

# SoundSoap 2™

---

Version 2.0

Software User's Guide





## INSTALL LICENSE AGREEMENT

This legal document is an agreement between you, the end user (“YOU” or “LICENSEE”), and 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.

## 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, 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 use the SOFTWARE on only one COMPUTER at one time, and such SOFTWARE may be used by only one user at a time. BIAS reserves all rights not expressly granted to LICENSEE.
2. AUTHORIZATION KEY. You must register this SOFTWARE within 14 days of installation either online (<http://www.bias-inc.com/support/register/>), via fax (+1 707-782-1874), or phone (+1 707-782-1866). If the SOFTWARE has not been registered within 14 days of

installation, it will cease to function until registered. Once registered, you cannot return the SOFTWARE.

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. 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, 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, 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 DV, Peak LE, Deck LE, SuperFreq, SoundSoap 2). 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.

11. MISCELLANEOUS. This Agreement is governed by the law of the State of California.

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) 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.

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  
1370 Industrial Ave.  
Suite A  
Petaluma, CA 94952  
USA  
Copyright 1996–2004 BIAS, Inc.

Credits:

SoundSoap 2 software: David Tremblay, Guillermo Garcia, David Ralley, Andrew Kimpton, Wayne Jackson, Steve Berkley, Eric Eizenman.

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

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

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

Avid™ is a registered trademark of Avid Technology, Inc.

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

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

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

DirectX™ 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, Dan Spirlock, Gabe Khofri, Ben Ventura, Lisa Stefan, Victor Cebreneros, Megan Peterschmidt, Cory Stück, Andrew Stone, Brent Hurtig, and Seamus Walsh.

# 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, 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 DV, Peak LE, Deck LE, SuperFreq, SoundSoap 2). 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 2

Welcome!.....	13
Who is SoundSoap 2 designed for?.....	13
What's New in SoundSoap 2?.....	14
Minimum System Requirements.....	14
About Your User's Guide.....	14
Conclusion.....	15

## Chapter 2 - Installing & Configuring SoundSoap 2

Installing SoundSoap 2 on Mac OS X.....	19
Installing SoundSoap 2 on Windows XP.....	20
Authorization.....	21
Conclusion.....	22

## Chapter 3 - SoundSoap 2 User Interface & Controls

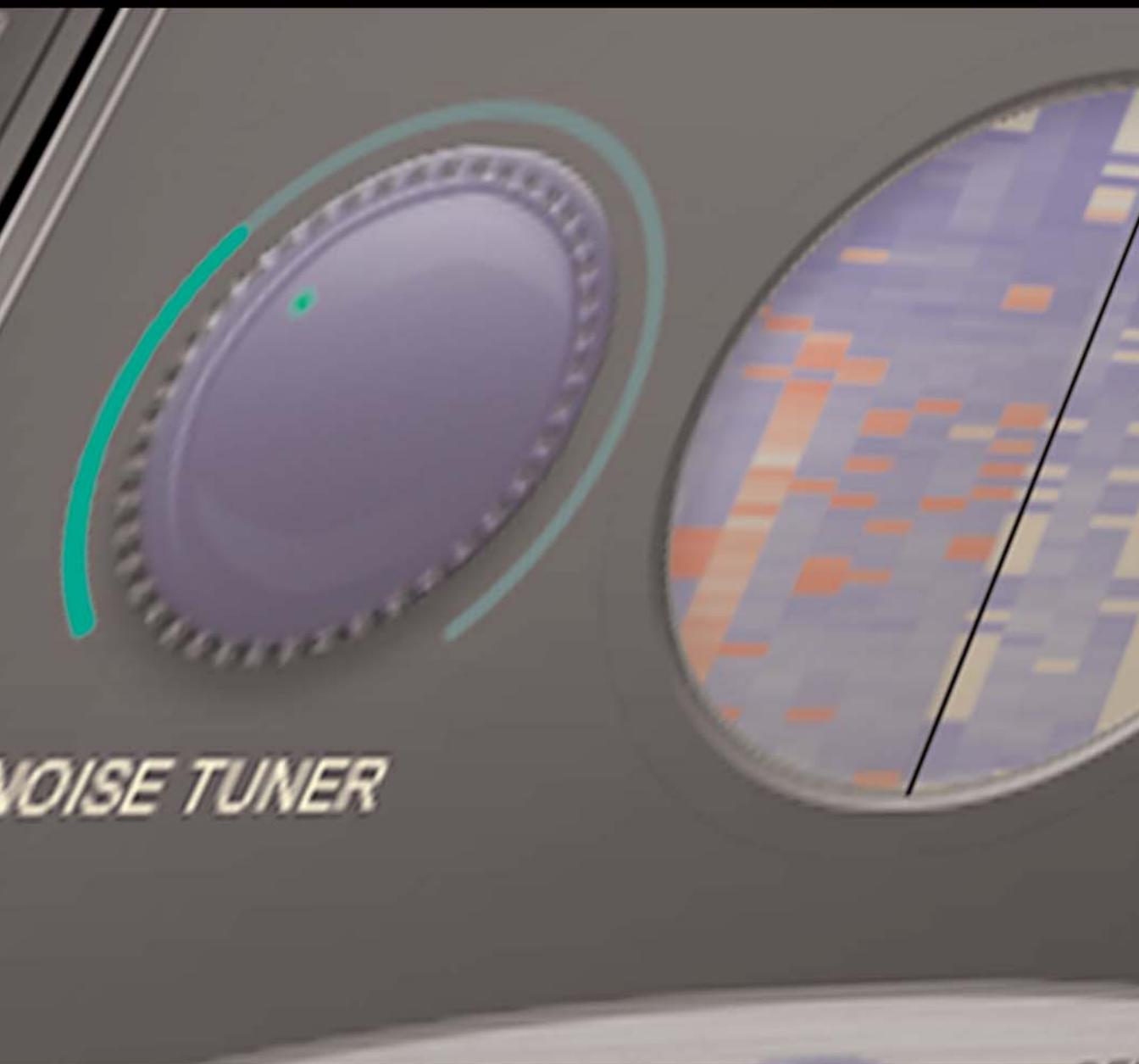
A Brief Explanation of Noise Types.....	25
Getting Started with SoundSoap 2.....	26
SoundSoap 2 Controls Explained.....	26
Overview of SoundSoap 2 Graphical User Interface.....	27
Additional Controls in Stand-Alone Edition.....	33
Conclusion.....	34

