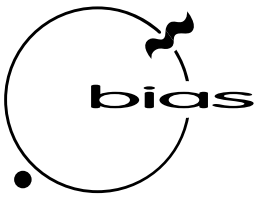
Peak™

Software User's Guide

Version 1.5

Berkley Integrated Audio Software, Inc.
P.O. Box 2481
Sausalito, CA 94966
415·331·2446
http://www.bias-inc.com

BIAS Technical Support
510-558-1962
9AM-5PM PST
or
support@bias-inc.com



berkley integrated audio software

Software Copyright and Warranty

This legal document is an agreement between you, the end user, and BIAS, Inc. BY UTILIZING THE SOFTWARE ON THESE DISKS, YOU ARE AGREEING TO BECOME BOUND BY THE TERMS OF THIS AGREEMENT, WHICH INCLUDES THE SOFTWARE LICENSE AND THE SOFTWARE DISCLAIMER OF WARRANTY (collectively the "Agreement"). THIS AGREEMENT CONSTITUTES THE COMPLETE AGREEMENT BETWEEN YOU AND BIAS, INC. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, DO NOT USE THE SOFTWARE ON THE DISKS INCLUDED IN THIS PACKAGE AND PROMPTLY RETURN THE UNOPENED PACKAGE AND THE OTHER MATERIALS (INCLUDING WRITTEN MATERIALS, BINDERS OR OTHER CONTAINERS) THAT ARE PART OF THIS PRODUCT TO THE PLACE WHERE YOU OBTAINED THEM FOR A FULL REFUND.

BIAS SOFTWARE LICENSE

1. GRANT OF LICENSE. In consideration of payment of the LICENSE fee, which is part of the price you paid for this product, BIAS, as Licensor, grants to you, the LICENSEE, a non-exclusive right to use and display this copy of a BIAS software program (hereinafter the "SOFTWARE") an a single COMPUTER (i.e., with a single CPU) at a single location. BIAS reserves all rights not expressly granted to LICENSEE.
2. OWNERSHIP OF SOFTWARE. As the LICENSEE, you own the magnetic or other physical media on which the SOFTWARE is originally or subsequently recorded or fixed, but BIAS retains title and ownership of the SOFTWARE recorded on the original disk copy (or copies) and all subsequent copies of the SOFTWARE, regardless of the form or media on which the original and other copies may exist. This License is not a sale of the original SOFTWARE or any copy.
3. COPY RESTRICTIONS. This SOFTWARE and the accompanying written materials are copyrighted. Unauthorized copying of the SOFTWARE, including SOFTWARE that has been modified, merged, or included with other software, or of the written materials is expressly forbidden. You may be held legally responsible for any copyright infringement that is caused or encouraged by your failure to abide by the terms of this License. Subject to these restrictions, and if the SOFTWARE is not copy-protected, you may make one (1) copy of the SOFTWARE solely for backup purposes. You must reproduce and include the copyright notice on the backup copy.
4. USE RESTRICTIONS. As the LICENSEE, you may physically transfer the SOFTWARE from one computer to another provided that the SOFTWARE is used on only one computer at a time. You may not electronically transfer the SOFTWARE from one computer to another over a network. You may not distribute copies of the SOFTWARE or accompanying written materials to others. You may not modify, adapt, translate, reverse engineer, de-compile, disassemble, or create derivative works based on the SOFTWARE. You may not modify, adapt, translate, or create derivative works based on the written materials without the prior written consent of BIAS.
5. TRANSFER RESTRICTIONS. This SOFTWARE is licensed only to you, the LICENSEE, and may not be transferred to anyone without the prior written consent of BIAS. Any authorized transferee of the SOFTWARE shall be bound by the terms and conditions of this Agreement. In no event may you transfer, assign, rent, lease, sell, or otherwise dispose of the SOFTWARE on a temporary or permanent basis except as expressly provided herein.
6. TERMINATION. This License is effective until terminated. This License will terminate automatically without notice from BIAS if you fail to comply with any provision of this License. Upon termination you shall destroy the written materials and all copies of the SOFTWARE, including modified copies, if any.
7. UPDATE POLICY. BIAS may create, from time to time, updated versions of the SOFTWARE. At its option, BIAS will make such updates available to the LICENSEE and transferees who have paid the update fee and returned the registration card to BIAS.
8. MISCELLANEOUS. This Agreement is governed by the law of the State of California.

DISCLAIMER OF WARRANTY AND LIMITED WARRANTY

THE SOFTWARE AND ACCOMPANYING WRITTEN MATERIALS (INCLUDING INSTRUCTIONS FOR USE) ARE PROVIDED "AS IS" WITHOUT WARRANTIES OF ANY KIND. FURTHER, BIAS DOES NOT WARRANT, GUARANTEE, OR MAKE ANY REPRESENTATIONS REGARDING THE USE, OR THE RESULTS OF THE USE, OF THE SOFTWARE OR WRITTEN MATERIALS IN TERMS OF CORRECTNESS, ACCURACY, RELIABILITY, CURRENTNESS, OR OTHERWISE. THE ENTIRE RISK AS TO THE RESULTS AND PERFORMANCE OF THE SOFTWARE IS ASSUMED BY YOU, AND NOT BIAS OR ITS DEALERS, DISTRIBUTORS, AGENTS, OR EMPLOYEES, YOU AGREE TO ASSUME THE ENTIRE COST OF ALL NECESSARY SERVICING, REPAIR, OR CORRECTION.

BIAS warrants to the original LICENSEE that the disk(s) on which the SOFTWARE is recorded is free from defects in materials and workmanship under normal use and service for a period of ninety (90) days from the date of delivery as evidenced by a copy of the receipt and. Further, BIAS hereby limits the duration of any implied warranty (or warranties) on the disk to the respective periods stated above. Some states do not allow limitations on duration of an implied warranty, so the above limitation may not apply to you.

BIAS' entire liability and your exclusive remedy as to disk(s) shall be, at BIAS' option, either (a) return of the purchase price or (b) replacement of the disk that does not meet BIAS' Limited Warranty and which is returned to BIAS with a copy of the receipt. If failure of the disk has resulted from accident, abuse, or misapplication, BIAS shall have no responsibility to replace the disk or refund the purchase price. Any replacement disk will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer.

THE ABOVE ARE THE ONLY WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, THAT ARE MADE BY BIAS CONCERNING THE BIAS PRODUCT. NO ORAL OR WRITTEN INFORMATION OR ADVICE GIVEN BY BIAS, ITS DEALERS, DISTRIBUTORS, AGENTS, OR EMPLOYEES SHALL CREATE A WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THIS WARRANTY, AND YOU MAY NOT RELY ON ANY SUCH INFORMATION OR ADVICE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

NEITHER BIAS NOR ANYONE ELSE WHO HAS BEEN INVOLVED IN THE CREATION, PRODUCTION, OR DELIVERY OF THIS PRODUCT SHALL BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL, OR INCIDENTAL DAMAGES (INCLUDING DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, AND THE LIKE) ARISING SUCH DAMAGES. BECAUSE SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

This Disclaimer of Warranty and Limited Warranty is governed by the laws of the State of California.

U.S. GOVERNMENT RESTRICTED RIGHTS

The SOFTWARE and documentation is provided with RESTRICTED RIGHTS. Use, duplication, or disclosure by the Government is subject to restrictions as set forth in subdivision (b)(3)(ii) of The Rights in Technical Data and Computer Software clause at 252.227-7013.

Contractor/manufacturer is BIAS (Berkley Integrated Audio Software), Inc./P.O. Box 2481/Sausalito, CA 94966.

Should you have any questions concerning this Agreement, or if you desire to contact BIAS for any reason, please contact in writing:

BIAS Customer Sales and Service, P.O. Box 2481/Sausalito, CA 94966.

Credits:

Peak Software:
Steve Berkley

Time Compression/Expansion Software:
Earl Vickers (aka The Sound Guy™)

User's Guide:
Steve Berkley and Montara Creative Group

Package Design:
Montara Creative Group

Beta Testers and Technical Assistance:
Robbie Berman, Dennie Edwards, Tom Erbe, Terje Finstad, Kelly Fitz, Brian Hamilton, Matt Issaacson, Ray Legnini, M. Stevens, Rudy Trubitt, NIN, peer landra, Jeff Moore, Brent Hurtig, Melvin & Milo Mole.

Contents

Chapter 1: Introduction

Welcome! 3
Who Is Peak Designed For? 3
What's New in Peak 1.5? 3
Minimum System Requirements 4
Maximizing Peak Performance 4
About Your User's Guide 5
About Peak LE 6
Using Online Help 6

Chapter 2: Installing & Configuring Peak

Installing Peak 9
Making Audio Connections 10
Configuring The Sound Control Panel 11
- Using The Macintosh's Built-in Audio Inputs And Outputs 12
- Using The Inputs And Outputs of a Plug-In Audio Card 13

Chapter 3: Peak Basics

Introduction 17
A Brief Explanation of Digital Audio 17
About Disk-based Recording and Editing 18
Creating a New Peak Document 19
Opening Existing Audio Documents 19
Opening "Dual Mono" Files 20
Opening Multiple Files 20
Saving a Document 21
Setting Preferences 23
- Setting Peak's Playback Parameters 23
- Scroll During Playback 24
- Choosing Colors for the Audio Document Window 24
- Choosing a Time Format 25
- Audio File Meter, Tempo, and Timestamp Settings 25
- Choosing a Scratch Disk 25
- Keyboard Shortcuts 26

Quitting Peak 27

Chapter 4: Recording

Proper Levels for Recording 31
Preparing Your System for Recording 31
- The Transport 33

Initiating Recording 33
Importing a Track From an Audio CD (Audio Extraction) 34

Chapter 5: Editing

Editing Audio with Peak 39
The Audio Document Window 39
An Audio Waveform 40
A Selection 40
A Marker 41
A Loop 41
A Region 41
Blending Enable/Disable button 41
Cursor Location Display 41
Selecting Audio 42
Playing Audio 42
The Transport 42
Auditioning Audio with Pre- or Post-Roll 43
Triggering Playback of Multiple Audio Documents 43
Scrubbing 44
Using Unlimited Undo and Redo 45
Using the Edits Command to Undo a Series of Actions 45
Essential Editing Functions 46
Cutting Audio 47
Deleting Audio 47
Copying Audio 47
Pasting Audio 47
Inserting Audio 48
Replacing Audio 48
Cropping a Selection 48
Silencing a Selection 48
Inserting Silence into a Document 48
Show Edits 49
Using Crossfades and Blending to Smooth Edits 49
Creating Fade-ins and Fade-outs 50
Creating and Using Markers 52
Creating Loops 54
Creating Crossfade Loops 55
Using Loop Surfer™ 56
Exporting Regions 57

Chapter 6: DSP & Plug-Ins

Introduction 61
About Adobe Premiere Plug-Ins 61
Installing Adobe Premiere Plug-ins 61
Premiere Plug-in Memory Settings 62
Premiere Plug-In Preview Time 62
Premiere Envelope 62
Processing Audio with DSP & Plug-ins 63
Peak's Audio Processing Tools 63
Add 63
Convolve 64
Mix 64
Modulate 64
Reverse Boomerang 65
Rappify 65

Reverse 66
Phase Vocoder 66
Sample Rate Conversion 66
Normalize 67
Change Gain 67
Gain Envelope 68
Amplitude Fit 68
Change Duration 68
Invert 69
Mono To Stereo / Stereo To Mono 69
Peak's Advanced Editing Tools 70
Find Peak 70
Repair Clicks 70
Threshold 71
Peak's Audio Librarian Tools 72
Apple Events™ Support 72
Batch File Processor 73

Chapter 7: Playlists

Introduction 79
Playlist Regions 79
Creating a Playlist 80
Modifying Playlist Events 81
Applying DSP Effects to Playlists 82
Creating a New Audio Document from a Playlist 82
Exporting the Playlist as a Text Document 83
Saving and Opening Playlists 83

Chapter 8: Samplers

Introduction 87
Working with SMDI Samplers 87
MIDI Sample Dump Standard 89
Working with Ensoniq Samplers 91

Chapter 9: Peak Menus

File Menu 99
Edit Menu 103
Action Menu 105
DSP Menu 109
Samplers Menu 111
Plug-Ins Menu 113
Preferences Menu 113
Region Menu 119
Windows Menu 119

Appendices

Keyboard Shortcuts & Actions 123
Troubleshooting 127
Encoding RealAudio™ Files 133

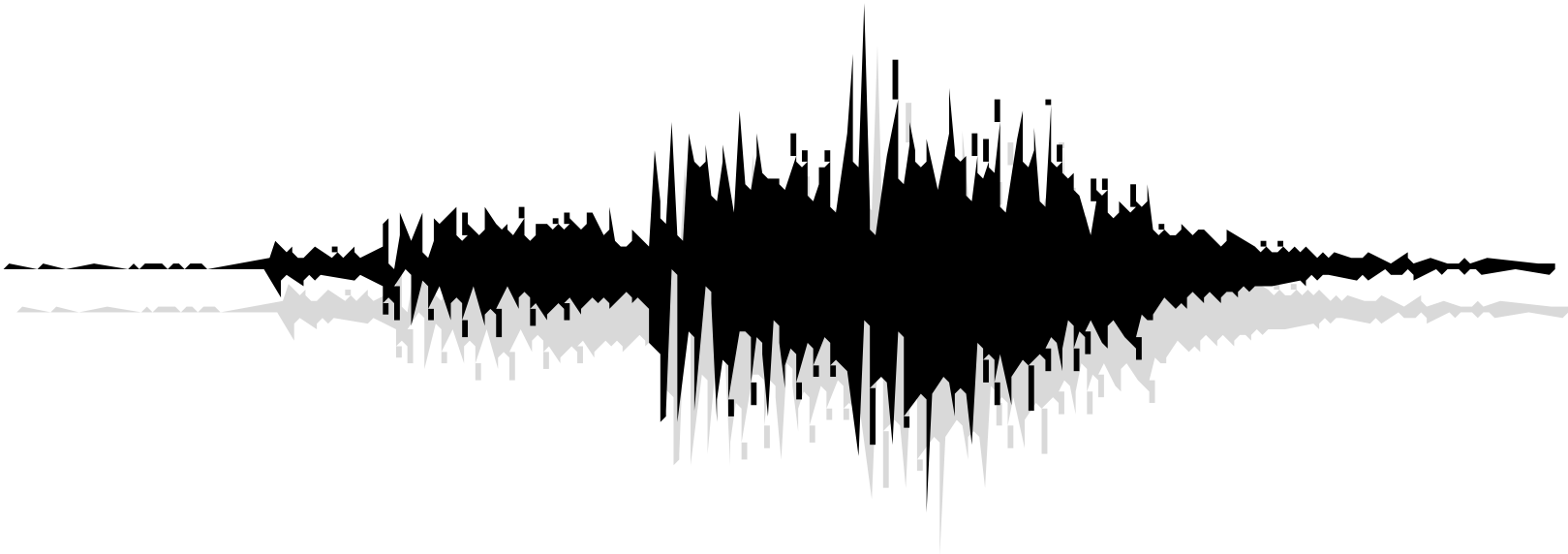
Glossary

Glossary 139

Index

Index 145

Chapter 1
Introducing Peak



Chapter 1: Introducing Peak

Welcome!

BIAS Peak™ is an advanced audio application which 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 Digidesign's Pro Tools® and Macromedia's DECK II™. Peak also offers advanced sampler support, and works directly with many popular MIDI sampling keyboards and rackmount samplers.

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-configured waveform display
- Support for commonly used audio document formats, including AIFF, Sound Designer II™, Red Book, QuickTime™, Wave, RealAudio™, and System 7 Sound formats
- Completely nondestructive 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 undo
- By using an application that supports Apple Events, such as Filemaker Pro™ or HyperCard™, you can catalog your Peak sound files—and audition them from within the application
- Support for third-party digital audio hardware, such as the Digidesign™ or Lucid™ digital audio boards, through the Macintosh Sound Manager
- Support for third-party Adobe Premiere™ Plug-Ins, allowing you to add advanced signal processing features to Peak. Plug-Ins from companies such as Waves™, Arboretum™, CyberSound™ and InVision Interactive™ can be used to empower Peak with digital filtering, noise reduction, reverb, equalization, and other effects

Who Is Peak Designed For?

Peak is designed for a wide variety of users, ranging from composers and multimedia producers to sound designers 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 1.5?

Version 1.5 of Peak software has numerous new features and enhancements, including:

- Opening Multiple Files using the Open... Dialog
- Drag & Drop Folders and Disks
- QuickTime file support. Since QuickTime provides automatic translation of WAVE, .au, .snd, and System 7 sounds, Peak can also open these file types. Peak can also save AIFF, Sound Designer II, QuickTime, Red Book, System 7 sounds, RealAudio, and WAVE files.
- Support for Compressed Audio Documents
- Graphic Overviews

- Vertical Scaling
- SMPTE and Bars | Beats Units Scale
- Audio File Meter, Tempo, and Timestamp Settings
- Playback Preferences
- User-definable Keyboard Shortcuts
- Recording with the Notepad Cues
- Input Level Control and Automatic Gain Control
- Tape-style Scrubbing
- BIAS's "Accessory Pak™" plug-ins (including Audio Pro Pak™, Composer•Audio Designer Pak™, and Audio Librarian Pak™) have been integrated into Peak 1.5
- DSP features include Mono To Stereo / Stereo To Mono, Gain Envelope, Amplitude Envelope, Find Peak, Change Duration, Phase Vocoder, Repair Clicks, and much more
- Batch File Processor
- RealAudio Encoding Support for streamlining audio over the internet
- Enhanced Sampler Support, including MIDI Sample Dump Standard and improved support for SMDI and Ensoniq Samplers
- Numerous performance improvements

Minimum System Requirements

To use Peak you will need:

- Any PowerPC-, 68040-, or 68030-equipped Macintosh with an Apple Sound Chip (ASC). Peak also supports all PowerPC- 68040-, or 68030-equipped PowerBooks
- 16MB of RAM (Power Macintosh) or 8MB of RAM (68040 or 68030 Macintosh)
- Macintosh System Software version 7.1 or later
- Sound Manager version 3.0 or later
- QuickTime version 2.5 or later. (Note the QuickTime 2.5 Installer automatically updates the Sound Manager to version 3.2.)
- QuickTime PowerPlug™ and MathLib installed in the Extensions folder (for Power Macintosh users)
- A hard drive with 18ms or faster average seek time
- A 13-inch or larger monitor (color is recommended)

The optimal system for use with Peak software is a Power Macintosh with AV (Audio Visual) features and 8MB or more of RAM available to run Peak. The Peak application runs in native mode on both 680X0-based Macintosh models and Power Macintosh-based models.

Maximizing Peak Performance

Peak is a power-hungry application. To get the best performance out of Peak and your Macintosh, do the following.

To maximize Peak performance:

- Use a minimal number of System Extensions. Extensions can slow down your Macintosh by using precious processor cycles. In particular, turn off System Extensions such as menu bar clocks and screen savers that are in constant operation.
- Set your monitor to no more than 256 colors (8-bit color).
- Turn off *File Sharing*.
- Disconnect your Macintosh from any networks and turn off *AppleTalk*.
- Use the Memory control panel to set the Macintosh's disk cache to at least 384k.

- Allocate additional RAM to Peak if possible, using the Finder's *Get Info* command. (Select Peak in the Finder, choose *Get info* from the Finder's Special menu, and enter the desired amount in the Preferred Size field. Make sure you allocate more RAM than the amount indicated in the Minimum Size field!)
- Optimize your hard drive. (See Chapter 3 to learn about proper hard disk maintenance).

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 your Macintosh before going any further. This will make using Peak much easier and enjoyable.

The Chapters in your Peak User's Guide are arranged in the order that you would typically perform tasks when embarking on an audio production 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 record audio to hard disk and transfer audio from compatible CD-ROM drives.
- Chapter 5 introduces you to the concepts and techniques of nondestructive editing with Peak.
- Chapter 6 explains how to use DSP-based functions and software plug-ins to enhance Peak's audio production capabilities.
- Chapter 7 explains how to create regions and sequence their playback using playlists.
- Chapter 8 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 9 describes each of the commands found in Peak's menus.
- Appendix 1 lists the default Keyboard Shortcuts for Peak.
- Appendix 2 provides a troubleshooting guide for commonly encountered problems.
- Appendix 3 describes Peak's RealAudio™ Encoder support for preparing audio for streaming over the internet.
- A Glossary and an Index complete your User's Guide.

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

About Peak LE

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

- Playlists
- Batch File Processor
- RealAudio Bandwidth Negotiation
- Up to three Premiere plug-ins only with three second preview limit
- Loop Surfer
- Export Regions
- Sampler Support
- Convolve
- Modulate
- Add
- Amplitude Fit
- Change Duration
- Crossfade Loop
- Find Peak
- Mono To Stereo
- Stereo To Mono
- Phase Vocoder
- Rappify
- Repair Clicks
- Threshold
- Recording Notepad
- Recording Input Levels
- Specialized Apple Events for Playback from a database such as FileMaker Pro

LE Features that are not supported in Peak LE will show this icon in the manual.

Using Online Help

Peak provides two types of online help. The first type, Balloon Help, can be activated by selecting *Show Balloons* from the Macintosh's Balloon Help menu in the Finder. Balloon Help will show you the functions of each menu item as you move the mouse across different menu items. The second type of online help is available via the Apple menu's *Help* item. This help system gives you detailed information about how to use the Peak software.

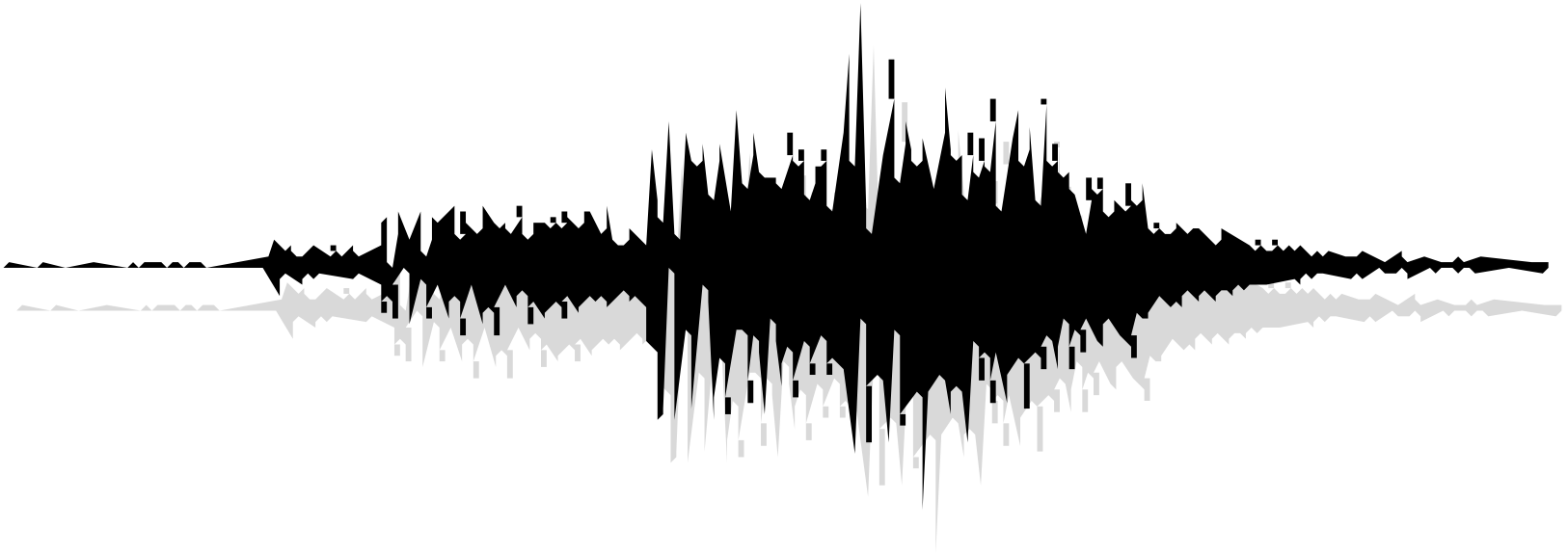
Online Help is available in the Apple menu

Online Help

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



Chapter 2: Installing and Configuring Peak

Installing Peak

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

- 3 installation disks.

Before you Install Peak

Peak is a *fat binary* application, meaning that it will run on both Power Macintosh computers and non-Power Macintosh computers. However, in order to work properly, Peak requires the following:

- Mac OS System 7.1 or later must be running on your computer.
- *Virtual Memory* must be off. Open the *Control Panels* folder within your System folder, double-click the item called *Memory*, and click the *Off* button next to *Virtual Memory*. After you do this, restart your computer.
- If you have a Quadra-series Macintosh, *32-bit Addressing* must be turned on. Open the *Control Panels* folder within your System folder, double-click the item called *Memory*, and click the *On* button under *32-bit Addressing*. After you do this, restart your computer.

Copy Protection

Peak is copy-protected with a *key disk* protection scheme. When you install Peak, the Installer automatically "authorizes" your hard disk to run the Peak software. You are allowed to authorize a maximum of *three* hard disks to run Peak. If you use all of your authorizations and find it necessary to run Peak on another hard drive, you must reclaim one of the authorizations you have used. (You must also reclaim authorization before reformatting a hard drive or the authorization will be erased.) To deauthorize a hard drive, simply run the installer application on the *Install 1* disk and select *Auth/Deauth Peak™ 1.5* to remove the authorization.

The Installer dialog

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 *Install 1* disk in your floppy drive and double-click the file called *Install Peak 1.5*.
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* button.
5. Click *Install* at the bottom right of this dialog.
6. After you have clicked *Install*, follow the on-screen instructions. The Installer will prompt you to insert disks as necessary. Peak will be installed into a folder named *Peak 1.5* on your selected hard disk.

7. When the installation is complete, a message will appear indicating that the installation was successful. Click *Quit* to quit the Installer, or click *Continue* to install copies additional copies. (Don't forget to turn back on any virus-protection software that you may be using the next time you restart the computer.)

If you ever need to run Peak from a hard disk that has not been authorized, simply install Peak and when you open Peak for the first time, click *Continue* in the Authorization dialog instead of *Authorize*. The hard drive will not be authorized, but you will still be able to run Peak if you insert your Key disk each time you open the Peak application.

To run Peak on an unauthorized hard disk:

1. Double-click on the Peak application icon. This dialog appears:

2. Insert the *Install 1* disk. This dialog appears:

3. Click *Continue*. Peak opens normally. You will now be able to use Peak on the hard drive. However, each time you attempt to open Peak on this drive, you will be have to insert your Key disk.

Send in Your Registration Card!

After you have installed Peak, please send in the Registration Card included with your software to receive free technical support, software updates and notification of upgrades.

Making Audio Connections

While it is possible to listen to Peak using a Macintosh's built-in speaker (or headphones, as might be the case with a PowerBook) most people will prefer to listen through a better quality external speaker system.

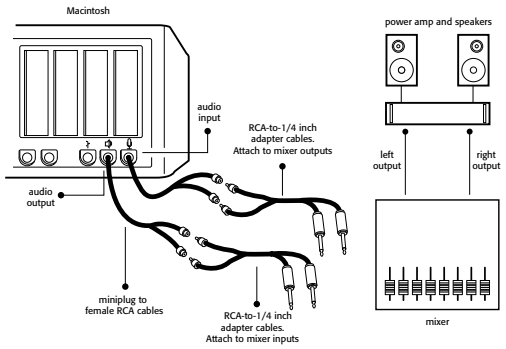
It is very easy to set up audio connections between your Macintosh and a mixer or speaker system. Your exact setup will differ slightly depending on whether you are using the built-in sound input and output connectors on your Macintosh, or those of a plug-in audio recording/playback card. Instructions for each case are given below.

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:
   - 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. 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).

The audio input jacks on most Macintoshes are a standard mini-plug (1/8-inch) connector. Most source outputs are 1/4-inch "phone" connectors or RCA connectors. To make this connection, you may need to use a *1/4-inch to mini-plug* or *RCA to mini-plug* cable or adapter.



