

# SoundSoap™

---

Version 2.1

Software User's Guide





## INSTALL LICENSE AGREEMENT

This legal document is an agreement between you, the end user ("YOU" or "LICENSEE"), and Berkley Integrated Audio Software, Inc. ("BIAS, Inc."). BY CLICKING "INSTALL" ON THE FOLLOWING DIALOG, 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"). CLICK "QUIT" ON THE FOLLOWING DIALOG IF YOU DO NOT ACCEPT THE TERMS OF THIS 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 OR REGISTER THE SOFTWARE AND PROMPTLY RETURN THE SOFTWARE 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. YOUR USE OF THIS SOFTWARE SHALL CONSTITUTE ACCEPTANCE OF THIS AGREEMENT, AND ONCE YOU HAVE REGISTERED THE SOFTWARE YOU MAY NOT RETURN IT.

1. **BIAS SOFTWARE LICENSE**

BIAS offers two distinct license options – SINGLE USER and MULTI-USER SINGLE SITE. If you have purchased a single user license, the license terms in section 1a apply to you. If you have purchased a multi-user single site license (e.g. 5 user lab pack), the license terms in section 1b apply to you.

  - 1a. **GRANT OF LICENSE (SINGLE USER).** In consideration of payment of the single user license fee, which is part of the price you paid for this product, BIAS, as Licensor, grants to you, LICENSEE, a nonexclusive license to use and display this copy of a BIAS software program (the "SOFTWARE") and accompanying user documentation ("DOCUMENTATION"). LICENSEE may install and authorize the SOFTWARE on one COMPUTER, provided that (a) the COMPUTER is owned by (or leased to) and under exclusive control of the Licensee; (b) the SOFTWARE shall NOT be used simultaneously on more than one COMPUTER at a time, and (c) any COMPUTER(S) with BIAS Software installed shall not be sold, rented, leased, loaned or otherwise be removed from the LICENSEE's possession without first removing and deauthorizing the Software, except as provided in Paragraph 6 (below) pertaining to "TRANSFER RESTRICTIONS." BIAS reserves all rights not expressly granted to LICENSEE.
  - 1b. **GRANT OF LICENSE (MULTI-USER SINGLE SITE LICENSE).** In consideration of payment of the multi-user single site license fee, which is part of the price you paid for this product, BIAS, as Licensor, grants to you, LICENSEE, a nonexclusive license to use and display this copy of the Software and Documentation. LICENSEE may install and authorize the SOFTWARE on a number of COMPUTERS equal to or less than the number of licenses purchased (e.g. a 5 User Lab Pack allows up to 5 BIAS SOFTWARE licenses at a single SITE to be simultaneously installed, authorized, and used on up to 5 COMPUTERS at said SITE), provided that (a) each COMPUTER is owned by (or leased to) and under exclusive control of the Licensee; (b) the SOFTWARE shall NOT be used simultaneously on more COMPUTERS at a time than the number of licenses purchased as part of the multi-user single site license, and (c) any COMPUTER(S) with BIAS Software installed shall not be sold, rented, leased, loaned or otherwise be removed from the LICENSEE's possession without first removing and deauthorizing the Software, except as provided in Paragraph 6 (below) pertaining to "TRANSFER RESTRICTIONS." BIAS reserves all rights not expressly granted to LICENSEE.
2. **SOFTWARE AUTHORIZATION.** You must register and AUTHORIZE this SOFTWARE either online (via the included BIAS Authorization Manager software) or by phone (1-800-775-2427 +1-707-782-1866). Once the SOFTWARE is registered and AUTHORIZED, it may not be returned.
3. **OWNERSHIP OF SOFTWARE AND DOCUMENTATION.** As LICENSEE, you own the media on which the SOFTWARE and DOCUMENTATION are originally or subsequently recorded or fixed, but BIAS retains title and ownership of the SOFTWARE and DOCUMENTATION and all subsequent copies of the SOFTWARE and DOCUMENTATION, 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 or sale of the original DOCUMENTATION.
4. **COPY RESTRICTIONS.** This SOFTWARE and the DOCUMENTATION are copyrighted. Unauthorized copying of the SOFTWARE, including SOFTWARE that has been modified, merged, or included with other software, or of the DOCUMENTATION 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.
5. **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 if you have purchased a single user license or, if you have purchased a multi-user single site license, on up to the number of computers for which you have purchased a license at one 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 the DOCUMENTATION to others. You may not modify, adapt, translate, reverse engineer, decompile, disassemble, or create derivative works based on the SOFTWARE. You may not modify, adapt, translate, or create derivative works based on the DOCUMENTATION without the prior written consent of BIAS.
6. **TRANSFER RESTRICTIONS.** This SOFTWARE is licensed only to you, LICENSEE, and may not be assigned or otherwise transferred to anyone, whether voluntary or by operation of law, without the prior written consent of BIAS. Any authorized transferee of the SOFTWARE must agree to be bound by the terms and conditions of this Agreement, or the transfer shall be invalid. 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.
7. **LICENSE TO U.S. GOVERNMENT.** If LICENSEE is an agency or instrumentality of the United States Government, the SOFTWARE and DOCUMENTATION are "commercial computer software" and "commercial computer software documentation", and pursuant to FAR 12.212 or DFARS 227.7202, and their successors, as applicable, use, reproduction and disclosure of the Software and Documentation are governed by the terms of this Agreement.
8. **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 DOCUMENTATION and all copies of the SOFTWARE, including modified copies, if any.
9. **UPDATE POLICY.** BIAS may create, from time to time, updated versions of the SOFTWARE. At its option, BIAS will make such updates available to LICENSEE and transferees who have paid the update fee and returned the registration card to BIAS.
10. **BIAS PRODUCT SUPPORT.**

Unlimited Complimentary Self Help Options

If you have questions about installing or using your BIAS products, please check the manual or user guide first, and you will find answers to most of your questions there. If you need further assistance, please check the

support section of the BIAS web site, which contains answers to frequently asked questions, troubleshooting tips, and more:

<http://www.bias-inc.com/support/faq/>

#### Limited Complimentary Technical Assistance

Ninety days of complimentary technical support assistance for up to three incidents is available with the initial purchase of Type 1 BIAS products (Peak Pro, Peak Pro XT, Master Perfection Suite, SoundSoap Pro, Deck). Ninety days of complimentary technical support assistance for a single incident is available with the initial purchase of Type 2 BIAS products (Peak LE, Deck LE, SoundSoap 2). The support period begins when the product is initially registered and authorized. Type 3 products (OEM versions) are excluded.

An additional thirty days of complimentary technical support assistance for a single incident, beginning on the expiration of the initial ninety days of complimentary support described above, is available with the purchase of paid upgrades to Type 1 and Type 2 BIAS products.

To receive e-mail or telephone technical support, you will need a valid serial number and must be registered for a current BIAS product. Please keep your original product serial number (located on your original owner's certificate) in a safe place as it will be required for support.

Customers who prefer support by email, please contact:

[support@bias-inc.com](mailto:support@bias-inc.com)

Customers who prefer support by telephone, (connect and toll charges apply), please have your computer running and close by the phone and call us at:

+1-707-782-1865  
(9AM-5PM Monday-Friday PST – excluding BIAS holidays)

#### Fee-based Technical Support Options

Fee-based Support is available for those customers whose support period has expired or for Type 3 (OEM version) customers. Please call:

+1-707-782-1865  
(9AM-5PM Monday-Friday PST – excluding BIAS holidays)

For customers living outside of North America, please contact your local BIAS distributor, or contact BIAS directly. A list of BIAS distributors may be found at:

<http://www.bias-inc.com/distributors.html>

#### BIAS Support Policy and Hours

BIAS, Inc. support policy and hours are subject to change without notice.

#### Sales and Non-Technical Customer Service

For product information, sales, and other non-technical customer service, please email or call:

[sales@bias-inc.com](mailto:sales@bias-inc.com)  
US: 1-800-775-BIAS (2427)  
International: +1-707-782-1866  
(9AM-5PM Monday-Friday PST – excluding BIAS holidays)

No technical support is available at the numbers or email address above.

11. MISCELLANEOUS. This Agreement is governed by the law of the State of California, without regard to conflicts of law principles.

#### DISCLAIMER OF WARRANTY AND LIMITED WARRANTY

THE SOFTWARE AND DOCUMENTATION (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 DOCUMENTATION 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 media upon which the SOFTWARE is recorded and the BIAS Key (USB dongle), if applicable, are 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 your receipt. Further, BIAS hereby limits the duration of any implied warranty(ies) on the media 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 the media shall be, at BIAS' option, either (a) return of the purchase price or (b) replacement of the media that does not meet BIAS' Limited Warranty and which is returned to BIAS with a copy of the receipt. If failure of the media has resulted from accident, abuse, or misapplication, BIAS shall have no responsibility to replace the media or refund the purchase price. Any replacement media 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). 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, without regard to conflicts of law principles.

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

BIAS Customer Sales and Service  
140 Keller Street  
Petaluma, CA 94952  
USA

Copyright 1996–2006 BIAS, Inc.

Credits:

SoundSoap 2.1 software: David Tremblay, Guillermo Garcia, David Ralley, Andrew Kimpton, Wayne Jackson, Steve Berkley, Eric Eizenman, Rick Sustek, Eric Johnson, Ben Ventura, Dan Spirlock.

Audio Units™, Mac OS X™, Logic™, GarageBand™, Final Cut Pro™, SoundTrack™, iPod™, iMovie™ and Macintosh™, are registered trademarks of Apple Computer, Inc.