## Chapter 4 - Using SoundSoap 2

Tips for Noise Reduction.....	37
Using SoundSoap 2 with Peak.....	42
Using SoundSoap 2 with iMovie.....	45
Using SoundSoap 2 with Sound Forge.....	48
Using SoundSoap 2 with Cubase SX.....	51
Using SoundSoap 2 with Logic.....	54
Using SoundSoap 2 with Pro Tools.....	57
Using SoundSoap 2 with GarageBand.....	59
Using SoundSoap 2 with Premiere Pro.....	63
Conclusion.....	65



# Chapter 1: Introducing SoundSoap 2





# Chapter 1:

## Introducing SoundSoap 2

### Welcome!

Thank you for purchasing BIAS SoundSoap 2! SoundSoap 2 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 2 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 2 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 VST, RTAS, or Audio Units host application, or any Windows XP-compatible VST, RTAS, or DirectX host program
- A stand-alone edition – for users who do not own a compatible host program

### Who is SoundSoap 2 designed for?

SoundSoap 2 is designed for a wide variety of users, ranging from home movie makers to audio engineers and video editors. SoundSoap 2'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 2 in just a few minutes – and you'll quickly see why SoundSoap 2 is perfect for anyone with noisy digital media!

## What's New in SoundSoap 2?

SoundSoap 2 offers a number of new features and enhancements, including:

- Updated User Interface
- Click & Crackle Removal/Reduction
- “Enhance” Slider
- Includes RTAS (Mac OS X, Windows XP), and Audio Units (Mac OS X) versions
- Drag & Drop file support (stand-alone edition)
- Windows Media Support (stand-alone edition)

## Minimum System Requirements

### ***To use SoundSoap 2 on a Macintosh – you will need:***

- G4 or G5 Apple Macintosh desktop, PowerBook, or iBook (≥ 400 MHz processor recommended)
- Macintosh OS 10.2 minimum
- Plug-in mode requires compatible VST, Audio Units, or RTAS host application – such as Peak 4 (contact BIAS for compatibility information)
- QuickTime 6.5 (included)

### ***To use SoundSoap 2 on a Windows PC – you will need:***

- Pentium III or Pentium IV desktop or laptop (≥ 600 MHz processor recommended)
- Windows XP Home or Professional
- Compatible VST, RTAS, or DirectX host program
- Windows Media 9 & QuickTime 6.5 (included)

### ***Both:***

- 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 2 is designed to be simple and intuitive. Your User's Guide is designed to help you set up and use SoundSoap 2 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 2 much easier and more enjoyable.