For advanced users: Certain professional mixing consoles, DAT decks, or other audio sources may have a nominal output level of +4dBu, whereas the Macintosh expects to see a nominal -10dBu 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.

3. Connect your Macintosh's audio output to your playback system's input. The Macintosh's audio output jack is a standard stereo mini-plug (1/8-inch) connector. Most mixer, receiver, and amplified speaker inputs are equipped with 1/4-inch, RCA, or mini-plug jacks. To make this connection, you may need to use a *mini-plug to 1/4-inch* or *mini-plug to RCA* cable or adapter.

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

Using the Inputs And Outputs Of An Audio Expansion Card

If you have a plug-in audio record/playback card (such as Digidesign's Audiomedia II or III card) installed in your computer and wish to use its audio input and output capabilities, do the following:

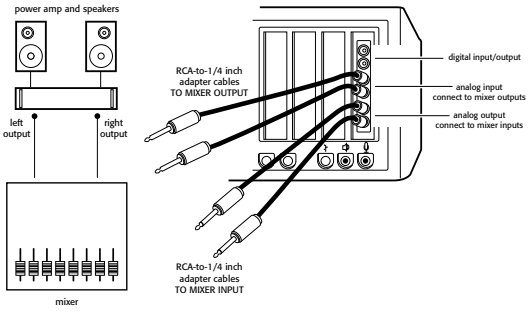
1. Turn down the volume on your mixer or playback system.

2. Make sure that you have installed the plug-in audio card into one of the available expansion slots inside your Macintosh. If you are not sure how to do this, please refer to the instructions that came with your Macintosh and the card itself.

3. Connect your mixer's output to the audio card's input connectors. (Some audio cards have an external interface box which contains the input connectors.)

4. Connect your audio card's outputs to your mixer's (or playback system's) input. Note that some audio expansion cards have an external interface box which contains the output connectors.

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



Configuring The *Sound* Control Panel

Before you use Peak, you must first configure your system's inputs and outputs with the *Sound* Control Panel. The *Sound* Control Panel controls the Macintosh Sound Manager and the inputs and outputs of your Macintosh.

Your exact setup will differ depending on the input device that you are using with Peak. You can use either the built-in audio input and outputs of your Macintosh, or if you own a plug-in expansion card such as Digidesign's Audiomedia II or III card, the input and outputs on this card.

Using The Macintosh's Built-in Audio Inputs And Outputs

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

To configure the Macintosh's input and outputs:

1. From the Apple menu, choose the *Sound* Control Panel.
2. When the Sound Manager appears, choose *Sound In* from the pop-up menu at the top of this window.

3. In the *Sound In* window, select *Built-In*, and then click the *Options* button.

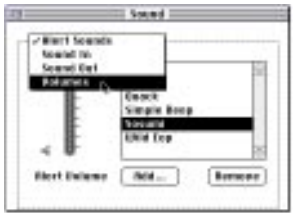
4. Select *Microphone* and then select *Playthrough*. This selects the sound input jack on the rear of the Macintosh. Click *OK* when you have finished. This window may look different depending on your model of Macintosh. (Be careful not to cause feedback when using a microphone. If feedback occurs, turn down your mixer.)

5. Next, choose *Sound Out* from the pop-up menu at the top of the Sound Manager window.

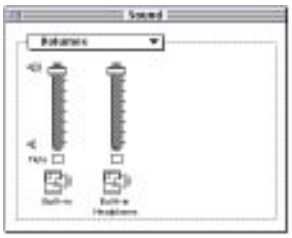
6. In the *Sound Out* window, select your desired sample rate ("Rate"). 44.1 kHz is the Compact Disc standard. This doesn't affect recording, only playback fidelity. Some 68030 and 68040-based Macintoshes may not allow a 44.1 kHz output; regardless, Peak, can still process audio internally at 44.1kHz if desired. For best results, use the highest rate that your Macintosh model allows.
7. Select the bit resolution ("Size"). 16-bit is the Compact Disc standard. Again, this doesn't affect recording, just playback. 68030 and 68040-based Macintoshes may only allow 8-bit output. (Peak however, can still process audio internally at 16-bit.) For best results, use the highest resolution that your Macintosh model allows.
8. Select mono or stereo format ("Use"). We recommend stereo.

To set the master output volume:

1. Choose *Volumes* from the pull-down menu.



Choosing Volumes in the Sound Manager



The Volumes window

2. Drag the *Built-In* volume slider to maximum. This sets the master output volume for the Macintosh sound system. Leave the volume all the way up for maximum signal-to-noise fidelity.

3. Close the Sound window when you have finished. Your Macintosh is now ready to use for digital recording and playback.

4. If you wish to set your Macintosh "system beep" volume to a lower level than your main output volume, choose *Alert Sounds* from the pop-up menu and set the *Alert Volume* slider to a lower level. Your Macintosh's system alert sounds will have the level that you set here.

Using The Inputs And Outputs of a Plug-In Audio Card

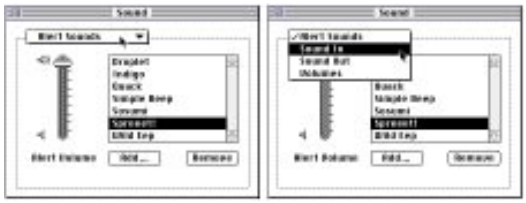
If you have a plug-in audio record/playback card (such as Digidesign's Audiomedia II or III card) installed in your computer and wish to use its input and output capabilities instead of your Macintosh's built-in capabilities, do the following:

To use a Digidesign audio card's inputs and outputs:

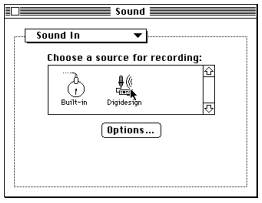
1. Make sure that you have installed the Digidesign Sound Driver software on your Macintosh. If you haven't already installed this software (which is included on your Peak software installation disks), please do so now. Simply drag the *Digidesign Sound Driver* and *DigiSystem INIT* to your System Folder and your Macintosh will place them in the appropriate location. After you have done this, restart your computer.

2. From the Apple menu, choose the *Sound* Control Panel.

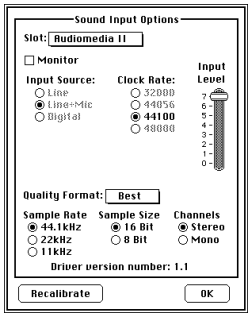
3. Click the *Alert Sounds* pop-up menu and select *Sound In*.



4. Select *Digidesign* as the sound input device.



5. Click *Options*. The following dialog appears:



6. If you have multiple Digidesign audio cards, select the one you wish to use for input from the *Slot* pop-up menu.

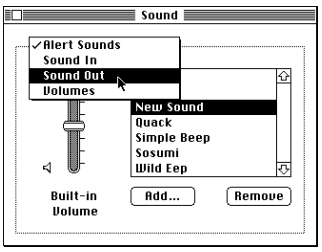
7. Set the *Input Level* parameter to 7. This will help you obtain optimum signal level and headroom in your recordings. (If you later find that clipping and distortion occurs, try lowering the level of your instrument or audio source.)

8. Select the desired input source: *line*, *line+mic*, or *digital*. (The *digital* option should only be used for digital format transfers from DAT or other digital medium.)

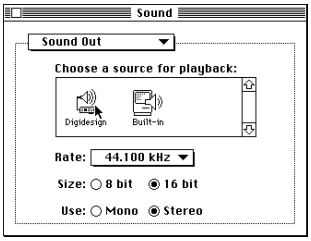
9. Select the desired clock rate, sample rate, sample size and channel format. In general, for optimum fidelity, we recommend 44.1 kHz, 16-bit stereo.

10. Click *OK* to close this dialog.

11. Choose *Sound Out* from the pop-up menu.



12. Select *Digidesign* as the sound output device.

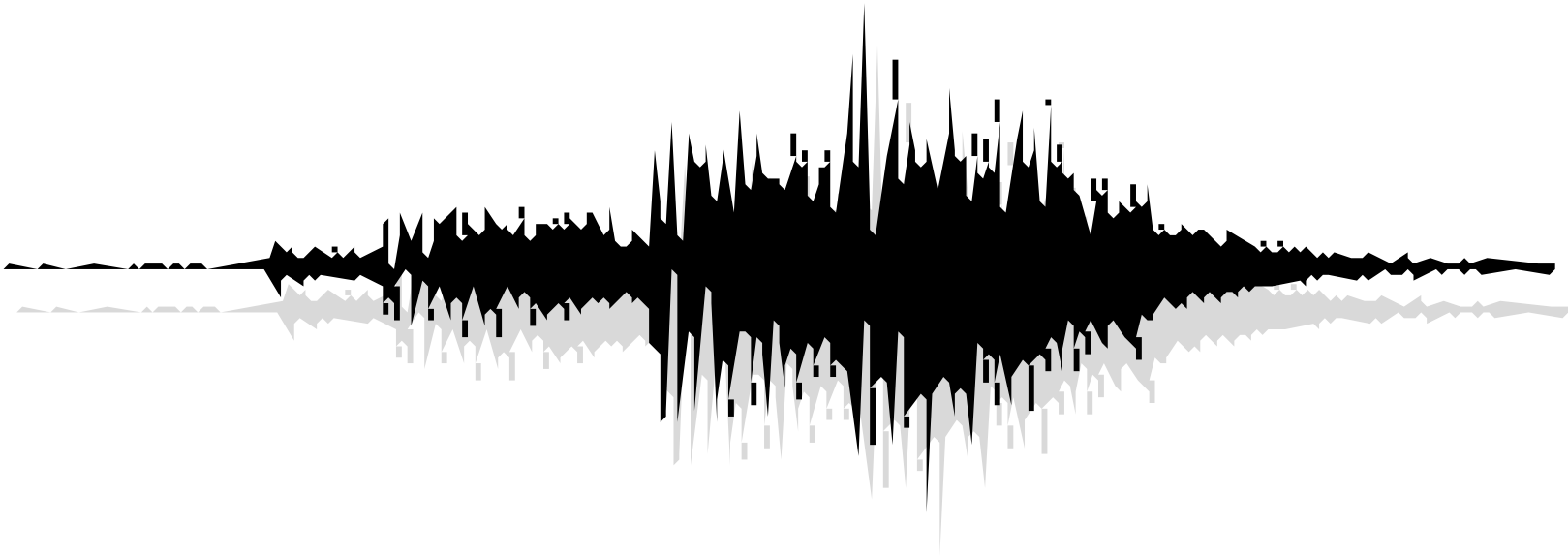


13. Close the *Sound* window when you have finished. Your Macintosh is now ready to use for digital recording and playback

Conclusion

Now that you have installed Peak and configured the Macintosh Sound Manager for recording and playback, 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 which 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 which 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 at the low end to 20,000 Hertz (20 kilohertz, or 20kHz) at the high end. In practice, however, most adults hear only as high as 12kHz to 18kHz, 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 how 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. 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 22,050Hz, 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, 35 millimeter, and 70 millimeter film, for example,) greater bit resolution (8-bit, 16-bit, and 24-bit) results in better fidelity digital audio. 16-bit resolution is the current standard for most professional digital audio applications.

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 96dB dynamic range. (The rule of thumb for dynamic range 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 pleased at the amount of 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

Nondestructive 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.

Nondestructive 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.

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 significant 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.

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. *(Be sure to deauthorize Peak using the Installer before you reformat your drive so that you don't lose your authorization!)* 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

The first step in beginning a new project is creating a new Peak audio document. Peak allows you to have multiple audio documents open at the same time.

To create a new audio document:

1. Choose *New* from the File menu. This command provides a hierarchical menu which allows you to choose either a *mono* or *stereo* format for the new document.

Creating a new Peak document

2. Choose the desired format, *mono* or *stereo*. When a new empty window appears, you are ready to begin your project.

Opening Existing Audio Documents

Peak allows you to open audio files created in a variety of common audio formats including AIFF, Sound Designer II, QuickTime, Red Book, WAVE, .au, .snd, and System 7 Sounds.

Opening WAVE files

The Macintosh recognizes files using a "type" and "creator." WAVE files are recognized by some audio applications with a type ".WAV," while others recognize only "WAVE" as the type.

Peak, along with Apple's QuickTime™ software and most other Multimedia applications, recogonize WAVE files of the type "WAVE," but not of type ".WAV."

You can use ResEdit or other third-party applications to ensure your WAVE files have the correct type prior to attempting to opening them with Peak.

Please note that markers and loops are not saved into or read from WAVE files.

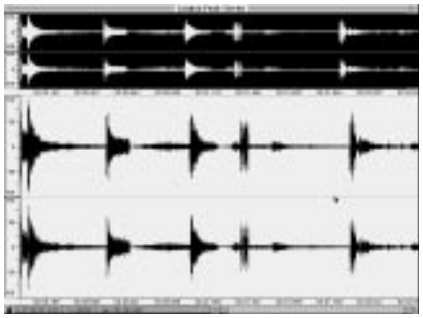
Opening Compressed Audio Documents

AIFF/AIFC and QuickTime files with compression such as MACE 3:1, MACE 6:1, IMA 4:1, or µlaw are compatible with Peak 1.10 and later. If Sound Manager version 3.2 or later is installed, Peak can open these files for editing

To open an audio file:

1. Choose *Open* 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, QuickTime, RedBook, WAVE, .au, .snd, and System 7 Sound formatted audio files. This dialog also allows you to audition files by selecting the file in the list and then clicking the *Play* icon.
3. When 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.
4. When you are finished opening audio documents, click the *Done* button.

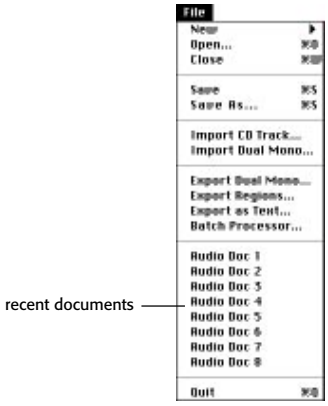
The Open dialog



An open Peak audio document

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 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 converts them into 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.

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 your project.

Peak also allows you to export your documents into *Dual Mono* format, which means that it's easy to import dual mono tracks from Pro Tools into Peak, edit and process them within Peak, and the export them back as Dual Mono files, to be reincorporated into your Pro Tools sessions.

Opening Multiple Files

Opening Multiple Files with the Open... Dialog

You can use the Open... dialog that appears after selecting the *Open* command from the File menu to open several audio documents. When you are finished opening audio documents, click the *Done* button.

Dragging & Dropping Folders, Disks, and CD Audio Tracks

In addition to opening individual documents by dropping them onto the Peak application's icon, you can now drop entire folders or disks onto the Peak application's icon. The contents of the disk or folder(s) will be scanned entirely for audio document's that Peak can open, such as QuickTime, .WAV, AIFF, Sound Designer II, Red Book, etc.

This new feature is particularly useful when used with Peak 1.5's new Batch File Processor, described later in this manual.

Peak 1.5 now 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. 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, you can still use the *Import CD track* command under the File menu. (The *Import CD Track* command is covered in the Chapter 4.)

Saving a Document

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.

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 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 AIFF files. Nor can copyright, author, or other file format-specific information be saved in a format which doesn't support it.

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**: This is Microsoft's *Windows Audio File Format*. It is supported by many Window's 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 Adobe Premiere™ or Macromedia Director™.
- **Red Book**: This is the headerless raw file format for audio CDs and some game platforms.
- **RealAudio™**: This is the file format for Progressive Networks™ RealAudio 3.0 and 2.0 Encoders, used for preparing audio for streaming over the internet.
- **System 7 Sounds**: This is Apple's audio file format used for Macintosh Operating System Sounds.

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*.

The Save dialog

Using the "Save As" Command

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.

To save an audio document under another name:

1. Choose *Save As...* from the File menu. This dialog appears:

The Save As... dialog

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 in 8-bit format (if it isn't already), click the *8-bit* checkbox. If not, leave this item unchecked. (*Peak does not use dithering to convert to 8-bit format when saving this way, so you may wish to use a product such as L1™ from Waves™ for higher-fidelity conversion.*)
4. Enter a name for the new audio document, select where you want to save the new file, and click *Save*.

Saving Compressed Audio Documents

AIFF/AIFC and QuickTime files with compression such as MACE 3:1, MACE 6:1, IMA 4:1, or μlaw are compatible with Peak 1.10 and later. If Sound Manager version 3.2 or later is installed, Peak can open these files for editing and then save them with compression.

User Tip: Audio compression should be the last step of your mastering of audio documents. Decompressing and recompressing audio documents will degrade their sound quality each time they are recompressed, so it is best not to save with compression until all editing and mastering has been completed.

Additionally, you may only compress AIFF or QuickTime documents.

To save an audio document with compression:

1. Choose *Save As...* from the File menu. The Save As dialog appears.

2. Choose the audio compressor you wish to compress the audio document with from the *Compressor* pop-up menu. Note some compressors work exclusively with 8-bit or only with 16-bit data, so the compression options may grey out, depending on whether the "8-bit" checkbox is checked in the *Save As* dialog.
3. Type the name of the new audio document, select the folder you wish to save the audio document, and click *Save*.

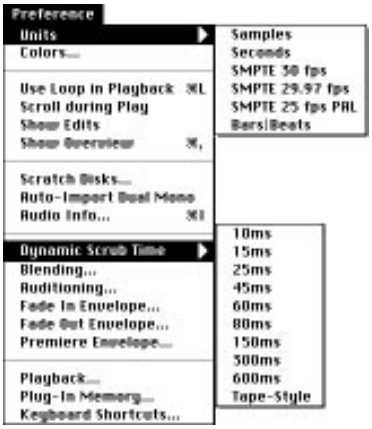
Peak shows how much disk space the compressed audio document will occupy with the compression and bit depth settings.

If Sound Manager 3.2 is not installed, there will be no compression options in the Compressor pop-up menu.

Setting Preferences

Peak allows you to customize a number of parameters of your system so that you can work with Peak as you are most comfortable. Most of these parameters are found in the Preferences menu. They range from the controls for playing back audio documents, to the colors that you want for the audio document window. Once you have set these as you like, they will stay that way until you decide to change them again.

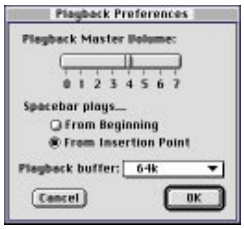
This section explains how to set several of these parameters. For items not covered here, please refer to the chapter entitled *Peak Menus*. There you will find explanations of each command in the Preferences menu and other Peak menus. Items from the Preferences menu are also covered throughout this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



The Preferences menu

Setting Peak's Playback Parameters

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



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, 64k to 128k is a good general setting. If you are experiencing clicks in your playback, working with fragmented files, or are using a slow hard drive, you may need a larger playback buffer setting.

Spacebar Operation

In earlier versions of Peak, pressing the Spacebar would cause playback to start from the beginning of the audio document. Holding the Option key and pressing the Spacebar would play the selected audio, and pressing the Command key with the Spacebar would cause playback to start from the insertion point or selection start using preroll settings in the *Auditioning...* dialog. This behavior is still available if the *From Beginning* button is marked.

Here are the keyboard combinations for playback using *From Beginning* setting:

Key Combination	Description
Spacebar	Play from beginning of file
Command-Spacebar	Play from selection start or insertion point
Option-Spacebar	Play selection only
Control-Spacebar	Play selection with preroll and post roll
Return or Spacebar	Stop playback
Shift-Spacebar	Stop playback and extend selection to playback stop point
Command-Spacebar	Stop playback and place insertion point at playback stop point (pause)

If "From Insertion Point" is marked, Peak will always play from the insertion point. If there is a selection made, Peak will play the selection only. The following behavior applies to the Spacebar when "From Insertion Point" is marked:

Here are the keyboard combinations for playback using "From Insertion Point" setting:

Key Combination	Description
Spacebar	Start playback from insertion point or play current selection if one exists
Command-Spacebar	Play from selection start or insertion point using preroll
Control-Spacebar	Play selection with preroll and post roll
Spacebar	Stop playback and place insertion point at playback stop point unless playing an audio selection
Return (during playback)	Stop without moving insertion point
Return (when stopped)	Return insertion point to beginning of audio document (rewind)
Shift-Spacebar	Stop playback and extend selection to playback stop point
Command-Spacebar	Stop playback and place insertion point at playback stop point (pause)

Scroll During Playback

With the *Scroll During Playback* command 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 enable Scroll During Playback:

1. Select *Scroll During Playback* from the Preferences menu. A check next to this item indicates it is enabled.
2. To disable Scroll During Playback, simply reselect *Scroll During Playback* from the Preferences 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. 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 of the waveform display:

1. Choose *Colors* from the Preferences menu.
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. Click *Change* to close this dialog. The audio document window is now set to the colors you selected.

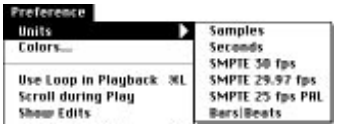
The Colors dialog

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 *Units* from the Preferences menu.
2. From the submenu, choose the time format that you desire: *samples*, *seconds, SMPTE frames,* and *Bars|Beats*. The timeline in Peak's audio document window switches to the format that you choose.



Choosing a time format with the Units command

Audio File Meter, Tempo, and Timestamp Settings

If your audio document is using bars and 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 Preferences menu 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, etc.

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 4 seconds, then the first sample in the audio document will appear in the audio document with a time of 4 seconds instead of 0 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* command in the Preferences menu allows you to choose the drive (or "scratch disk") that you wish to use for these temporary files. This feature automatically defaults to the disk with the most free space currently connected to your Macintosh. 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 Preferences menu. The *Scratch Disks* dialog appears.

The Scratch Disks dialog

2. From the pop-up menu, choose the hard drive that you wish Peak to use when it creates temporary files. 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 scratch disk.

Keyboard Shortcuts

Peak 1.5 allows you to customize any Peak menu item with a keyboard shortcut. To change your keyboard shortcuts, use the Keyboard Shortcuts item under the Preferences menu. Keyboard shortcuts are stored in a Preference file in the System Folder's Preferences Folder, called "Peak Shortcuts." Peak's default Keyboard Shortcuts are listed in Appendix 1 at the end of this manual.

All Peak shortcuts require holding the Command key. You may assign additional modifier keys such as the Shift or Option keys. However, be careful not to assign keyboard shortcuts to keys that are already in use!

To add a new Keyboard Shortcut

1. Choose *Keyboard Shortcuts* under the Preferences menu.
2. Scroll through the list of menu items, and click on the name of the Peak menu item you wish to assign a new keyboard shortcut.
3. Type the letter on the keyboard corresponding to the shortcut you wish to use. You may use the Option and Shift keys as additional modifiers.
4. Close the Keyboard Shortcuts dialog.

To remove a Keyboard Shortcut

1. Choose *Keyboard Shortcuts* under the Preferences menu.
2. Scroll through the list of menu items ,and click on the name of the Peak menu item you wish to remove a keyboard shortcut.
3. Click on the *Clear* button.
4. Close the Keyboard Shortcuts dialog.

LE *User-defined Keyboard Shortcuts are not supported in Peak LE.*

Making a Keyboard Shortcuts "Cue Card"

Its 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.

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

1. Choose *Keyboard Shortcuts* under the Preferences menu.
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*.
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.

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:

1. Choose *Quit* from the File menu, or press ⌘-Q on your keyboard.

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*.

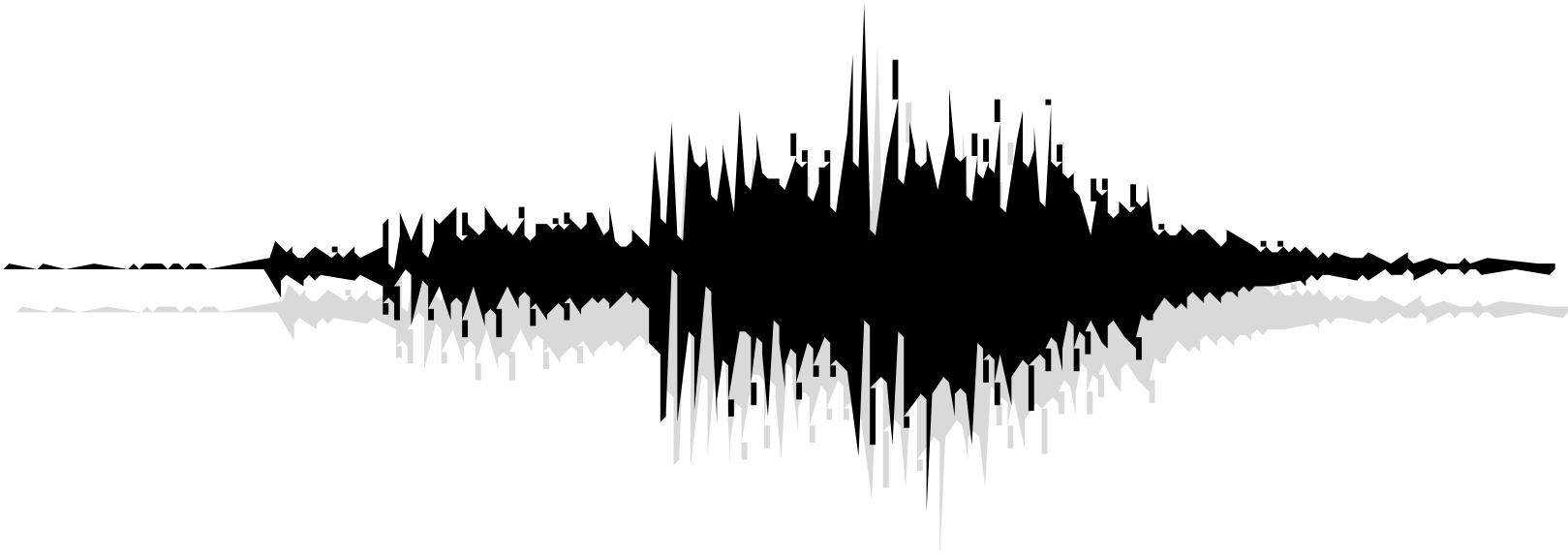
2. If you wish to close *all* currently open windows without saving, hold down the Option key and click *Don't Save*.

The Save Changes Before Quitting dialog

Conclusion

You now know how to create, open, import audio files and save Peak documents, as well as to set Preferences for operating Peak. The next chapter explains how to use your Peak software to record audio to disk.

Chapter 4
Recording



Chapter 4: Recording

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

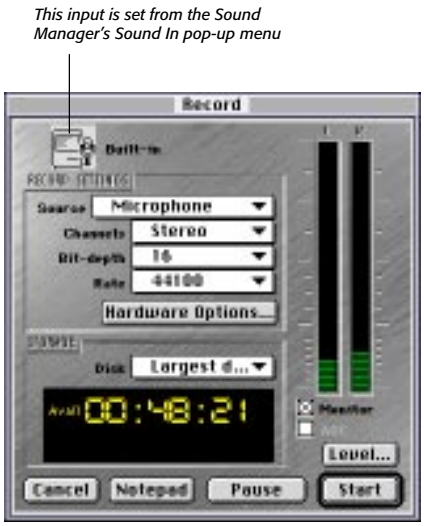
Proper Levels for Recording

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* (6dB or so) when you set levels so that you don't hit maximum input levels and clip.

Preparing Your System for Recording

Before you begin recording, you must set several parameters for the audio that you wish to record. If you followed the instructions in Chapter 2, your system's basic recording and playback setup should already be configured properly. At this point, you will simply use the *Record* command from the Actions menu to confirm these recording-specific parameters and then you can begin capturing audio to hard disk.

When you choose the *Record* command, the Record window appears. This window allows you to set several parameters which are explained below. *(Please note that the settings you choose here override any previously set with the Sound Control Panel.)*



The Record window

Source

This pop-up menu allows you to choose an input device for recording. The choices that appear here depend on your model of Macintosh and whether or not you are using a plug-in audio expansion card.

Channels

This pop-up menu allows you to choose either mono or stereo recording format (providing that your Macintosh or plug-in audio card supports both mono and stereo recording). Stereo recordings have two tracks of audio, one for the left channel, the other for the right channel of the audio. Mono recordings have only a single channel of audio.

