effects to your audio document (this action is undo-able before saving).

VST

Choosing VST from the Insert "X" submenu brings up another submenu, displaying all currently available VST format plug-ins. Select the desired plug-in from this menu, and its editor window (interface) will appear.

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Audio Unit

Choosing Audio Unit from the Insert "X" submenu brings up another submenu, displaying all currently available Audio Unit format plug-ins. Select the desired plug-in from this menu, and its editor window (interface) will appear.

For more information on individual third-party plug-ins, please refer to the manufacturer's documentation. For detailed information on using plug-in and Vbox SE in Peak, see Chapter 8: Plug-Ins.

Options Menu

This menu contains a number of commands that allow you to customize aspects of your Peak software such as time units, dynamic scrub time, and other user preferences.

Time Units

The Time Units command allows you to choose a time format for the audio timeline in Peak's audio document window. You can choose samples, Min:Sec:ms, SMPTE frames, and Bars│Beats. The format you choose will depend on the nature of the project that you are working on.

Sample Units

The Sample Units command allows you to select whether sample units will be displayed in decimal, percentage, or dB.

Use Loop in Playback

If an audio document contains a loop (defined by loop markers), the Use Loop in Playback command (⌘-L) allows you to listen. Once playback reaches the looped region of the audio document the loop will begin repeating. A check mark next to this menu item indicates that it is enabled. To turn off loop playback, disable this command by selecting it a second time.

Scroll During Play

When the Scroll During Play command is enabled, Peak will "scroll" through the audio document as playback progresses. This conveniently allows you to visually follow the progress of audio playback. A check next to this menu item indicates that it is enabled. To disable this command, deselect it.

Move Waveform During Playback

The Move Waveform During Play command will move the waveform under the cursor as playback progresses, so that the insertion point is always in the middle of the waveform display. A check next to this menu item indicates that it is enabled.

Compute File Max dB

The Compute File Max dB command scans the audio document for it's maximum amplitude, and gives you a readout of the maximum value and its precise location. This feature requires extra time, and is best used with smaller audio documents when needing to monitor overall volume during editing. Otherwise, keep this option off and option-click the "Max" text in the lower left corner of the audio document window, which brings up a dialog with information about the maximum level.

Show Edits

The Show Edits command indicates areas of an audio document that you have edited by enclosing these areas with hatched lines. This provides you with a convenient visual reference to portions of the document that have been affected by your editing actions. Once you save a document, the edits are saved, and these indicators will no longer appear.

Show Marker Times

The Show Marker Times command will show a time value as well as a marker name for all Peak markers, loops, and regions.

Show Overview

The Show Overview command (⌘-,) provides an Overview display of the entire audio waveform along the top of the Audio Document window under the title bar. This provides you with a convenient visual reference of the overall document when you are editing only a portion in the audio document window.

Show Cursor Info

The Show Cursor Info command (⌘-Shift-T) brings up a floating, translucent cursor information window, which follows along with the mouse cursor as it is moved. Choosing this command again turns the window off.

Auto-Import Dual Mono

Certain audio applications such as Digidesign's Pro Tools do not directly support stereo interleaved documents, and instead use "dual mono" documents which comprise the right and left channels of stereo material. Enabling the Auto-Import Dual Mono command tells Peak to automatically convert such documents into new stereo audio documents when you attempt to open these documents with the Open command. Because Peak actually writes a new stereo audio file to disk, this conversion process requires hard disk space equivalent to the two original mono documents. (Please note that the Import Dual Mono command requires that both files be mono documents, have the same sample rate, and the files must have exactly the same name with the separate suffixes of ".L" and ".R".)

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Audio Info

The Audio Info command (⌘-I) allows you to change an audio document's length, sample rate, root key, low key, or high key parameters. When you choose this command, a dialog indicating the total time of the sample, its sample rate, and its key mapping information will appear. The Audio Info dialog allows you to change the sample rate, duration, root key (for use in a sample playback instrument), and high and low key range. Note that by changing the sample rate, the pitch and duration of the sample will be affected. (To change the sample rate of an audio document without changing the pitch, use the Convert Sample Rate command from the DSP menu.)
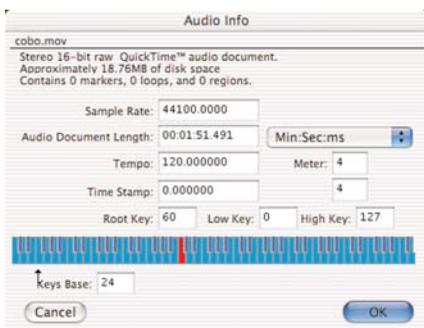
The Audio Info dialog

You can also adjust the key range (for use in a sample playback instrument) of a document by clicking on the miniature keyboard in this dialog. To set the lower limit of the key range, click on the keyboard at the desired key. To set the upper limit of the key range, hold down the Shift key and click on the keyboard. To set the root key of the audio document's key range, hold down the Option key and click on the keyboard. You can also enter the desired numerical value in any of the appropriate fields to accomplish this.