VST™, WaveLab™, Cubase™, and Nuendo™ are registered trademarks of Steinberg Media Technologies, AG.

Pro Tools™, RTAS™ & AudioSuite™ are registered trademarks of Digidesign, Inc.

Digital Performer™ is a registered trademark of MOTU, Inc.

Premiere Pro™ and Audition™ are registered trademarks of Adobe Systems, Inc.

Sound Forge™ and Vegas Video™ are registered trademarks of Sony, Inc.

Windows XP™ is a registered trademark of Microsoft, Inc.

Sonar™ is a registered trademark of Cakewalk, Inc.

User's Guide:

Zac Wheatcroft

Special Thanks to:

Christine Berkley, Ben Hester, Jason Davies, Paul Knowles, Gabe Khofri, Lisa Stefan, Victor Cebreros, Cory Stück, Brian Smiley, Andrew Stone, Brent Hurtig, Seamus Walsh, and the hard working beta team.



# **BIAS Product Support:**

## **Unlimited Complimentary Self Help Options**

If you have questions about installing or using your BIAS products, please check the manual or user guide first, you will find answers to most of your questions there. If you need further assistance, please check:

<http://www.bias-inc.com/support.html>

for frequently asked questions, an extensive database of related articles, troubleshooting tips, and more.

## **Limited Complimentary Technical Assistance**

Ninety days of technical support assistance for up to three incidents is available with the initial purchase of Type 1 BIAS products (Peak Pro, Peak Pro XT, Master Perfection Suite, Deck, SoundSoap Pro). Ninety days of technical support assistance for a single incident is available with the initial purchase of Type 2 BIAS products (Peak LE, Deck LE, SoundSoap). Type 3 products (OEM versions) are excluded. Thirty days of technical support assistance for a single incident is available with the purchase of paid upgrades to Type 1 and Type 2 BIAS products. The support period begins when the product authorization code (PAC) is initially issued following the product registration. To receive e-mail or telephone technical support, you will need a valid serial number and must be registered for a current BIAS product. Please keep your original product serial number and PAC in a safe place as it will be required for support. For customers preferring e-mail assistance, please use the email form available on our web site at:

<http://www.bias-inc.com/support.html>

Or, email:

[support@bias-inc.com](mailto:support@bias-inc.com)

For customers preferring telephone assistance, (connect and toll charges apply), please have your computer running and close by the phone and call us at:

+1-707-782-1865

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

## **Fee-based Technical Support Options**

Fee-based Support is available for those customers whose support period has expired or for Type 3 (OEM version) customers. Please call:

+1-707-782-1865

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

For customers living outside of North America, please contact your local BIAS distributor, or contact BIAS directly. A list of BIAS distributors may be found at:

<http://www.bias-inc.com/distributors.html>

## **BIAS Support Policy and Hours**

BIAS, Inc. support policy and hours are subject to change without notice.

### **Sales and Non-Technical Customer Service**

For product information, sales, and other non-technical customer service, please email or call:

[sales@bias-inc.com](mailto:sales@bias-inc.com)

US: 1-800-775-BIAS (2427)

International: +1-707-782-1866

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

No technical support is available at the numbers or email address above.

---

# Contents

## Chapter 1 - Introducing SoundSoap

Welcome!.....	13
Who is SoundSoap designed for?.....	13
What's New in Version 2.1?.....	14
Minimum System Requirements.....	14
About Your User's Guide.....	14
Conclusion.....	15

## Chapter 2: Installation, Registration, and Authorization

Installing SoundSoap.....	19
Registration and Authorization.....	21
Deauthorizing a Computer.....	24
Conclusion.....	24

## Chapter 3 - SoundSoap User Interface & Controls

Introduction.....	27
A Brief Explanation of Noise Types.....	27
SoundSoap Controls Explained.....	28
Overview of SoundSoap Graphical User Interface.....	29
Additional Controls in Stand-Alone Edition.....	34
Conclusion.....	35

## Chapter 4 - Using SoundSoap

Introduction.....	39
Tips for Noise Reduction.....	39
How to Use SoundSoap.....	44
Using SoundSoap as a Plug-In.....	44
Using SoundSoap as a Stand-Alone Application.....	46
SoundSoap Tutorial Video.....	49
Conclusion.....	49



# Chapter 1: Introducing SoundSoap





# Chapter 1: Introducing SoundSoap

## Welcome!

Thank you for purchasing BIAS SoundSoap! SoundSoap is a professional-quality noise reduction solution that's very easy to use. By adjusting just a few controls, anyone can remove unwanted hiss, room noise, rumble, electrical hum, clicks & crackles, and other background noise from almost any digital media file – including digital video (DV) soundtracks, PowerPoint and other presentation software soundtracks, Flash and other web-tool soundtracks, digital audio workstation tracks, cassette or other analog tape recordings, or vinyl recordings that have been transferred to a computer, and other sources. SoundSoap was designed by listening to the suggestions of audio and video editors who all had one thing in common – noisy media, and the desire to clean it up quickly and easily.

### SoundSoap Features:

- Broadband noise reduction/removal
- 50 & 60 Hz hum reduction/removal
- Rumble reduction/removal
- “Learn” function – allows automatic noise reduction/removal
- “Preserve Voice” function – specialized pre-filtering for voice-based media files
- Click & Crackle reduction/removal
- Enhance Slider – allows tone enhancement when working with degraded media sources, such as old audio or video cassettes or vinyl records

- A real-time plug-in which may be used with any Mac OS X-compatible Audio Units, RTAS, or VST host application, or any Windows XP-compatible VST, or RTAS host program
- A stand-alone edition – for users who do not own a compatible host program
- Drag & drop file support (stand-alone edition)
- Windows Media Support (stand-alone edition)

---

## Who is SoundSoap designed for?

SoundSoap is designed for a wide variety of users, ranging from home movie makers to audio engineers and video editors. SoundSoap's advanced noise reduction algorithm and simple user interface shatter the myth that noise reduction software must be complicated, with dozens of parameters to adjust, in order to achieve high quality noise reduction.

With just a few knobs, buttons, and sliders, you can learn how to use SoundSoap in just a few minutes – and you'll quickly see why SoundSoap is perfect for anyone with noisy digital media!

## What's New in Version 2.1?

SoundSoap 2.1 offers a number of new features and enhancements, including:

- Universal application supports both Intel and PowerPC-based Macs
- Updated authorization system allows easier and more flexible management of SoundSoap licenses

---

## Minimum System Requirements

### ***To use SoundSoap on a Macintosh – you will need:***

- G4, G5, or Intel-based Macintosh ( $\geq 500$  MHz processor recommended)
- Macintosh OS 10.3.9 (Intel-based Mac require 10.4)
- QuickTime 6.5 (stand-alone mode)

### ***To use SoundSoap on a Windows PC – you will need:***

- Intel Pentium 3/4, or Athlon with SSE Instructions ( $\geq 600$  MHz processor recommended)
- Windows XP Home or Professional
- Windows Media 9 & QuickTime 6.5 (stand-alone mode)

### ***Both:***

- Plug-in mode requires compatible Audio Units, RTAS, or VST host program
- 128 MB RAM minimum
- 20 MB available disk space

For most up-to-date info, please visit:

<http://www.bias-inc.com/soundsoap/>

## About Your User's Guide

SoundSoap is designed to be simple and intuitive. Your User's Guide is designed to help you set up and use SoundSoap for noise reduction/removal as quickly as possible.

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

- Setting up, starting, and using your computer
- 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 windows

If you don't know how to perform these tasks, please refer to the documentation that was included with your computer, and spend a little time learning about your operating system before going any further. This will make using SoundSoap much easier and more enjoyable.

The chapters in your SoundSoap User's Guide are arranged in the order in which you would typically perform tasks to remove unwanted noise from your media.

- Chapter 1 introduces you to SoundSoap and explains some of the requirements for using it
- Chapter 2 explains how to install, register, and authorize SoundSoap
- Chapter 3 explains the various features in SoundSoap and how they are used to reduce/remove noise
- Chapter 4 demonstrates how to use SoundSoap as a plug-in, and as a stand-alone program. A tutorial video is also included



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

---

## **Conclusion**

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

---



## Chapter 2: Installation, Registration, and Authorization





# Chapter 2: Installation, Registration, and Authorization

---

## Installing SoundSoap

SoundSoap's auto-installer software makes installation very easy. The steps below will guide you through the process.

Your complete SoundSoap system consists of:

- CD-ROM installer
- Serial number
- Authorization File



*Before you install SoundSoap, please check the Minimum System Requirements on Page 14.*

---

### **To install SoundSoap on a Macintosh:**

1. If you are using any virus protection software, turn it off or temporarily remove it, and restart your Macintosh.
2. Insert the SoundSoap installer CD-ROM into your CD-ROM drive – when its icon appears on your computer's desktop, double-click the Install SoundSoap icon.
3. The Installer will prompt you about running a program to determine if SoundSoap can be installed – click Continue when this appears.
4. When the Installer dialog appears, click the Continue button.
5. Read the Software License Agreement – then click the Continue button to proceed.

6. Click the Agree button if you agree to the terms of the Software License Agreement.
7. Select the hard drive/volume on which you wish to install SoundSoap, and click the Continue button.
8. Click the Install/Upgrade button (depending on the configuration of your user account, you may need to enter your account password. If prompted for your password, enter it and click the OK button. If you do not know your account password, please contact your system administrator for assistance).
9. When the installation is complete, a message will appear indicating that the installation was successful. Click the Close button to quit the Installer. (Don't forget to turn back on any virus-protection software that you may be using the next time you restart the computer).