Resolution

This pop-up menu allows you to choose a bit resolution for your recording. The choices that appear here depend on your model of Macintosh. 16-bit is the current Compact Disc standard for professional-quality recordings. 8-bit is commonly used for computer-based multimedia and games.

Sample Rate

This pop-up menu allows you to choose a sample rate for your recording. The choices that appear here depend on your model of Macintosh. Possible sample rates are as follows:

48000. 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.

44100. 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. Most sound engineers working in music production—or anything that may be distributed on a CD—work at "forty-four one."

22050 and **11025**. These sample rates are used for lower-fidelity audio playback on Macintosh and PC compatible computers that have 16-bit playback capability. Many games and other multimedia productions utilize 22.050kHz 8-bit audio, since it uses one-quarter of the disc space of CD-quality audio.

22255 and **11127**. These sample rates are used for lower-fidelity audio playback on Macintosh computers that are not capable of 16-bit audio playback.

Hardware Options

The *Hardware Options* button allows you to access parameters specific to your input device. For example, if the device you are recording with supports special parameters such as synchronization, you can access these through the *Hardware Options* dialog.

Disk

This pop-up menu allows you to select a hard drive attached to your Macintosh for recording. This setting defaults to the hard disk with the greatest amount of free space currently connected to your Macintosh. The numeric indicator displays how much recording time is available on the selected drive. Approximately 10.1MB of hard disk space is required for each minute of stereo recording at 44.1kHz, 16-bit resolution. The amount of audio-recording time shown for your hard drive will change depending on the settings you have chosen in the *Sample Rate*, *Resolution*, and *Channels* pop-up menus.

Remember, 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 input connector, or if you own a plug-in audio expansion card such as Digidesign's Audiomedia II or III card, the input connectors on this card.

Automatic Gain Control (AGC)

The Record dialog allows you to disable the Sound Manager's Automatic Gain Control feature used with some Macintosh microphone inputs. If the recording device you are using supports this feature, you can use the "AGC" checkbox in the Record dialog to enable or disable this feature.

Level

Some recording devices allow you to set the input gain. Use the *Level...* button to control the input level gain on the selected recording device. Be careful not to overload the signal into the input device or you may have distortion or digital clipping in the recorded audio document.

LE Input Level control is not available in Peak LE.

Recording Notepad

The Notepad feature in Peak 1.5 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 Recording dialog and may be used once a recording starts.

Each time you press the Return key, a new Notepad Cue is generated for the current recording time. You may then begin typing text to describe the audio recording at that time. 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 text markers corresponding to each Notepad Cue you have entered.

Be sure to save your audio document after recording if you are using the Notepad feature, since the new markers are added to the audio document after it is has been recorded to disk.

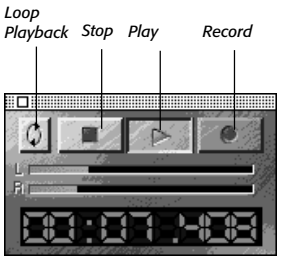
Notepad Cues are not available in Peak LE.

The Transport

The Transport is a useful tool for initiating both playback and recording. In addition it provides a digital counter-type display of the current location and playback level meters. You will find it useful to use this window when working with audio documents.

To display the Transport window:

1. Choose *Transport* from the Windows menu. The Transport appears.



The Transport

Initiating Recording

To record audio to disk, do the following.

To initiate 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 a plug-in audio card, use the connectors on this card. (Some *audio cards have an external interface box which contains the input and output connectors. If this is the case, use these.)*
3. Choose *Record* from the Actions menu. The Record window appears.
4. Make sure that the *Monitor* checkbox is checked so that you can listen to your audio source as it is recorded into Peak.
5. From the *Disk* pop-up, choose the hard disk that you wish to record to. (This setting defaults to the hard disk with the greatest amount of free space currently connected to your Macintosh.)
6. From the *Source* pop-up, choose the input device that you that you wish to record from.
7. From the *Resolution* pop-up, choose a bit resolution for the audio document. 16-bit is the CD standard.

8. From the *Rate* pop-up, choose the sample rate that you desire. Your choices here will depend on your model of Macintosh and your application. 44.1kHz is the CD standard.

9. Play your instrument or audio source. You should see the signal levels register on the *L* and *R* meters in the *Record* window.

10. Adjust the output of your audio source so that its signal registers relatively high on the meters but never hits top (indicated in red). (Remember to always leave 6dB or so of headroom on the meters so that you don't clip.)

11. Click the *Record* button. You are now recording to disk.

12. To stop recording, click *Done*.

13. The *Save* dialog appears, prompting you to name the audio document. You must save the audio document to the same hard drive you selected with the *Disk* pop-up. Enter a name and click *Save*. Peak automatically saves the document in the AIFF audio file format. If you wish to later save the document in a different audio file format, use the *Save As* command.

14. To exit the Record window, click *Cancel* or click the close box in the upper-left corner. Peak will return you to the audio document window where your recording will appear.

To play back the recording:

1. Press the Spacebar on your computer keyboard. Playback begins.

2. To stop playback, press the Spacebar again.

3. To start playback from a specific point in the recording, 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 ⌘-Spacebar.

Importing a Track From an Audio CD (Audio Extraction)

If you own a recent Macintosh computer that is equipped with a CD-ROM drive and Apple's Sound Manager software (version 3.0 or later), you may be able to use Peak to import audio directly from an audio CD. 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.

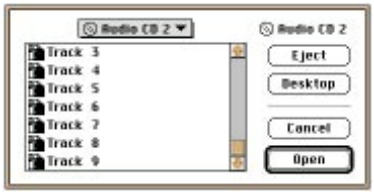
Please note that not every CD-ROM drive supports audio extraction, and that even among drives of the same model, one drive's firmware (the internal operating software) may support audio extraction, while another's may not. If you are unsure as to whether or not your drive supports Apple-standard audio 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. If the manufacturer claims that your drive should support this feature, please contact us with your drive's model number and firmware revision, and BIAS will attempt to address the problem.

To import a track from an audio CD:

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

2. Choose *Import CD Track* from the File menu.

3. In the dialog that appears, select the CD track that you wish to import and click *Open*.



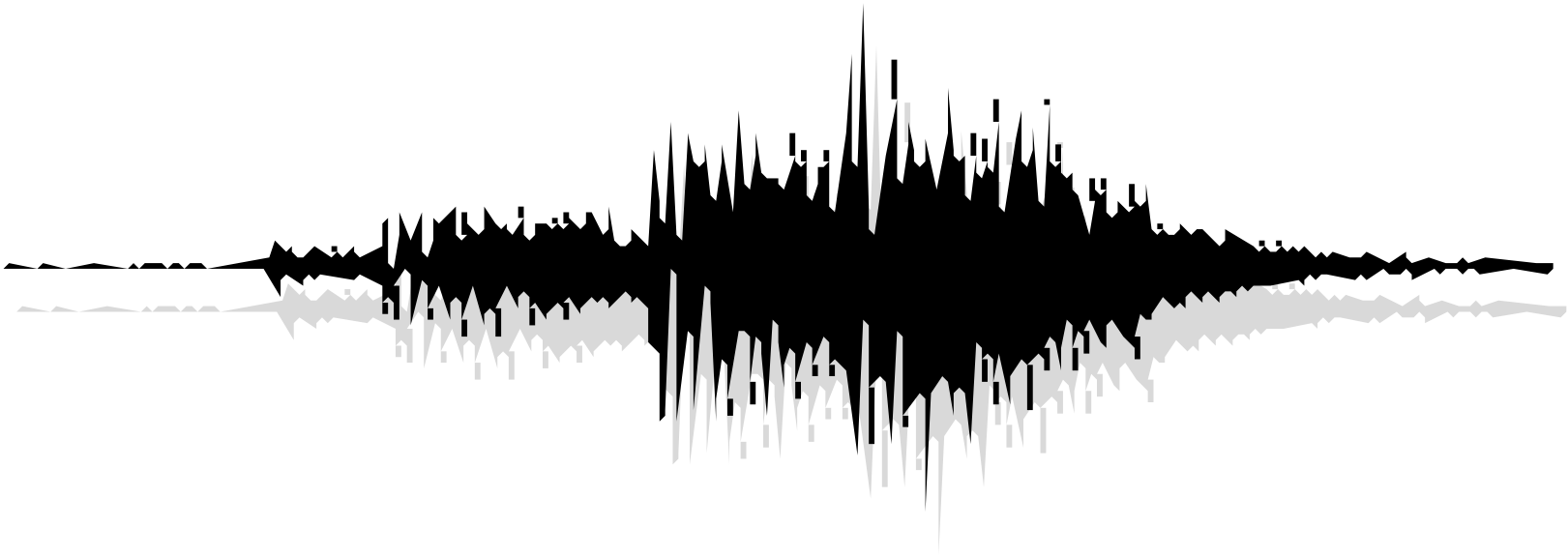
4. In the next dialog that appears, select the desired sample rate, resolution, and format. By adjusting the *Start* and *End* time controls at the bottom of this dialog you can import the entire audio file, or a just specific portion of the file. The slider in this dialog assists you in locating start and end times. Click *Play* to audition the CD track (or selected portion of the CD track). When you have set these parameters as you like, click *OK*. (Note if you wish to import an entire CD track, you can also use the *Open* command from the File menu.)

5. 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 saves the file in the AIFF audio format.

Conclusion

You have now learned how to record audio to hard disk. This is just the beginning. In the next chapter, you will learn perhaps the most important aspect of working with Peak: how to manipulate and edit audio with Peak's powerful digital editing tools.

Chapter 5
Editing



Chapter 5: Editing

This chapter introduces you to the concept of digital editing. Here you will learn how to understand and "read" waveforms and how to use Peak's many powerful tools for manipulating sound.

Editing Audio with Peak

Peak software provides you with a uniquely 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 Plug-Ins *even while playing back the very audio that you are editing*. (Plug-Ins are covered in the next chapter.) 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 seem archaic by comparison.

Nondestructive Editing

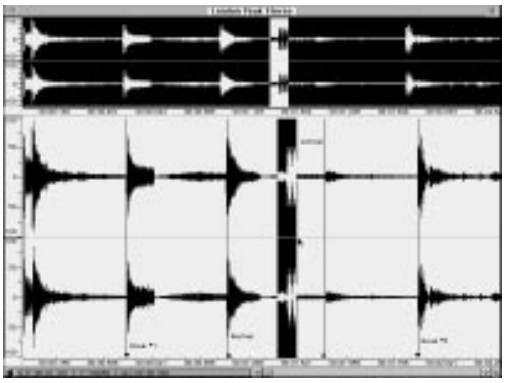
Peak's nondestructive editing capabilities mean that the edits you perform to an audio document do not permanently change the original source recording until you finally save the document. Thus, you can cut, copy, paste, fade in and out of, and otherwise completely change a recording, and still be able 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

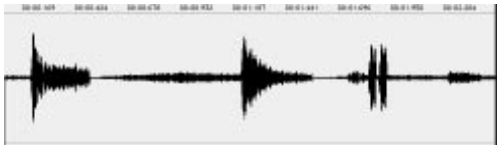
As an editing session progresses, Peak maintains an internal list of the edits that you perform. Changes that you make to an audio document are never permanently applied to the file until you ultimately save it. This is what gives Peak its unprecedented *unlimited undo and redo* capability. Through the use of the Macintosh's standard *Undo* and *Redo* commands, you can undo or redo your actions sequentially, or by using the powerful *Edits* command, using a "playlist-style" editing event list. This is a very exciting technology which allows you to maintain complete creative freedom of choice—right up until the last moment before you save your project to disk. By making good use of these nondestructive, interactive editing capabilities, you will be able to perform feats of audio production that until recently were virtually impossible with traditional tools.

The Audio Document Window

At 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



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. In reality, it is really quite simple to navigate through a recording with a waveform as your road map. In a nutshell, 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.

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:

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

To decrease the vertical scaling magnification:

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

Audio Waveform Overview

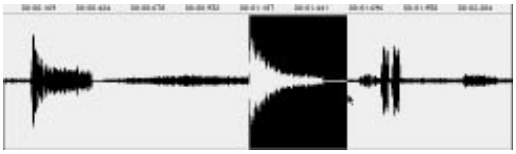
Peak provides an Overview display of the entire audio waveform along the top of the screen under the menu bar. This provides you with a convenient visual reference of the overall document when you are editing only a portion in the audio document window. The highlighted area in the Overview display shows 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 computer screen.

To show the Audio Waveform Overview:

1. Choose the *Show Overview* command from the Preferences menu. A check next to this item indicates it is enabled. The Overview Display appears along the top of the screen under the menu bar.

To hide the Audio Waveform Overview:

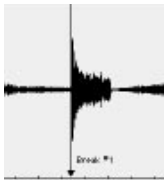
1. Choose the *Show Overview* command again from the Preferences menu. The absence of a check next to this item indicates it is disabled.



A Selection

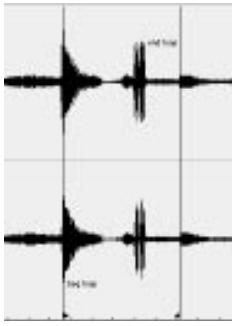
A selection is just what it sounds like: a portion of audio that you have selected with the mouse. You must select audio in order to perform an editing action on it. To make good selections for editing, the best rule of thumb is to begin a selection *just before* a peak in the waveform and end it *just 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 low 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). 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.



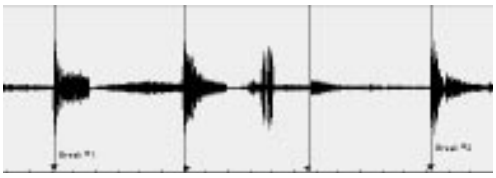
A Marker

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 Loop

A loop refers to a region 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.

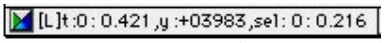


A Region

A *region* refers to a section of audio that is bounded by *markers*. In the illustration above, the area that falls between the *Break #1* and *Break #2* markers is a region. (Note: Regions are different from *Playlist Regions* which are described in Chapter 7, *Playlists*.)

Blending Enable/Disable button

This button, located in the lower left of the audio document window, allows you to toggle Peak's *blending* function on or off. Peak applies blending to areas of an audio document that have been modified by cutting, pasting or other editing processes to smooth abrupt transitions between waveform amplitudes. Blending is very useful for creating a smooth transition between edits that might otherwise sound too abrupt or cause a pop or click.



Cursor Location Display

This field displays information about the current position of the cursor. If audio is selected, it also displays information about the duration of the selection. The alphanumeric shorthand given here is as follows:

[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

t = the current cursor position in time

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

X = the current cursor position in samples

dtr = distance in current units to the nearest reference marker

sel = the duration of the current selection

+ or – = indicates positive or negative phase

The time format displayed in this field depends on which time format (*samples* or *seconds*) you have chosen with the *Units* command in the Preferences menu.

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:

1. 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 previously.
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 a region 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 region between the markers.
2. If there are additional markers in the document and you wish to extend the selection to encompass other audio regions 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 region to the region(s) that you just added.
3. Repeat as desired to navigate to and select additional regions.

To select a region 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 waveform region that lies between the first two markers in the document.
3. Press the Tab key again to select the region 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 region to the selection.)
4. Repeat as desired to navigate to and select additional regions.

To select all audio in a document:

1. Choose *Select All* from the Edit menu or press ⌘-A on your Macintosh keyboard.

To select the audio that you audition:

1. Begin playback.
2. Hold down the Shift key.
3. Stop playback. All audio that has been played is selected.
4. To play the selected audio, press Option-Spacebar.

Playing Audio

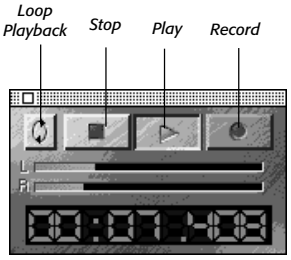
Prior to making selections and performing edits on an audio document, you will typically play the audio to locate likely sections for editing. There are a number of ways that you can do this, each of which is explained below.

The Transport

The Transport is a useful tool for initiating both playback and recording. In addition it provides a digital counter-type display of the current playback location and playback level meters. You will find it useful to use this window when working with audio documents.

To display the Transport window:

1. Choose *Transport* from the Windows menu. The Transport appears.



The Transport

To start playback from the beginning of a document:

1. Press the Spacebar or click the Play button on the Transport. Playback begins from the beginning of the document.
2. To stop playback, press the Spacebar again or click the Stop button on the Transport.

To rewind playback to the beginning of a document:

1. Click the Stop button on the Transport twice.

To start playback from a specific point in a document:

1. Click the cursor at the desired location in the audio document and press ⌘-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. To stop playback, press the Spacebar.

To play a selection only:

1. Click the cursor at the desired location in the audio document and drag to select the range you desire.
2. Press Option-Spacebar. Playback starts at the beginning of the selection and stops at the end of the selection.

Auditioning Audio with Pre- or Post-Roll

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 *preroll* or *postroll* when you play the selection.

To audition audio with preroll or postroll:

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

The Auditioning dialog

2. Enter the desired amount of preroll and postroll 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 preroll and postroll that you specified.

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 convenient 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. 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 order.

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.

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 Preferences 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:

1. Choose *Dynamic Scrub Time* from the Preferences 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 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.

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.

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 Preferences menu to *Tape-Style*.

Tape-style Scrubbing requires Sound Manager version 3.1 or later.

To start tape-style scrubbing:

1. 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:

1. 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 or press ⌘-Z. 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 or press ⌘-Y. 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

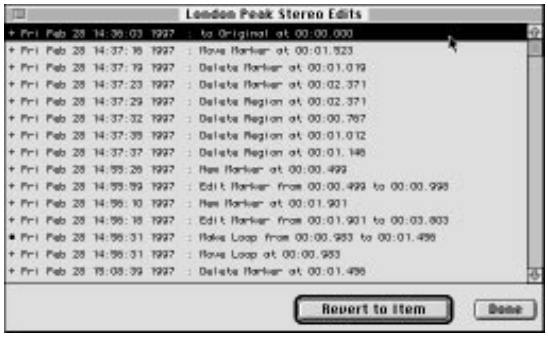
Peak's *Edits* command provides you with a second unique and powerful method of undoing virtually any number of editing actions performed on an audio document since you last saved it. You can think of the *Edits* command as a kind of "event list-based" undo with a list of all your editing actions since 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, if you wish.

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.

To use the Edits command to return to or undo an action:

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.

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 Preferences menu allows you to choose the drive (or "scratch disk") that you wish to use for these temporary files. This feature automatically defaults to the drive with the greatest amount of free space currently connected to your Macintosh. 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 is recommended only if you have access to a high-speed Ethernet, Media Net or other fast server.

The Scratch Disks dialog

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 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 to the audio document and any changes that you have made are permanently saved to the 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 (or press ⌘-X).
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. 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.
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 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*, and *Modulate*. 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 (or press ⌘-C).
3. The selection is copied to the Clipboard.

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

Pasting Audio

The *Paste* command allows you to paste the contents of the Clipboard into a location that you choose by placing an insertion point. The audio that you paste will *overwrite* audio at the insertion point by the length of the pasted data. 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 sound pastiches.

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

The Clipboard contents are pasted into the audio document(s), beginning immediately after the insertion point. The previous data at the location of the paste is overwritten when the pasted data is inserted into the audio document. If you wish to insert copied audio data into an audio document without deleting existing data, you can use the *Insert* command as explained below.

Inserting Audio

The *Insert* command 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 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 (or press ⌘-D). All data to the right of the insertion point is pushed farther to the right (later in time) to accommodate the newly pasted range.

Replacing Audio

The *Replace* command allows you to paste audio data 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. All data to the right of the replaced audio maintains their time position.

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 (or press ⌘-`)

All audio but the selection is removed from the audio document.

Silencing a Selection

The *Silence* command 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 (or press ⌘-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:

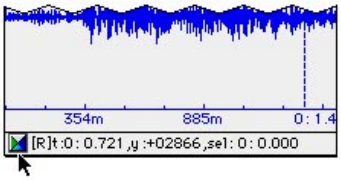
1. Choose *Show Edits* from the Preferences menu. A check next to this item indicates it enabled.

To disable Show Edits:

1. Choose *Show Edits* again from the Preferences 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, 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 cut, paste, or insert audio into a document, you may wish to enable blending to smooth things out a bit. You can toggle blending on or off by choosing the *Blending* command from the Preferences menu or by clicking the *Blend enable/disable* button at the bottom left of the audio document window.



The blend enable/disable button is located here

Blending is enabled.

Blending is disabled.

To enable blending and set blending parameters:

1. Choose *Blending* from the Preferences menu. The Blending dialog appears.

The Blending dialog

2. Click the *Blending* checkbox to turn this feature on.
3. Enter a value in milliseconds in the *Duration* field. Peak will apply a crossfade of this length to any material that requires blending.

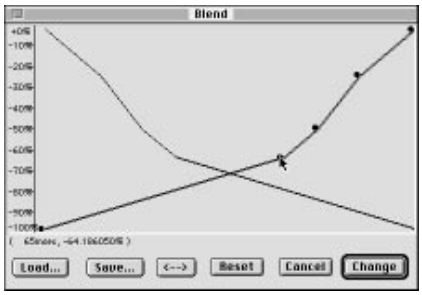
4. If you wish to blend the onset and offset of Adobe Premiere Plug-In effects, click the *Blend Premiere Plug-Ins* checkbox to turn this feature on.

5. If you wish to edit the shape of the crossfade that the blending function applies, click the *Edit Blending Envelope.* (Instructions for editing a blending envelope are given later in this chapter.)

6. Click *OK* when you have finished.

To edit the blending envelope:

1. Choose *Blending* from the Preferences menu and click the *Edit Blending Envelope* button. The envelope editor appears. The envelope shape shown here represents the shape of the crossfade.



The Blending Envelope dialog

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. 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.

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/fade-out by providing you with very precise user-definable envelope controls for the fade. Peak also comes with several commonly used preset envelopes that you can load and use.

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 menu.

3. In the dialog that appears, you can use the default fade shape, edit the envelope, or load any fade-in shapes included with Peak or that you have created yourself. ("Editing Fade-in/Fade-out Envelopes" is covered in the next section.)

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 audio within this selection.

2. Choose *Fade Out Envelope* from the Preferences menu.

3. In the dialog that appears, you can use the default fade shape, create your own, or load any fade-out shapes that you have saved to your hard disk. ("Editing Fade-in/Fade-out Envelopes" is covered in the next section.)

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

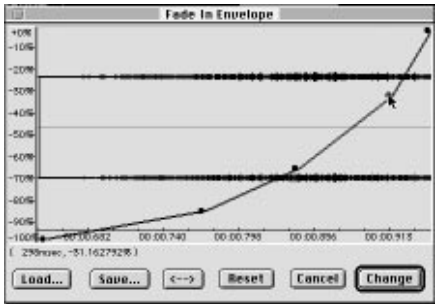
5. To hear the fade-out, press Option-Spacebar. You will hear the selected audio complete with your fade-out.

Editing a Fade-in/Fade-out Envelope

Peak allows you to control the exact shape of fade-ins/fade-outs by providing you with controls for editing the fade-in/fade-out envelope. These are found in the *Fade In Envelope* and *Fade Out Envelope* commands in the Preferences menu.

To edit a fade-in/fade-out envelope:

1. Choose *Fade In Envelope (or Fade Out Envelope)* from the Preferences menu. 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 affects 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. 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.

Saving a Fade-in/Fade-out Envelope

Peak allows you to save any fade-in/fade-out envelopes that you create. This conveniently lets you load and reuse envelopes that you have found useful for specific applications.

To save a fade-in/fade-out envelope:

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

2. Follow the steps given previously for creating a new fade envelope.

3. Click the *Save* button.

4. In the dialog that appears, enter a descriptive name for the fade envelope, choose a suitable location on your hard drive, and click *Save*.

To load a fade-in/fade-out envelope:

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

2. Click the *Load* button.

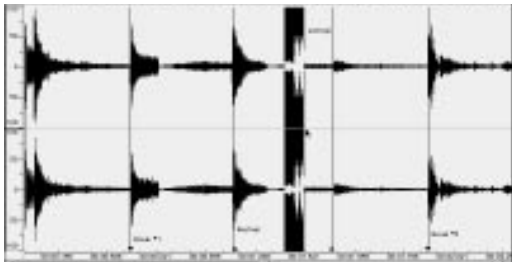
3. In the dialog that appears, locate and select the fade envelope that you desire, and click *Open*.

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 defined as *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 greater detail later in this chapter.



Creating Markers

As we'll describe in detail on the next few pages, there are two ways to create markers: by dropping them "on the fly" during playback, or by defining them with the mouse when playback is stopped. Of the two, 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), in practice both methods work equally well.

Once you have defined a marker, you can assign or edit a number of its attributes through a special dialog which appears when you double-click the triangular base of the marker. This dialog and the attributes contained within are explained below.

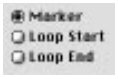
The Edit Marker dialog

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.

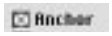
Marker Position

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, seconds or milliseconds) for the value that you enter in the *Marker Position* field.



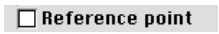
Marker, Loop Start, and Loop End

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. *Peak allows one loop per audio file.*



Anchor

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 and loops.



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. Peak drops 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 drops 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 drops 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. The *Nudge Markers* dialog appears.
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.

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 also 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.)

Loops are also 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 one loop per document.*

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 desire.
2. Choose *Loop This Selection* from the Actions menu. 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 Preferences menu (a check next to this menu item indicates it is enabled), or click the Loop button on the Transport. and start playback by pressing Option-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.

We call any process which involves adjusting a loop during playback *Loop Surfing*. (The Loop Surfer feature, as described in the next section, can automate many steps of Loop Surfing.)

To change regular markers into loop markers:

1. Create markers in a audio document as explained previously.
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. If you wish to play the loop, select *Use Loop in Playback* command (⌘-L) from the Preferences menu or click the loop button on the Transport, begin playback, and when Peak reaches the loop, it will continue to repeat until you stop playback.

To move a pair of loop markers together:

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

To listen to the loop only:

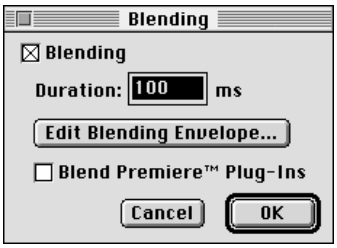
1. Choose *Select Loop* (⌘-"-") from the Edit menu to select the loop.
2. Make sure loop playback is enabled using the *Use Loop in Playback* command from the Preferences menu (a check next to this menu item indicates it is enabled), or by pressing the *Loop* button on the Transport.
3. Press Option-Spacebar, or hold the Option key an click the *Play* button on the Transport, to begin playing back the loop.

Creating Crossfade Loops

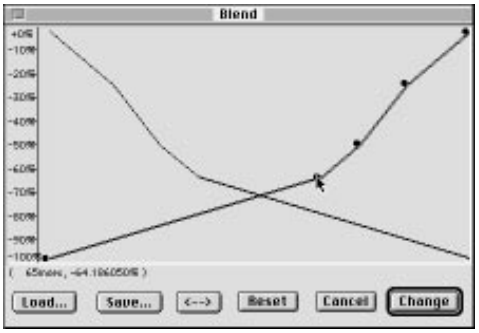
Peak allows you to create a crossfade at the start and end points of a loop. Crossfading a loop can be very useful for smoothing the transition between the end of the loop and its beginning as it repeats. Peak allows you to control the exact shape of the crossfade by providing you with user-definable crossfade envelope controls.

To edit a crossfade envelope:

1. Choose *Blending* from the Preferences menu. In the Blending dialog that appears, click the *Blending* checkbox in the upper-left corner, and click the *Edit Blending Envelope* button. The envelope editor appears. The envelope shape shown here represents the shape of the crossfade.



The Blending dialog



The Blending Envelope dialog

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 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. 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 create a crossfade 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 Preferences menu or click the Loop button on the Transport, and press Option-Spacebar. You will hear the loop, complete with your crossfade.

Crossfade Loop is not available in Peak LE.

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 and 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.

To use Loop Surfer based on a musical tempo:

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. The Loop Surfer dialog appears.