Dynamic Scrub Time

Peak provides a unique audio auditioning technique called dynamic scrubbing. This feature is very useful for precisely pinpointing a desired location in an audio document. Dynamic scrubbing allows you to drag the mouse forward or backward over a waveform while Peak plays a short loop (between 10 and 600 milliseconds) at the scrub location. You can control the tempo and direction (forward or backward) of playback by dragging the mouse slower or faster, forwards or backwards. When you have found the location you are looking for, you can commence editing or playback. The Dynamic Scrub Time command allows you to choose the length of this playback loop. Depending on the audio document's content, a value of between 40 to 80 milliseconds typically works well. See Chapter 5: Editing, for step-by-step instructions on how to use the Dynamic Scrubbing feature.

Auto Snap To Zero

The Auto Snap to Zero command will automatically "snap" any Peak selection to a zero crossing after you make a selection.

Movie

Movie Sound Tracks

The Movie Sound Tracks command brings up a dialog that allows you to Enable or Disable the movie's existing soundtracks. You can use this dialog to toggle multiple soundtracks contained in a movie on and off to check balances or "solo" certain tracks. Click on the Set button

to accept the changes, or Cancel to leave the movie unaffected.
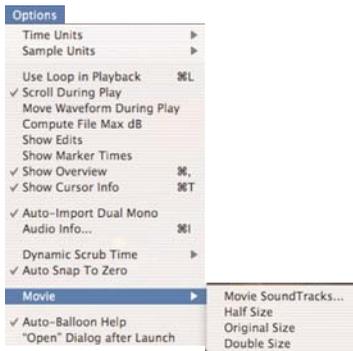
Selecting a movie viewing size...

Half Size

Selecting this menu command displays the open QuickTime movie at half of its original size.

Original Size

Selecting this menu command displays the open QuickTime movie at its original size.

Double Size

Selecting this menu command displays the open QuickTime movie at double its original size.

Auto-Balloon Help

Auto-Balloon Help, when enabled, will automatically activate Balloon Help for items in the Toolbar if the cursor rests over an item fro more than 3 seconds.

"Open" Dialog after Launch

The "Open" Dialog after Launch option allows you to choose whether an open dialog is automatically displayed when Peak is launched. A check next to this menu items indicates that it is active. The absence of a check indicates that it is inactive.

Window Menu

The commands in this menu allow you to display and manage Peak's windows - including the Transport, Toolbar, Contents Palette, Movie Window, Playlist, and any open audio documents or active plug-ins.

Transport

The Transport window is a floating, re-sizable window. It contains three areas: a time display showing elapsed time, the Transport controls (Return to Zero, Stop, Play, Go to End, Record, and Loop during playback), audio level meters with clip/peak indicators, and a master volume fader.

Toolbar

You may assign almost any Peak command as an icon in the Toolbar. The Toolbar menu allows you to group together the functions you use most often, so that you can simply click a button instead of going to the menus. For example, if you frequently use Normalize and Pitch

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Change, you can choose to have the icons for these functions in the Toolbar, so that all you have to do to use one of them is to make an audio selection and click a button. The Toolbar is an easy way to make your work in Peak faster and more efficient, allowing you to customize the program to suit the way you work.

To add or subtract items from the Toolbar, use the Shortcuts & Toolbar command in the Preferences dialog.

Contents Palette

Peak has a floating Contents Palette that will display all Regions, Markers, and Loops contained in any open audio documents. There are three buttons at the bottom of the palette that allow you to select which items to view-from left to right: the Markers button, the Region button and the Loop button. Option-double-clicking on any item in the Contents window will bring up the Edit Region or Edit Marker dialog.

Movie

The Movie command toggles the Movie window on and off for any QuickTime movie you currently have open in Peak.

LE *The QuickTime Movie Window is not available in Peak LE.*

Playlist

The Playlist command (⌘-P) allows you to open up the current Playlist window. For more information on using playlists, see Chapter 6: Playlists & CD Burning.

LE *Crossfades, VST, and Nudge Regions are not available for the Playlist in Peak LE.*

DV *Crossfades, VST, and Nudge Regions are not available for the Playlist in Peak DV.*

Tile Windows

The Tile Windows command (⌘-T) arranges all open audio documents in a tile formation on your computer screen. This type of arrangement allows you to view multiple open audio documents and once, and is particularly convenient if you are cutting and pasting between several documents or jumping back and forth between them for editing purposes. You can press a ⌘-number key corresponding to an open audio document and the document will become the active window. (Click the Windows menu to see the numbers that correspond to each open audio document.)

Stack Windows

The Stack Windows command arranges all open audio documents into a stack, with each document overlapping the previous document, in the order that they were opened. This type of arrangement allows you to have the maximum number of documents open and use the minimum amount of screen real estate. You can then conveniently use the Windows menu to select any open docu-

ment and make it the active window. Alternatively, you can press the ⌘-number key corresponding to the open document and the document will become the active window. (Click the Windows menu to see the ⌘-numbers that correspond to each open audio document.)

Toggle Contents Drawer

The Toggle Contents Drawer command opens and closes the Contents drawer that is located on each audio document. Choosing this command will open the Contents drawer on the right side of an audio document. Choosing this command when the Contents drawer is open will close the drawer. Toggling the Contents drawer can also be done with a button in the top right corner of each audio document window.

LE *The Contents Drawer is not available in Peak LE!*

DV *The Contents Drawer is not available in Peak DV!*

Plug-In Effect 1 - 5

The Plug-In effect commands allow you to bring any active VST or Audio Unit plug-in editor windows to the foreground. When using the keyboard equivalent, (⌘-Option-<#>) the number should correspond to the insert number that the plug-in was instantiated on. For instance, to bring up the plug-in editor window for an EQ plug-in that was instantiated on Insert 3, the key-

board equivalent would be: ⌘-Option-3.