### **What SoundSoap installs on Macintosh systems:**

The SoundSoap installer places a number of files on your computer. The files and install location are described below:

#### **Stand-Alone Application**

A stand-alone application of SoundSoap is placed into your system's Applications folder:

### **Audio Units Hosts: (Peak, Digital Performer, GarageBand, Logic, etc.)**

The installer automatically places the Audio Units format plug-in into the following directory:

/Macintosh HD/Library/Audio/  
Plug-Ins/Components/Macintosh HD/Applications/

### **RTAS/AudioSuite Hosts: (Pro Tools, etc.)**

The installer automatically places the RTAS/AudioSuite format plug-in into the following directory:

/Macintosh HD/Library/Application Support/  
Digidesign/Plug-Ins/

### **VST Hosts: (Peak, Cubase, Live, Nuendo, etc.)**

SoundSoap automatically installs the VST format plug-in into the following directory:

/Macintosh HD/Library/Audio/Plug-Ins/VST/

### **Documentation**

An electronic (PDF format) version of the SoundSoap User's Guide, and a Read Me file with late-breaking information are both installed into:

/Macintosh HD/Library/Documentation/BIAS/SoundSoap/

If you would like to register and authorize SoundSoap at this point, simply attempt to use the plug-in or stand-alone edition – when an unauthorized copy is first launched, the Welcome to SoundSoap dialog appears – click the Authorize button to proceed to the BIAS Authorization Manager. Have your Owner's Certificate handy, and follow the directions in the next section.



---

*Check the documentation included with your host application for more information on where it expects plug-ins to reside in order to function properly.*

---

### **To install SoundSoap on a Windows PC:**

1. If you are using any virus-protection software, turn it off or temporarily remove it, and restart your computer.
2. Insert the SoundSoap Installer CD-ROM in your CD-ROM drive. If the SoundSoap Setup program does not automatically launch, double-click the Install SoundSoap icon.
3. When the Welcome to the SoundSoap Setup program window appears, click the Next button.
4. Read the Software License Agreement, and then click Yes to agree to the terms and continue with the SoundSoap installation.
5. To install SoundSoap into the default directory (recommended), click the Next button.
6. In the Setup Type dialog, choose the Typical option, and click the Next button.
7. In the Select Program Folder dialog, click the Next button to continue with installation.
8. In the Ready to Install dialog, click the Next button to continue with installation.
9. When you are finished installing, click Finish to exit the installer.



---

*At the end of installation, the Installer program will instruct you to authorize the plug-in – this is described later in this chapter.*

---

### **What SoundSoap Installs on Windows Systems:**

The SoundSoap installer places a number of files on your computer. The files and install location are described below:

#### **Stand-Alone Program**

A stand-alone program of SoundSoap is placed into:

/Program Files/BIAS/BIAS SoundSoap/

## RTAS/AudioSuite Hosts: (Pro Tools, etc.)

The installer automatically places the RTAS/AudioSuite format plug-in into:

/Program Files/Common/Digidesign/DAE/Plug-Ins/

## VST Hosts: (Cubase, Live, Nuendo, etc.)

The installer automatically places the VST format plug-in into the VstPlugIns folder of your VST host program.

## Documentation

An electronic (PDF format) version of the SoundSoap User's Guide, and a Read Me file with late-breaking information are both installed into:

/Program Files/BIAS/BIAS SoundSoap/

If you would like to register and authorize SoundSoap at this point, simply attempt to use the plug-in or stand-alone edition – when an unauthorized copy is first launched, the Welcome to SoundSoap dialog appears – click the Authorize button to proceed to the BIAS Authorization Manager. Have your Owner's Certificate handy, and follow the directions in the next section.

---

## Registration & Authorization

SoundSoap must be authorized to work on your computer. You must register SoundSoap with BIAS in order to authorize it. BIAS offers a variety of methods to authorize your computer – though registering and authorizing via the internet with the computer on which SoundSoap will be run is by far the fastest and easiest method. This and alternate methods are outlined below.

## Serial Number-Based Authorization System

SoundSoap's standard authorization system consists of the following components:

- **BIAS Authorization Manager** – A simple application for managing BIAS software licenses.
- **Serial Number** – Located on Owner's Certificate.
- **Registration Account** – Your registration and authorization information on the BIAS Server.
- **Authorization Request File** – A file transferred from your computer to the BIAS server, which adds the computer you are authorizing to your BIAS Registration Account.
- **Authorization File** – A file transferred from the BIAS server to your computer, which authorizes it to run SoundSoap.

The registration/authorization process provides the following services:

- Registers your software with BIAS – making you eligible for technical support and product updates.
- Authorizes your computer so it can run SoundSoap. You may authorize up to two computers for use with SoundSoap – for example, a studio or office computer, and a laptop for home or mobile use.



*Keep in mind that for each license of SoundSoap – the software may only be used by one user, on one computer system at a time. If you have used both of your authorizations, and need to authorize a new computer, you will need to first de-authorize one of the authorized computers before you are issued a new authorization for the new computer.*

---

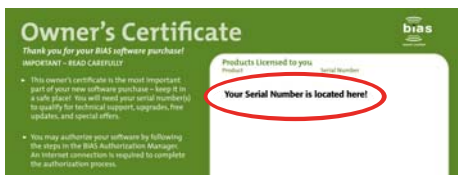
### To Register & Authorize a Computer to Run SoundSoap:

1. Attempt to run SoundSoap in your host program (or in stand-alone mode) – the first time it is opened on an unauthorized computer, you will be prompted to use it in trial mode, or to authorize it – click the Authorize button.
2. When the BIAS Authorization Manager appears, select BIAS SoundSoap 2.x in the “Please Choose a Product” section – then enter your SoundSoap serial number (your SoundSoap serial number is printed on the Owner’s Certificate included in the SoundSoap package, or on the electronic receipt from a downloadable purchase) and email address in the appropriate fields, and click the Authorize button.



*If you use more than one email address, be sure to make a note of which one you registered with – this will make managing your BIAS Registration Account faster and simpler in the future.*

- 3a. If you have previously registered another BIAS product, using the same email address, SoundSoap will be authorized automatically – please continue to step 4.
- 3b. If the BIAS Registration system does not recognize your email address (i.e., if this is the first BIAS product you are registering, or if you enter a different email address than with previously registered BIAS products) – a dialog will appear, prompting you to enter your registration information. Enter your registration information, and click the Submit button – a dialog will appear indicating that you have been successfully registered – please continue to step 4.



Your serial number appears on the Owner’s Certificate, included in the SoundSoap package, or on the electronic receipt from a downloadable purchase (not shown here).

4. A dialog will appear indicating successful authorization – click the OK button, and then click the Done button to exit the Authorization Manager, and begin using SoundSoap.

### Alternate Methods of Registration/Authorization

If the computer on which you plan to use SoundSoap cannot be temporarily connected to the Internet, even for this one-time authorization process, there are a number of other ways to register and authorize SoundSoap.

#### Registering & authorizing SoundSoap using another computer with internet access

To use this method of registration/authorization, you will need to run the BIAS Authorization Manager program from your installer CD-ROM – or copy the BIAS Authorization Manager from your installer CD-ROM to the internet-equipped computer’s hard drive and run it from there.

#### To Register & authorize using another computer with internet access:

1. Attempt to open SoundSoap on the computer where it will be used (i.e., the computer without internet access) – the first time SoundSoap is used on an unauthorized computer, the Welcome to SoundSoap dialog appears – click the Authorize button to proceed to the BIAS Authorization Manager.
2. In the BIAS Authorization Manager dialog, select BIAS SoundSoap 2.x in the “Please Choose a Product” section – then enter your SoundSoap serial number and email address (your SoundSoap serial number is printed on the Owner’s Certificate included in the SoundSoap package, or on the electronic receipt from a downloadable purchase).
3. Click the Alternate Authorization button – the Alternate Authorization dialog appears.

4. In the Alternate Authorization dialog, click the Generate Authorization Request button – the Serial Number/Email Address dialog appears.
5. Confirm that the email address and serial number are correct, and click the OK button to save an Authorization Request File to your hard drive.
6. Transfer the Authorization Request File to another computer that has Internet access (via a LAN, by burning it to CD, copying to a floppy diskette, flash drive, external hard drive, iPod, digital camera, etc.)
7. Launch the BIAS Authorization Manager program on your internet-equipped computer.
8. In the “Please Choose a Product” section, choose BIAS SoundSoap 2.x.
9. Click the Alternate Authorization button in the BIAS Authorization Manager program.
10. Go directly to step 3 in the Alternate Authorization dialog – click the Open Authorization Request button.
11. In the Open dialog that appears, locate and select the Authorization Request File, then click the Open button – this will transmit the Authorization Request File to the BIAS Server.
- 12a. If you have previously registered another BIAS product, using the same email address, the BIAS server will transmit an Authorization File back to your internet-equipped computer – click the Save button to save this to the internet-equipped computer’s hard drive. Please proceed to step 13.
- 12b. If the BIAS Registration system does not recognize your email address (i.e., if this is the first BIAS product you are registering, or if you enter a different email address than with previously registered BIAS products) – a dialog will appear, prompting you to enter your registration information.
- 12c. Enter your registration information, and click the Submit button, then click the OK button when the successful registration dialog appears.
- 12d. You will be prompted to open the Authorization Request File a second time – locate it, and then click the Open button – The BIAS server will transmit an Authorization File back to your internet-equipped computer – click the Save button to save this to the internet-equipped computer’s hard drive.
13. Click OK to exit the Authorization Successful dialog, then click the Done button in the Alternate Authorization dialog, and again in the BIAS Authorization Manager.
14. Transfer the Authorization File (the file is called “BIAS SoundSoap 2.x”) from the internet-equipped computer back to the host computer where SoundSoap will be used (via a LAN, by burning it to CD, etc.).
15. Go directly to step 4 in the Alternate Authorization dialog – click the Open Authorization File button.
16. In the Open dialog that appears, locate and select the Authorization File, then click the Open button.
17. Click OK in the Authorization Complete dialog, and Done in the Authorization Manager.