3. Type in the music's tempo. If you are unsure, and have used a drum machine or sequencer to create the music, you might wish to refer back to determine the tempo. (If not, 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 beats 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 Preferences menu.
   f) begin looped playback of the audio selection, stopping only once you hit your keyboard's Spacebar or press Stop on the Transport.

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 Preferences menu.
   f) At this point, you must start playback manually using the Spacebar or the Transport 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 have a

selection that lasts for a period of time that matches the beat, try moving the markers in tandem (as described earlier), by holding down the Command key (⌘) and dragging one of the loop markers to the desired location. 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 Shift-clicking your 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 Preferences 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 Transport if you wish to begin Loop Surfing (if you have selected Make Loop).

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 *Threshold* command (described later in this chapter) to break up a selection of audio into rhythmic "chunks." If you then select audio with start and end points that correspond to these chunks, you should have a selection that falls fairly precisely on the musical beat. Using Loop Surfer, you could then automate the process of looping the selection, by following the steps described directly above.

Loop Surfer is not available in Peak LE.

Exporting Regions

If you have placed markers in an audio document, Peak's *Export Regions* command allows you to divide the document into its component regions 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 save them as separate files.

The *Export Regions* dialog allows you to select regions for export based on their name (or more precisely, the name of the marker that bounds them). For example, if you wish to export all regions in the document, click the *Export Selected Regions* button. If you wish 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.

This dialog also allows you to choose the format and resolution of the resulting audio documents as well as a folder location for them.

The Export Regions dialog

To export regions from an audio document:

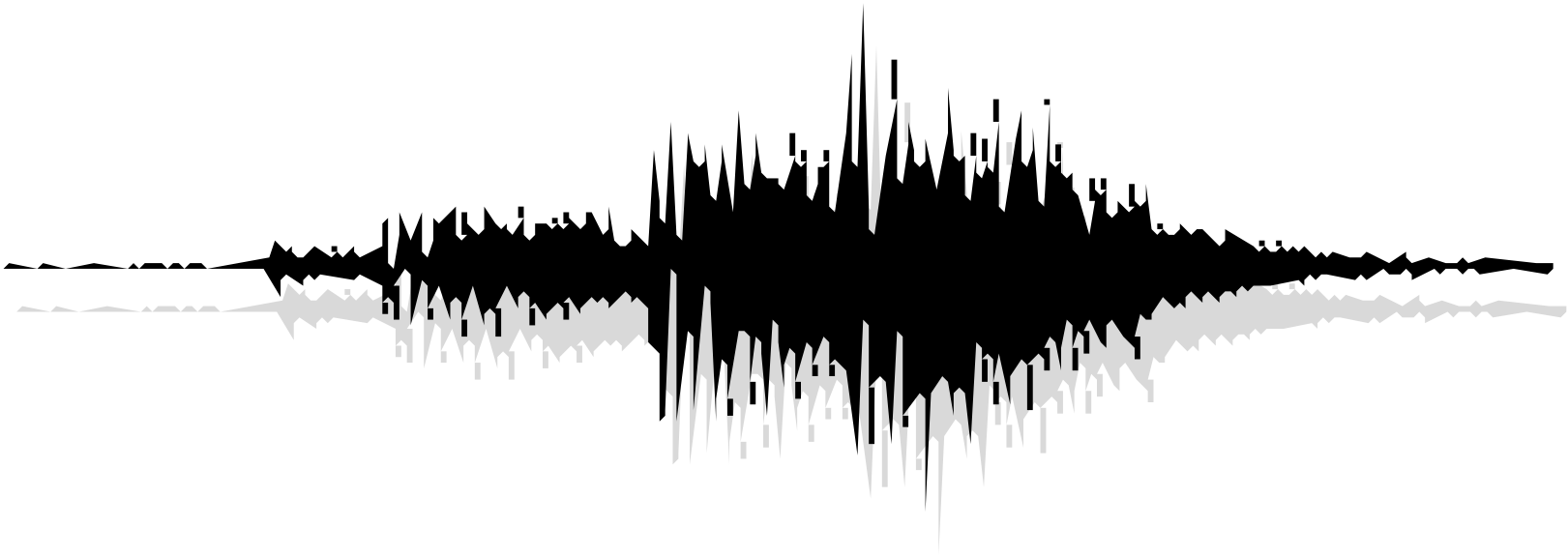
1. Select the regions that you wish to export. (You can use the Tab key, Shift-Tab, or if you wish to select the entire document, press ⌘-A.)
2. Choose *Export Regions* from the File menu.
3. In the dialog that appears, choose the parameters that you wish to use for selecting the regions to export.
4. Using the *Output Format* options, choose the format and resolution of the exported regions.
5. Using the *Output Directory* options, choose the destination for the exported regions.
6. If you wish to export the regions into new open Peak documents, choose *Output to new windows*.
7. If you wish to save the regions to disk, select *Save to Disk* and choose whether you would like to save the files into the "parent" audio document's folder, or to a different folder (in the latter case, using the *Set Path* button).
8. To export the regions, click *Begin*. Peak exports each of the regions into its own audio document.

LE *Exporting Regions is not available in Peak LE.*

Conclusion

You have now learned how to manipulate audio with Peak's various editing tools. In the next chapter you will learn how to enhance Peak's production capabilities with DSP and software plug-in processing.

Chapter 6
DSP & Plug-ins



Chapter 6:
DSP & Plug-ins

Introduction

Peak allows you to perform powerful processing with a variety of *Digital Signal Processing (DSP)* functions and special-purpose software "plug-ins." These software enhancements are available from both BIAS, as well as from a number of third-party developers who support the Adobe Premiere™ Plug-in format. These enhancements range from noise reduction, filtering, and reverberation, to three-dimensional spatialization, and more.

Peak itself provides a variety of advanced audio editing, processing and librarian 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 (typically the *DSP* menu).

⚠ *BIAS separately available "Accessory Pak™" plug-ins including the Composer•Audio Designer Pak™, Audio Pro Pak™ and Audio Librarian Pak™, have been integrated into Peak 1.5.*

About Adobe Premiere Plug-Ins

Adobe Premiere is one of the most popular digital video and multimedia authoring programs. Adobe Premiere publishes a list of specifications for their Audio Plug-In format, which allows third-party companies to create and market software which adds audio-related features to Premiere. BIAS Peak also supports the Adobe Premiere Audio Plug-In format, which means that many of these same third-party programs can be used to enhance the capabilities of Peak.

⚠ *Not all Adobe Premiere Audio Plug-Ins may be supported by Peak. For a complete listing of supported plug-ins, please see you authorized BIAS dealer, or contact us directly. To ensure full compatibility with Peak, please check with the plug-in developer or BIAS before purchasing the plug-in.*

Compatible plug-ins are currently available from BIAS, Arboretum™, Waves™ and InVision Interactive™; other companies are also in the process of developing compatible plug-ins. Plug-ins enhance Peak's editing capabilities by offering features such as advanced equalization (tone control), noise reduction, filtering, reverberation, three-dimensional spatialization, and more.

Installing Adobe Premiere Plug-ins

Adobe Premiere Plug-ins are essentially separate software packages that can be installed on your hard drive and placed in the *Peak Plug-Ins* folder. The installed software will appear in the *Plug-Ins* menu. You can then use the software within Peak at any time by first making a selection in an audio document and then choosing the software plug-in from the *Plug-Ins* menu.

To install an Adobe Premiere-type plug-in, simply drag it into the *Peak Plug-Ins* folder (located at the same hard disk directory level as the Peak application), restart Peak, and the plug-in will appear in the *Plug-Ins* menu. As with all editing functions, audio processing with plug-ins is applied non-destructively until you save a document.

Plug-Ins must reside in the Peak Plug-Ins folder

Please note that not all Adobe Premiere audio filter plug-ins are supported by Peak. To ensure full compatibility with Peak, please check with the plug-in developer or BIAS before purchasing the plug-in. Please also realize that BIAS cannot answer questions specifically related to the operation of third-party plug-ins. Please refer to the documentation that came with the plug-in.

⚠ Arboretum Hyperprism-MMP™ users should contact Arboretum Systems to update to the latest version of the MMP effects, version 1.06 or higher. Peak 1.5 is incompatible with earlier versions.

⚠ WAVES users should update to the most recent Waveshell 2.3 for compatibility with Peak 1.5 batch file processing and playlists.

Premiere Plug-in Memory Settings

When using third party plug-ins, you may need to set aside some RAM for the plug-in. The Plug-In Memory dialog under the Preferences menu allows you to set this memory reserve. For the best results, make sure this preference should be set between 256k and 1024k.

When you initiate a plug-in on an audio selection from Peak, the amount of memory set in the Plug-In Memory dialog is reserved, and any left over memory is used for the preview of the audio selection. Peak will attempt to use as much left over RAM as possible so you can listen to longer plug-ins, as described below.

Premiere Plug-In Preview Time

Previous versions of Peak allowed only three seconds of preview time when using third party Adobe Premiere audio plug-ins, such as those available from WAVES or InVision Interactive. Peak 1.50 allows more preview time based upon how much RAM is available to Peak. As a result, you may now preview for longer than three seconds if you have enough RAM to hold the audio selection. Peak will allow the plug-in to preview with as much audio as it can given the available RAM.

To increase the amount of application RAM given to the Peak application, quit Peak and use the Finder's Get Info dialog on the Peak application. Under "Memory Size" type the amount of RAM you would like to allocate to the Peak application by typing a value into the "Preferred Size" box. To find out how much RAM your Macintosh has available to applications, choose *About This Macintosh* under the Apple menu from the Finder.

LE *Peak LE limits previews to three seconds.*

Premiere Envelope

Peak allows you to apply third-party Adobe Premiere plug-in effects gradually. This is useful for applying affects over time.

To apply a Premiere Plug-In variably over time:

1. Make a selection of the audio material you wish to process with the plug-in.
2. Choose *Premiere Envelope...* from the Preferences menu.
3. A dialog appears allowing you to draw the curves or lines that control how much of the Plug-In's effect is applied, over time. Points at the top of the graph represent 100% effect, while points at the bottom of the graph represent 0% of the effect.
4. When you are finished drawing an envelope, click *Change*.
5. Select the Premiere Plug-In you wish to use from the Plug-Ins menu.

6. Configure the Premiere plug-in and click *OK* if you decide to process the sound. Note if you are previewing the effect in the plug-in, you will not hear the effects of the Premiere envelope yet, but rather the 100% effect amount your Premiere envelope will use when the selection is finally processed using the Premiere envelope.

Processing Audio with DSP & Plug-ins

The following general procedure describes how to process a selection in an audio document with a DSP function or plug-in. The specific capabilities and parameters of the DSP function or plug-in will vary.

To process audio with a DSP function or plug-in:

1. Select the portion of the audio that you wish to process with the DSP function or plug-in.

You must first make a selection in order to use a DSP function or plug-in.

2. From the *Edit, DSP* or *Plug-Ins* menu (depending on the type of process you wish to use), select the item that you wish to use.

3. A dialog appears allowing you to set the parameters for the plug-in. Most plug-ins allow you to preview the effect of the processing from this dialog, and the preview time is based upon how much RAM is available to Peak

4. Set the parameters for the plug-in as desired and click *OK*. Peak processes the selection with the DSP function or plug-in.

What if the *DSP* or *Plug-Ins* menu item appears "grayed out" and can't be selected, even if you already have a document open or audio selected? It's likely that the plug-in may need to be unlocked or "authorized" before it can be used with Peak. If in doubt, please contact the manufacturer of the plug-in in question. If problems persist, please contact BIAS Technical Support.

Peak's Audio Processing Tools

Peak's Audio Processing Tools provide composers and professional sound designers with many interesting effects and audio processing tools. Effects include Convolve, Reverse Boomerang™, Rappify™, Reverse, Mix, Modulate, Phase Vocoder, Sample Rate Conversion, Normalization, Gain Changing, Gain Envelope, Amplitude Fit, Duration Changing, Inversion, and Mono To Stereo / Stereo To Mono conversion. The following sections explain how to use each of these functions.

Add

The *Add* command adds the samples 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 use the Add command:

1. Select the audio you wish to Add into another audio document and choose *Copy* from the Edit menu (or press ⌘-C).

2. Select the audio that you wish to mix the copied material into.

3. Choose *Clipboard* from the Edit menu and choose *Add* from the hierarchical submenu.

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. *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 Option-Space bar.

Add is not available in Peak LE.

Convolve

The *Convolve* command is a unique and powerful sound design tool that allows you to apply the sonic character of one sound onto another. The Convolver 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. 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 Convolver, 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.

The spectrum for the clipboard contents must be held in RAM for the convolution and subsequently uses a lot of RAM. Therefore, small clipboard impulses should be used, unless a large amount of RAM has been allocated to Peak.

To use the Convolver:

1. Select the audio with the characteristics you wish to apply and choose *Copy* from the Edit menu (or press ⌘-C).

2. Select the audio that you wish to modify.

3. Choose *Clipboard* from the Edit menu and choose *Convolve* from the hierarchical submenu. Peak applies the spectral character of the copied material to the selection.

4. To hear the results, press Option-Spacebar.

Convolve is not available in Peak LE.

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.

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 press ⌘-C).

2. Select the audio that you wish to mix the copied material into.

3. Choose *Clipboard* from the Edit menu and choose *Mix* from the hierarchical submenu.

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.

5. Click *OK*. Peak mixes the two signals together.

6. To hear the results, press Option-Space bar.

Modulate

This *Modulate* command functions as a "ring modulator" which multiplies two audio signals together: the material copied to the clipboard and the currently selected audio. The results are generally very complex timbres that often have a "metallic" character to them.

To use the Modulation command:

1. Select the desired source audio and choose *Copy* from the Edit menu (or press ⌘-C).
2. Select the destination audio.
3. Choose *Clipboard* from the Edit menu and choose *Modulate* from the hierarchical submenu.
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.

5. Click *OK*. Peak processes the two signals.
6. To hear the results, press Option-Space bar.

Modulate is not available in Peak LE.

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, press ⌘-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.

4. Click *OK*. Peak processes the audio. To hear the results, press Option-Space bar to initiate playback.

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.

To rappify a selection:

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.
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.

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, press ⌘-A.
2. Choose *Reverse* from the DSP menu. Peak reverses the selected audio. To hear the results, initiate playback.

Phase Vocoder

The Phase Vocoder allows you to modify the duration 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.

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.

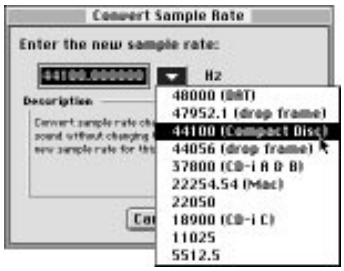
Phase Vocoder is not available in Peak LE.

Sample Rate Conversion

The *Sample Rate Conversion* 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 *Sample Rate Conversion* from the DSP menu. 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.



Normalize

This command allows you to optimize the volume of a selection or an entire audio document so that it is at its maximum without clipping. The normalize function is very useful for boosting the loudness 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.

To normalize a selection:

1. Select the audio that you wish to normalize. If you wish to select the entire document, press ⌘-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.

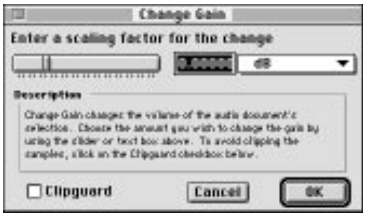
3. Click *OK*. Peak normalizes the selected audio.

Change Gain

The *Change Gain* function changes the loudness of a selection. You can specify the amount of gain change in decibels (dB) or in a percentage. If you wish to double the volume of a sound, you must apply approximately 6dB of gain change. The *Change Gain* command's *Clipguard* feature protects against the possibility of clipping by searching through the audio document or selection for the maximum peak, and limiting the Gain Change slider's range based on the maximum peak it finds in the audio document.

To change the gain of a selection:

1. Select the portion of the audio that you wish to process.
2. From the DSP menu, choose the *Change Gain* command. The *Change Gain* dialog appears.
3. Enter the amount of gain that you wish to boost or cut the signal by.
4. If you wish to protect against the possibility of clipping, enable *Clipguard* by clicking in this checkbox.
5. Click *OK* when you have finished. Peak boosts or cuts the signal by the amount of gain you specified.



Gain Envelope

The Gain Envelope operation allows you to enter a envelope that allows amplification (gain) as well as attenuation. It is easy to cause samples to clip when using this feature, so use it carefully.

User Tip: To determine the maximum percentage gain available to your clip, use the Change Gain... operation in the DSP menu. After selecting Change Gain..., click on the "Clipguard" checkbox. Change the units to percentage and slide the change gain slider all the way to the right until it stops. The amount of gain change available without clipping is shown in the edit text field.

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.
4. To process the audio selection using the gain envelope, press *Change*.

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 to the settings in the Amplitude Fit envelope, 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.

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.

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 a desired change value in seconds; a percentage; or for rhythmically-oriented material, beats per minute. By experimenting with this function on drums, rhythm loops, speech, sampled instruments or sound effects, you can achieve a wide variety of useful effects. One of the most powerful aspects of the *Change Duration* command is its ability to vary how tempo changes over time (using the *Tempo Envelope* control). Extreme settings of this feature will often yield unusual and interesting results.

The Change Duration dialog

To change the duration of a selection:

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 radial 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 that you wish for the selected audio.
- In the *Percentage* field, type the percentage 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 interpolate between the two values. Use this field to change the duration of rhythmically-oriented material.

4. 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.

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.

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.
2. Choose *Mono To Stereo* from the DSP menu.
3. In the dialog that appears, adjust the slider to adjust the left- and right-channel balance in the mix.

4. Click *OK*. Peak converts the mono document to stereo.

To change an audio document from stereo to mono

1. Select the entire audio document with the *Select All* command from the Edit menu.
2. Choose *Stereo To Mono* from the DSP menu.
3. In the dialog that appears, adjust the slider to adjust the left- and right-channel balance in the mix.

4. Click *OK*. Peak converts the stereo document to mono.

Mono To Stereo / Stereo To Mono is not available in Peak LE.

Peak's Advanced Editing Tools

Peak's Advanced Editing Tools include Find Peak, Repair Click, and Threshold separation. The following sections explain how to use each of these functions.

Find Peak

The Find Peak operation will place the insertion point at the largest sample value it locates in the audio selection.

To find the maximum amplitude point in an audio selection:

1. Select the audio material you wish to find the peak in.
2. Choose *Find Peak* from the DSP menu.
3. The insertion point will be placed at the sample where the largest amplitude was located.

Find Peak is not available in Peak LE.

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 discontinuities from sample to sample. For example, a sample value of -100 followed by a sample value of 10000 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 of a scratching and popping vinyl record will require more careful repair in addition to using the Repair Clicks dialog, such as Change Gain... and Delete. Clicks such as those of a scratching and popping vinyl record loose their detectability once they are sampled using Analog to Digital converters.

There are three user settings in the Repair Clicks dialog:

1. "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.
2. 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.
3. 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 Preroll and Postroll settings from the *Auditioning...* dialog under the Preferences 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.

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.
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.

Repair Clicks is not available in Peak LE.

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.

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.

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 regions (the area between any two adjacent markers). For best results, you should generally set the threshold range between 75dB and 85dB.
3. When you have finished, click *OK*.
4. 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.
5. 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.

User Tip: 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 to create new interesting compositional and rhythmic ideas!

Threshold 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 System 7 "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:C5-A6.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 FindFile 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.

Peak events (event class = 'FURP')

SFFV

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 frontmost window, if one exists.

PLAY

Play the front most window

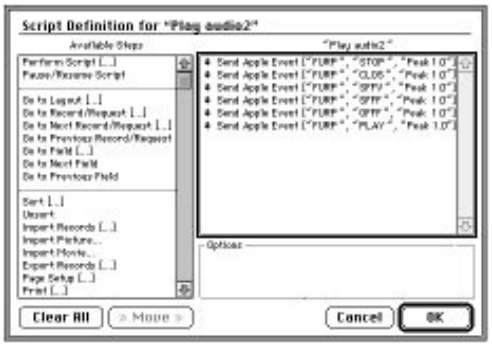
The “play” event initiates playback of the front most opened audio document. Use the “stop” event to stop playback, or wait till the document completes it’s playback.

Example Scripts

The Filemaker Pro™ documents included in this 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 frontmost audio document (PLAY) (most likely opened in step 5).



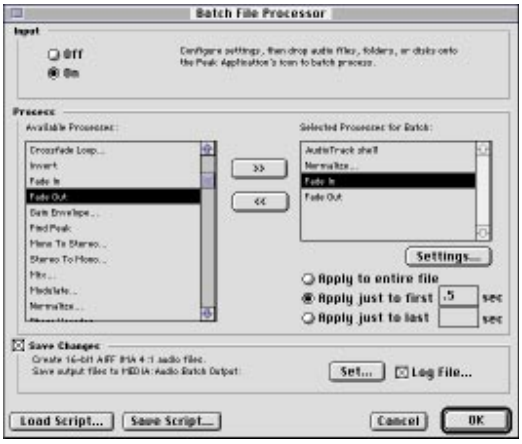
Sample Script Definition from Filemaker Pro

Apple Events are not supported in Peak LE.

Batch File Processor

Peak’s new Batch File Processor is one of the most powerful, versatile, and useful additions to Peak 1.5. With the Batch Processor, you can integrate any series of Peak processes (called a *batch script)*, and apply these scripts to countless thousands of files.

You must open an audio document and make a selection in the document before you can configure the Batch File Processor. The audio document and selection you make will be used for previewing processes sequenced into your batch script.

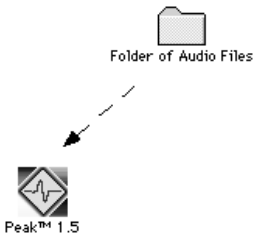


Batch File Processor

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 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. You can also have the Batch File Processor run in the background while you continue work in Peak or any other application.

Supported contents include all file formats that Peak can read, including AIFF, Sound Designer II, QuickTime, Red Book, System 7 Sound, .snd, .au, and WAVE files. Audio documents opened using the *Open* command from the File menu will not be batch processed.



Dragging a folder onto the Peak application icon

New audio documents created with the Batch File Processor will have the same file name as the original input audio document.

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.

Process Area

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.

When you add a process to the "Available Processes" list, you may be required to supply settings for the process. The frontmost 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.

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.

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 "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 4. 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 SimpleText 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.

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. Open an audio document and make a selection.
2. Choose the *Batch Processor...* command from the File menu.
3. Double-click the *Normalize* item in the "Available Processes:" list. Enter "95" into the following normalization settings dialog.
4. Click *Set...* in the Save Changes Area of the Batch File Processor. Choose the *AIFF* command from the File Format pop-up menu. Choose the *IMA 4:1* option from the Compression pop-up menu.
5. Choose the folder to save the output files into. Click *Save*.
6. You will be back in the Batch File Processing dialog. Click *Log...* and choose the output folder to save the log file into.
7. Click the *On* button in the Input Area of the Batch File Processor. The Batch File Processor is now turned on.
8. Click *OK* to close the Batch File Processor dialog.
9. Switch to the Finder, and drag and drop a folder full of audio documents onto the Peak application's icon.
10. Peak will process all audio files in the folder that was dropped onto the Peak application icon.
11. Once the files have been processed, open an audio document, make a selection, and 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.

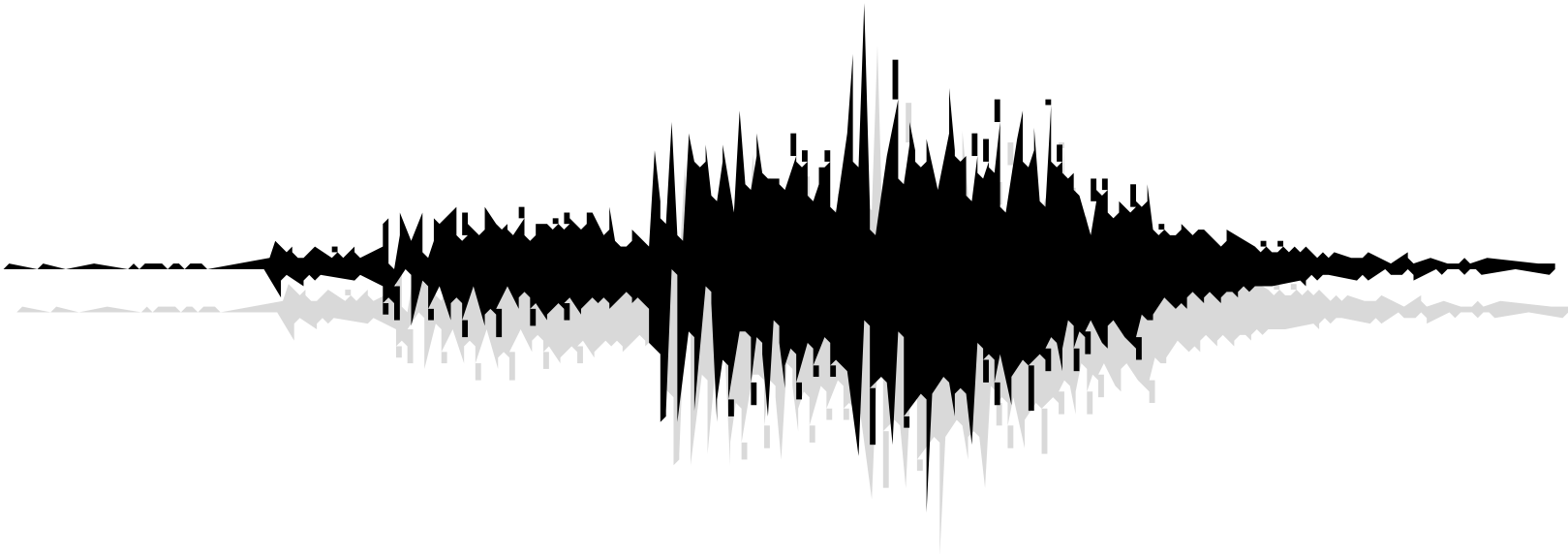
Once the batch file processor has started, it will continue to process files as quickly as possible. If you find it necessary to halt the batch process, press ⌘-period or click on the *Cancel* button in the progress dialog. A dialog will appear allowing you to cancel the batch process. If you choose to cancel the batch process, Peak will finish processing the current file and then ignore all other incoming files from the Finder. Once batch processing has been cancelled, Peak will turn the batch file processor *Off*.

Batch File Processing is not available in Peak LE.

Conclusion

You have now learned how to manipulate and process audio using Peak's DSP and software plug-in capabilities. In the next chapter, you will learn how to create Playlist Regions and sequence their playback using Playlists.

Chapter 7
Playlists



Chapter 7: Playlists

Introduction

This chapter explains how to use Peak's *Playlist* feature to sequence audio events. A Playlist is a list of *Playlist Regions* strung together in a specific order. Because audio is recorded on hard disk, it can be freely manipulated, unlike recording tape. Therefore, the Playlist is merely a set of instructions which tell the hard disk which playlist 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 important features.

When you edit an audio file within Peak's *Playlist* window you are not really cutting and moving chunks of sound as you would if you were editing 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 tell the hard disk (where the information is stored) to go to the middle of the recording and play that portion first, followed by the others.

With nondestructive editing, you are free to experiment with music and sound in ways never before possible. You can move and rearrange "pieces" of audio, or *Playlist Regions,* with total freedom. Edits can be heard as soon as you perform them. In addition, Power Macintosh users can apply Premiere audio plug-ins to playlist events in real-time. Peak offers a fast, flexible, and powerful approach to recording, editing and processing digital audio.

LE *Playlists are not available in Peak LE.*

Playlist Regions

The audio events that are played back in a *Playlist* are *Playlist Regions* which are portions of an audio document defined using the *New Region* command from the Actions menu. All Playlist Regions defined in the frontmost audio document window will also appear under the Region menu.

Playlist Regions can be saved only into AIFF and Sound Designer II files created by Peak. However, Peak will also read Playlist Regions stored from other programs in Sound Designer II files. The method Peak uses to store Playlist Regions in AIFF files is specific to Peak and is not supported by other software applications. If you are using Playlist Regions with other programs, you will want to store your files as Sound Designer II files.