Links Menu

The Links menu in Peak provides useful links to BIAS's Web site. Included are the Peak online registration page, the BIAS home page, the Peak updates page, technical support pages, online documentation, and current BIAS product information pages.

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Appendix 1
Keyboard Shortcuts

Peak User's Guide

Appendix 1: Keyboard Shortcuts

Keyboard Shortcuts

This section lists the default keyboard shortcuts for Peak. As you learned in Chapter 3: Peak Basics, these keyboard shortcuts may be reassigned to any desired key or combination of keys, as well as to icons in the Toolbar.

Keyboard Shortcut	*Equivalent Menu Command*		*Command Comments*
File Menu			
⌘-N	New Mono Document		Creates a blank mono document
⌘-Shift-N	New Stereo Document		Creates a blank stereo document
Option-N	New Document from selection		Creates new document from selection
⌘-Shift-P	New Playlist Document		Creates a blank playlist
⌘-Shift-B	New Document From Playlist		Creates a document from a playlist
⌘-O	Open...		Opens a file from disk
⌘-W	Close		Closes the front-most document
⌘-Option-W	Close All		Closes all documents
⌘-S	Save		Saves the front-most document
⌘-Shift-S	Save As...		Saves the front-most document with a new name and/or new location
⌘-Option-S	Save a Copy As		Saves a copy of the front-most document with a new name and/or new location
⌘-Q	Quit		Quit Peak
Edit Menu			
⌘-Z	Undo	Undo edits one by one (as long as you haven't Saved)	
⌘-Y	Redo	Redo edits one by one (as long as you haven't Saved)	
⌘-X	Cut	Cut selected audio	
⌘-C	Copy	Copy selected audio to clipboard (useful for Clipboard based DSP effects like Mix and Convolve)	

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Keyboard Shortcut	**_Equivalent Menu Command_**	**_Command Comments_**

Edit Menu(Cont.)

⌘-V	Paste	Pastes Copied or Cut audio at insertion point
⌘-D	Insert	Pastes, pushing audio at insertion point further to the right.
⌘-E	Silence	Replaces audio selection with silence
Delete Key	Delete	Deletes selection, does not put in Clipboard
Option-Delete	Delete Except Audio	Deletes Markers, Loops & Regions
⌘-`	Crop	Crops selected audio
⌘-A	Select All	Selects all audio and events
Up Arrow	Insertion Point at Selection Start	Places Insertion Point at beginning of selection
Down Arrow	Insertion Point at Selection End	Places Insertion Point at end of selection
⌘- "–"	Select Loop	Selects loop
⌘-Left Arrow	Previous Selection	Selects previous view or selection
⌘-Right Arrow	Next Selection	Selects next view or selection

Action Menu

⌘-] or +	Zoom In	
⌘-[or -	Zoom Out	
Control-Up Arrow	Increase Vertical Zoom	
Control-Down Arrow	Decrease Vertical Zoom	
⌘-Shift-]	Fit Selection	
⌘-Shift-[	Zoom Out all the way	
Shift-Left Arrow	Zoom To Sample Level	Zoom in to start of selection at sample level
Shift-Right Arrow	Zoom To Sample Level (End)	Zoom in to end of selection at sample level

Keyboard Shortcut	_Equivalent Menu Command_	_Command Comments_
Action Menu (Cont.)		
⌘-Shift- "**–**"	Loop this Selection	
Option-Left Arrow	Nudge Loop Backward	
Option-Right Arrow	Nudge Loop Forward	
⌘- "**–**"	Select Loop	
⌘-M	New Marker	
⌘-Shift-R	New Region	
⌘-G	Go to Time...	
⌘-J	Loop Surfer	
⌘-K	Capture Region to Playlist	
Audio Menu		
Spacebar	Play/Pause	
⌘-Spacebar	Play with Auditioning	Plays audio with pre-roll amount designated in Auditioning Preferences
Return	Stop/Rewind	
Shift-Return	Stop & Extend Selection	
⌘-R	Record	
Option-R	Record Settings	
Option Menu		
⌘-L	Use Loop in Playback	
⌘-,	Show Overview	Toggles waveform overview on and off
⌘-I	Audio Info...	
⌘-Shift-T	Show Cursor Info	
Window Menu		
⌘-P	Playlist	Opens document's Playlist.
⌘-T	Tile Windows	Arranges open documents in a tile formation.
⌘-1, -2, -3....	Document Windows	Brings document windows to front by number, in the order they were opened.
⌘-Option-1, -2, -3....	Plug-In Windows	Brings Plug-In windows to front by number, in the order they were opened.

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Keyboard Shortcut	Equivalent Menu Command	Command Comments
Commands not in a Menu		
<	n/a	Moves playhead cursor to left by coarse increments
>	n/a	Moves playhead cursor to right by coarse increments
Option + <	n/a	Moves playhead cursor to left by fine increments
Option + >	n/a	Moves playhead cursor to right by fine increments

Appendix 2
Peak Actions

Appendix 2: Peak Actions

This section lists common Peak Actions not found in Peak's menus. It is organized by Peak windows and functions.