The chapters in your SoundSoap 2 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 2 and explains some of the requirements for using it
- Chapter 2 explains how to install, register, and authorize SoundSoap 2
- Chapter 3 explains the various features in SoundSoap 2 and how they are used to reduce/remove noise
- Chapter 4 demonstrates how to use SoundSoap 2 with other software – both as a plug-in and as a stand-alone program

---

## Conclusion

Now that you know a little about SoundSoap 2, proceed to the next chapter to learn how to install your software and get started using it.



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

---



## Chapter 2: Installing & Authorizing SoundSoap 2





# Chapter 2:

## Installing SoundSoap 2

### Introduction

SoundSoap 2's auto-installer software makes installation very easy. Your complete SoundSoap 2 system consists of:

- CD-ROM Installer
- SoundSoap 2 Serial Number and Product Authorization Code (PAC)



*Before you install SoundSoap 2, please check the Minimum System Requirements on Page 14 of this User's Guide.*



The Installer dialog on Mac OS X

#### To install SoundSoap 2 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 2 Install CD-ROM in your CD-ROM drive, and double-click the Install icon.
3. When the installer dialog appears, read the Read Me for late-breaking information concerning the Installer, then click Continue to proceed.
4. Select where you would like to install SoundSoap 2, using the Install Location pop-up menu.
5. Click Install at the bottom right of this dialog.
6. After you have clicked Install, follow the on-screen instructions.
7. When the installation is complete, a message will appear indicating that the installation was successful. Click Quit to quit the Installer (don't forget to turn back on any virus-protection software that you may be using the next time you restart the computer).

#### What SoundSoap 2 Installs on Macintosh systems:

##### VST Hosts: (Peak, Cubase SL/SX, Nuendo, etc.)

The VST format plug-in is automatically installed into the following directory:

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

**Audio Units Hosts: (Peak, Logic, Digital Performer, GarageBand, SoundTrack, Final Cut Pro, etc.)**

The Audio Units format plug-in is automatically installed into the following directory:

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

**RTAS Hosts: (Pro Tools)**

The RTAS format plug-in is automatically installed into the following directory:

/MacintoshHD/Library/Application Support/Digidesign/Plug-Ins/



*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 2 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 2 Install CD-ROM in your CD-ROM drive. If the SoundSoap 2 Setup program does not automatically launch, double-click the Install SoundSoap 2 icon.
3. When the Welcome to the SoundSoap 2 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 2 installation.
5. To install SoundSoap 2 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. In the Choose Directory dialog, you will be prompted to select the VstPlugIns folder for your VST host program. If you have any Steinberg audio programs installed, the directory will default to the Steinberg VstPlugIns folder.

It is recommended that you use this folder as a central location for all of your VST plug-ins. If you do not have any Steinberg audio programs installed, select the VstPlugIns folder for your VST host program and then click the OK button.



*At the end of installation, the installer will give you the option of registering via the BIAS website, which you may find more convenient than mailing your registration card.*

---

**What SoundSoap 2 Installs on Windows systems:**

**VST Hosts: (Cubase SL/SX, Nuendo, Wavelab, Premiere, Audition, etc.)**

The VST plug-in is automatically installed into the VstPlugIns folder for your VST host program.

**DirectX Hosts: (Sonar, Sound Forge, Vegas Video, Audition, etc.)**

The DirectX format plug-in is automatically installed and entered into the registry.

**RTAS Hosts: (Pro Tools)**

SoundSoap 2 automatically installs the RTAS format plug-in into:

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

---

## Authorization

SoundSoap 2 must be authorized to work on your computer. The SoundSoap 2 authorization system consists of the following components:

- Serial number (located on the BIAS License Certificate)
- A Product Authorization Code – which is issued at the end of the registration process



*The SoundSoap 2 Authorization dialog on Mac OS X – clicking the Register Online button automatically launches your web browser, and takes you directly to the BIAS website. This is the fastest way to register and receive your Product Authorization Code.*



*You must register with BIAS in order to obtain your Product Authorization Code; SoundSoap 2 will not launch after the 14 day registration period unless you authorize it with your Serial Number and Product Authorization Code!*

---

The fastest and easiest way to register SoundSoap 2 – and receive your Product Authorization Code – is by registering online, at:

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

The registration/authorization process provides the following services:

- It registers your software with BIAS – making you eligible for technical support and product updates.
- It provides you with the Product Authorization Code you will need to authorize SoundSoap 2.

---

## Conclusion

Now that you have installed, registered, and authorized SoundSoap 2, proceed to the next chapter to learn several basic concepts and functions essential to using SoundSoap 2.