To define a new Playlist Region:

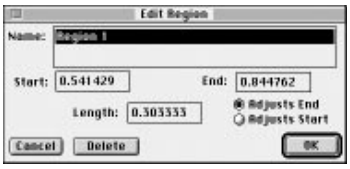
1. Make a selection in an opened audio document.
2. Choose *New Region* from the Actions menu.
3. Type the name of the Playlist Region and click *OK*. The new Playlist Region will appear in the audio document.

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

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

To change the name of a Playlist Region:

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



The Edit Regions dialog

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

To move a Playlist Region without changing its length:

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

To edit a Playlist Regions' start, end, or length manually:

1. Double-click on either the start or end marker of the Playlist Region in the audio document window. The Edit Region dialog will appear.
2. Enter new values for Start, End, or Length times, then click *OK*.

To locate a Playlist Region:

1. Choose the Playlist Region you wish to locate under the Region menu. The audio document will scroll automatically to display the region and the Playlist Region will become the current selection in the audio document. (Note the audio document, not a playlist, must be the frontmost document for this to work.)

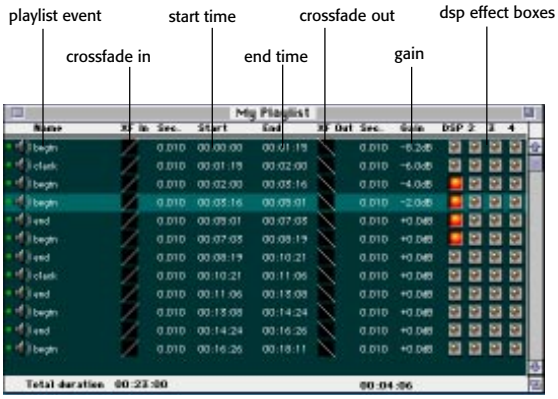
Creating a Playlist

To create a new Playlist:

1. Select *Playlist Document* from the *New...* submenu under the File menu. 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 playback time and total duration of the playlist.

To add an item to the playlist:

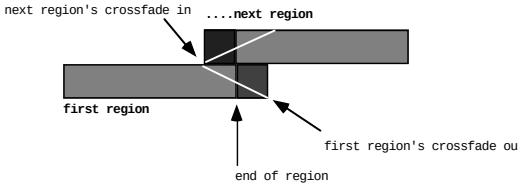
1. Make sure the playlist is the frontmost audio document.
2. Pull down the Region menu and select the Playlist Region you wish to add to the playlist. Each Playlist Region you add to the playlist becomes a *playlist event*. The center of the playlist window shows playlist events in a list. You may use Playlist Regions from more than one audio document. However, the audio document with the Playlist Regions you wish to use in the playlist must be open.



A playlist event has several properties that can be modified. Each event can have a crossfade in, crossfade out, gain, and up to four plug-in DSP effects. 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.

The crossfade fades 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 in RAM, instead of on disk, and are computed before playback. When a crossfade is being calculated, a red dot will appear next the playlist event and it will turn back to green when the crossfade has been recalculated. Since crossfades may require extra RAM, make sure you provide the Peak application with enough RAM from the Finder's Get Info dialog.



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.

Using the separate crossfade in and crossfade out curves, Peak provides you with the flexibility to create all 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 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.

Be careful not to set a playlist'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.

To select items in the playlist:

1. 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 insert items into the playlist:

1. To hear your playlist, use the Transport control or press the Spacebar. The playlist will begin playback from the current selected playlist event.

To preview transitions between playlist regions

1. Select the playlist event in which you wish to hear the transition.
2. Use the Transport control or press the Spacebar while holding down the Command key. The preroll setting from the *Auditioning...* dialog under the Preferences menu will be used to audition from the end of the previous playlist event into the selected playlist event.

Modifying Playlist Events

To move items in the playlist:

1. 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. The event will be removed from the playlist, and the audio events below the event will move up. This operation will decrease the duration of the playlist.

To edit a crossfade in or out:

1. Double-click on the playlist event's crossfade in or crossfade out picture. The envelope editor will appear where you may edit the points making up the crossfade in or out.

To change the duration of a crossfade in or out

1. Double-click on the playlist event crossfade in time or crossfade out time. A dialog will prompt you to enter the time for the playlist event's crossfade in or out duration.

Applying DSP Effects to Playlists

Playlist DSP Effects work on Power Macintosh systems only. Playlist DSP Effects are also compatible with PowerPC Native plug-ins only. Check with the manufacturer of your plug-ins to ensure compatibility.

On Power Macintosh systems, you may apply up to four DSP processes per playlist event. This powerful feature allows you to place different DSP effects on different events that are processed in real-time. This is very useful if you are creating remixes.

Please note the number of effects you can use is limited to the speed of your Power Macintosh. Some effects, such as Waves TrueVerb™, may not be able to run in real-time on your processor. In addition, performance of playlist DSP effects is reduced when other applications are open or if File Sharing is in use during playback.

To add a Plug-In effect to a playlist event:

1. Highlight the audio you wish to preview in an open audio document. You will probably want to preview the loudest portion of a region to ensure level settings are correct in the plug-in effect.
2. Make the playlist the frontmost audio document by clicking on it.
3. Click on first unused DSP effect box on the playlist event. You may select DSP effect boxes on multiple events by holding down the Shift key while you select DSP effect boxes.
4. Choose a desired plug-in from the *Plug-In* menu.
5. Configure the plug-in settings, and click *OK* or *Process*, depending on the plug-in.
6. Peak will turn on the LED lights for the selected DSP effect boxes indicating that they are enabled.

To remove a DSP effect to a playlist event:

1. Click on the DSP effect box in the playlist event that you wish to remove. You may select multiple DSP effect boxes on multiple events by holding down the shift key while you select DSP effect boxes.
2. Press the Delete key on your keyboard. Peak will turn off the LED lights for the selected DSP effect boxes indicating that they are disabled.

To change the settings of a DSP effect on a playlist event:

1. Double-click on the DSP effect box in the playlist event that you wish to re-configure.
2. Configure the plug-in settings and click *OK* or *Process*, depending on the particular plug-in.

Creating a New Audio Document from a Playlist

After you have created a definitive playlist "remix," you may wish to permanently transform the playlist into a new audio document of its own, including all the DSP effects and crossfades generated from the selected playlist events. In other words, the new audio document will be the equivalent of digitally recording the output of a playlist into a new document. Additionally, Peak automatically places markers into the new document that correspond to each playlist event boundary, and the markers have 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 turn into a new audio document, or use the *Select All* command from the Edit menu.
2. Choose *New Document from Playlist* under the File menu's *New* submenu.
3. A new audio document, with DSP effects and crossfades 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 playlist region.

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 following 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

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!

Playlist edits that have been Saved cannot be Undone.

To save a playlist:

1. Choose *Save* from the File menu. If the playlist has not been saved yet, you will be asked to enter a name to save the playlist under, and a location to store the document.
2. Alternatively, you can save a copy of the playlist with the *Save As...* command.

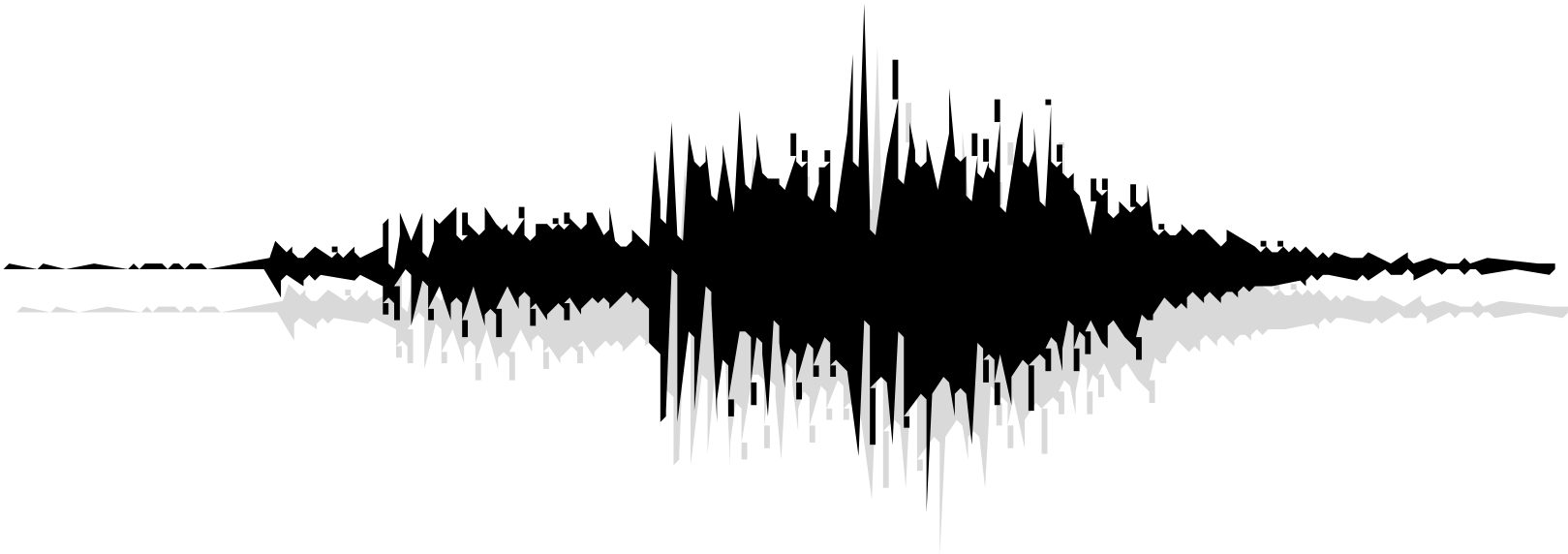
To open a playlist:

1. 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.

Conclusion

You have now learned about creating Playlist Regions and sequencing their playback using Playlists. In the next chapter, you will learn 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.

Chapter 8
Samplers



Chapter 8: Samplers

Introduction

Peak allows you to import samples directly from compatible samplers, edit or process the audio using all of Peak's functions, then send the modified sample back to the sample—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 directly supports the Ensoniq EPS16+ and ASR-10 samplers (requires a MIDI interface and Opcode's OMS). Peak also supports SMDI samplers, including the Kurzweil K2000 series, the Peavey SP, and several E-mu samplers, including the ESI-32, the E64, 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.

Sampler support is not available in Peak LE.

Working with SMDI Samplers

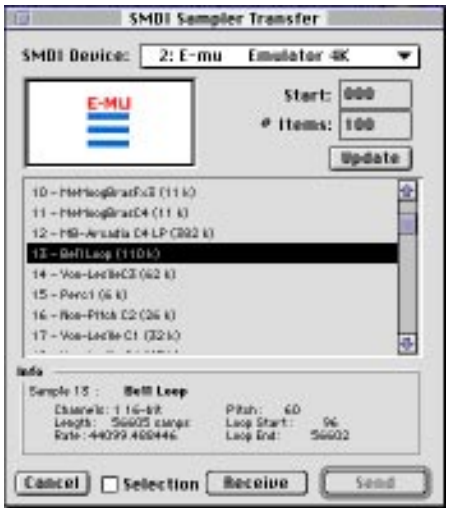
Peak's SMDI Sampler Support makes it possible to transfer several audio documents at once to or from your SMDI sampler.

SMDI Samplers

SMDI Samplers such as the Kurzweil K2000 or the E-mu EIV 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. Consult your sampler 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.

To use the SMDI Sampler dialog:

1. Choose *SMDI 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 Command-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 filed 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 frontmost 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.*

To send multiple opened Peak audio documents to the SMDI Sampler, shift-click or ⌘-click to select multiple destinations in the list of samples and click the *Send* button. Peak audio documents will be sent to the selected destinations in the order that they appear under Peak's Windows menu.

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.

The 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 "sees" 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.

To browse through samples stored in your SMDI device:

1. 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 Macintosh 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.

MIDI Sample Dump Standard

A large number of sampling instruments and older sampling instruments support transferring samples between samplers or computers using a method called MIDI Sample Dump. Peak allows you to transfer samples to and from these instruments if you have a MIDI connection.

MIDI Sample Dump Standard works only with mono audio documents.

This guide assumes you are familiar with how to connect MIDI Cables, configure your Open Music System (OMS) software, and understand how your sampler integrates with audio samples sent through MIDI.

Once a sample is sent to the sampler, it may need to be assigned to a patch, preset, layer, or voice before you can play back the sample.

Refer to your MIDI sampler instrument's Owner's Guide for information on how to display and set the instrument's Sysex ID.

Because different samplers store samples differently, you should refer to the Owner's Guide of your particular sampler to understand how samples are numbered and stored in your sampler. There may be important information in the manual on how to use MIDI Sample Dump with your sampler.

There are two methods of connecting the MIDI cables from your computer to the sampler to do a MIDI Sample Dump. Peak uses the closed loop configuration, where you must connect the MIDI IN jack to the OUT jack of your MIDI Interface, then connect the MIDI OUT jack from your sampler to the IN jack of your MIDI Interface.

In order to use MIDI Sample Dump, you will also need to install Opcode's OMS software. If you do not have OMS installed, you can download it from the Opcode World Wide Web site at http://www.opcode.com, or call Opcode directly to receive the software on floppy diskette.

Peak sends and receives all MIDI Sample Dumps as 16-bit resolution samples. Depending on your particular sampler, the 16 bit resolution may be reduced to a lower resolution to match the sampler's capabilities. MIDI Sample Dump does not support stereo audio documents, so you may need to separate your stereo audio documents into left and right mono documents using the *Export Dual Mono...* command under the File menu. You can then send the mono documents separately to the sampler.

To send an audio document to a sampler using MIDI Sample Dump Standard:

1. Open the audio document you wish to send to the sampler instrument.
2. From the Sampler menu, choose the *MIDI Sample Dump* command.
3. Select the OMS device corresponding to the sampler that you wish to send the sample to.
4. Enter the Sysex ID that the sampler is set to.
5. Enter the sample number you wish to assign the sample to in the sampler and press the *Send* button. Peak will transfer the sample to the sampler over the MIDI connection.

To receive an audio sample from a sampler using MIDI Sample Dump Standard:

1. From the Sampler menu, choose the *MIDI Sample Dump* command.
2. Select the OMS device corresponding to the sampler that you wish to receive a sample from.
3. Enter the Sysex ID that the sampler is set to.
4. Enter the sample number you receive from the sampler and press the *Receive* button. Peak will receive the sample into a new audio document.

MIDI Sample Dump Standard Error Messages & Troubleshooting

MIDI Sample Dump Standard works only with mono audio documents.

You may only send mono audio documents to the sampler. If you wish to send a stereo audio document to the sampler, you will need to create two separate mono files to send to the sampler corresponding to the left and right channels of the audio document using the *Export Dual Mono...* command in the File menu.

"The MIDI device timed out."

- The device failed to communicate with Peak as expected. This error can be caused by a break in the MIDI connection during the transfer.

"The MIDI device returned an error."

- This error message can occur when the sample transfer is aborted from the front panel of the MIDI sampler.

"The MIDI device did not respond."

- This error message can occur when Peak sends a message and no response is sent back. Check the Sysex ID of the sampler and make sure it matches the one you entered in the MIDI Sample Dump dialog.

"The MIDI transfer was aborted because there were errors during transmission."

- This error message indicates that there may be a bad MIDI cable or connection between the sampler and the MIDI Interface. Check the MIDI cables for damage.

"The transmission timed out."

- This error message can occur when Peak is waiting for information from the sampler and too much time elapses without a response. Check your MIDI connection and try again.

"Peak does not have enough RAM to use MIDI Sample Dump Standard. MIDI SDS Receive could not be completed because Peak ran out of memory."

- The Peak software has run out of memory when this error message occurs. Try closing some audio document windows or allocating more RAM to the Peak application from the Finder's Get Info dialog.

"Peak was unable to initialize OMS. Make sure OMS is installed on your Macintosh and try again."

- This message appears when OMS is not installed on your Macintosh. Make sure it is not disabled in your "Extensions Manager" or other System Software management utilities. If you have not installed OMS, you can download it from the Opcode World Wide Web site at http://www.opcode.com or by contacting Opcode directly.

Working with Ensoniq Samplers

Owners of Ensoniq Samplers will find the Peak Ensoniq Sampler dialog an indispensable tool for transferring samples between their Macintosh and an Ensoniq Sampler. As a part of the Peak digital audio editor software, the Ensoniq Sampler dialog provides several operations beyond wavesample transfer, including instrument, layer and wavesample renaming, creation, and deletion.

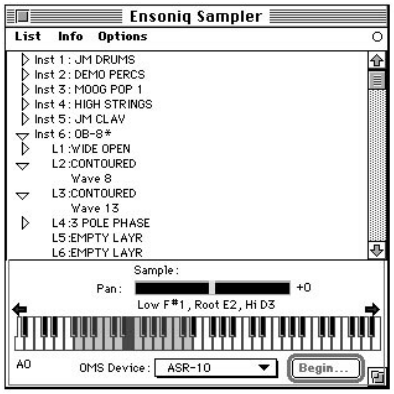
The following sections assume you are familiar with the procedures for operating your Ensoniq Sampler as detailed in its owner's guide. Please consult your owner's guide for details on how to connect your sampler to your audio system, MIDI interface, and/or SCSI chain.

How Samples are stored in Ensoniq Samplers

The Ensoniq family of digital samplers organize wavesamples (a sample) into "layers" that are contained by "instruments." A layer can contain several samples, each having its own characteristics such as volume, panning location, and the specific keyboard notes that trigger the sample, or keyrange. Ensoniq Samplers number all of these structures "Wavesample 1", "Layer 4", and "Instrument 3," referring to specific and unique items stored in the sampler's memory.

Ensoniq Samplers create layers in order, therefore you cannot create layer 2 if layer 1 has not been created. You must first create layer 1. Ensoniq Samplers also create wavesamples in order, therefore you cannot not create wavesample 3 if wavesamples 1 and 2 have not been created. You must first create wavesamples 1 and 2.

The Ensoniq Sampler dialog maintains a list of instructions to execute with your Ensoniq Sampler, according to your directions. For instance, you may wish for the Ensoniq Sampler dialog to send a wavesample, create new layers on an instrument, rename instruments, and then receive a wavesample to your Macintosh. Use the List menu in the Ensoniq Sampler dialog to add and remove items in the Ensoniq Sampler dialog to execute these instructions.



The Ensoniq Sampler dialog

Ensoniq Sampler Dialog Basics

The Ensoniq Sampler dialog displays your Ensoniq Sampler's instruments, layers and wavesamples in a Finder-like interface that Macintosh users will find familiar. A convenient twist-down list allows you to customize your display of instruments, layers, and wavesamples. By clicking on the triangles next to an item in the Ensoniq Sampler dialog's list, you can expand or collapse a list item, such as an instrument or layer. Instruments, layers, and wavesamples also show their item number as represented on the Ensoniq Sampler. For instance, Instrument number three on an Ensoniq Sampler with the name "TROMBONE" will show up as a list item with the name "Inst 3:TROMBONE."

Instruments, layers, and wavesamples can be in one of three states to the Ensoniq Sampler dialog software: "existing," "empty," or "unknown." All instruments, layers, and wavesamples are unknown until the Ensoniq Sampler dialog software is synchronized with the Ensoniq Sampler by using the Update menu command in the Ensoniq Sampler dialog's Info menu. If an instrument, layer, or wavesample is found with a name, the name changes from "unknown" to the instrument name, layer name, or wavesample number in the Ensoniq Sampler dialog window. Any other instruments, layers, or wavesamples are EMPTY, which means they don't exist yet on the Ensoniq Sampler.

The Ensoniq Sampler dialog cues up a list of actions to carry out with the Ensoniq Sampler and carries out the list when you click on the Begin button in the Ensoniq Sampler dialog. In addition, you can save the list of instructions as a file on the Macintosh and recall it later so that lengthy transfers can easily be automated.

Most operations use a simple sequence of actions to record instructions into the Ensoniq Sampler dialog:

1. Select one or more list items by clicking or shift clicking on items in the Ensoniq Sampler dialog list.
2. Choose a command from one of the Ensoniq Sampler dialog menus: *List*, *Info*, or *Options*. You can scroll through the list by using the vertical slider on the right side of the Ensoniq Sampler dialog list. Expand or collapse instruments or layers by clicking on the triangle next to the instrument or layer name.


User Tip: You can Shift-click on list items to select more than one list item to apply a command to.

When you click on a wavesample represented in the Ensoniq Sampler dialog list, the wavesample's name, size, panning, and keyrange will be retrieved from the Ensoniq Sampler. When the information is complete, The Ensoniq Sampler dialog will display the information in the area below the Ensoniq Sampler dialog list.

Auditioning Wavesamples already in the Ensoniq Sampler

To hear a wavesample stored on the Ensoniq Sampler, double-click on the list item in the Ensoniq Sampler dialog list that represents that wavesample. The Ensoniq Sampler dialog will play back the sample using MIDI.

Changing Parameters and Keyranges

You can change the keyrange or panning of a wavesample that already exists on the Ensoniq Sampler.

To change the keyrange or panning of a wavesample:

1. Click on the wavesample that you wish to modify in the Ensoniq Sampler dialog list. The current keyrange, panning, size, and name of the sample will be retrieved by The Ensoniq Sampler dialog and displayed in the area below the Ensoniq Sampler dialog list.
2. Click on the pan slider to change the wavesample's panning, or click on the Ensoniq Sampler dialog graphic keyboard to change the wavesample's keyrange.
3. Click a key on the Ensoniq Sampler dialog keyrange display to change the low key of the wavesample's keyrange.
4. Hold down the Shift key and click on the Ensoniq Sampler dialog keyrange display to change the high key of a keyrange.
5. Hold down the Option key and click on a key in the Ensoniq Sampler dialog keyrange display to change the root key of the wavesample's keyrange.

You can also change the keyrange of the samples you are sending to the Ensoniq Sampler. These items are displayed in the dialog's list with a green right-arrow. The keyrange and panning info for these samples are set to default values read from the sound file that you are transferring. Use the same procedure described above to change the keyrange of samples marked for transfer to the Ensoniq Sampler.

Ensoniq List Menu

The following section describes commands found in the List menu within the Ensoniq Sampler dialog.

Make New

Use the *Make New* menu item to change EMPTY instruments, layers, or wavesamples into existing ones.

To create the first new wavesample to send an audio document to on the sampler:

1. Open the instrument by clicking on its triangle.
2. Open the layer you wish to place the new wavesample onto by clicking on its triangle, or skip to step 3 if there it is an empty layer.
3. Click on the layer to select it.
4. Choose *New* from the List menu. If the layer was "EMPTY," it will change to "New." Repeat steps 3 and 4 to create the first new wavesample in the layer. The layer can now be opened by clicking on its triangle, revealing the new wavesample.

To create additional new wavesamples in a layer that already has samples in it:

1. Open the instrument by clicking on its triangle.
2. Open the layer you wish to place the new wavesample onto by clicking on its triangle.
3. Select any one of the wavesamples that appear in the layer by clicking on a wavesample.
4. Choose *New* from the List menu. A new wavesample will appear in the list of wavesamples belonging to that layer.

Send Sample

To send a sample from the Macintosh to the Ensoniq Sampler:

1. Select the wavesample that already exists or has been marked as "New" in the Ensoniq Sampler dialog list.
2. Select *Send Sample* from the List menu.
3. The standard Get File Macintosh file dialog will appear allowing you to select a sample for transfer into the selected instrument, layer, and wavesample. Select the sample to send and click Open. The Ensoniq Sampler dialog will change the name of the wavesample you have chosen to the name of the file you picked to send to the Ensoniq Sampler.
4. To begin transfer of the sample to the Ensoniq Sampler, click *Begin* in the Ensoniq Sampler dialog.

If the sample you wish to send to the Ensoniq Sampler is a stereo sample, the Ensoniq Sampler dialog will automatically detect this when you choose a sample to send in the above procedure. Keep in mind that stereo samples must have the left channel on an odd layer, while the right channel of the sample resides on an even layer. Instruct the Ensoniq Sampler dialog to send stereo samples to odd layers of an instrument. If you have not created a right channel layer on the instrument, the Ensoniq Sampler dialog will warn you and ask if you wish to have one created. If you have not created a new wavesample on an adjacent even layer, the Ensoniq Sampler dialog will warn you and ask if you wish to create one.

Your Macintosh must have enough RAM to read in the entire sample you are sending to or receiving from the Ensoniq Sampler. Otherwise, a memory error dialog will appear informing you that you must allocate more RAM to the Peak application.

The Ensoniq Sampler dialog will tell you how much more RAM you must allocate to the Peak application to successfully transfer the sample to the Ensoniq Sampler. If this occurs, you must quit the Peak application and allocate more memory to the Peak application. To do this, select the Peak application icon in the Finder and select Get Info from the Finder's File menu. Increase the Preferred Size to the appropriate amount of RAM and close the Get Info dialog box. You may then open the Peak application from the Finder and send the sample to the Ensoniq Sampler using the Ensoniq Sampler dialog. (Open audio document windows also use up RAM available for Peak.)

You may not send a sample to an Ensoniq Sampler dialog wavesample list item that is unknown—you must first create the new wavesample using the New command in the List menu. Additionally, you must create the instruments, layers, and wavesamples in the following order: instruments, a new layer belonging to the new instrument, then new wavesamples belonging to the new layer. Using the Make New operation on an empty instrument, layer, or wavesample changes the name in the Ensoniq Sampler dialog to "New."

To receive a sample from an Ensoniq Sampler:

1. Click on the wavesample that exists in the Ensoniq Sampler dialog to select it.
2. Select *Receive Sample* from the List menu. The item representing the wavesample you have chosen to import to your Macintosh will be marked with a blue left-arrow graphic.
3. To begin transfer of the sample to the Macintosh, click *Begin* in the dialog.

If the sample you have selected from the Ensoniq Sampler dialog list is a stereo sample (available on the ASR sampler only), the Ensoniq Sampler dialog will automatically retrieve both sides of the stereo sample.

Delete

To delete items from the Ensoniq Sampler directly, click or shift-click items to delete in the Ensoniq Sampler dialog list, then choose *Delete* from the List menu.

Remove From List

The Ensoniq Sampler dialog maintains a list of instructions to carry out with your Ensoniq Sampler until you click the Begin button. To remove one of the instructions, such as a sample transfer or a rename, click on the item with the instruction and choose *Remove From List* from the List menu.

Save Set

Once you have created a list of instructions for Ensoniq Sampler dialog to carry out, you can save this list of items as a Macintosh document that can be recalled later.

To save a set of instructions:

1. Create a list of instructions using the Ensoniq Sampler dialog,
2. Choose *Save Set* from the List menu to save the list as a document. Make sure you use the *Save Set* command before you click Begin in the Ensoniq Sampler dialog.

Load Set

You can recall a list of instructions using the Load Set command in the List menu. A standard Get File dialog will appear, prompting you to pick an instruction set document. This loads the set of instructions for the Ensoniq Sampler dialog to execute. To save a set of instructions for your Ensoniq Sampler using the Ensoniq Sampler dialog, see the *Save Set* description, above.

Clear Set

To clear the entire set of instructions you have instructed the Ensoniq Sampler dialog to carry out, choose *Clear Set* from the List item. All instructions (sending samples, receiving samples, and renaming samples) that are currently stored in the Ensoniq Sampler dialog will be permanently deleted. You cannot undo this operation.

Ensoniq Info Menu

Update

Since the Ensoniq Sampler dialog cannot continually update its internal list of the editing actions you perform from the front panel of your Ensoniq Sampler, you may periodically need to update its link to your Ensoniq Sampler. This will update the names of the instruments, layers, and wavesamples. To do this, select the instrument or layer item that you wish to update by clicking on it and choose *Update* from the List menu.

Update Names

To retrieve only the current names of the instruments stored in your Ensoniq Sampler, choose *Update Names* from the Info menu.

Rename

To rename an instrument, layer, or wavesample, select or Shift-click select items from the Ensoniq Sampler dialog list and choose *Rename* from the Info menu. You will then be prompted to enter the new name for each item that was selected in the Ensoniq Sampler dialog list.