Useful Peak Actions, General

To stop lengthy processes, Saves and recalculations:

• Press ⌘-Period

Audio Document Window, General

To find the Max Level in an audio document:

• Option-click on Max Level Indicator (at bottom left of audio document window).

To bring up the Audio Info Dialog:

• Click on the Audio Info Area at the bottom left of the audio document window.

To navigate the Overview without playing audio:

• Option-drag in the Overview.

To nudge the playhead cursor (coarse increments):

• Press the < or > keys on your keyboard to move left or right (pressing Shift is not necessary).

To nudge the playhead cursor (fine increments):

• Hold down the Option Key, and press the < or > keys on your keyboard to move left or right (pressing Shift is not necessary).

Playback

To play from beginning of a document, or from the location of the insertion point:

• Press the Space bar, or click the Play button on the Toolbar

To stop playback:

• Press the Spacebar again, or click Stop on the Transport.

To play from a desired location in the audio document:

• Click cursor at desired location in track and press the Space bar, click the Play button on the Toolbar, or double-click mouse at desired location in the track.

Scrubbing

To begin dynamic "shuttle" scrubbing:

• Hold down the Control key and drag the mouse across the desired area.

To begin dynamic "jog" scrubbing:

• Hold down the Control and Option keys, and drag the mouse.

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Selections

To make a selection:

- Click and drag the mouse.

To select all:

- ⌘-A

To extend or shorten a selection:

- Shift-click on the end of the selection that you wish to modify, then drag the mouse to extend or shorten the selection.

To toggle selection start/end:

- Use the shift key.

To snap selection to the nearest zero crossing:

- Hold ⌘-Option while making a selection.

Views

To zoom out by increments:

- Press ⌘-[

To zoom in by increments:

- Press ⌘-]

To scroll audio display left or right:

- Press control-arrow key left or right

Markers, Loops, and Regions

To find a Marker by name:

- Type in the first few letters of the marker name

To edit a Marker:

- Double-click on the triangular base of the Marker to open the Edit dialog

To name a Marker:

- Double-click the triangular base of the marker, and enter a name.

To select the audio between two markers:

- ⌘-click anywhere between the markers, or press the Tab key.

To select additional audio between markers:

- ⌘-Shift-click between another two markers, or press Shift-Tab.

To move a marker:

- Click on the triangular base of the marker and drag it.

- Or, double-click on the triangular base and enter a time.

To change regular markers into loop markers:

- Double-click the triangular base, and click the Loop Start or Loop End radio button.

To move a pair of loop markers together:

- Hold down the Option key and drag one of the loop markers, or select area containing loop markers and turn on Horizontal Lock - markers move together until Horizontal Lock is turned off.

To move a marker to a zero-crossing:

• Click on the triangular base of the marker, and hold down the Shift key while you drag the marker.

To move both ends of a loop or region marker simultaneously:

• Hold down the Option key while moving the marker, or select area containing loop markers and turn on Horizontal Lock - markers move together until Horizontal Lock is turned off.

To delete a marker:

• Double-click the triangular base. Click the Delete button. A range of markers can be selected and deleted by clicking Option-Delete.

To delete all markers, loops and regions, leaving audio intact:

• Select all, then press Option-Delete.

To paste just markers, loops and/or regions, leaving audio intact:

• hold down option while selecting paste from the edit menu (⌘-Option-V).

Playlist

To scrub Playlist audio during playback:

• Click and hold the mouse on the time display. The cursor changes to a scrub cursor (<—>). Drag to the left to scrub backwards, drag to the right to scrub forwards. The farther to the left or right you drag, the faster the scrub will progress.

Loops

To create a loop from a selection:

• Select desired range, and choose Loop This Selection from the Action menu (⌘-Shift- "-").

To listen to a loop:

• Choose Use Loop in Playback from the Preference menu or Toolbar, and start playback before the loop end marker.

VST Plug-Ins

To set the VST delay compensation offset:

• Hold down the Option key while choosing Bounce VST Effects.

Tools - Audio Document Window

To toggle between tools:

• Press the esc (Escape) key.

To toggle Blending on and off:

• Press the Caps Lock key.

To find the zoom factor amount:

• Option-click on the Zoom tool in the Cursor Palette.

To bring up the Smoothing dialog for the Pencil tool:

• Option-click on the Pencil tool in the Cursor Palette.

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To bring up the Contextual Menu:

- Control-shift-click in the audio waveform.

The Contents Palette

To edit a region, marker or loop in the Contents Palette:

- Option-double-click on its name in the Contents Palette or Contents Drawer.

The Movie Window

To change the size of the Movie Window:

- Click on the QuickTime movie's "grow button" (at the upper left corner of the Movie window) to double the size of the movie window.

- Control-Option-click on the QuickTime movie's "grow button" (at the upper left corner of the Movie window) to halve the size of the movie window.

- Select the desired size (original, half, or double) under the Options menu>Movie...

Appendix 3
Troubleshooting

Appendix 3: Troubleshooting - Before Calling For Help

Before you call BIAS Technical Support for help, please take a moment to examine the Read Me file installed with Peak. This document contains late-breaking information not included in your User's Guide.

Use the Apple System Profiler utility to gather information about the configuration of your computer. The information the Apple System Profiler reports is very helpful when reporting a problem to BIAS Tech Support.