**To register & authorize SoundSoap with no Internet access**

If you do not have temporary Internet access on any computer, or need help with any part of the registration/authorization process, please contact BIAS at:

US Toll-Free: 1-800-775-2427  
 International: +1-707-782-1866

## Deauthorizing a Computer

If you need to de-authorize a particular computer that will no longer be used to run SoundSoap, you can do so by following the steps below.



*The computer running SoundSoap must be connected to the internet in order to deauthorize it.*

---

### **To De-Authorize a Computer:**

1. Launch the BIAS Authorization Manager from your hard drive (or launch the BIAS Authorization Manager program from your installer CD-ROM).
2. In the BIAS Authorization Manager, select the product you wish to de-authorize – the serial number and email address used to authorize that product will be automatically recalled and will appear in the Serial Number and Email Address fields.
3. Click the Deauthorize button.
4. Click the Deauthorize button to confirm the deauthorization process – the Deauthorization Successful dialog appears.
5. Click the OK button – then click the Done button in the BIAS Authorization Manager.

---

## Conclusion

Now that you have installed, registered, and authorized SoundSoap, please proceed to the next chapter to learn about using SoundSoap.

---

## Chapter 3: SoundSoap User Interface & Controls





# Chapter 3:

## SoundSoap User Interface & Controls

---

### Introduction

This chapter explains several key SoundSoap concepts and functions. Before using SoundSoap to remove unwanted noise in one of your digital audio or video projects, take a few minutes to learn about how its various controls work. This will make using SoundSoap much more enjoyable and will produce the best results.

from a digital file, there may be situations in which the desired audio signal is lower than the signal of noise, making it impossible to fully remove the noise. In cases like this, SoundSoap may not entirely remove the noise, but may be able to significantly reduce its presence.

The types of noise that SoundSoap is designed to reduce are outlined below:

---

### A Brief Explanation of Noise Types

If you are using SoundSoap, chances are you have run into some sort of undesirable noise in your digital media. You may have encountered camera motor noise, picked up by the built-in microphone in your DV camera – or perhaps you’ve had an annoying hiss as you archive an old audio cassette collection – maybe there’s a 60Hz hum due to a bad cable that was used in a recording. Perhaps you’re removing clicks and crackles from an old LP collection to convert to CD, or make compressed files for use in a portable digital music player. In any case, such noises can be a big distraction from the desired audio signal. It is projects like these that call for the advanced broadband noise, hum, and rumble reduction, and click and crackle reduction offered by BIAS SoundSoap.

While SoundSoap can do a great deal to reduce noise

#### Broadband Noise

A type of noise that is composed of a broad frequency spectrum. Tape hiss, air-conditioner noise, white noise, and pink noise are common examples of “broadband” noise.

#### Hum

A type of noise that is typically composed of a single frequency, such as 60 Hz, and is often associated with audio equipment being used on faulty electrical circuits, equipment that is not properly grounded, or even electrical power cables being in close proximity to audio signal cables.

#### Rumble

A type of very low-frequency noise, usually occurring at 40 Hz or below. A good example of rumble would be the

low frequency noise produced by a turntable motor, that is commonly found in recordings of vinyl records.

### Click and Crackle

Clicks and crackles are commonly found in recordings made from vinyl records. Clicks are the result of recording (digitizing) a scratch on a vinyl record, and generally have a fairly high level (for a very short period of time). Clicks are audible in a digital recording because of an abrupt change in amplitude in the audio waveform in a very short period of time. Crackles are similar to clicks, but are caused by tiny surface imperfections on a vinyl record. Crackles are lower in level, and are more densely concentrated than clicks, and the sound they produce is similar to the sound of something “sizzling” or “frying” in a frying pan.

---

## SoundSoap Controls Explained

SoundSoap can be used as a plug-in within your Audio Units, RTAS/AudioSuite, or VST-compatible host program, on Mac OS X or Windows XP.

SoundSoap was designed to provide high-quality noise reduction, while remaining simple to use, with a minimal number of controls. While there are not many controls required to quickly clean up noisy media, it is important to know what each one does, so as to achieve the best possible results.

The next section introduces the graphical user interface of SoundSoap. Take a moment to familiarize yourself with the various knobs, buttons, sliders, and displays, and then move on to the next section, which features more detailed descriptions on how to use each.

The SoundSoap GUI (Graphical User Interface) contains the few knobs, buttons, and sliders required to reduce most types of broadband noise, hum, rumble, or clicks

and crackle from just about any type of digital media. These controls consist of the following:

### Learn Noise Button



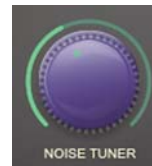
SoundSoap’s “Learn Noise” feature is what makes it so powerful and easy to use. The Learn Noise feature can automatically determine the noise contained in a file, and automatically set the values for the Noise Tuner and Noise Reduction controls. To use this feature, just start playback and click the Learn Noise button. SoundSoap will analyze the noise present in the file, create an appropriate noise profile, and determine the best settings for the Noise Tuner and Noise Reduction knobs. It is important to understand that noise profiles are created “behind the scenes” and are not visible or accessible within the SoundSoap interface. The next section includes examples of noise profiles.



*If your file has an area of just isolated noise, and none of the music, voice, or other audio you wish to preserve, use this section for “Learning the Noise”. For more detail on using the Learn Noise feature, please refer to Chapter 4: Using SoundSoap.*

---

### Noise Tuner Knob



To make a setting with the Noise Tuner, click the knob with your mouse, and rotate to the left or right.

The Noise Tuner knob is essentially a threshold control, and is responsible for determining what is considered to

# SoundSoap: Graphical User Interface (GUI)

## Wash Window

Sound Soap's unique Wash Window provides a graphical representation of noise reduction. The left side of the window shows the unprocessed audio signal, and the right side shows the "clean" signal.

Blue = Desired audio signal  
Red = Noise

## Noise Tuner Knob

Helps you "tune in" the hiss and background noise you want to remove. (The Learn Noise button sets this control automatically – or you can adjust it manually)

## Noise Reduction Knob

Controls the amount of noise reduction being applied. (The Learn Noise button sets this control automatically – or you can adjust it manually)

## Remove Click & Crackle Slider

This single slider controls the threshold level for both click and crackle reduction.

(Moving it upwards removes more clicks and crackles – moving it downward removes fewer clicks and crackles)

## Enhance Slider

The Enhance slider is used to add "sparkle" back into the audio signal. It can help to restore frequencies that may have been lost in old or degraded media.



## Preserve Voice Button

This is a special pre-filtering mode which removes frequencies outside of the range of the human voice.

## Broadband Mode Selection Controls

Allow you to toggle between noise reduction being on & off, and also offers a "noise only" mode, which allows you to monitor just the offending broadband noise, providing useful feedback about the frequencies being removed.

## Learn Noise Button

The Learn Noise feature analyzes an audio signal and determines the frequencies causing a broadband noise problem. Once this "noise profile" has been determined, Learn Noise also sets the Noise Tuner and Noise Reduction knobs automatically.

## Remove Hum Controls

Used for eliminating hum introduced into digital audio & video files from electrical interference. Use 60Hz for regions using 60Hz electrical systems (North/South America), and 50Hz in regions using 50Hz systems (Africa/Asia/Australia/Europe).\*

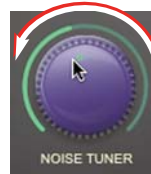
## Remove Rumble Button

Takes out low-frequency noise at 40 Hz & below – often found as background noise in many DV clips.

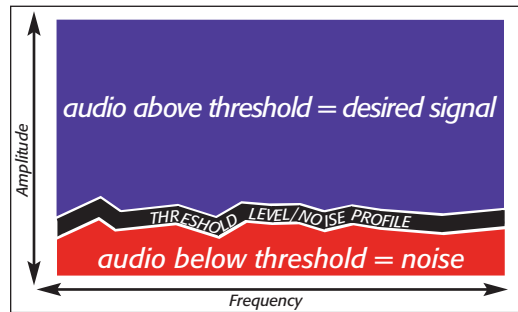
\*Some regions in these continents use different electrical frequencies – if you're unsure about the electrical system in the country where you live, a good resource for checking this is available at: <http://kropla.com/electric2.htm>

be noise, and what is considered to be the desired audio signal. For example, turning the Noise Tuner knob all the way to the left (counter-clockwise), means setting a very low threshold value. With a very low threshold value, all audio content with an amplitude above this threshold is considered to be part of the desired audio signal that we wish to preserve. On the other hand, setting a higher threshold value with the Noise Tuner means that any of the audio content with an amplitude lower than the threshold level will be eliminated.