Ensoniq Options Menu

Use SCSI

If there is a SCSI cable connecting your Ensoniq Sampler and your Macintosh, you can take advantage of the much faster SCSI protocol to move samples and information between the Macintosh and your Ensoniq Sampler. Select *Use SCSI* from the Options menu to toggle SCSI usage on or off. A check mark will appear next to this item when SCSI communication is enabled. Be sure you can initiate transfers using just MIDI before attempting to use the SCSI option. *Use SCSI* will be "grayed out" if there is another SCSI device on your SCSI chain with SCSI ID #3.

Clear After Done

To remove all items from the Ensoniq Sampler dialog's the list of instructions after it is finished with the list, choose the *Clear After Done* command the Options menu. If *Clear After Done* is enabled, the Ensoniq Sampler dialog will erase your list of instructions after it completes them.

Ensoniq Error Messages and Troubleshooting

If the Ensoniq Sampler dialog encounters an error condition while communicating with your Ensoniq Sampler, a warning dialog similar to the one shown in the illustration that follows will appear. When the warning dialog appears, you can either attempt to continue the current operation by clicking continue, abort the current operation by clicking abort, or Quit Peak itself by clicking *Exit To Finder*. The warning dialog usually appears if your MIDI connection to the Ensoniq Sampler is not properly configured.

The sampler communications error dialog

Here are some common Ensoniq configuration mistakes:

- Choosing the wrong OMS device in the Ensoniq Sampler dialog's OMS device selection pop-up menu.
- Your Ensoniq Sampler is set to "MIDI SYSEX=OFF." To verify that this is the problem, press EDIT then press the SYSTEM button until you see "MIDI-SYSEX=OFF". Turn MIDI-SYSEX=ON by pressing "ENTER/YES" on the Ensoniq Sampler. You may save this as a "default setting" using the "SAVE GLOBAL PARAMETERS" option from the COMMAND/SYSTEM page of your Ensoniq Sampler.
- Forgetting to turn on your MIDI interface.
- Forgetting to turn on your Ensoniq Sampler.
- MIDI cables connected incorrectly.
- A bad MIDI connection.
- Having Appletalk on when your MIDI interface is configured to communicate with the Ensoniq Sampler through the Printer serial port. Either re-configure your MIDI interface connections, or turn Appletalk off using the Chooser under the Apple menu.

The warning dialog will also appear if you attempt to initiate a procedure on the Ensoniq Sampler that is not valid.

Here are some common mistakes:

- Making a new wavesample and/or sending a wavesample to an instrument onto a new layer when the previous layers do not exist. Remember, you may not work with "Layer 4" unless layers 1, 2, and 3 exist.

- Failing to use the *Update* command in Ensoniq Sampler dialog to keep the Ensoniq Sampler dialog software current with any editing you might have done since your last Update. Remember, the Ensoniq Sampler dialog cannot constantly automatically update itself. It needs your help. To do this, select the instrument or layer item that you wish to update by clicking on it and choose *Update* from the List menu.

Potential SCSI Problems

Using SCSI with some models of the Macintosh and Ensoniq Samplers can be a "challenging" experience to say the least. To make a bad situation worse, communication errors can cause the Ensoniq Sampler and Macintosh to crash or hang, making it necessary to restart both devices. In particular, Macintosh Quadra, LC, Centris, and some Power Macintosh models have difficulties using SCSI with the Ensoniq Sampler.

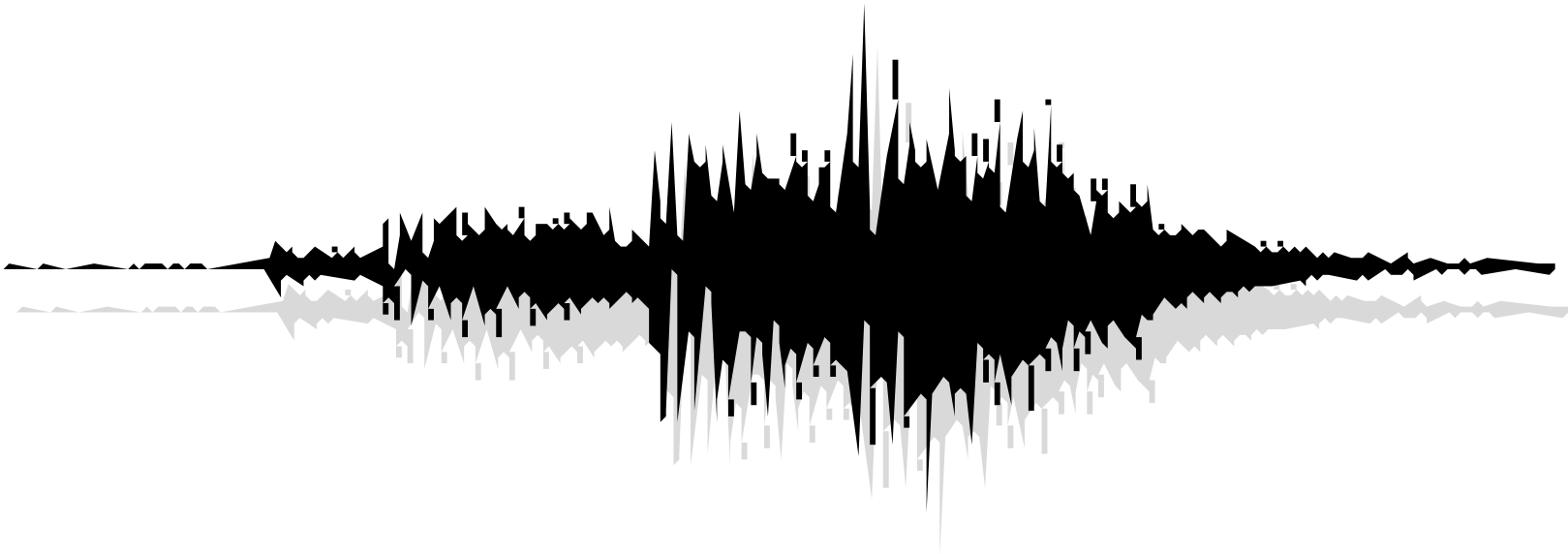
Here are some tips to improve SCSI connections between your Ensoniq Sampler and your Macintosh:

1. Use high-quality, tested SCSI cables that are as short as possible.
2. Make sure that the problem is indeed a SCSI problem and not a MIDI problem. If you find that it is a SCSI problem, disable the USE-SCSI checkbox in the Options menu. This will force all transfers to use MIDI only. If you can transfer samples back and forth with your Ensoniq Sampler using only MIDI, then the problem is SCSI related.
3. Check for SCSI ID conflicts. Ensoniq Samplers have a SCSI ID of 3. Make sure every SCSI device in the SCSI chain has a unique ID.
4. Check for problems with SCSI termination. For more information, consult the manuals of your SCSI devices and the Ensoniq Sampler you are using. 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. Most ASR and EPS models are terminated.
5. Reduce the number of components in your SCSI chain. If you have more than one device connected between the Ensoniq Sampler and your Macintosh, try removing devices to determine if this affects the errors.
6. Change the "power-up" order. Try turning all SCSI devices on first, including the Ensoniq Sampler. Once the devices have powered up, turn on the Macintosh. If this does not help, try turning on all SCSI devices, then the Macintosh, and finally the Ensoniq Sampler.

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 chapter, you will learn about each of the commands found in Peak's different menus.

Chapter 9
Peak Menus



Chapter 9: 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. There you will learn how to apply the functions described here.

File Menu

This menu contains all of the standard Macintosh commands for opening, closing, and saving files, as well 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 hierarchical menu appears which allows you to choose either a mono or stereo format for the new audio document, or to create a playlist document or a new audio document from an open playlist document.

Mono Document

Choosing *Mono Document* creates a mono (one channel) audio document.

Stereo Document

Choosing *Stereo Document* creates a stereo (two channel) audio document.

Playlist Document

Choosing *Playlist Document* creates a new playlist document.

Document From Playlist

Choosing *Document From Playlist* creates a new audio document from an open playlist document.

Playlists are not available in Peak LE.

Open...

The *Open* command allows you to locate and open an audio document. Peak can open audio documents in a variety of formats including, AIFF, Sound Designer II, QuickTime, Red Book, WAVE, .au, .snd, and System 7 Sound audio format. The *Open* command also allows you to audition AIFF files by selecting the file in the dialog and clicking the *Play* button. Peak allows you to have as many documents open at the same time as RAM permits. The more free memory that you can allocate in your Macintosh to Peak, the more documents you will be able to open and work with simultaneously.

The Open dialog

Close

This command 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.

Save

This command 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 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 Adobe Premiere™ or Macromedia Director™.
- **Red Book**: This is the headerless raw file format for audio CDs and some game platforms.
- **RealAudio™**: This is the file format for Progressive Networks™ RealAudio 3.0 and 2.0 Encoders, used for preparing audio for streaming over the internet.
- **System 7 Sounds**: This is Apple's audio file format used for Macintosh Operating System Sounds.

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 AIFF files. Nor can copyright, author, or other file format-specific information be saved in a format which doesn't support it.

The Save dialog

Save As...

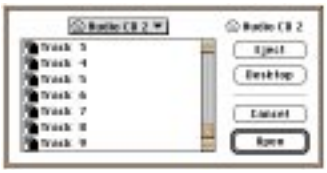
This command allows you to save a copy of the current audio document under a different name, in a different location on your hard drive, or in a different audio file format. You can save the document with a variety of audio compression schemes — see Chapter 3 for detailed instructions on using this feature.

The Save As dialog

Import CD Track

If you own a Macintosh computer that is equipped with a compatible CD-ROM drive and Apple's Sound Manager software (version 3.0 or later), you may be able to use the *Import CD Track* command to import audio directly from an audio CD. By adjusting the *Start* and *End* time controls in the *Audio CD Import Options* dialog you can import the entire audio file, or a just specific portion of the file. See Chapter 3 for detailed instructions on using 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.



The Import CD Track dialog

The Audio CD Import Options dialog

Import Dual Mono

Certain audio applications such as 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. The *Import Dual Mono* command allows you to open dual mono files, and in the process converts them into 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. *(Please note that the Import Dual Mono command requires that both files be mono files and have the same sample rate.)*

Export Dual Mono

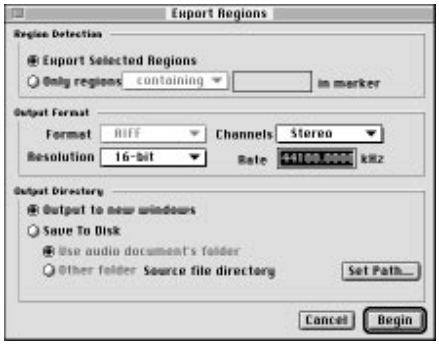
The *Export Dual Mono* command allows you to save a stereo audio document as separate mono digital audio files. This feature is convenient if you intend to use the audio document in a third-party audio application such as Pro Tools which does not directly support stereo audio files. When you choose this command Peak will prompt you to name both the left and right sides with the file dialog. If you intend to use the exported audio with a Digidesign application, you should save it in either the AIFF or Sound Designer II format. The Sound Designer II format is Digidesign's native audio file format.

Export Regions

If you have placed markers in an audio document, Peak's *Export Regions* command divides the document into its component regions and saves 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 save them as separate files.

The *Export Regions* dialog allows you to select regions for export based on their name (or more precisely, the name of the marker that bounds them). For example, if you wish to export all regions in the document, click the *Export Selected Regions* button. If you wish 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.

This dialog also allows you to choose the format and resolution of the resulting audio documents as well as a folder location for them.



The Export Regions dialog

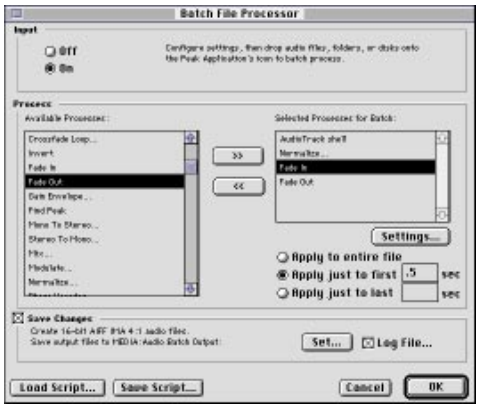
Export as Text...

This command allows you export an opened playlist into a new text document. The text document will show the playlist events, times, crossfade times, and gain levels.

The Export as Text dialog

Batch Processor...

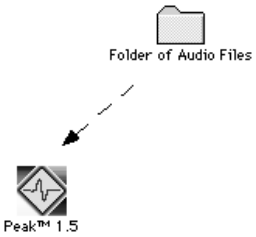
Peak's Batch File Processor can integrate any series of Peak processes (called a *batch script)* and apply these scripts to countless thousands of files.



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 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. Supported contents include all file formats that Peak can read, including AIFF, Sound Designer II, QuickTime, Red Book, System 7 Sound, .snd, .au, and .WAV files.



Dragging a folder onto the Peak application icon

Batch File Processor is not available in Peak LE.

Recently Opened Documents

Peak automatically remembers the last several 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 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.

Recently opened documents are listed at the bottom of the File menu

Quit

This command quits the Peak application. If you haven't saved changes to a currently open audio document, Peak will prompt you to do so before quitting.

Edit Menu

This menu contains all of the standard Macintosh commands for cutting copying and pasting as well several additional commands specific to Peak software.

Undo

This command 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.

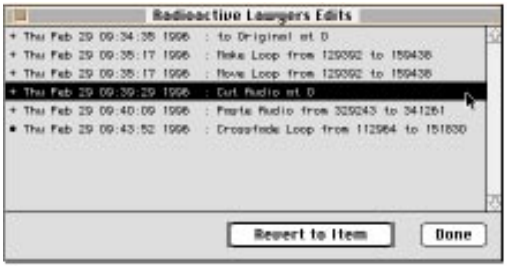
Redo

This command "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.

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.



The Edits dialog

9

Cut

This command cuts selected data from an audio document and temporarily holds it in internal memory in the Macintosh clipboard. Once you have cut a portion of an audio document, you can paste it or insert it at another location the same document or a different document. 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, and an indispensable tool for general sound design tasks.

Copy

This command copies selected data temporarily holds in memory on the Macintosh clipboard. Once you have copied a portion of an audio document, you can paste it or insert it at another location the same document or a different document. 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.

Paste

This command pastes data currently held in the Macintosh clipboard into an audio document at the current insertion point. When you paste a selection, it will replace any audio at the insertion point for the duration of the paste. As noted above, 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. In sound design applications, it gives you the power to "compose" with sound.

Replace

This command pastes data currently held in the Macintosh clipboard into an audio document at the current insertion point. It allows you to paste audio data into a track 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

This command pastes data currently held on the Macintosh clipboard into an audio document at the current insertion point *without overwriting audio*. Audio occurring past the insertion point is moved over by an amount of time equivalent to the duration of the inserted audio.

Insert Silence

This command allows you to insert a desired 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 an amount equal to the silence that you insert. 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.

The Insert Silence dialog

Silence

The *Silence* command replaces the selected audio in the audio document's selection with silence. This feature is very useful for silencing portions of a recording that have an unusually high 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.

Crop

The *Crop* command allows you to make a selection in a track and quickly and easily remove all other audio from the track 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 quickly isolate and save just the desired portion of a recording.

Clipboard

This command contains a submenu which allows you to add, convolve, mix, or modulate an audio selection with material that has been cut or copied to the computer's clipboard. Here are brief descriptions of each of the available Clipboard processes:

Add

The *Add* command adds the samples copied to the clipboard into the audio document at the selection point. You can choose the level of the clipboard samples you wish to add into the document.

Convolve

The *Convolve* operation is a unique and powerful sound design tool that allows you to apply the sonic character of one sound onto another.

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.

Modulate

The *Modulate* command functions as a "ring modulator" which multiplies two audio signals together: the material copied to the clipboard and the currently selected audio. The results are generally very complex timbres that often have a "metallic" character to them.

(LE) The Add, Convolve, and Modulate commands are not available in Peak LE.

Clear Clipboard

Peak utilizes a portion of your hard disk's free space to hold audio data 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 data contained there.

Select All

This command selects all audio in the audio document. This is command is useful if you wish to perform an editing action or specific type of audio processing on an entire document.

Select Loop

If you have defined a loop in a document, this command will automatically select the region within the loop start and loop end markers. This feature is very useful for precisely selecting a looped region so that you can cut, copy, or perform any other editing process on it.

Action Menu

This menu provides several commands for recording audio, zooming in and out of the audio document window, creating loops, markers and regions, and navigating to specific locations in an audio document.

Record

When you choose the *Record* command, the Record window appears. This window allows you to set several parameters in preparation to recording. The settings you choose here override any previously set with the Sound Control Panel.

The Record window

The parameters in the record windows are as follows:

Source

This pop-up menu allows you to choose an input device for recording. The choices that appear here depend on your model of Macintosh and whether or not you are using a plug-in audio expansion card.

Channels

This pop-up menu allows you to choose either mono or stereo recording format (providing that your Macintosh or plug-in audio card supports both mono and stereo recording). Stereo recordings have two tracks of audio, one for the left channel, the other for the right channel of the audio. Mono recordings have only a single channel of audio.

Resolution

This pop-up menu allows you to choose a bit resolution for your recording. The choices that appear here depend on your model of Macintosh. 16 bit is the current Compact Disc standard for professional-quality recordings. 8 bit is commonly used for computer-based multimedia and games.

Sample Rate

This pop-up menu allows you to choose a sample rate for your recording. The choices that appear here depend on your model of Macintosh. Possible sample rates are as follows:

48000. 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.
44100. 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. Most sound engineers working in music production—or anything that may be distributed on a CD—work at "forty-four one."
22050 and **11025**. These sample rates are used for lower-fidelity audio playback on Macintosh and PC compatible computers that have 16-bit playback capability. Many games and other multimedia productions utilize 22.050kHz 8-bit audio, since it uses one-quarter of the disc space of CD-quality audio.
22255 and **11127**. These sample rates are used for lower-fidelity audio playback on Macintosh computers that are not capable of 16-bit audio playback.

Hardware Options

The *Hardware Options* button allows you to access parameters specific to your input device. For example, if the device you are recording with supports special parameters such as synchronization, you can access these through the *Hardware Options* dialog.

Disk

This pop-up menu allows you to select a hard drive attached to your Macintosh for recording. This setting defaults to the hard disk with the greatest amount of free space currently connected to your Macintosh. The numeric indicator displays how much recording time is available on the selected drive. Approximately 10.1MB of hard disk space is required for each minute of stereo recording at 44.1kHz, 16-bit resolution. The

amount of audio-recording time shown for your hard drive will change depending on the settings you have chosen in the *Sample Rate*, *Resolution*, and *Channels* pop-up menus.

Remember, 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 input connector, or if you own a plug-in audio expansion card such as Digidesign's Audiomedia II or III card, the input connectors on this card.

Automatic Gain Control (AGC)

The Record dialog allows you to disable the Sound Manager's Automatic Gain Control feature used with some Macintosh microphone inputs. If the recording device you are using supports this feature, you can use the checkbox "AGC" in the Record dialog to enable or disable this feature.

Level

Some recording devices allow you to set the input gain. Use the "Level..." button to control the input level gain on the selected recording device. Be careful not to overload the signal into the input device or you may have distortion or digital clipping in the recorded audio document.

Recording Input Level control is not available in Peak LE.

Recording Notepad

The Recording Notepad feature 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 Recording Notepad is available from the Recording dialog and may be used once a recording starts.

Each time you press the Return key, a new Notepad Cue is generated for the current recording time. You may then begin typing text to describe the audio recording at that time. 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 text markers corresponding to each Notepad Cue you have entered.

Recording Notepad is not available in Peak LE.

Remember, 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 input connector, or if you own a plug-in audio expansion card such as Digidesign's Audiomedia II or III card, the input connectors on this card.

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.

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.

Fit Selection

Choosing the *Fit Selection* command will zoom in view so that your selection fills the audio document window. As a shortcut for this command, press ⌘-Shift-]. To zoom to the *sample-level* (each pixel on the screen represents an individual sample) of the left side of the selection, press Shift-left arrow. To zoom to the sample-level of the right side of the selection, press Shift-right arrow.

Zoom Out All the Way

The *Zoom All the Way Out* command zooms the audio document window completely out to show the entire audio document, press ⌘-Shift-[.

Loop This Selection

This command automatically creates loop out of 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.

New Marker

This command 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 easily navigate to a location for selection, editing or playback purposes. Markers can also be defined as *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.

Once you have defined a marker, you can assign or edit a number of its attributes through a special dialog which appears when you double-click the marker. This dialog and the attributes contained within are explained in Chapter 5, *Editing*.

The Edit Marker dialog

Make Region

This command defines a selection as a new playlist region and adds it to the Regions menu. From there the new playlist region can be selected and used in playlist documents. You can also locate the playlist region by selecting it in the Regions menu. The audio document will automatically scroll to display the selected playlist region, and the playlist region will become the current selection in the audio document.

Nudge Markers

This command allows you to nudge a marker (or several markers) within a selected range 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.

Go To

This command 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 a lengthy audio document. Choosing the *Go To Marker* command allows you to enter the name of the marker that you wish to navigate to. Choosing the *Go To Time* command allows you to enter the exact time location that you wish to navigate to.

The Go To Marker dialog

The Go To Time dialog

Loop Surfer™

Peak's Loop Surfer feature automates some of the steps for setting up loop points, by allowing you to "Loop Surf" (adjust your loops during playback) quickly and 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. See Chapter 5 for a complete description of this feature.

The Loop Surfer dialog

Loop Surfer is not available in Peak LE.

DSP Menu

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 6 of this User's Guide.

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 to the settings in the Amplitude Fit envelope, 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.

Amplitude Fit is not available in Peak LE.

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 a desired change value in seconds; a percentage; or for rhythmically-oriented material, beats per minute.

Change Duration is not available in Peak LE.

Change Gain

The *Change Gain* function changes the loudness of a selection. You can specify the amount of gain change in decibels (dB) or as a percentage. The *Change Gain* command's *Clipguard* feature protects against the possibility of clipping by searching through the audio document or selection for the maximum peak, and limiting the Gain Change slider's range based on the maximum peak it finds in the audio document.

Crossfade Loop

Peak allows you to create a crossfade at 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 exact shape of the crossfade, using the *Blending* dialog under the Preferences menu.

Crossfade Loop is not available in Peak LE.

Invert

The *Invert* command allows you to invert the phase of a selection or an entire audio document.

Fade In/Fade Out

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-ins/outs by providing you with very precise user-definable envelope controls for the fade (using the Fade In/Out Envelope items in the Preferences menu). Peak also comes with several commonly used preset envelopes that you can load and use.

Gain Envelope

The Gain Envelope operation allows you to enter an envelope that allows amplification (gain) as well as attenuation. It is easy to cause samples to clip when using this feature, so use it carefully.

Find Peak

The *Find Peak* operation will place the insertion point at the largest sample value it locates in the audio selection.

Find Peak is not available in Peak LE.

Mono To Stereo / Stereo To Mono

These two DSP commands may be used to easily convert a document between one and two channel formats.

Mono To Stereo and Stereo To Mono are not available in Peak LE.

Normalize

This command allows you to optimize the volume of a selection or an entire audio document so that it is at its maximum without clipping. The normalize function is very useful for boosting the loudness 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.

Phase Vocoder

The *Phase Vocoder* allows you to modify the duration or pitch of an audio selection.

Phase Vocoder is not available in Peak LE.

Rappify

The *Rappify* command applies extreme dynamic filtering to a selection. If the target material has a pronounced beat, this has the effect of reducing the material to its most essential rhythmic components.

Rappify is not available in Peak LE.

Repair Clicks

The *Repair Clicks* command allows you to repair a pop or click 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.

Repair Clicks is not available in Peak LE.

Reverse Boomerang

The *Reverse Boomerang* command mixes a reversed copy of the selected audio with the original.

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.

Sample Rate Conversion

The *Sample Rate Conversion* 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 the explanation of the *Save* command under the File menu for an explanation of commonly used sample rates.

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 a 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.

Threshold is not available in Peak LE.

Samplers Menu

This menu allows you 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. Peak supports the MIDI Sample Dump Standard, SMDI and Ensoniq samplers. A complete description of how to use this feature is given in Chapter 8 of this User's Guide.

MIDI Sample Dump Standard

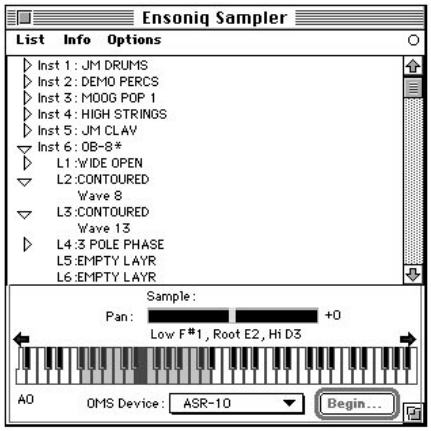
A large number of sampling instruments and older sampling instruments support transferring samples between samplers or computers using a method called MIDI Sample Dump. Peak allows you to transfer samples to and from these instruments if you have a MIDI connection.

Peak sends and receives all MIDI Sample Dumps as 16-bit resolution samples. Depending on your particular sampler, the 16 bit resolution may be reduced to a lower resolution to match the sampler's capabilities. MIDI Sample Dump does not support stereo audio documents, so you may need to separate your stereo audio documents into left and right mono documents using the *Export Dual Mono...* command under the File menu. You can then send the mono documents separately to the sampler.

In order to use MIDI Sample Dump, you will also need to install Opcode's OMS software.

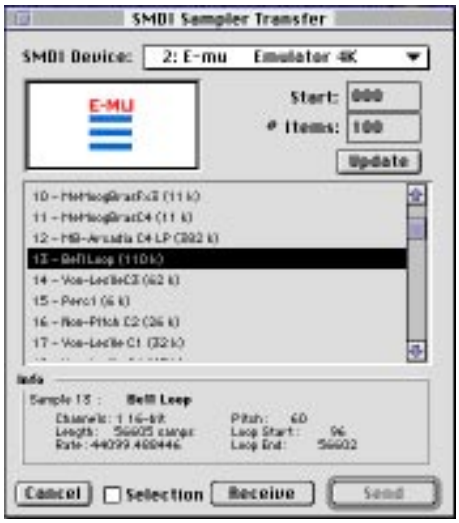
Ensoniq Sampler Transfer

Owners of Ensoniq Samplers will find the Peak *Ensoniq Sampler* dialog an indispensable tool for transferring samples between the Macintosh and an Ensoniq Sampler. In Peak, the *Ensoniq Sampler* dialog provides several operations beyond wavesample transfer, including instrument, layer and wavesample renaming, creation, and deletion. See Chapter 8 for a full description of this dialog.



The Ensoniq Sampler dialog

SMDI Sampler



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 Command-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 filed 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 frontmost 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 the sample already exists in the SMDI Sampler, it will be replaced.*

To send multiple opened Peak audio documents to the SMDI Sampler, shift-click or ⌘-click to select multiple destinations in the list of samples and click the *Send* button. Peak audio documents will be sent to the selected destinations in the order that they appear under Peak's Windows menu.

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.

The receive multiple samples from your SMDI Sampler, Shift-click or ⌘-click multiple destinations in the list of samples and click the *Receive* button.

Sampler Support is not available in Peak LE.

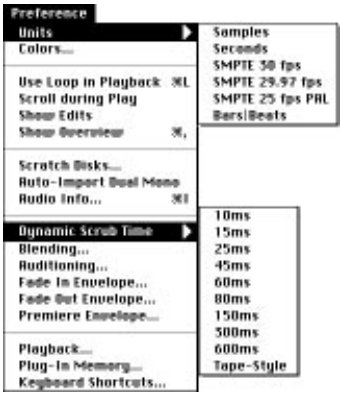
Plug-Ins Menu

This menu lists optional software plug-ins for Peak. Peak is compatible with plug-ins that support the Adobe Premiere Audio Plug-In Standard. They are available from BIAS and a variety of third-party developers such as Waves, Arboretum Systems, and InVision Interactive, Inc. For a description of the items under this menu, please refer to the documentation for the plug-in software.