Visit the BIAS web site for the latest technical support information, downloads, updates, and more at:

http://www.bias-inc.com

Please verify the following:

- Double check the authorization code you've typed in with the authorization code we've provided. Sometimes people mistake I's for 1's and 8's for B's etc. Please note authorization codes always use the number zero, never the letter O.

- Make sure the version of the product you have installed on your computer matches the version listed on the registration card, as well as the product name in the authorization email you received from BIAS.

If you continue to have trouble, please contact the BIAS Technical Support Department at:

Email: support@bias-inc.com

Phone: +1-707-782-1865

Common problems and solutions

How do I set up my USB or FireWire audio hardware device?

1. Please download the latest USB or Firewire driver from you hardware manufacturers website.

2. Boot your computer system with your USB or Firewire device already installed to an available USB or Firewire port directly on your computer and NOT into a USB or Firewire hub.

3. Once your system is up locate the Peak application and run it.

4. Then, from the Peak's audio menu, choose "Hardware Options". You should see the hardware options available for Peak (Fig. A).

   - To accept an input source, change the Input Device to your USB or Firewire audio device.

   - You can either listen to playback via your USB or Firewire audio device or use the   built in

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audio controller (which is the built-in audio card inside your Mac).   Depending on your preference, change the output device setting to your preferred listing environment.

Fig. A

5. After ensuring that you have connected your audio recording sources to your USB or Firewire device, and that the recording source is playing, press the "record" button located on the transport (Fig. B cirlcled in red)

Fig. B

⚠ *At this point you should be able to see a recording signal in the transport window.*
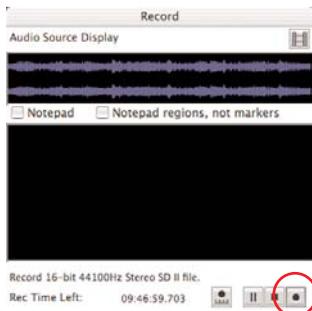
Fig. C

6. The record dialog will pop up (Fig. C) - Press the "record" button (circled in red) in this window and you will see a preview waveform of your recording as well as metering at the transport bar.

⚠ *If your USB or Firewire device is not available for selection within the hardware options window you can verify if the operating system is able to recognize it by launching the Audio MIDI Setup Application located in:*

Macintosh HD/Applications/Utilities.

7. Ensure that all circled fields (Fig. D) are set to your preferred USB or Firewire hardware. If it is not an option please contact your hardware manufacturer for support.
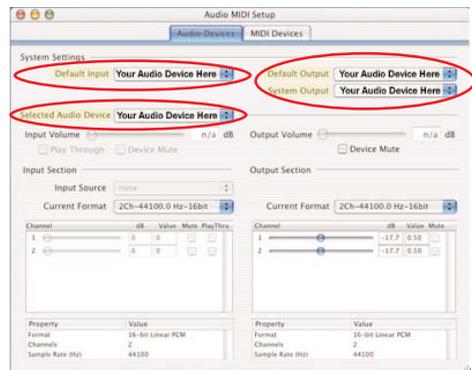
Fig. D

Why am I getting clicks and pops with my USB device?

1. Update to the most recent Mac OS. There were major improvements in CoreAudio in OS 10.2.3 and we recommend using the latest OS update.

2. If your USB audio device manufacturer provides drivers make sure you are using the most recent

version.

3. Delete the "ACA Preference" preference file. This file is located in:

MacintoshHD/Users/<YourUserAccount>/username/Library/Preferences

After you delete this file, you will need to reset your hardware and recording settings in Audio MIDI Setup and in your audio applications.

4. Go to your Audio MIDI Setup utility (this is available in OS 10.2 or later, and is shown in Fig. E). Audio MIDI Setup is found at this location:

MacintoshHD/Applications/Utilities .
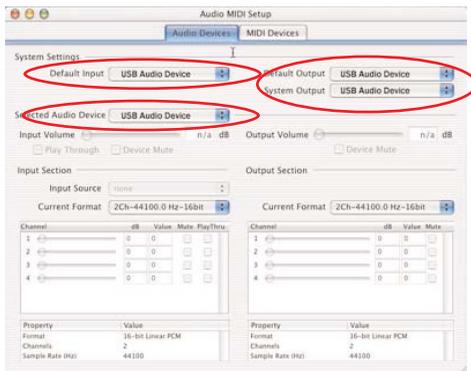
Fig. E

Make sure your input AND output are set to your USB device and the sample rate you have selected is supported by your device

5. Go into the Hardware Settings dialogue. Make sure you have the USB device selected as your input AND output device. Also try experimenting with recording at different CoreAudio buffer sizes (increasing this buffer size normally helps). The hardware settings dialog is located in Audio>Hardware Settings. (See Fig. F)

Fig. F

6. If you are experiencing pops and clicks during recording, go to Audio>Record Settings>Device and Sample Format, and specify a bit depth and sample rate that is supported by your device. (See Fig. G)
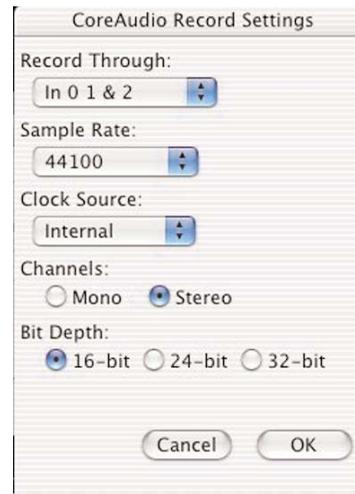
Fig. G

7. Go to System Preferences>Energy Saver. Make sure you turn off any energy saving preferences, especially the option to spin down the hard drive.