If we needed to adjust the threshold level, we could just rotate the Noise Tuner knob – for example, if we rotated it counter-clockwise, the noise profile would remain unchanged, but more of the overall audio content would be considered to be the part we wish to preserve.



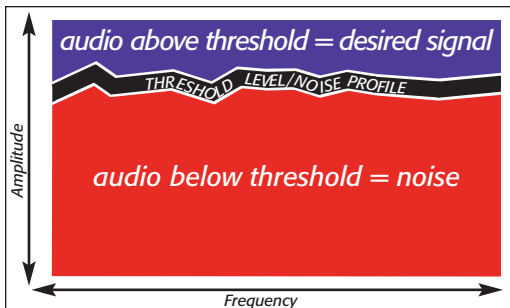
Another important concept related to the Noise Tuner knob and the idea of a threshold level is that of a “noise profile”. If the threshold determines the level at which some audio content is desired signal and some is noise, think of the noise profile as the “shape” of the point where the desired signal meets the noise. SoundSoap has the ability to use either a “flat” noise profile, in which all frequencies are treated equally – or, if the Learn Noise feature is used, then a custom noise profile is created that addresses the actual broadband frequencies that happen to be present in a media file. When using a learned noise profile, more noise reduction is applied in the frequency ranges where it is needed.



*This diagram illustrates having a low Noise Tuner setting, with a custom noise profile – a custom noise profile is the result of having used the Learn Noise feature – different frequencies are affected in different ways.*

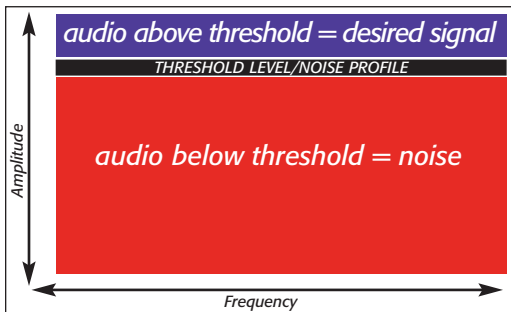
The Noise Tuner can be used in a variety of ways – first, it can be set automatically by first using SoundSoap’s Learn Noise feature. This method is ideal when the media file being cleaned has an isolated area of the noise by itself. Learn Noise first analyzes the frequency content of this portion of audio, creates a noise profile, and then automatically sets the Noise Tuner knob to what should be an ideal position. The diagram below illustrates this concept.

The second way to use the Noise Tuner is to make adjustments without having first “learned” a custom noise profile. This method is typically used when the media file being cleaned does not contain an isolated portion of noise by itself. In some instances, learning a noise profile within a section of the desired audio signal can cause some frequencies that should be preserved to be removed, based on the custom noise profile that’s created.



*This diagram illustrates having a high Noise Tuner setting, with a custom noise profile – a custom noise profile is the result of having used the Learn Noise feature – different frequencies are affected in different ways.*

In cases where there is no isolated portion of noise by itself, adjusting the Noise Tuner knob using a “flat” noise profile can often produce better noise reduction results, as a flat noise profile affects all frequencies equally. The diagrams below illustrate using a flat noise profile.



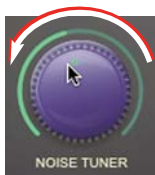
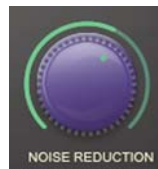
This diagram illustrates having a high Noise Tuner setting, with a flat noise profile – in this example, all frequencies are affected equally.

(or most of what you hear) is noise. When you find the best setting for the Noise Tuner in Noise Only mode, (the one that allows you to hear the most noise) you should hear a dramatic difference when you toggle the listening mode back to the “On” position.

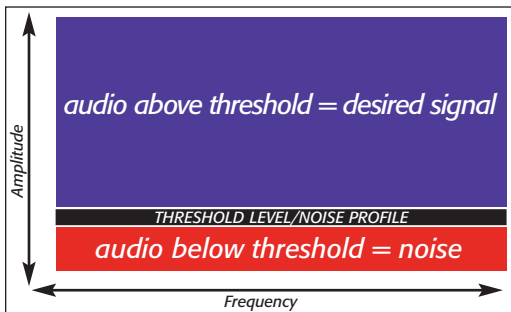
When Noise Only mode is used, the Wash Window works “in reverse” – that is, the left side still shows both red and blue lines, but when the ideal noise reduction settings are found, only red lines (noise) are displayed on the right side.

Whether you’re using a learned noise profile or a flat noise profile, the Noise Tuner knob behaves in exactly the same way – it simply varies the threshold level. So, with a flat noise profile, if we were to rotate the Noise Tuner knob counter-clockwise it would lower the threshold level, just as in the previous example using a learned noise profile.

### Noise Reduction Knob



To make a setting with the Noise Reduction knob, click the knob with your mouse, and rotate to the left or right.



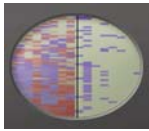
This diagram illustrates having a low Noise Tuner setting, with a flat noise profile – in this example, all frequencies are affected equally.

The Noise Reduction knob works in two ways – first, it manually adjusts the amount of noise reduction being applied. As the Noise Reduction knob simply adjusts the amount of noise reduction being applied, it is very important to first “tune-in” the offending noise using the Noise Tuner knob. Once you have found the right setting to reduce the noise in a particular media file, then you can use the Noise Reduction knob to adjust how much of that noise is removed.

The second way to use the Noise Reduction knob is similar to the way the Noise Tuner can be used in conjunction with the Learn Noise button. To use the Noise Reduction knob in this way, first use the Learn Noise button to pick up a noise profile from the media file, and then, based on this profile, use the Noise Reduction knob to fine tune the amount of noise being reduced. When using the Learn Noise feature to establish settings, it is often unnecessary to make any further adjustments to the Noise Reduction knob.

Finally, you can use the Noise Tuner with the listening mode set to “Noise Only” (see “Broadband Mode Buttons” later in this chapter). This method allows you to tune in and hear just the noisy portion of audio that you are trying to reduce. When using SoundSoap in this manner, just turn the Noise Tuner knob until all you hear

## Wash Window



SoundSoap's unique Wash Window provides a visual representation of the noise reduction process. The Wash Window displays a series of red and blue lines from left to right within the small oval window in the middle of the SoundSoap GUI. A center line divides the oval window into left and right halves, and indicates the point at which noise is being reduced.

Blue lines represent the desired audio, and red lines represent noise. In addition to the two colors that represent the desired audio and the noise to be removed, the Wash Window also shows the strength of each type of signal by using a darker or lighter shade of each color.

Ideally, the display will show strong blue and red lines on the left half of the Wash Window, and only strong blue lines on the right half of the window – indicating that only the desired audio is being output, and that any noise has been “cleaned”.

For an example of how the Wash Window works, think of a video clip of someone being interviewed. Imagine a strong, clear voice – but in the background there is a distinct noise from the A/C system in the room where the interview is being conducted. With SoundSoap's listening mode set to “Off”, the Wash Window would display mixed blue and red lines moving from left to right across the entire display. With SoundSoap's listening mode set to “On”, and an ideal combination of noise tuning and noise reduction, the display should still show mixed red and blue lines in the left half of the Wash Window, but as the lines move to the right half of the Wash Window (after having been processed), only blue lines should appear.

When Noise Only mode is used, the Wash Window works “in reverse” – that is, the left side still shows both red and blue lines, but when the ideal noise reduction settings are found, only red lines (noise) are displayed on the right side.

## Remove Click & Crackle Slider



The Remove Click & Crackle slider controls two internal parameters simultaneously – the click threshold, and the crackle threshold. This control is optimized so as to provide excellent reduction of both types of noise.

When this slider is in its lowest position, it is inactive. Moving it upwards removes more clicks and crackles – moving it downward removes fewer clicks and crackles. The ideal setting for the click and crackle slider will vary depending on the audio material you are attempting to restore. The general rule for this control is to use the lowest setting possible, which successfully eliminates the clicks and crackle present in your digital media file.

The Click & Crackle removal slider operates independently of all other controls.

## Enhance Slider



When working with old or degraded media, such as old audio or video cassettes or old vinyl records, some frequencies may not be present in the digitized version of the original recording. For example, this might be

caused by oxidation of the magnetic tape, or the accumulation of microscopic debris in the grooves of a record. In any case, the Enhance slider is designed to help bring back the original tone of a degraded recording.

If a media file you're working with sounds a little "dull", use the Enhance Slider to add "sparkle" back into the audio signal by boosting frequencies that may have been lost because of degraded media. As this control is designed to enhance frequencies and tone, it is recommended that it be used as a final processing step, after the appropriate settings have been made to remove noise.

When this slider is in its lowest position, it is inactive. For the best results, leave the Enhance slider inactive until you have configured all other controls for the best noise reduction results. When you have done this, you can control how much enhancement is applied by moving this slider. Moving it upwards applies more enhancement – moving it downward applies less enhancement.

The Enhance slider operates independently of all other controls.

### Preserve Voice Button



To use the Preserve Voice feature, simply click the button labeled "Preserve Voice" within the SoundSoap interface using your mouse. This button will light up in bright green to indicate that it is on. To turn Preserve Voice off, just click the button again.

The Preserve Voice feature filters out any frequencies that are outside of the frequency range of the human voice. This helps in preserving the audio quality of voice-only recordings that may also contain noise.