You must first make a selection in order to use a plug-in.

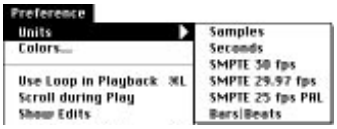
Preferences Menu

This menu contains a number of commands that allow you to customize aspects of your Peak software such as waveform display colors, drawing speed, output volume, and other user preferences.



Units

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.



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 ("*Theme*"), or individual colors for each element in the audio document window. Changes made using the *Colors* dialog affect both the current audio document's colors, and any subsequent new audio document's colors.

Use Loop in Playback

If an audio document contains a loop (defined by loop markers), the *Use Loop in Playback* command allows you to you listen to the loop when you play the audio document. 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

With this command 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, select it a second time.

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.

Show Overview

This command 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. If desired, you can hide the Overview display to allow the audio document window to occupy more of computer screen.

Scratch Disks

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 allows you to choose the drive (or "scratch disk") that you wish to use for these temporary files. By default, Peak uses the drive with the most free space currently connected to your Macintosh. If you would like to use your fastest hard drive for edits, thereby speeding up many editing operations, choose the desired disk or disks from the *Scratch Disks* pop-up menu. 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.

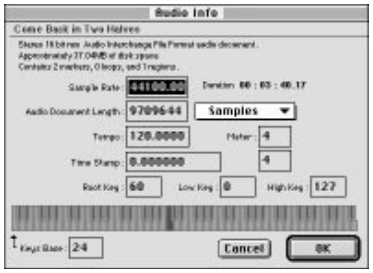
Auto-Import Dual Mono

Certain audio applications such as 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. Enabling the *Auto-Import Dual Mono* command tells Peak to automatically convert such files into a new stereo audio document when you attempt to open these files 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 files. *(Please note that the Import Dual Mono command requires that both files be mono files and have the same sample rate.)*

Audio Info

The *Audio Info* command 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 *Sample Rate Conversion* command from the DSP menu.)



The Audio Info dialog

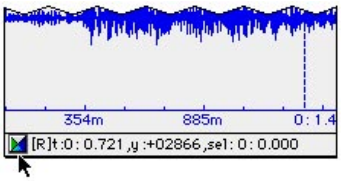
You can also adjust the key range (for use in a sample playback instrument) of a document by clicking on the miniature keyboard in this dialog. To set the upper lower limit of the key range, click on the keyboard at the desired key. To set the upper limit of the key range, hold down the Shift key and 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 for step-by-step instructions on how to use the Dynamic Scrubbing feature.

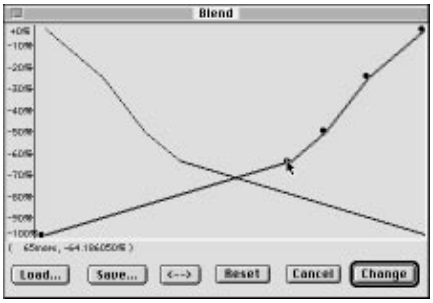
Blending

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 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 choosing this command or by clicking the *Blend enable/disable* button at the bottom left 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 blend enable/disable button is located here

The Blending dialog



The Blending Envelope dialog

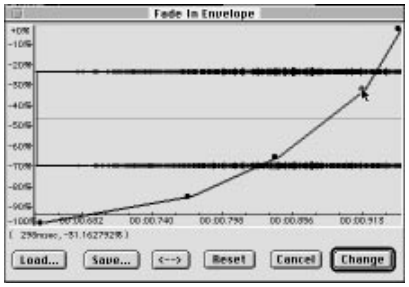
Auditioning

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 *preroll* or *postroll* when you play the selection. To play a selection with the selected amount of pre- and postroll, press Control-Space bar.

The Auditioning dialog

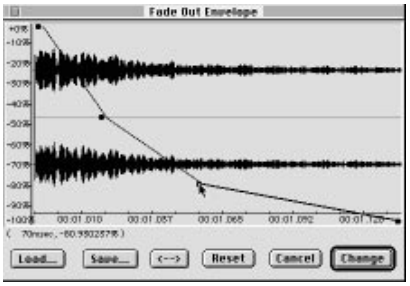
Fade In Envelope

The *Fade In Envelope* command allows you to edit Peak's fade in envelope. Fade ins/outs can be very useful for smoothly fading into 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. 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 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*.



Premiere Envelope

This command allows you to apply third-party Adobe Premiere Plug-in effects gradually. This is useful for applying affects over time.

Playback Preferences Dialog

Peak's Playback Preferences dialog is available under the Preferences menu. The Playback Preferences Dialog allows you to control the master output volume, Spacebar operation, and hard disk playback buffer size.

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.

Spacebar Operation

In earlier versions of Peak, pressing the Spacebar would cause playback to start from the beginning of the audio document. Holding the option key and pressing the Spacebar would play the selected audio, and pressing the command key with the Spacebar would cause playback to start from the insertion point or selection start using preroll settings in the "Auditioning..." dialog. This behavior is still available if the "From Beginning" button is marked.

Here are the keyboard combinations for playback using "From Beginning" setting:

Key Combination	Description
Spacebar	Play from beginning of file
Command-Spacebar	Play from selection start or insertion point
Option-Spacebar	Play selection only
Control-Spacebar	Play selection with preroll and post roll
Return or Spacebar	Stop playback
Shift-Spacebar	Stop playback and extend selection to playback stop point
Command-Spacebar	Stop playback and place insertion point at playback stop point (pause)

If "From Insertion Point" is marked, Peak will always play from the insertion point. If there is a selection made, Peak will play the selection only. The following behavior applies to the Spacebar when "From Insertion Point" is marked:

Here are the keyboard combinations for playback using "From Insertion Point" setting:

Key Combination	Description
Spacebar	Start playback from insertion point or play current selection if one exists
Command-Spacebar	Play from selection start or insertion point using preroll
Control-Spacebar	Play selection with preroll and post roll
Spacebar	Stop playback and place insertion point at playback stop point unless playing an audio selection
Return (during playback)	Stop without moving insertion point
Return (when stopped)	Return insertion point to beginning of audio document (rewind)
Shift-Spacebar	Stop playback and extend selection to playback stop point
Command-Spacebar	Stop playback and place insertion point at playback stop point (pause)

Playback Buffer

Peak allows you to control the amount of RAM the program uses when playing back audio documents. In general, 64k to 128k is a good general setting. If you are experiencing clicks in your playback, working with fragmented files, or are using a slow hard drive, you may need a larger playback buffer setting.

Keyboard Shortcuts

Peak allows you to customize any Peak menu item with a keyboard shortcut. To change your keyboard shortcuts, use the Keyboard Shortcuts item under the Preferences menu. Keyboard shortcuts are stored in a Preference file in the System Folder's Preferences Folder, called "Peak Shortcuts."

All Peak shortcuts require holding the Command key. You may assign additional modifier keys such as the Shift or Option keys. However, be careful not to assign keyboard shortcuts to keys that are already in use!

User-defined Keyboard Shortcuts are not supported in Peak LE.

Its 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.

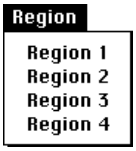
You can also sort the imported keyboard shortcut commands by description or shortcut. Consult your FileMaker Pro User’s Guide for more information on importing records, sorting records, and printing.

Premiere Plug-in Memory Settings

The Plug-In Memory dialog under the Preferences menu allows you to set aside some RAM for using third party plug-ins. For the best results, make sure this preference should be set between 256k and 1024k. When you initiate a plug-in on an audio selection from Peak, the amount of memory set in the Plug-In Memory dialog is reserved, and any left over memory is used for the preview of the audio selection. Peak will attempt to use as much left over RAM as possible so you can listen to longer plug-ins, as described below.

Peak LE limits previews to three seconds.

Region Menu

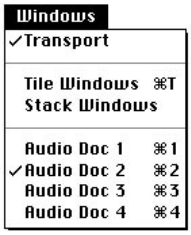


All *Playlist Regions* defined in the frontmost audio document window (using the *Make Region* command in the Edit menu) will also appear under the Regions menu. You can use the Region menu to locate a specific playlist region. The audio document will automatically scroll to display the selected playlist region, and the playlist region will become the current selection in the audio document.

When a playlist is the frontmost audio document, selecting an region from this menu adds the region as a *playlist event* in the playlist. You may use regions from more than one audio document. However, the audio document with the regions you wish to use in the playlist must be open.

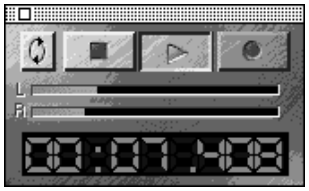
Windows Menu

The commands in this menu allow you to display and manage Peak’s windows, including the Transport and any open audio documents.



Transport

This command displays or hides Peak’s Transport window. The Transport is similar to the transport controls found on recording decks. It contains controls for (from right to left) loop play, stop, play, and record. In addition, it contains playback level meters and a numerical LED time display.



The Transport

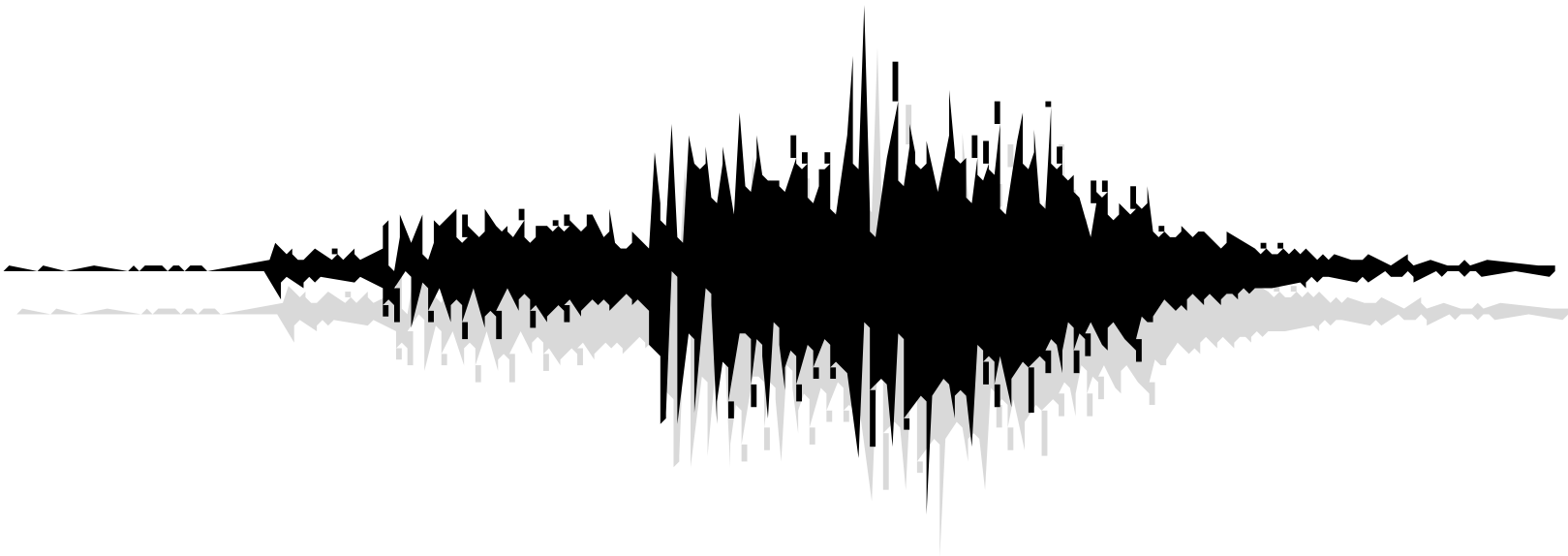
Tile Windows

This command 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

This 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 document 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.)

Appendices



Appendix 1:
Keyboard Shortcuts & Actions

Keyboard Shortcuts

This section lists the default keyboard shortcuts for Peak. As you learned in Chapter 2, these keyboard shortcuts may be reassigned to any desired key or combination of keys.

Menu	Keyboard Shortcut	Command	Comments
File	⌘-n	New Mono Document	The keyboard shortcut creates a mono file unless the clipboard contains stereo audio.
	⌘-Shift-N	New Document from Playlist	
	⌘-o	Open...	
	⌘-w	Close	
	⌘-s	Save	
	⌘-Shift-S	Save As...	
	⌘-q	Quit	
Edit	⌘-z	Undo	If you Save, you can't Undo any edits that occurred before you Saved.
	⌘-y	Redo	If you perform a new editing action other than Undo when Redo is available, you can no longer Redo.
	⌘-x	Cut	
	⌘-c	Copy	Useful for clipboard-based commands such as Add, Convolve, Mix, and Modulate.
	⌘-v	Paste	Overwrites audio at the insertion point.
	⌘-d	Insert	Pushes later audio further to the right.
	⌘-e	Silence	
	⌘-`	Crop	
	⌘-a	Select All	
	⌘- -	Select Loop	

Menu	Keyboard Shortcut	Command	Comments
Action	⌘-r	Record	
	⌘-] or +	Zoom In	
	⌘-[or -	Zoom Out	
	⌘-}	Fit Selection	
	⌘-{	Zoom Out all the way	
	⌘-_	Loop this Selection	
	⌘--	Select Loop	
	Option-Shift-Left Arrow	Snap Loop Start to Zero-crossings	
	Option-Shift-Right Arrow	Snap Loop End to Zero-crossings	
	Left Arrow	Show Selection Start	
	Right Arrow	Show Selection End	
	Shift-Left Arrow	Show Selection Start at Sample-level Zoom	
	Shift-Right Arrow	Show Selection End at Sample-level Zoom	
	Control-Up Arrow	Vertical Zoom In	
	Control-Down Arrow	Vertical Zoom Out	
	Control-Right Arrow	Horizontal Zoom In	
	Control-Left Arrow	Horizontal Zoom Out	
	⌘-m	New Marker	
	⌘-Shift-R	New Region	
	⌘-g	Go to Time...	
	⌘-j	Loop Surfer™	
Preference	⌘-l	Use Loop in Playback	
	⌘-,	Show Overview	
	⌘-i	Audio Info...	
Window	⌘-t	Tile Windows	Arranges open documents in a tile formation.

Peak Actions

This section lists common Peak Actions not found in Peak's menus.

Editing

To make a selection:

- Click and drag the mouse.
- Or, hold down Shift key during playback.

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 delete a selection without storing it on the clipboard:

- Press the Delete key.

To Zoom to the Sample Level, Left Side of Screen:

- Press Shift-Left Arrow.

To Zoom to the Sample Level, Right Side of Screen:

- Press Shift-Right Arrow.

Playback

To play selected audio:

- Option-Spacebar. This plays the selection, plus any pre- or postroll you selected.

To play from beginning of document:

- Press the Space bar.
- Or, click the Play button on the Transport.

To play from a specific point:

- Click cursor at desired location in track, and press ⌘-Spacebar.
- Or, double-click mouse at desired location in the track.

To stop playback:

- Press the Spacebar again, or click Stop on the Transport.

To play a window:

- Press a ⌘-numeric key (1-9) on the keyboard to trigger playback of the corresponding window in its entirety (as assigned in the Windows menu).

To begin dynamic "shuttle" scrubbing:

- Hold down the Control key and drag the mouse across the desired area.

To begin dynamic "job" scrubbing:

- Hold down the Control and Option keys, and drag the mouse.

To trigger sequential playback of multiple documents:

- Press the ⌘-number corresponding to the documents you wish to play (as assigned in the Windows menu).

Markers

To create a marker:

- Press ⌘-m (also works during playback or scrubbing).

To name a marker:

- Double-click the triangular base of the marker, and enter a name.

To select a region between two markers:

- ⌘-click anywhere between the markers.
- Or, press the Tab key.

To select additional regions:

- 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 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 delete a marker:

- Double-click the triangular base. Click the *Delete* button.

Loops

To create a loop from a selection:

- Select desired range, and choose *Loop This Selection* from the Action menu.

To listen to a loop:

- Choose *Use Loop in Playback* from the Preferences menu, and start playback by pressing ⌘-Spacebar.

To change regular markers into loop markers:

- Double-click the triangular base, click Loop Start / Loop End.

To move a pair of loop markers together:

- Hold down the Option key and drag one of the loop markers to the desired location.

Appendix 2:
Troubleshooting

This Appendix contains solutions to common problems that you may encounter when using Peak.

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.

Typical Problems and Solutions

Peak software won't open:

- If you have a 68030 or 68040 Macintosh, make sure it's running in 32-bit mode.
- Does your Macintosh have enough RAM to run Peak? If you have a Power Macintosh, you must have at least 16MB of RAM. If you have a 68040- or 68030-based Macintosh you must have at least 8MB of RAM. 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.
- Always leave about 300-500K free for the Sound Manager to allocate sound channels, and for libraries to link. This means that you should set Peak's application RAM in the Get Info window from the Finder to approximately 500K less than the total free RAM reported in the About This Macintosh window in the Finder's Apple menu. For instance, if your Macintosh has 8MB free in the About This Macintosh dialog, you can set Peak's application RAM up to 7.7MB in Peak's Get Info window from the Finder.
- Is Macintosh System Software version 7.1 or later installed on your computer? If not, you may need to purchase and install the most current version of the Macintosh System Software in order to run Peak.
- Is Sound Manager version 3.0 or later installed on your Macintosh? If not, you must install this Macintosh System software in order to use Peak. (Note Sound Manager is automatically included in System 7.5.)
- Is QuickTime 2.0 or later installed on your Macintosh?

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 System Folder) to the Trash icon on the Desktop, choosing *Empty Trash* from the Finder's Special menu and then relaunching Peak.

Peak reports a -2807 error:

- If Peak reports a *-2807 error* when launching on a Power Macintosh, make sure QuickTime PowerPlug and MathLib are installed in your Extensions folder (in your System Folder). Macintosh System version 7.5.3 should have MathLib built-in, so don't worry about it unless Peak complains about missing libraries.

Peak reports a -108 error:

- A *-108 error* generally means Peak doesn't have enough RAM. If the Installer gives you this error, increase the Installer's RAM in the Finder's Get Info Window. If Peak gives you this error, set Peak's application RAM in the Finder's Get Info window to approximately 500K less than the total free RAM reported in the About This Macintosh window in the Finder's Apple menu. If you've already done this, see the next paragraph.

Peak reports a "QuickTime Lib not found" error:

- Always leave about 300-500K free for the Sound Manager to allocate sound channels, and for libraries to link. This means that you should set Peak's application RAM in the Get Info window from the Finder to approximately 500K less than the total free RAM reported in the About This Macintosh window in the Finder's Apple menu. For instance, if your Macintosh has 8MB free in the About This Macintosh dialog, you can set Peak's application RAM up to 7.7MB in Peak's Get Info window from the Finder.
- For Power Macintoshes, make sure you have both the QuickTime and QuickTime PowerPlug extensions in your Extensions folder (in your System Folder).

Peak quits unexpectedly:

- Have you allocated enough memory to Peak? Allocate additional RAM to Peak if possible, using the *Get Info* command from the Finder's File menu. To do this, select Peak's icon in the Finder, choose *Get Info* from the Finder's File menu, and enter the desired amount in the Preferred Size field. Make sure you allocate more RAM than the amount indicated in the Minimum Size field.
- Always leave about 300-500K free for the Sound Manager to allocate sound channels, and for libraries to link. This means that you should set Peak's application RAM in the Get Info window from the Finder to approximately 500K less than the total free RAM reported in the About This Macintosh window in the Finder's Apple menu. For instance, if your Macintosh has 8MB free in the About This Macintosh dialog, you can set Peak's application RAM up to 7.7MB in Peak's Get Info window from the Finder.

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 MacTools Pro™ to defragment your drive.
- Is Peak's playback buffer in the Playback Preferences (found in Peak's Preferences menu) set too low? Try increasing the playback buffer to 128K or higher.
- Is the Macintosh's disk cache set too low? If you have enough RAM to permit it, use the Memory control panel to set the Macintosh's disk cache to at least 384K and restart your computer. (The maximum setting for System 7.1 is 512K.)
- Are you using too many System Extensions? Extensions can slow down your Macintosh by using precious processor cycles and can conflict with a disk-intensive program such as Peak. In particular, turn off or remove System Extensions such as menu bar clocks and screen savers that are in constant operation, and restart your Macintosh.
- Apple System 7.5.3 is reported to cause problems with various types of digital audio systems. This is a result of the new native SCSI Manager and only happens on Power Macintoshes running 7.5.3. This affects all digital audio programs. However, not all 7.5.3 PowerMac users are affected, and 68K users will not experience any problems. Running System 7.5.5 should correct this problem.

Audio playback has pops and clicks:

- Is Sound Manager version 3.0 or later installed on your Macintosh? If not, you must install this Macintosh System software. (Note: Sound Manager is automatically included in System 7.5.)
- 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.)

- Do the Sound Control Panel's *Sound Out* sample rate and resolution settings match the ones set in Peak? To check, select a portion of audio in Peak, choose the *Audio Info* command from Peak's Preferences menu, and note the settings. Then, open the Sound Control Panel from the Apple menu, and choose *Sound Out* from the pop-up menu. If the settings don't match, correct them here.
- Apple System 7.5.3 is reported to cause problems with various types of digital audio systems. This is a result of the new native SCSI Manager and only happens on Power Macintoshes running 7.5.3. This affects all digital audio programs. However, most 7.5.3 PowerMac users are not affected, and 68K users will not experience any problems. System 7.5.5 should fix this problem.

Audio playback is at the wrong speed or pitch:

- Do the Sound Control Panel's *Sound Out* sample rate and resolution settings match the ones set in Peak? To check, select a portion of audio in Peak, choose the *Audio Info* command from Peak's Preferences menu, and note the settings. Then, open the Sound Control Panel from the Apple menu, and choose *Sound Out* from the pop-up menu. If the settings don't match, correct them here. (This may also cause the system beep to play at the wrong speed.)
- If you are using a plug-in audio card such as Digidesign's Audiomedia II or III card, the input source or clock rate may be set incorrectly. Make sure that both of these parameters are set correctly by opening the Macintosh's Sound Control Panel and choosing *Sound In* from the pop-up menu. This problem is very common if your audio card is connected to a digital recorder and is receiving its clock rate from that device. To avoid this problem, always set the input source back to *line* or *line + mic* and set the Sync Mode back to *Internal* in this dialog after you have finished transferring audio digitally. If the file plays back about 10% slow or fast after switching from digital to internal sync, the sample rate selected in the Hardware Setup window may not match the sample rate of the digital source.

Problems using Tape-Style Scrubbing:

- Sound Manager 3.1 or later is required for Tape-Style Scrubbing to work properly. With earlier versions of the Sound Manager, the scrubbing will not play with varispeed.

The items in the DSP submenu are grayed out:

- You need to open an audio document and select an area of the audio before the DSP effects will be available.

Using Peak with Digidesign or other third-party hardware:

- If you don't have them already, you will need to place the appropriate Digidesign compatibility extensions (the Digidesign Sound Drivers and the DigiSystem Init) in your Extensions folder (in your System Folder). Make sure you're using the recommended versions of these extensions.
- If you experience problems while using Peak with Digidesign or other third-party boards, you may be able to narrow down the source of the problem by removing the associated System Extensions from your Extensions folder and restarting the computer. If this fixes the problem, there may be an extension conflict or other problem with the third-party software. FAQs and technical support information for Digidesign products may be found at:

  http://www.digidesign.com/Newdigiweb/Digiservice/techserv.html

- Whenever you change hardware or software, it's a good idea to drag the DigiSetup file (a preference file that stores your Digidesign hardware settings) from the System Folder to the Trash icon on the Desktop, and then choose *Empty Trash* from the Finder's Special menu. Sometimes this preference file can get corrupted. It will be recreated when you change settings in the Hardware Setup window.

- If you are experiencing pops and clicks while using Peak with Digidesign's Audiomedia III card, these problems have generally been resolved by one or more of the following:

  1. Use the recommended Digidesign extensions.

  2. Rebuild your Desktop. This is a good thing to do every now and then. It is done by holding down the Option and Command keys while you restart the Macintosh.

  3. If your hard drive is highly fragmented, you should defragment and optimize it.

  4. Zap your PRAM. The PRAM is a programmable RAM chip that remembers things like Control Panel settings after you turn off your Mac. Sometimes the PRAM can get corrupted, causing a variety of problems. The solution is to zap your PRAM. There are two methods for doing this:

  a. While holding down the Command-Option-P-R keys, turn on the computer. It will restart, re-chiming to indicate that the PRAM has been reset. Then Release the Command-Option-P-R keys. You will then need to reset all of your system Control Panel preferences, such as 24/32 bit and Virtual Memory settings in the Memory Control, Date & Time Control Panel, etc. Also, throw away all of your various Finder preferences and preferences for problematic applications. Make sure Appletalk is turned off, or if you have Open Transport running, use the Network Control Panel to select *Classic Appletal*k and then turn it off. Finally, restart your computer.

  b. Use TechTool, a utility which can clear the entire PRAM clean. It can save the previous contents (in case you find out you really shouldn't have zapped it) and restore the PRAM to what it used to be.

Problems using Sound Designer II, Studio Vision Pro or other audio applications with the Digidesign Sound Drivers installed:

- The Digidesign Sound Drivers are needed in order to use Peak with Digidesign hardware. However, under certain circumstances, Sound Designer II, Studio Vision Pro and possibly other audio applications will not launch if the Digidesign Sound Drivers are present. This is due to an odd interaction between OMS, QuickTime Musical Instruments, the Digidesign Sound Drivers and the Sound Manager.

  The fix is simple, if non-obvious. Open your OMS Setup file and remove the QuickTime Musical Instruments from your setup. (Simply removing the QuickTime Musical Instruments extension from your Extensions folder is not sufficient.)

- There can also be a conflict with DAE, if your DAE-based application doesn't release DAE when you switch out of the program. With Pro Tools, turn off the *Active in Background* preference item in order to work concurrently with the Digidesign Sound Drivers.

Problems using Peak with an Ensoniq Sampler:

- Make sure you choose the correct OMS device in the Ensoniq Sampler dialog's OMS device selection pop-up menu.
- Make sure your Ensoniq Sampler is set to *MIDI SYSEX = ON*.
- Make sure your MIDI interface is powered on.
- Make sure your MIDI cables are connected correctly.
- Check to see that you have a good MIDI connection.
- Either use the Modem serial port, or turn off Appletalk using the Chooser (under the Apple menu).

Problems using Peak with a SMDI sampler (via SCSI):

- Use high-quality, tested SCSI cables that are as short as possible.
- Make sure that the problem is indeed a SCSI problem and not a MIDI problem. If you find that it is a SCSI problem, disable the *USE-SCSI* checkbox in the Options menu. This will force all transfers to use MIDI only. If you can transfer samples back and forth with your Ensoniq sampler using only MIDI, then the problem is surely SCSI-related.
- Check for SCSI ID conflicts. (Ensoniq samplers have a SCSI ID of 3.) 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. Most ASR and EPS models are self-terminated.
- 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.
- PowerMac users with System 7.5.5 can try using the PowerPC Interrupt Extension. System 7.5.3 changed some interrupt priorities, resulting in problems such as inexplicable and momentary freezes. The PowerPC Interrupt Extension fixes one known cause of "long interrupt latencies" which is when the computer sits waiting for something more important to happen.

  It's difficult to say what specific problems this extension will fix since so many programs can be affected, but reports indicate the extensions fixes formerly-reproducible problems with some games, telecommunications software, and audio/video editing tools. (Note this extension requires a Power Macintosh and System 7.5.5.)

What is the Apple System Profiler, and how can it help solve difficult technical support problems?

- Apple System Profiler lets you gather information about the configuration of your computer. The information the Apple System Profiler reports is helpful if you report a problem to our Tech Support department.
- We recommend that you install Apple System Profiler on your computer now, *only* if you have one of the following computer models:

  1. Power Macintosh 9500, 8500, 8100, 7600, 7500, 7200, 7100, 6100, 5400, 5300 and 5200 series.
  2. PowerBook 5300, 2300 and 190 series.
  3. Macintosh Performa 6300, 6200, 6100, 5300 and 5200 series.