---



# Chapter 3: SoundSoap 2 User Interface & Controls





# Chapter 3:

## SoundSoap 2 User Interface & Controls

---

# 3

### Introduction

This chapter explains several key SoundSoap 2 concepts and functions.

### A Brief Explanation of Noise Types

If you are using SoundSoap 2, 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 2.

While SoundSoap 2 can do a great deal to reduce noise 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 2 may not entirely remove the noise, but may be able to significantly reduce its presence.

The types of noise that SoundSoap 2 is designed to reduce are outlined below:

#### 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.

---

## Getting Started with SoundSoap 2

SoundSoap 2 can be used as a plug-in within your VST, Audio Units, RTAS/AudioSuite, or DirectX compatible host program, on Mac OS X or Windows XP.

SoundSoap 2 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 2. 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.

## SoundSoap 2 Controls Explained

The SoundSoap 2 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 2'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 click the Learn Noise button with your mouse, and start playback. SoundSoap 2 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 within the SoundSoap 2 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 2.*

---

# SoundSoap 2: Graphical User Interface (GUI)

3

## 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>

## Noise Tuner Knob



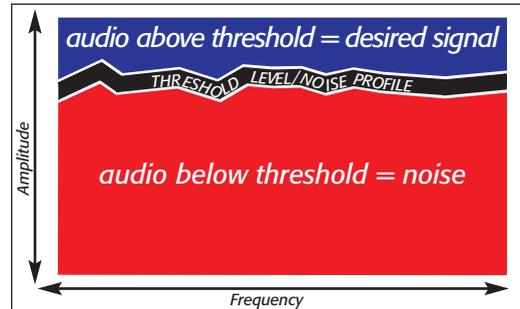
To make a setting with the Noise Tuner, click the knob with your mouse, and rotate to the left or right.

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

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 2 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.

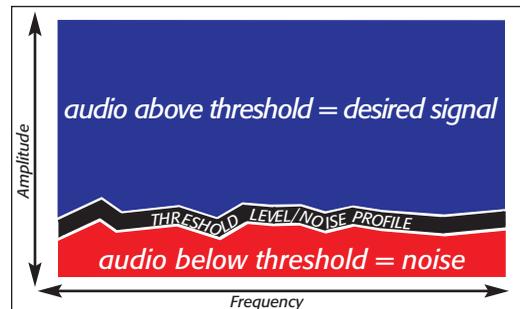
The Noise Tuner can be used in a variety of ways – first, it can be set automatically by first using SoundSoap 2’s Learn Noise feature. This method is ideal when the media file being

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.



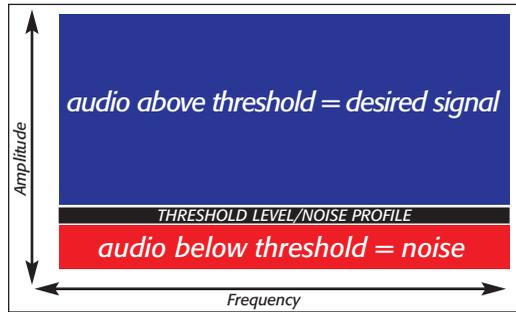
*This diagram illustrates having a high Noise Tuner setting, with a custom noise profile – a custom noise profile is the result of having used the Learn Noise feature – different frequencies are affected in different ways.*

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.

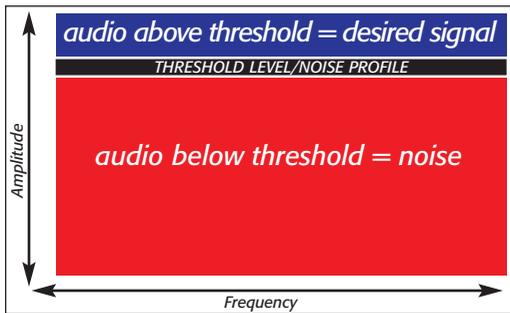


*This diagram illustrates having a low Noise Tuner setting, with a custom noise profile – a custom noise profile is the result of having used the Learn Noise feature – different frequencies are affected in different ways.*

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



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

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.



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 2 in this manner, just turn the Noise Tuner knob until all you hear (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.

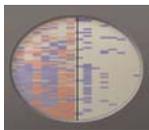
**Noise Reduction Knob**

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

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.

### Wash Window



SoundSoap 2’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 2 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 digital 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 2’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 2’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.