---

*If the file includes music or other audio content besides the human voice (speech, singing, etc.) the Preserve Voice feature should not be used.*

---

Whether you choose to use the Learn Noise function to automatically create a noise profile, or use the Noise Tuner and Noise Reduction knobs to adjust the amount of noise reduction manually, you should use Preserve Voice mode when attempting to clean vocal files – such as narration, singing, or dialogue – where no other audio is present (musical instruments, etc.).

Preserve Voice mode operates independently of all other controls, and may be turned on before or after "learning" a noise profile, and will not affect the accuracy of the learned noise profile.

### Remove Rumble Button



To use the the Remove Rumble feature, simply click the button labeled "Remove Rumble" within the SoundSoap interface using your mouse. This button will light up in bright green to indicate that it is on. To turn Remove Rumble off, just click the button again.

The Remove Rumble feature targets very low frequencies commonly known as "rumble". Typically, "rumble" occurs at about 40 Hz or below. Rumble is commonly found in recordings of vinyl records, where the very low frequency noise of the turntable motor can be transferred through the turntable's needle and be picked up in the recording. This function helps to preserve the quality of media affected by rumble.

Whether you choose to use the Learn Noise function to automatically create a noise profile, or use the Noise Tuner and Noise Reduction knobs to adjust the amount of noise reduction manually, you should use Remove Rumble mode when attempting to clean media that contains this type of low-frequency noise.

Remove Rumble mode operates independently of all other controls, and may be turned on before or after “learning” a noise profile, and will not affect the accuracy of the learned noise profile.

### Broadband Mode Buttons



SoundSoap’s Broadband mode buttons control whether broadband noise reduction is On, Off, or in “Noise Only” mode. To make settings to these controls, use your mouse to click into the desired mode. The selected Mode is indicated by an illuminated green button.

When the “Off “ button is illuminated, SoundSoap is not removing broadband noise, and it is normal to hear any broadband noise that is present in the original media.

When the “On” button is illuminated, SoundSoap is processing the media according to the current broadband tool settings.

When the “Noise Only” button is illuminated, SoundSoap is processing the media according to the current broadband noise reduction controls, and is outputting only the broadband noise that is being reduced. This is a very useful setting, as it allows you to isolate and hear just the noise, and is helpful in determining the effectiveness of a particular noise reduction setting.



*The Broadband mode buttons operate independently of the Click & Crackle removal slider, and the Enhance slider. When broadband noise reduction is in the Off position, SoundSoap may still be processing with its Hum Removal, Click & Crackle, or Enhance sliders.*

### Hum Removal Mode Buttons



The Remove Hum buttons in the SoundSoap interface control whether hum removal is set to remove 50 or 60 Hz hum, or whether hum removal is turned off. Use your mouse to select the desired type of hum removal – the selected Hum Removal type is indicated by an illuminated button.

- When the “50 Hz” button is illuminated, SoundSoap will remove 50 Hz hum.
- When the “60 Hz” button is illuminated, SoundSoap will remove 60 Hz hum.
- When the “Off “ button is illuminated, SoundSoap’s Hum Removal feature is inactive.



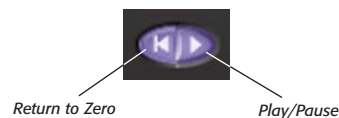
*The Hum Removal buttons operate independently of other controls. When Hum Removal is in the Off position, SoundSoap may still be processing with its Broadband noise reduction, Click & Crackle, or Enhance sliders.*

## Additional Controls in Stand-Alone Edition

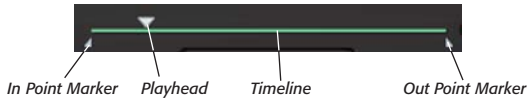
The controls in this section are found only in the interface of the stand-alone edition of SoundSoap.

### Transport Controls

The transport controls are used to start and stop playback and to locate the playhead back to the beginning of the timeline.



## Timeline



The timeline provides a linear representation of a media file that is loaded into SoundSoap. The elements that make up the timeline include a playhead, and In & Out locator points.

- The Playhead shows the current location within a file.
- The In & Out points are used to isolate a particular range of audio. This can be useful when attempting to “learn” a noise profile within a short loop of audio, or when particular noise reduction settings need to be applied to a particular section of a media file.

## Counter



The counter provides a numerical representation of the position of the playhead within the timeline.

## Apply Button



The Apply button is used to apply the current settings to a media file. The Apply button affects only the audio material located between the In and Out points. This allows different sections of a media file to be cleaned with different settings.

## Conclusion

You should now be familiar with the various controls in the SoundSoap interface. Please continue to the next chapter, which gives step-by-step directions on using SoundSoap as both a plug-in and in stand-alone mode.



## Chapter 4: Using SoundSoap





# Chapter 4:

## Using SoundSoap

---

### Introduction

This chapter will cover how to use SoundSoap to reduce noise in digital media files.

SoundSoap is a very flexible program – it can be used as a plug-in within most Audio Units, RTAS, or VST compatible host programs – as well as stand-alone, on Mac OS X or Windows XP.

---

### Tips for Noise Reduction

SoundSoap can be used in many ways, but by observing the following tips, you will get the best results in the least amount of time.

### Recommended Workflow

If you examine SoundSoap’s user interface starting from the left and moving right, this outlines the basic recommended workflow. Let’s assume that we’re cleaning an LP recording which contains clicks, crackles, needle hiss, and a 60Hz hum. In this example, we’ll use multiple noise reduction tools, in a suggested order, so as to eliminate as much of the unwanted noise as possible, while preserving as much of the desired audio signal as possible.

The first step in such an example would be to remove the random clicks and crackles. With the media file in your host program and SoundSoap active, first initiate

playback, and adjust the Click & Crackle slider until you no longer hear this type of noise. Then, find an area in the recording (such as the very beginning of the record, before any music starts) in which SoundSoap can “learn” the profile of the broadband noise. The host program’s playhead should be positioned at the beginning of this section, and SoundSoap’s Learn Noise button must be clicked (in the depressed position). Once playback is started, SoundSoap will analyze about two seconds of audio material, the noise profile is determined, and broadband noise reduction is turned on automatically. The next step is to click the Noise Only button to hear what is being removed. If any of the desired audio content is heard, turn the Noise Tuner Knob slowly to the left (counter-clockwise) until only the undesired noise is heard. Next, return SoundSoap’s Broadband mode to “On”. Turn the Noise Reduction knob all the way to the left (counter-clockwise). In this position, broadband noise reduction is off, and no broadband noise is being removed. Slowly begin to turn the Noise Reduction knob to the right (clockwise). You should hear the broadband noise begin to fade away, leaving behind only the desired audio signal (music, voice, etc). At this point, click the 60Hz Hum Removal button to eliminate the low-frequency hum. If the audio content you’re working with is just a person’s voice (dialogue, a cappella singing, etc), you would also click the Preserve Voice button to automatically help filter any noise that lies outside of the frequency range of the human voice. Much of the unwanted noise should now be eliminated (or greatly reduced).

In some instances, when working with degraded media sources, you may wish to use the Enhance slider to help

restore tonality that was present in the original recording. The Enhance slider is recommended as a final processing step, when all other settings have been made.

Following this basic “left to right” order of operations will allow you to achieve quick and easy noise reduction results. In cases where you only have one type of noise (ie, clicks and crackles, broadband noise, hum), simply use the tools that are needed, and leave the others in the “Off” position.

### Sampling (“Learning”) Broadband Noise

Often, the noisy media that you encounter will have areas where there is just the undesired noise present, and none of the audio signal that should be kept. A simple but very common example would be video footage of an interview – this situation would contain spoken word, interspersed with silence (or what should be silence, except for the undesired noise). In cases such as this, the “silent” areas will contain the same noise that gets in the way of us hearing the voice of the person being interviewed. These silent sections of the file allow us to sample just the noise itself, essentially telling SoundSoap what to remove from the entire file. The end

result is that the undesired noise is reduced equally in all parts of the file, making the desired audio signal much cleaner.

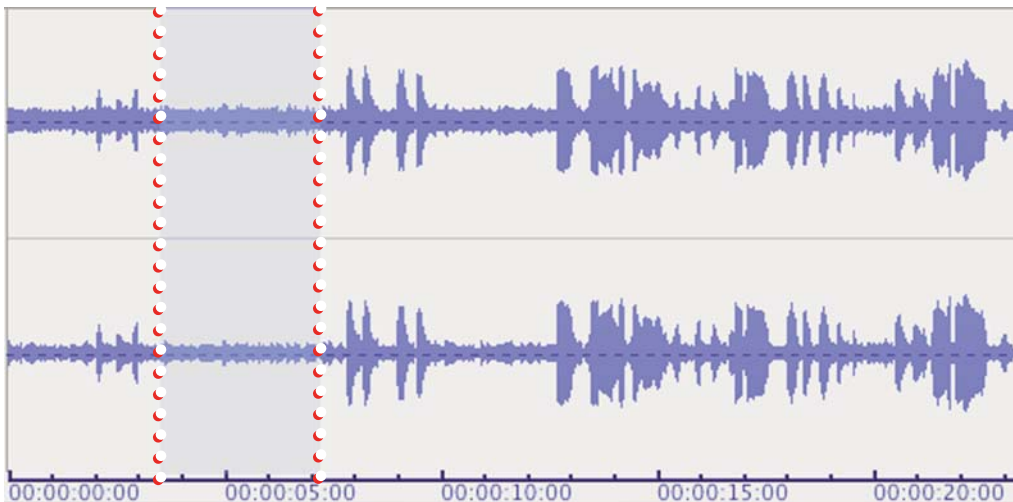
In other cases, there may not be an area present in your media file that contains just the undesired noise. In media files that contain the desired audio and undesired noise throughout the entire length of the file, it is often best to first experiment and learn the noise in different parts of the file to get the best noise reduction results. This can be done by clicking the Learn Noise button in various parts of the file as it plays, or by positioning the playhead cursor in your host program in a specific location, clicking the Learn Noise button, and starting playback. When you find the settings that work best, you can then apply, or render them, to the entire file.