8. If these suggestions don't work, launch Peak, and in the Audio Menu, choose Sound Out, and select Mac OS X Audio HAL as the preferred audio engine to use. (See Fig. H)

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Some users report that when using a USB device that doesn't require/include drivers, recording is more stable under OSX HAL.
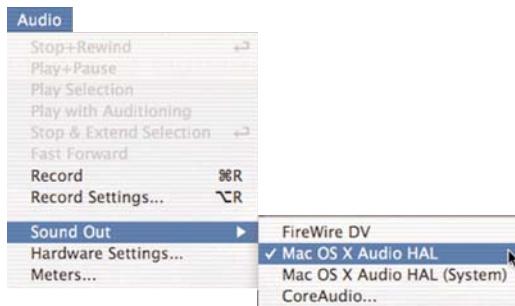
Fig. H

Peak will not launch:

• Does your Macintosh have enough RAM to run Peak? You must have at least 256MB of RAM— 512MB of RAM is recommended. To find out how much memory your Macintosh has, choose About This Macintosh in the Finder's Apple Menu. A window will appear telling you how much memory is currently installed in your computer. If you have less than the amount required to run Peak, you will have to install additional RAM in your computer.

Peak used to work but now acts strangely or won't launch:

• If Peak used to work but now won't launch or suddenly started acting strangely, the Peak Preferences file may be corrupted. Try quitting Peak, dragging the Peak Preferences file from the Preferences folder (in your home directory's Library folder) to the Trash icon on the Desktop, choosing Empty Trash from the Finder menu and then relaunching Peak.

When I place the cursor on the waveform, it jumps to the right or the left. Why?

• This is the result of Peak's "Auto Snap To Zero" preference, that automatically places the cursor at a zero crossing in the waveform. You can turn it off by going to the Options menu and un-checking the option.

I notice files on my hard drive with Peak file icons, called "AFM.temp"

• These are temporary files that Peak created as you edited audio. If you change Scratch Disk preferences at the end of a session, or force-quit or crash in Peak, sometimes these temporary files won't be deleted. You can either manually drag them into the Trash, or launch and then quit Peak.

I know that I can process separate channels in Peak, but not edit them separately. Is there a workaround?

• The workaround is to export dual mono files, open the Left and Right channels in Peak as two separate mono files, edit them, save them, and then Import as Dual Mono. You will then have a stereo file with your changes in it.

Peak stops or stutters during recording or playback:

• Is your hard disk too slow? For direct-from-disk recording and playback, your hard drive must have an average seek time of 18ms or faster. If you are not sure of the speed of your drive, check with the manufacturer or the dealer where you purchased the drive.

• Is the data on your hard disk fragmented? If the files on your hard drive have become fragmented (see Chapter 3 for an explanation of fragmentation) you may have to use a hard disk maintenance program such as Norton Speed Disk™ or the optimizer module of TechTool Pro™ to defragment

your drive.

- Is Peak's playback buffer in the Playback Preferences (found in Peak's Preference menu) set too low? Try increasing the playback buffer to 128K or higher.

- Try turning off Interrupt-based metering in Peak's Meters dialog.

- Is AppleTalk turned on? If so, use the Apple menu's Chooser to turn it off if you don't need it.

- Try increasing the playback buffer size in Peak's Playback Preferences dialog. (Always use the smallest working setting, because this setting also affects how much memory is used per audio document window.)

I can't access Tape Style Scrubbing:

- Make sure Peak is set to use the Mac OS X Audio HAL audio engine - to check this, go to Peak's Audio Menu>Sound Out and select Mac OS X Audio HAL.

I can't use the real-time pitch change preview in the Change Pitch window:

- Make sure Peak is set to use the Mac OS X Audio HAL audio engine - to check this, go to Peak's Audio Menu>Sound Out and select Mac OS X Audio HAL.

There are items in the DSP menu that are grayed out:

- You need to open an audio document before the DSP effects will be available.

- Not all DSP processes are available in Peak LE and Peak DV.

Problems using Peak with a SMDI sampler (via SCSI):

- Use high-quality, tested SCSI cables that are as short as possible.

- Check for SCSI ID conflicts. Make sure every SCSI device in the SCSI chain has a unique ID.

- Check for problems with SCSI termination. For more information, consult the manuals of your SCSI devices. SCSI termination should exist on each end of the SCSI chain: one termination inside the Macintosh (usually this is the case), and one termination on the last SCSI device in the chain.

- Try turning off Asynchronous transfers in Peak's Samplers Preferences dialog.

- Reduce the number of components in your SCSI chain. If you have more than one device connected between the sampler and your Macintosh, try removing devices to determine if this affects the errors.

- Change the power-up order of your devices. Try turning all SCSI devices on first, including the sampler. Once the devices have powered up, turn on the Macintosh. If this does not help, try turning on your other SCSI devices, then the Macintosh, and finally the sampler.

When I try to move a region marker that's in the same position as a reference marker, the reference marker moves instead:

- When editing markers that exist in the same space/sample, reference markers take priority. To get to a region marker, move or delete the reference marker first.