  Apple System Profiler will only install on the computers listed above. Do *not* attempt to install it on any other computers. Also note that you *must* be running Macintosh Operating System version 7.5.2 or 7.5.3 to successfully install Apple System Profiler.
- Apple System Profiler can be downloaded from:

  ftp://ftp.support.apple.com/pub/apple_sw_updates/US/Macintosh/Utilities

Appendix 3:
Encoding RealAudio™ Files

Encoding RealAudio files is only available with a Power Macintosh.

Peak is an indispensable tool for preparing audio files for the internet. Peak supports the Progressive Networks™ RealAudio 3.0 and 2.0 Encoders, allowing you to prepare audio for streaming over the internet. This chapter discusses how to use the RealAudio Encoder dialog in Peak, and how to optimize your results.

The RealAudio™ system delivers music and speech over a network in real-time. Real-time delivery means that users do not have to wait while a file downloads; the sound plays as it is delivered. Users have complete control over the sound; they can pause, move forward and back, and start or stop at any time.

The network can be the Internet, an intranet, or any local area network. RealAudio formats are optimized for low- to medium-speed connections including 14.4 and 28.8 Kbps modems and ISDN. Users can also listen to RealAudio files stored on their local computers.

A RealAudio clip is a file or live broadcast containing sound encoded in one of the RealAudio formats. These formats are highly compressed to deliver the best possible sound over a limited-bandwidth connection.

Because there is no one best format for delivering sound, the RealAudio system provides several formats that are optimized differently for different kinds of audio content. You can choose to provide a clip in one or more formats based on the type of content and the available bandwidth. For example, you would use a different format to deliver speech over a 14.4 Kbps modem than you would to deliver music over an ISDN connection.

In addition to the sound contained in the RealAudio clip, the RealAudio system can deliver images and other Web pages that are synchronized with the sound. These presentations are called Synchronized Multimedia.

The RealAudio system uses several file types, each identified by a specific file extension. The RealAudio files Peak supports and their file extensions are:

- **RealAudio clip (.ra)** - The sound encoded in the RealAudio format. This file is created with Peak delivered by RealAudio Server.
- **RealAudio events file (.rae)** - The file that contains the events defined for a Synchronized Multimedia presentation. The events file has the same name as the RealAudio clip it contains events for and it is stored in the same directory on the RealAudio Server. This file is created using markers in your Peak audio document.

To save a file in the RealAudio format, choose Save As... from the File menu in Peak. In the file type pop-up menu that appears in the Save As... dialog, choose “RealAudio.” The RealAudio dialog will appear with several options.

You can play back RealAudio documents created with Peak using the Progressive Networks RealAudio Player™ application, which is free. Download the RealAudio player from the Progressive Networks web site at:

http://www.realaudio.com

Encoding a RealAudio clip is a one-way process; you cannot convert a RealAudio file back into the original source format. If you want to be able to encode in other formats in the future, you need to archive a copy of the original source.

When you encode an audio file, you select an encoding algorithm. The RealAudio Encoder can encode using several different algorithms. Each encoding algorithm is optimized for a particular type of audio and connection speed bandwidth. You need to select one or more algorithms that best suit your needs.

It is possible to offer more than one encoding algorithm from your RealAudio Server. In this way, you can reach the widest possible audience while still providing high-bandwidth users with the best listening experience. Using *Bandwidth Negotiation*, you can configure your site to automatically serve the appropriately encoded file. For more information about Bandwidth Negotiation, refer to the RealAudio web site at http://www.realaudio.com.

The following RealAudio encoding algorithms are available:

Encoding Algorithm	*Description*	*File Size*
RealAudio 14.4	Use for speech over 14.4 Kbps modems. This is the original RealAudio 14.4 Codec. Frequency response: 4.0 kHz.	1 KBps
RealAudio 28.8	Use for general mono content over 28.8 Kbps modems. This is the original RealAudio 28.8 Codec. Frequency Response: 4.0 kHz.	1.8 KBps
RealAudio 28.8 Mono Voice	Use to optimize speech over 28.8 Kbps modems. Frequency response: 4.0 kHz.	2 KBps
RealAudio 28.8 Mono Pop	Use for musical selections that include snare drums, cymbals, and vocals. Frequency response: 4.7 kHz.	2 KBps
RealAudio 28.8 Mono Instrumental	Use for instrumental, classical, and other music needing the widest frequency response. Frequency response: 5.5 kHz.	2 KBps
RealAudio 28.8 Stereo	Use for general stereo content. Frequency response: 4.0 kHz.	2.5 KBps
Real Audio ISDN Mono	Use for general mono content over IDSN connections. Frequency response: 11 kHz.	4.9 KBps
RealAudio ISDN Stereo	Use for stereo content over ISDN connections. Frequency response: 8.0 kHz.	4.9 KBps
RealAudio Dual ISDN Mono	Use for optimal quality for mono content. Frequency response: 20 kHz (CD Quality).	9.8 KBps

Options

Source

The Source pop-up menu allows you to specify the type of audio material your source document contains. For instance, if your audio document is just narration, choose *Voice* from the Source pop-up menu.

Encoder

The Encoder pop-up menu contains a list of encoding options based on the Source settings, described above. Specific algorithms exist for different bandwidths (e.g., 14.4 bps modems, 28.8 bps, ISDN, etc.), and different numbers of channels (Mono or Stereo). Choose the Encoder option that is correct for your internet streaming delivery needs.

Bandwidth Negotiation

Bandwidth Negotiation will be supported in a later version of Peak. At the present time, you must manually use the *Save As...* command from the File menu for each bandwidth you need to support. For instance, if you require 14.4, 28.8, and ISDN encodings for one audio file, you must use the *Save As...* command three times to create the three separate files.

RealAudio Bandwidth Negotiation is not available in Peak LE.

Title

RealAudio clips include text strings for the title, author, and copyright. This text is displayed by RealAudio Player when the clip is played. Although the player usually labels the text as title, author, and copyright, the player displays whatever text you choose to supply.

Text information entered into the Title edit box is stored in the RealAudio document. Use this field to enter information about the name or source of your audio.

Use Source Document Name

If you would like Peak to place the audio document's file name in the Title field instead of providing a custom Title, check this box.

Author

Use this text field to enter the author or group on the recording.

Copyright

Use this text field to enter copyright information for the recording.

Copy Protect

Click on the Copy Protect button to create a RealAudio document that can only be played, but not recorded.

Embed Markers as URLs

Click this button to create an ".rae" Synchronized Multimedia file along with the encoded ".ra" file. If this option is turned on, Peak will generate a ".rae" file using the text from the markers in the audio document.

In addition to basic audio content, the RealAudio system allows you to create real-time on-demand multimedia from within Peak. These presentations can be as simple as a narrated slide show of your home page or as intricate as a multi-frame training program that the viewer controls.

The RealAudio System includes the ability to synchronize World Wide Web pages with audio. Thus the audio can be used as a "time line" to display new pages or frames in the Web browser or to update its content. This enables the creation of Internet slide shows, presentations, guided tours and site walk-throughs. A user can have full random access (fast forward and rewind), and the Web browser content is synchronized with the audio.

The RealAudio System stores the information for the synchronized events in a file with a .rae file extension. The audio file is located by the RealAudio Server when the listener opens the .ra file. The RealAudio Server streams audio and event information to the RealAudio Player. The event information is streamed to the RealAudio Player, and in turn the RealAudio Player sends Web page information to the Web browser telling it to update the page's content.

As an example, we might want to create a slide presentation for users to watch that is coordinated with the audio. We use Peak to record the narration of the presentation "Welcome to the Storyboard Society of America's thirteenth annual presentation. Today we're going to look at how storyboards have affected developmental changes in adolescents in Germany, Spain, and the United States. We'll look at several key issues including storyboard design, market dominance, storyboard manufacturing materials choice, creative storyboard potential, and storyboard plagiarism."

We can place text markers into the audio file using Peak. The text of each marker contains the URL for the browser application to go to. For instance, we might put a marker where it reads "Welcome to the Storyboard Society..." to have the text "http://www.storyboard.org/slidepresentation/slide1.gif." Then we might put a marker into the audio where it reads "We'll look at several key issues..." and place a marker there with the text "http://www.storyboard.org/slidepresentation/tableofcontents.gif."

When the RealAudio clip is played, the RealAudio server will send events to the Web browser at the times corresponding to your markers so a graphic, animation, or other HTML activity can be synchronized to the audio playback.

Perfect Play

Click on this button to allow the RealAudio document to be played on 14.4 bps modems when encoded using a 28.8 algorithm. If a RealAudio document is played to a 14.4 bps modem and Perfect Play is enabled, a pre-buffering scheme will allow the 28.8 bps audio to be listened to on a 14.4 bps modem.

Use Peak Sample Rate Converter

To use Peak's high quality sample rate conversion in place of the Progressive Network's sample rate converter, click on this box.

Filename ".ra" suffix

RealAudio documents on non-Macintosh systems typically have a ".ra" at the end of the document's name. Click this box to create a RealAudio document with ".ra" on the end.

Strip "/" from filename

Forward slash characters may be interpreted by RealAudio as an Internet URL. Click this box to ensure that document's are not encoded using the forward slash in the file name. The RealAudio server and player may misinterpret other characters such as the question mark "?", so try to avoid non-alphanumeric characters when naming your RealAudio encodings.

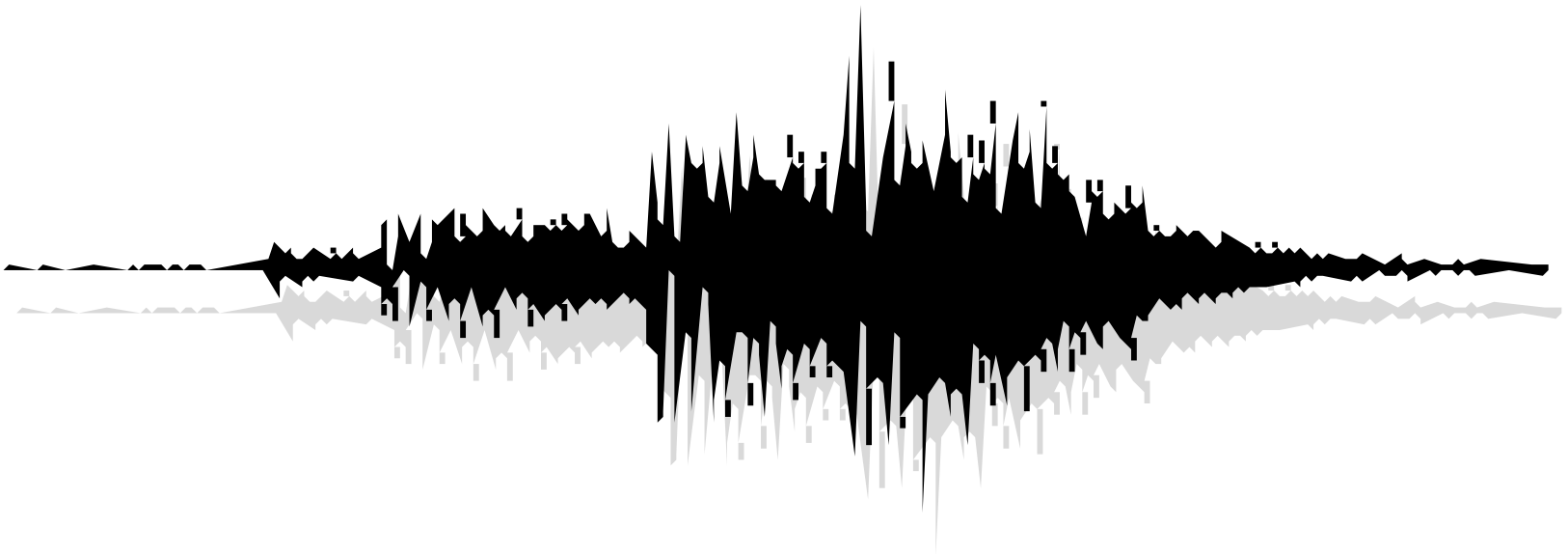
Tips for Achieving Quality RealAudio Clippings

The quality of your RealAudio clips depends on the quality of the input source. Because the RealAudio compression algorithms are lossy, some of the information contained in your original audio input will not be included in the reconstructed signal sent to the RealAudio Player. You produce higher-grade audio following compression/ decompression if you start with a high-fidelity recording with full dynamic range and high signal-to-noise ratio.

The following is some advice for getting high-quality source files:

- Use high-quality source files from Compact Disc (CD) or Digital Audio Tape (DAT).
- When possible, digitize the sound to a supported file format. Then preprocess the file with a sound editing program. Set the amplitude of your input signal to maximize the use of the available dynamic range.
- Eliminate any DC offset. DC offset is visible in Peak's waveform view as an imbalance of the audio signal above or below the horizontal zero axis. This enables you to remove low frequency noise. Peak supports third-party DSP processing plug-ins such as WAVES AudioTrack™, which will remove DC offset.
- Use a CD quality sampling rate (44.1 kHz), sampling width (16-bit) and two channels when creating an input file. You can always downsample and convert to one channel later.
- The source files should contain signals of the maximum allowable amplitude. If the full amplitude range is not used, the resulting RealAudio files may sound hollow. Adjust the range using Peak's Normalize function to will maximize levels automatically.
- If your original audio file signal exceeds the acceptable amplitude range, the file may contain "clipping." Clipping can cause clicks or pops during playback. If your source file contains a clipped signal, your final RealAudio file will have high-frequency background noise or static. Use Peak to first edit out any clipping that might be in your source audio document before encoding.
- Cut any unnecessarily long silences from the beginning or end of the output file to conserve space.

Glossary



Glossary

AIFF

Apple's Audio I*nterchange 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.

audio card (audio expansion card; audio recording/ playback card)

An plug-in card that adds audio recording and playback capabilities to a computer. Using Apple's Sound Manager software, Peak works with a variety of Macintosh audio cards from Digidesign, Sonic Solutions and others. In some cases, special Sound Manager Driver software may be needed from the audio card's manufacturer 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*, *WAVE*, *Sound Designer II*, *Red Book*, and *QuickTime*.

bit resolution (bit rate)

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

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 Preferences menu, or by clicking the Bending enable/disable button at the lower left of the audio document window.

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 too a high a level, such as when a mixing console feeds a signal to a power amplifier at too high a 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 such that the loudest incoming audio passages stay below the maximum input level, as indicated on the record meters. 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, you can "dB" 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 Action menu's DSP hierarchical menu.

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 an recording's dynamic range. An 8-bit recording has 256 available levels, which translates into a dynamic range of 48dB. This may be suitable for some applications, but it may also sound noisy, since the difference in gain between the loudest passages and the quietest passages (which may contain hiss and other potential noise) is not that great. A 16-bit recording has 65,536 available levels, which translates into a high-quality dynamic range of 96dB. As a rule of thumb, you can calculate dynamic range in decibels by multiplying the bit rate by "6." Also refer to *bit resolution*, *decibel*, and *gain*.

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 hierarchical menu in the Actions menu. Envelope shapes can be editing with the Fade In Envelope or Fade Out Envelope commands in the Preferences menu.

frequency

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

gain

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

headroom

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

Hz (Hertz)

This is the unit of measurement for frequency, and refers to the number how many "cycles per second" a sound wave generates. In the world of sound, the higher the number of Hertz, the higher the frequency of a sound and hence the higher its "pitch" as perceived by human ears. A thousand Hertz can be expressed as 1kHz (one kilohertz), so that 20,000 Hertz may also be referred to as 20kHz.

loop

Loops are used to sustain or repeat a section of audio. 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 from the Actions menu, or by placing markers at the desired start and end point of a region, and defining the markers as loop markers.

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 c-M when playback is stopped or while it is engaged.

playlist

A playlist is a list of audio events, or "playlist regions," strung together in a specific order. See also *playlist region*.

playlist region

Playlist regions are portions of an audio document defined with the *New Region* command from the Actions menu, and used as audio events played back in *playlists*. Playlist regions can be saved only into AIFF and Sound Designer II files created by Peak, but Peak will also read Playlist Regions stored from other programs in Sound Designer II files. However, the method Peak uses to store playlist regions in AIFF files is specific to Peak and is not supported by other software applications. See also *region*.

Plug-In

Plug-Ins are optional software enhancements for Peak that are available from BIAS and other developers that support the Adobe Premiere Audio Plug-In Standard. By installing Plug-ins in Peak's *Plug-Ins* folder, you can enhance Peak's audio editing and processing capabilities with tools such as filtering, reverberation, chorusing and flanging, noise reduction, three-dimensional 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™.

Red Book

This refers to the audio format used by all audio CDs and by many CD-ROMs. All Red Book audio must be recorded in 16-bit format, at a 44.1kHz sample rate.

region

A region is a portion of an audio document bounded by markers. To select a region, double-click anywhere between the bounding markers and the region will be selected. See also *playlist region*.

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.

48000. This is one of two standard sample rates for digital audio tape (DAT) recorders, and is often used by sound editors working in audio post-production for video or film. This rate results in an upper frequency response of 24kHz — well above the range of human hearing.

44100. This is the standard sample rate for Compact Discs, digital audio tape (DAT) recorders, and high-fidelity audio applications on Macintosh and PC-compatible computers with 16-bit playback capability. It is colloquially called "forty-four one" (as in 44.1kHz). Most sound engineers working in music production — or anything that may be distributed on a CD — work at this rate. This rate results in an upper frequency response of 22,050Hz — above most people's hearing range.

22050 and **11025**. These sample rates are used for lower-fidelity audio playback on Macintosh and PC compatible computers that have 16-bit playback capability. Many games and other multimedia productions utilize 22.050kHz 8-bit audio, since it uses half the disc space of CD-quality audio. The 22,050 sample rate results in an upper frequency response of 12,025Hz, which may sound "muffled," since many people can hear considerably higher.

22255 and **11127**. These sample rates are used for lower-fidelity audio playback on Macintosh computers that are not capable of 16-bit audio playback.

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.

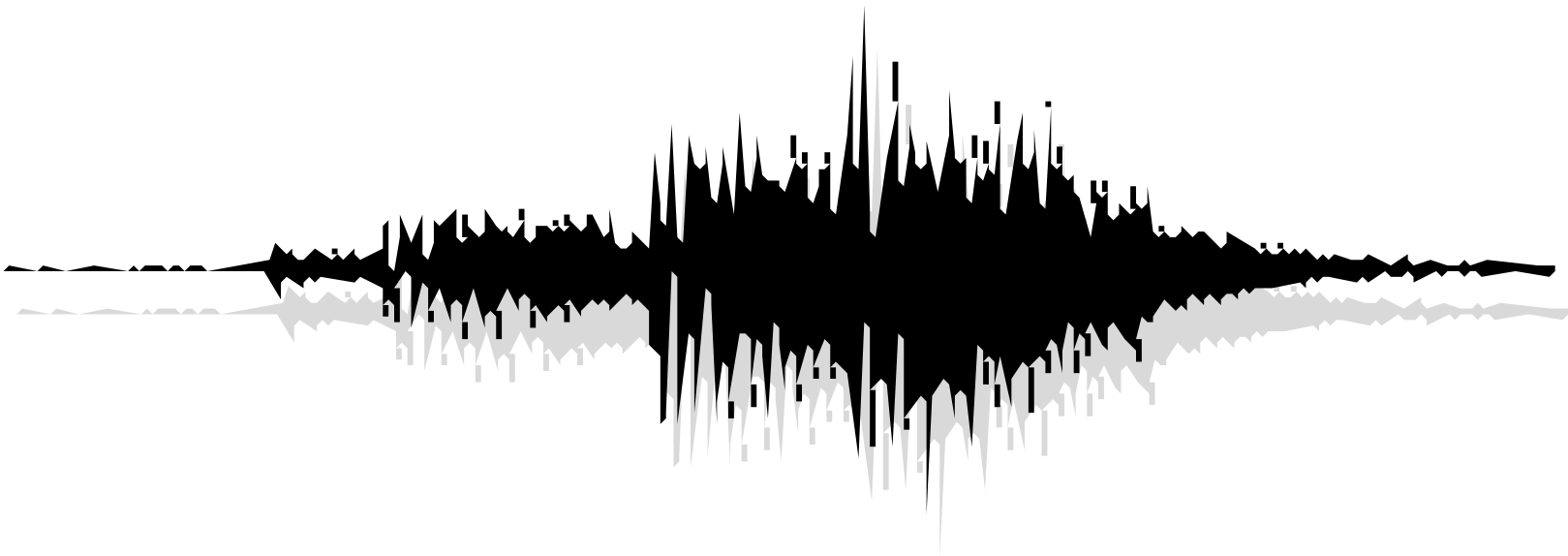
Sound Designer II™

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. Use this format if you wish to interchange audio documents with 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 applications. The *WAVE* format is best if you plan to use an audio document in an application that supports or requires *WAVE* format files.

Index



Index

Symbols

μlaw compression 22
32-bit Addressing 9

A

Adobe Premiere Plug-Ins 61
AIFF 21, 100, 139
Allocating additional RAM to Peak 5
Allow Servers 25, 46, 114
Amplitude Fit 68, 109
Analog-to-digital converter 17
Anchor 53
Apple Events 72
AppleTalk 4
Audio (playing) 42
audio card 13, 139
Audio CD 34
Audio CD Import Options dialog 101
Audio Compression 22
Audio Connections 10
audio document 139
  creating 19
Audio Document Window 39
Audio Engineering Society's file format 21, 100
Audio expansion cards 11
Audio Extraction 34
Audio Info command & dialog 25, 114
Audio Interchange File Format (AIFF) 21, 100
Audio Waveforms 40
Auditioning Audio 43
Auto-Import Dual Mono command 114
Automatic Gain Control (AGC) 32

B

Balloon Help 6
Batch File Processor 73, 102
BIAS Technical Support 127
Bit resolution 17, 139
Blend enable/disable button 49, 115
Blend Premiere Plug-Ins checkbox 50
Blending 49, 115, 139
Built-In 12

C

CD (recording from) 34
CD-ROM drives 34
Change Duration 72
Change Gain 67
Channels pop-up 31
Choosing a Time Format 25
Choosing Colors 24
Clear Clipboard command 105
Clicks 70, 111
Clipboard command 105
Clipping 139
Close command 100
Colors preferences 24, 113
Compressed Audio support 19, 22
Configuring the Sound Control Panel 11
Confuring a Digidesign audio card 13
Connections (audio) 10
Convolve 64
Copy command 104
Copy protection 9
Copying Regions 47
Creating an audio document 19
Creating Loops 54
Creating Markers 52
Crop command 105
Crossfade Loops 55
Crossfades 49, 80
Cursor Location Display 41
Cut command 104
Cutting Regions 47

D

dB (decibel) 139
Delete button 53
Deleting Audio 47
Digidesign Sound Driver software 13
DigiSystem INIT 13
Digital Audio explained 17
Digital sampling 17
Disk pop-up 32
Disk-based Recording 18
Dithering 22
DSP 140
Dual Mono format 20
Duration (change) 68
Dynamic range 17, 140
Dynamic Scrub Time command 44, 115

E

Edit Marker dialog 52, 108
Edit Menu 103
Editing Audio 39
Edits Command 45, 103
Ensoniq Samplers 91
Export Dual Mono command 101
Export Playlist as a Text Document 83
Export Regions 57, 101, 102

F

Fade envelope editor 51
Fade In/Out Envelope command 50, 116
Fade In/Out Envelope
  loading 51
  saving 51
Fade In/Out 50, 140
File formats 21
File Menu 20, 99
File Sharing 4
Filemaker Pro 73
Find Peak command 69, 110
Fit Selection command 108
Fragmentation 18
Frequency 140

G

Gain 140
Gain (change) 67
Gain Envelope 68
Go To command 108

H

Hard Disk Maintenance 18
Hard Disk Storage Requirements 4, 18
Hardware Options button 32, 106
Headroom 31, 140
Help 6
Hertz (Hz) 17, 140

I

IMA 4:1 compression 22
Import CD Track command 34, 101
Import Dual Mono command 20, 101
Input level 32, 107
Insert command 104
Insert Silence command 48, 104
Inserting Audio 48
Installing Peak 9
Interactive Editing 39
Invert 69

J

Jog scrubbing 44

K

Key disk 9
Keyboard Shortcuts 26, 118, 123

L

Levels for Recording 31
Linear recording 18
loop 140
Loop End 52
Loop End button 54
Loop Start 52
Loop Start button 54
Loop Surfer 56, 109, 140
Loop This Selection command 54, 108
Loops 41, 52, 54

M

MACE 3:1 compression 22
MACE 6:1 compression 22
Macintosh Inputs And Outputs 10
Make Loop button 56
Markers 41, 52, 141
Markers as URLs 135
Memory control panel 4
MIDI Sample Dump Standard 89, 111
Minimum Size field 5
Mix command 63, 105
Modulate 64
Monitor checkbox 33
Mono command 99

N

New command 19, 99
Nondestructive recording/editing 18, 39
Non-linear recording/editing 18
Notepad Cues 107

O

Online Help 6
Open command 99
Opening existing documents 19
Output volume of Macintosh 13

P

Paste command 104
Pasting Regions 47
Peak (finding) 70, 110
Peak Features 3
Perfect Play 135
Performance (maximizing) 4
Phase Vocoder 66, 110
Phone connectors 11
Playback Buffer 23, 117
Playback Master Volume 23
Playback Preferences dialog 117
Playing Audio 42
Playlist
  creating 80
  modifying events 81
  opening 83
  saving 83
Playlist Region 79, 141
Playthrough 12
Plug-In 141
Plug-in Memory 62, 119
Plug-In Preview Time 62
Plug-Ins (installing) 61
Plug-Ins folder 61
Position field 52
Pre- or Post Roll 43
Preferences 23
Preferences Menu 23, 113
Preferred Size field 5
Premiere Envelope 62
Pro Tools 20
Processing. *See* Plug-in
Progressive Networks 133
Proper Levels 31

Q

QuickTime 141
QuickTime file format 21, 100
QuickTime file support 19
Quit command 103
Quitting 27

R

RAM requirements 4
Random-access recording/editing 18
Rappify 65
RCA connectors 11
RealAudio clip (.ra) 133
RealAudio events file (.rae) 133
Recently Opened Documents 20, 102
Record command 31, 106
Recording (initiating) 33
Recording levels 31
Recording Notepad 107
Red Book 141
Redo command 45, 103
Reference Point 53
Region 79, 141
  exporting 57
  selecting 42
  Region for Playlists 79

Regions 41
Registration Card 10
Replace 104
Resolution pop-up 32
Reverse 66, 111
Reverse Boomerang 65

S

Sample 141
Sample Rate 17, 32, 141
Sampler 87, 141
Sampler Support 87
Samples list 87, 112
Sampling 17
Save As Command 22, 100
Save command 100
Scratch Disks command 25, 46, 114
Script (Batch File Processor) 75
Script Definition 73
Scroll During Play command 114
Scrubbing 45
SCSI 142
Select All command 105
Select Loop command 105
Selecting a region 42
Selecting Audio 42
Show Edits command 49, 114
Shuttle scrubbing 44
Signal-to-noise (improving) 13
Silence command 104
Silencing a Selection 48
Slot pop-up menu 13
SMDI 87, 142
Sound Control Panel 11
Sound Designer II 21, 100, 142
Sound Driver software 13
Sound frequency 17
Sound In window 12
Sound Manager 12
Sound Out 12
Source pop-up 31
Spacebar Operation 23, 117
Stack Windows command 120
Start Surfing button 56
Stereo command 99
Stereo To Mono command 69, 110
Storage Requirements 18
System Extensions 4
System Requirements 4

T

Tempo 25
Theme pop-up menu 24
Threshold 57, 72
Threshold command 71, 111
Tile Windows command 120
Time Format 25
Timestamp 25
Transport 33, 42
Troubleshooting 127

U

Undo 39, 103
Units command 25, 113
Unlimited Undo and Redo 45
Use Loop in Playback command 54, 114

V

Vertical Scaling 40
Virtual Memory 9
volume of Macintosh 13
Volumes item in Sound Control Panel 12, 13

W

Windows Audio File Format (WAVE) 21, 100
Windows Menu 119

Z

Zoom All the Way Out command 108
Zoom In command 107
Zoom Out command 108