---

*Real-time effects plug-ins, such as SoundSoap, are designed to process audio as parameters are adjusted. Once the ideal settings are made, the plug-in must be applied, or rendered to the media file, in order to make the changes permanent. In audio editing software, the term “Bounce” is commonly used to describe the process of applying plug-in settings to a file.*

---



Audio waveform with good target area selected for noise sampling — the selected portion of the waveform in this area contains just the undesired broadband background noise.

Another approach to “learning” noise in a part of a media file which contains both the unwanted background noise and the desired audio is to locate a section within the file that has the lowest signal to noise ratio. For example, in a digital recording of an audio cassette, there will likely be a low level hiss throughout the file. If this file does not have a section with the cassette hiss by itself, then the next best option for “learning” the noise is to use SoundSoap’s Learn Noise feature in a part of the file where the desired audio content is at its lowest level, compared to the level of unwanted noise.

If in the noise sampling process it seems that different settings would work best for different parts of the file, consult the next section.

In some cases, you may have an isolated section of broadband noise which is shorter than the two seconds that SoundSoap needs to “learn” the profile of frequencies responsible for this noise. In these cases, a useful technique is to “loop” the very short section several times, until SoundSoap can analyze the audio content for two seconds and determine the noise profile.

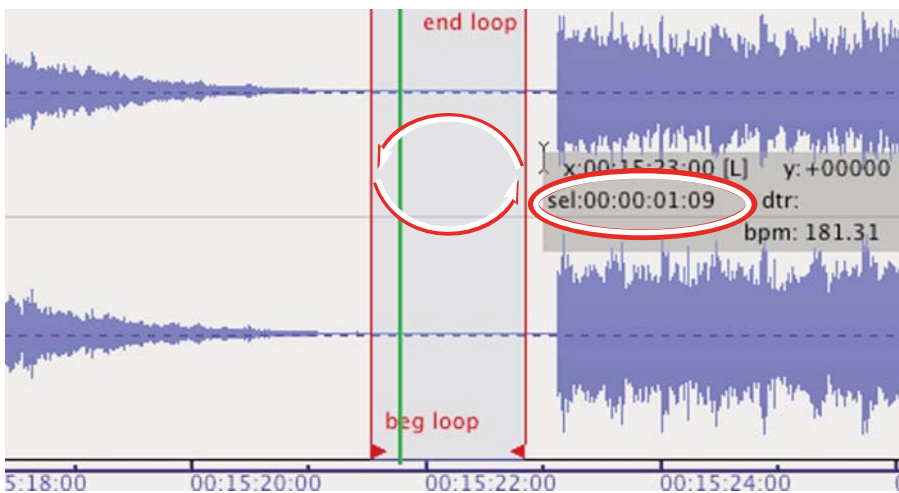
For example, let’s say we’re working with a cassette recording, and the only sections where the noise exists by itself is in the pauses between songs. Creating a loop

in one of these sections, and then clicking the Learn Noise button and initiating playback, will loop this section of the file over and over. After playing the loop twice, SoundSoap will have had enough audio material (approximately two seconds) to analyze and accurately create a noise profile.

At this point, use Noise Only mode to hear if the noise profile created will accurately remove just the undesired noise, and none of the desired audio content. The loop start and end points may need to be fine-tuned and the noise profile “re-learned”.



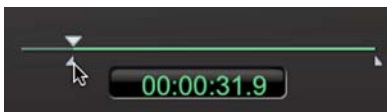
*Most host programs will allow certain portions of a media file to be looped. The stand-alone edition of SoundSoap is also capable of this – simply set the In point and Out point to the desired locations, and then activate Loop mode. When SoundSoap has “learned” the noise don’t forget to de-activate Loop mode. Also, if you need to clean the entire file, don’t forget to reset the In and Out points – the Apply button only affects the audio material contained within the In and Out points.*



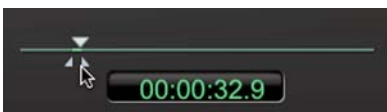
Repeating a short loop can give SoundSoap enough audio material to analyze the frequencies causing the unwanted noise. In this cassette recording we’ve created a short loop between two songs – the loop contains just the unwanted broadband noise (tape hiss). The host application’s (BIAS Peak) cursor information (circled) display shows the loop’s length to be 1.09 seconds – by engaging Learn Noise mode and playing the loop at least twice, SoundSoap will have enough audio material (approx. 2 seconds) to accurately create a noise profile.

### To Learn Noise in Loop Mode (Stand-Alone Edition)

1. Locate a portion of the file which contains a very short portion of just the unwanted background noise.
2. Drag the In point marker to the beginning of this section.



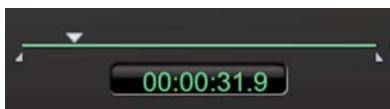
3. Drag the Out Point marker to the end of the section.



4. From the Transport menu, choose Loop (or press the L key on your keyboard).



5. Click the Learn Noise button.
6. Click the Play button – once a noise profile is learned, (and noise reduction turns on automatically) stop playback.
7. Move the In point marker back to its original position at the beginning of the timeline.
8. Move the Out point marker back to its original position at the end of the timeline.



To reselect the entire timeline, you may also use the keyboard shortcuts  $\text{⌘-A}$  on Mac, and  $\text{Ctrl-A}$  on Windows.

9. Click the Apply button when you are happy with your settings – since the In & Out point buttons have been put back in their original positions, the entire timeline will be processed.



10. From the File menu, choose Save As.

### Constant Noise v. Changing Noise (Broadband)

Noisy media can be categorized into two basic groups – that which has a constant noise level and type, and that which has varying levels and types of noise throughout. Each category of media can be cleaned best by using a slightly different approach to noise reduction.

#### Constant Noise

Media files with a constant noise level and type of noise are generally the easiest to clean. This noise type is typically found in recordings of audio or analog video cassettes, or in cases where there is a constant hum present due to using equipment that is plugged into poorly grounded electrical circuits. There may sometimes be unwanted noise in a recording environment, such as a heating/ventilation system, industrial equipment, etc.

Media that falls into this category can usually be cleaned by sampling the noise and creating just a single noise profile. In other words, in media with a constant noise level and type of noise, you should be able to open a file,

click the “Learn Noise” button to automatically profile the noise, and set the Noise Tuner and Noise Reduction knobs, perhaps fine-tune those settings, and then “bounce” or render the noise reduction settings to the file.

## Changing Noise

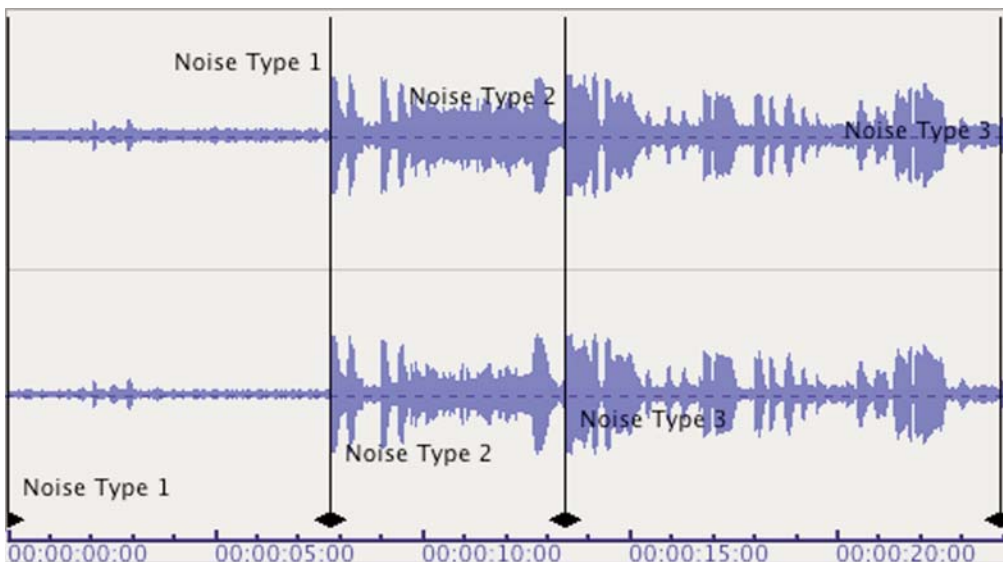
Noise in a media file may vary over time – for example, a video clip may contain air conditioning noise that varies in intensity throughout the clip, due to the camera being moved around the room while taping a subject. In cases like this, it is best to apply noise reduction with different settings for the different levels of noise that occur in various parts of the clip. To reduce noise by varying degrees in different sections of a clip, simply select specific “target” areas, apply noise reduction with certain settings, and then move on to each area of the clip, targeting the specific noise that occurs in each. This will generally yield the best results, as one noise reduction setting alone may not be suitable for the different levels and/or kinds of noise that occur over the course of the entire file.

If your host program allows the use of reference markers and/or regions (such as those found in BIAS Peak), you may want to “mark up” a file into sections that contain different levels of noise or different noise types. This is a good strategy for isolating and processing areas of the file with a certain level and kind of noise, and then moving on to another section and processing it with different noise reduction settings more suitable for its level and noise type.