I try to save files in MP3 format, but the MP3 option is grayed out:

- Peak needs to have the LameLib encoder installed.

A3

To install this encoder:

- Make sure Peak is **not** running.

- Download the LameLib.bundle from:

  http://homepage.mac.com/awk/lame/

- Select the Peak 4 application and choose Get Info from the Finder's File Menu.

- Open the Plug-Ins tab.

- Click the Add button.

- Locate the LameLib.bundle file, highlight it, and click the Choose button.

- The next time Peak is launched, MP3 will be an available option.

I try to instantiate a VST plug-in on an insert, but there is already a plug-in called Vbox SE running on that insert:

- Choosing the Vbox menu item automatically opens Vbox SE on the first available insert – perhaps this menu item was chosen and automatically assigned Vbox SE to the insert you are trying to use. To turn off Vbox SE, simply select the insert it is running on, and then choose None from the submenu.

How to I create a Scratch Disk?

1. Create a folder called "Peak Scratch Disk" on a drive/volume you prefer. We recommend partitioning your hard drive or using an external drive for the scratch disk, however creating a scratch disk on the same drive as your operating system will work as well.

2. Open Peak's Preferences dialog.

3. Click on "Scratch Disk".

4. Be sure that only the "Primary" radio button and "Use" checkbox are selected for the drive you created your scratch disk folder on as mentioned in step 1. No other drive should should have "Primary" or "Use" selected if you are using multiple hard drives or partitions.

5. Click the "Folder" checkbox, then navigate to the scratch disk folder you created in step 1. "Choose" that folder.

6. Click "OK" to exit the scratch disks dialog.

7. Locate the "Audio" menu (located next to the DSP menu) within Peak.

8. Click on "Record Settings".

9. From the "Record Disk" pop-up menu, choose the hard drive on which you created the scratch disk, and click "OK".

After setting up the scratch disk and record disk settings be advised that you will have to save all your recorded files on the scratch disk drive. Saving on any other drive or volume will result in the following error "You must save the new audio recording to the volume that you recorded onto".

Burning to CD-RW media:

Peak supports burning to CD-RW media, however the CD-RW media **must** be blank. Peak will not erase a CD-RW that already contains data.

To erase CD-RW media:

- Use the included Roxio Toast lite application – be sure to choose "Full Erase" (not "Quick Erase"). If you chose Quick Erase, you only will be able to write to the CD-RW media using Toast lite. No other burning application will be able to write to it.

Glossary

Glossary

AAC

Advanced Audio Coding - (Also known as AAC, MP4, or mpeg 1, layer 4) - A compressed audio file format that uses psychoacoustic modeling to reduce file size significantly, while audio quality rivals that of uncompressed CD audio. MP4 is a fairly new standard and rising in popularity for use on the Internet and in personal music players. Peak supports reading/writing AAC files.

AIFF

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

AU

AU, or .au, is the audio file format common to most Sun Unix workstations. It is one of the most commonly used audio file formats on the World Wide Web.

Audio Unit

Audio Unit is a real-time, native plug-in standard from Apple Computer, Inc. Audio Unit plug-ins are accessed by compatible host applications from a central directory. Mac OS X includes several Audio Unit plug-ins, which

can be accessed in Peak, or by any other Audio Unit compatible hosts. (Audio Units are sometimes referred to as "AU" plug-ins, not to be confused with the AU, or .au file format used on Sun Unix workstations)

audio hardware (audio interface, audio card)

Audio hardware can be any audio expansion card that plus into a PCI or PCMCIA slot in your Macintosh, with or without an additional break-out box, or an audio interface that connects to your computer by USB or FireWire. Third-party audio hardware enhances a computer's audio recording and playback capabilities. Using Apple CoreAudio, Peak works with a variety of Macintosh audio interfaces from Digidesign, Digigram, Echo, Korg, Mark of the Unicorn, M-Audio, and others. CoreAudio Driver software from the manufacturer of the audio hardware may be required to work properly with Peak.

audio document

An audio document is a Macintosh audio data file created by Peak. Peak can create and open audio documents in a variety of common audio file formats. The AIFF file format is Peak's default file format. For more information, refer to AIFF, AU, WAVE, Sound Designer II, and QuickTime.

bit resolution (bit rate or bit depth)

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. 24-bit is a high-resolution bit depth used for professional audio recording, editing, and processing; 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.

blending

Blending is an automatic crossfade function that Peak applies to areas during cutting, pasting and other editing processes in order to smooth abrupt transitions between waveform amplitudes. Blending can be toggled on or off by choosing the Blending command from the Preference dialog, or by clicking the Bending enable/disable button in the Cursor Palette.

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 (such as a Macintosh running Peak) runs out of "headroom." It can also occur when a signal is played back from a 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 Peak, you can avoid digital clipping by ensuring that the record levels are set so that the loudest incoming audio passages stay below the maximum input level, as indicated on the record or playback meters. Peak'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. Within Peak, the record and playback meters show a signal's relative level in terms of dB. There are many different kinds of decibel scales, but for the purposes of using Peak, "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. Peak uses DSP to perform many of its audio processing tasks-including those found in the DSP menu or Toolbar.