*SoundSoap (the stand-alone application) offers a timeline for navigation. While this allows for determining where the isolated noise should be learned, a waveform editor (such as Peak) provides additional visual feedback that makes determining the appropriate area where noise should be learned much easier.*

If using a host that allows automation of plug-in parameters, SoundSoap’s parameters may be automated as with any other plug-in. Dynamic parameter changes can be very useful when dealing with noise that varies over time.

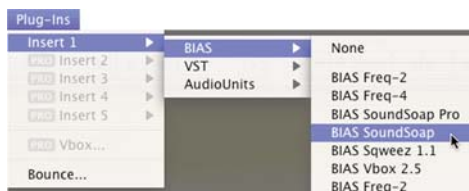


Audio waveform showing three distinct noise types — note use of region markers for reference

## How to use SoundSoap

This section will teach you how to use SoundSoap as both a plug-in inside a host program, as well as in stand-alone mode.

We'll use BIAS Peak LE as a host – a host is a main editing program that SoundSoap “plugs into” and expands that host’s functionality. In this case, SoundSoap adds high-quality noise reduction to the powerful editing tools that Peak LE already contains.



*In this example, we're using the Audio Units format plug-in of SoundSoap. Peak LE supports both VST and Audio Units formats plug-ins. To use the VST version of SoundSoap (included), simply choose "Insert 1 > VST > SoundSoap" from Peak LE's Plug-Ins menu, rather than choosing the Audio Units format version. The following steps are exactly the same in either version of the plug-in.*



*If you are using a different host than Peak LE, just check the documentation that was included with it about how to access and use effects plug-ins/filters. Accessing SoundSoap will work in the same way as other plug-ins/filters, such as equalizers, reverbs, etc. Once SoundSoap is active within your host, the steps for using it will be the same as those listed below for using it within Peak LE.*



4. When the SoundSoap interface appears, turn Broadband noise reduction to Off (it is on by default).



## Using SoundSoap as a Plug-In

In this example, we'll be using BIAS Peak LE as a host application, to restore an LP recording which contains various noise types. If the file you are restoring does not contain all the same types of noise, simply omit the steps for noise types not present in your recording.

The first step in reducing noise in digital media is to open the file in Peak LE, then open the SoundSoap plug-in. The following steps will guide you through your first attempts at noise reduction.

1. Launch Peak LE.
2. Open noisy media file.
3. Choose "Insert 1 > Audio Units > BIAS > SoundSoap" from the Plug-Ins menu.

5. Play the LP recording from the beginning, and slowly raise the Click & Crackle slider until you no longer hear this type of noise. When you find the ideal setting, try playing various parts of the recording, ensuring that the setting you have chosen will repair clicks/crackles of varying degrees throughout the entire recording.





---

*If the clicks/crackles vary greatly from song to song, you may want to work on each song separately, processing each with a more precise setting.*

---

Now, we'll remove the broadband noise from this recording (needle hiss), as well as the 60Hz hum and very low frequency turntable motor rumble...

6. Click the 60Hz Hum Removal button.



7. Click the Remove Rumble button.



---

*The Hum Removal, Remove Rumble, and Preserve Voice features operate independently of the other noise reduction tools (Click & Crackle Slider, Noise Tuner & Noise Reduction knobs, and Learn Noise button), and can be toggled on or off either before or after learning a noise profile, and will not affect the accuracy of the learned noise profile.*

---



8. Return to the beginning of the recording (before the music or other program material begins), and click the Learn Noise button.



9. Start playback by pressing the space bar, or by clicking the Play button in Peak's transport

window. After analyzing the audio content for approximately two seconds, SoundSoap will automatically turn on broadband noise reduction.

10. Listen to the results. To apply/render the current noise reduction settings, choose "Bounce..." from Peak's Plug-Ins menu.

Congratulations! You've just learned the basics of using SoundSoap. To learn more advanced techniques, continue along with the next few steps, and apply SoundSoap when you have completed all the advanced steps.

11. Start playback of the audio material, and click the Noise Only button – in Noise Only mode, you should hear only the unwanted broadband noise.



12. If you hear any of the desired audio material, turn the Noise Tuner knob to the left (counter-clockwise), until you hear only the unwanted noise.



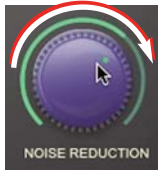
13. Click the On button to return to the regular listening mode.



14. Turn the Noise Reduction knob all the way to the left (counter-clockwise) – in this position, no broadband noise reduction is being applied.



- Now, slowly turn the Noise Reduction knob to the right (clockwise), until you reach the optimal balance between broadband noise reduction and introducing any unwanted artifacts.



- Slowly raise the Enhance slider to help add tonality and boost frequencies that are commonly lost in degraded media sources (if you are working with a recording made from a degraded media source).



- When you are satisfied with the results, choose “Bounce...” from Peak LE’s Plug-Ins menu.



---

*Be sure to disable SoundSoap after “bouncing”. If you leave SoundSoap active, you will hear the processed file being played through SoundSoap in realtime, giving the effect of twice the amount of noise reduction. For your convenience, a dialog box is presented after bouncing in Peak LE, with options to turn plug-ins off or to leave them active if you need to process additional files.*

---

## Using SoundSoap as a Stand-Alone Application (with iMovie)

If you’re using an application such as iMovie HD, which does not support audio plug-ins like SoundSoap, you can use the stand-alone edition of SoundSoap to clean up noisy clips used in the iMovie project.

Since iMovie does not allow using a plug-in like SoundSoap directly within the iMovie environment, we need to access the actual media file being used in the iMovie project.

iMovie stores all the various media files used in a project as a “package”. A package appears in the Mac OS Finder as a single icon, or file, but it actually contains multiple files. This makes moving an entire project very simple, rather than having to search around for all the different files used in a project.

The steps below will show you how to locate these media files, bring them into SoundSoap for cleaning, and then return the cleaned files to the iMovie project.



---

*If you are not using iMovie, you may start with Step 8, and open any digital media file that needs cleaning. Stop after Step 17, as the remaining steps are specific to working with iMovie.*

---

### **To use SoundSoap (stand-alone) to clean up iMovie clips:**

- In iMovie, locate the clip that needs editing.



Clip that needs editing

2. Select the clip, and from the Advanced menu, choose Extract Audio.



Extracted Audio clip

Note extracted audio clip, which now appears as a waveform on one of iMovie's Audio Tracks

3. Save your project and Quit iMovie.

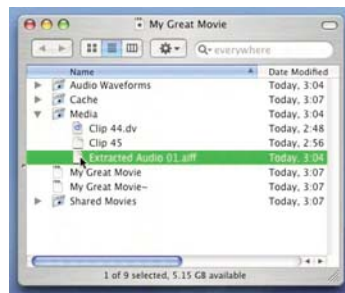


4. In the Mac OS Finder, locate the iMovie project file(or "Package")
5. Control-click on the project icon, and choose Show Package Contents.



Control-Clicking on the iMovie project's icon, or "Package" brings up a pop-up menu – look for "Show Package Contents" command

6. In the open package, navigate to the Media folder.



Note the mouse cursor - pointing at the extracted audio clip, which is located in the project's Media folder, within the "Package".

7. In the Media folder, the first extracted audio clip would be called "Extracted Audio01.aiff" – the next clip (if there were another) would be called "Extracted Audio02.aiff", and so on.
8. Launch the stand-alone edition of SoundSoap, and then choose Open Media File from the File menu. Open the file called "Extracted Audio01.aiff" from the iMovie project's Package.



*The file being cleaned up in this example is dialogue with broadband background noise. To learn how to clean up other types of noise, be sure to watch the included SoundSoap 2 tutorial video!*

9. Find a location in the file that contains just the unwanted background noise.
10. Click the Learn Noise button, and then click the Play button (or press the Spacebar on your keyboard) to start playback – after about two seconds, SoundSoap figures out the broadband frequencies causing the background noise, and turns on automatically.



11. Click the Return to Zero button to go back to the beginning of the clip.

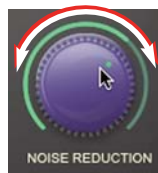


Return to Zero

12. Set the Broadband mode to Noise Only, and start playback – if you hear any of the desired signal (dialogue, in this case), turn the Noise Tuner Knob slowly counter-clockwise until you hear just the unwanted noise.



13. Click the Return to Zero button to go back to the beginning of the clip again.
14. Set the Broadband mode to On, and start playback – this time adjust the Noise Reduction knob to that the bare minimum is being applied that removes the background noise.



15. Since the material being used here is dialogue, click the Preserve Voice button – this filter automatically removes any audio material outside of the frequency range of the human voice.



16. Click the Apply button to apply the current settings to the file.



17. From the File Menu choose Save As – save the file using the exact same file name as the file that was opened from the iMovie project's Package folder. Save this file to the Desktop for the time being.



18. Control-click to show the iMovie project's Package Contents (if this window is not still open).
19. Drag the cleaned audio file into the Media folder – since it has the same name as the original extracted audio file, you will be prompted whether you wish to replace the existing file – click the Replace button.



20. Open the iMovie project – it should open up with all the audio changes intact – whatever noise reduction you applied to the file should now be reflected in the iMovie project.

---

## Conclusion

You should now be familiar with the “hands-on” aspects of using SoundSoap with a variety of other software. We hope you enjoy using SoundSoap for cleaning up your noisy recordings and adding a professional touch to your audio projects!

---