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 48 dB. 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 96 dB. 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.

fade-in/fade-out

A fade-in is a process where the gain of an audio signal is increased from zero (silence) to its full volume. A fade-out is a process where the gain of an audio signal is decreased from its full volume to zero (silence). Peak allows you to create fade-ins/fade-outs by making a selection and choosing the Fade In or Fade Out command from the DSP menu, or from the Toolbar. Envelope shapes can be editing with the Fade In Envelope or Fade Out Envelope commands in the Preference dialog.

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 20 Hz and 20,000 Hz (20 kHz).

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 Peak, the meter strip at the bottom of the screen will indicate this as well. Most professional audio engineers leave between 3 dB and 12 dB 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 1 kHz (one kilohertz), so that 20,000 Hertz may also be referred to as 20 kHz.

loop

Loops are used to sustain or repeat a section of audio. They can be used for material that you intend to transfer to a sampler, or simply for playback within Peak itself. Peak allows you to create one loop per audio file. You can do this either by making a selection and choosing the Loop this Selection command (⌘-L) from the Actions menu or Toolbar, or by placing markers at the desired start and end point of a region, and defining the markers as loop markers.

Loop Tuner

A feature of Peak that allows you to "fine tune" the start and end points of a loop.

Loop Surfing

Peak's term for adjusting loops during playback.

Loop Surfer™

A proprietary feature of Peak, which automates many of the steps required to "loop surf."

marker

A marker is a location in an audio document that you define as important; you can also think of a marker as a "memory location." By marking a specific location in a recording, you can easily navigate to it for selection, editing or playback purposes. Peak allows you to define a marker by pressing ⌘-M or clicking a Toolbar button,

either when playback is stopped or while it is engaged.

MP3

(Also known as mpeg 1, layer 3) - A compressed audio file format that uses psychoacoustic modeling to reduce file size significantly, while retaining good audio quality. Popular for use on the Internet and in personal music players.

MP4

(Also known as AAC, or mpeg 1, layer 4) - A compressed audio file format that uses psychoacoustic modeling to reduce file size significantly, while audio quality rivals that of uncompressed CD audio. MP4 is a fairly new standard and rising in popularity for use on the Internet and in personal music players. Peak supports reading/writing MP4 files.

playlist

A playlist is a list of audio events, or "regions," strung together in a specific order. See also region.

Plug-Ins

Plug-Ins are optional software enhancements for Peak that are available from BIAS and other third-party manufacturers. By installing plug-ins in Peak's VstPlugIns folder, you can enhance Peak's audio editing and processing capabilities with tools such as filtering, reverberation, chorusing and flanging, noise reduction, spatialization, and more.

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.

region

A region is a portion of an audio document bounded by region markers. Regions are portions of an audio document defined using the New Region command (⌘-Shift-R) from the Actions menu or Toolbar. Regions can be saved into only AIFF and Sound Designer II files created by Peak. See also playlist .

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 sampler and sample rate.

sampler

A sampler is an electronic instrument capable of digitally recording or "sampling" a sound and playing it back from a keyboard or other controller. Samplers are used extensively in all areas of audio production, ranging from recording and performance, to film production and sound design. See 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 Peak software.

192.000 kHz

This is the standard for HD (High-Definition) audio hardware/production. This rate results in an upper frequency response of 96 kHz-well above the range of human hearing.

96.000 kHz

This is the standard sample rate for Digital Video Disc (DVD) audio, and is often used by sound editors work-

ing in audio post-production for DVD. This rate results in an upper frequency response of 48 kHz-well above the range of human hearing.

48.000 kHz

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 24 kHz-above most people's hearing range.

44.100 kHz

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 44.1 kHz). 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 22,000 Hz-above most people's hearing range.

22.050 kHz & 11.025 kHz

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 22.050 kHz (or lower) 8-bit audio, since it uses half the disc space of CD-quality audio. The 22.050 kHz sample rate results in an upper frequency response of 12.025 kHz; this may sound "muffled," since most people can hear considerably higher frequencies than 12.025 kHz.

Also refer to bit resolution, frequency, and Hertz.

SCSI

Stands for Small Computer System Interface. It is a standard developed to allow a variety of computers and peripheral devices such as hard disks, CD recorders, scanners, and other storage media, to connect and transfer data. Most external hard drives designed for use with the Macintosh are SCSI hard drives and must be connected to the SCSI port on the rear of the Macintosh. The SCSI specification allows up to seven SCSI-equipped devices to be connected or "daisy-chained" together.

SMDI

SMDI stands for SCSI Musical Data Interchange Protocol. SMDI Samplers use SCSI to send samples between devices several times more quickly than over MIDI. In order to transfer samples between the Macintosh and your sampler using SMDI, you must connect a SCSI cable between your Macintosh and the sampler.

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 Peak.

VST™

"Virtual Studio Technology" - VST is a real-time, native

plug-in standard created by Steinberg Media Technologies, AG. Plug-ins conforming to the VST standard can be used in any compatible host application. VST plug-ins are accessed from a central directory in the Mac OS, making it very easy to maintain large collections of plug-ins. Peak supports "Mach-O" and "carbonized" VST 1.0 format effects plug-ins.

WAVE

This is Microsoft's Windows Audio File Format. It is supported by many Windows software applications and some Macintosh applications. The WAVE format is best if you plan to use an audio document in an application that supports or requires WAVE format files.

zero-crossing

The zero-crossing is the point where the waveform meets the zero crossing line or the center line through the waveform. It is the point of zero amplitude in the waveform.

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