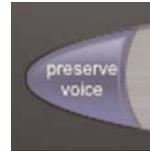
If a media file you’re working with sounds a little “dull”, use the Enhance Slider to add “sparkle” back into the audio signal by boosting frequencies that may have been lost because of degraded media. As this control is designed to enhance frequencies and tone, it is recom-

mended 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 2 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 applies a specific set of filters that remove frequencies outside of the range of the human voice. This helps in preserving the audio quality of vocal 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 2 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 applies a specific set of filters that target the low frequencies responsible for rumble. Typically, “rumbles” occur at 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



The Broadband mode buttons in the SoundSoap 2 interface 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 2 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 2 is processing the media according to the current broadband tool settings.

When the “Noise Only” button is illuminated, SoundSoap 2 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 2 may still be processing with its Hum Removal, Click & Crackle, or Enhance sliders.

### Hum Removal Mode Buttons



The Remove Hum buttons in the SoundSoap 2 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 2 will remove 50 Hz hum.

When the “60 Hz” button is illuminated, SoundSoap 2 will remove 60 Hz hum.

When the “Off “ button is illuminated, SoundSoap 2’s Hum Removal feature is inactive.

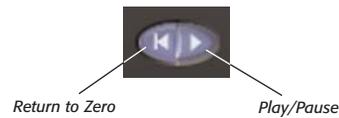


The Hum Removal buttons operate independently of other controls. When Hum Removal is in the Off position, SoundSoap 2 may still be processing with its Broadband noise reduction, Click & Crackle, or Enhance sliders.

## Additional Controls in Stand-Alone Edition

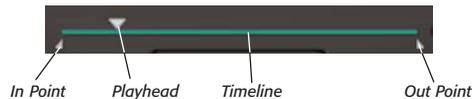
The controls in this section are found only in the interface of the stand-alone edition of SoundSoap 2.

### 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 2. 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 2 interface. Please continue to the next chapter, which gives step-by-step directions on using the plug-in edition of SoundSoap 2 with a variety of host programs, as well as using the stand-alone edition.

---

## Chapter 4: Using SoundSoap 2





# Chapter 4:

## Using SoundSoap 2

---

### Introduction

This chapter will cover how to use SoundSoap 2 to reduce noise in digital media files.

SoundSoap 2 is a very flexible program – it can be used as a plug-in within most Audio Units, DirectX, RTAS, or VST compatible host programs – as well as stand-alone, on Mac OS X or Windows XP.

### Tips for Noise Reduction

SoundSoap 2 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 2'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 2 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 2 can "learn" the profile of the broadband noise. The host program's playhead should be positioned at the beginning of this section, and SoundSoap 2's Learn Noise button must be clicked (in the depressed position). Once playback is started, SoundSoap 2 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 2'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).

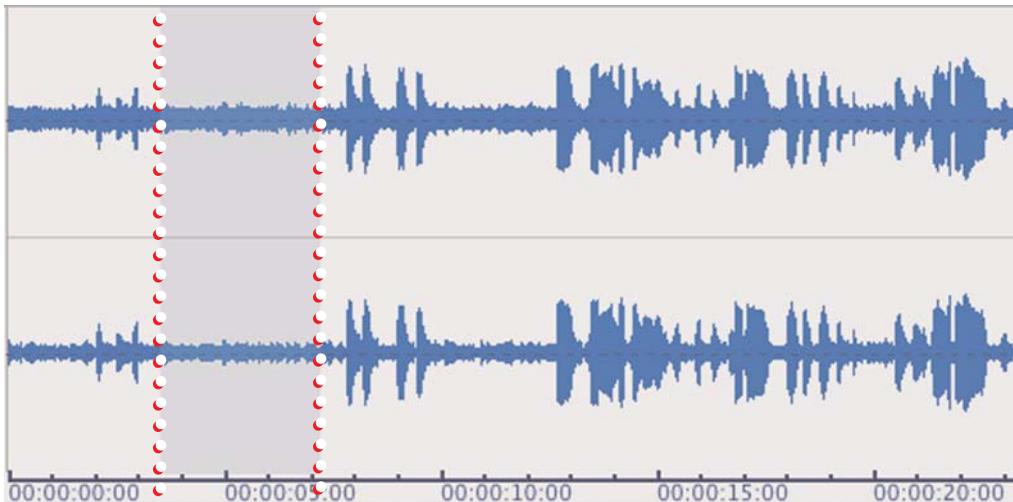
In some instances, when working with degraded media sources, you may wish to use the Enhance slider to help restore tonality that was present in the original recording. The Enhance slider is recommended as a final processing step, when all other settings have been made.

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 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 2 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



Media file (shown in BIAS Peak) with good target area selected for noise sampling — the selected portion of the waveform in this area contains just the undesired broadband background noise.

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 2, 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.*

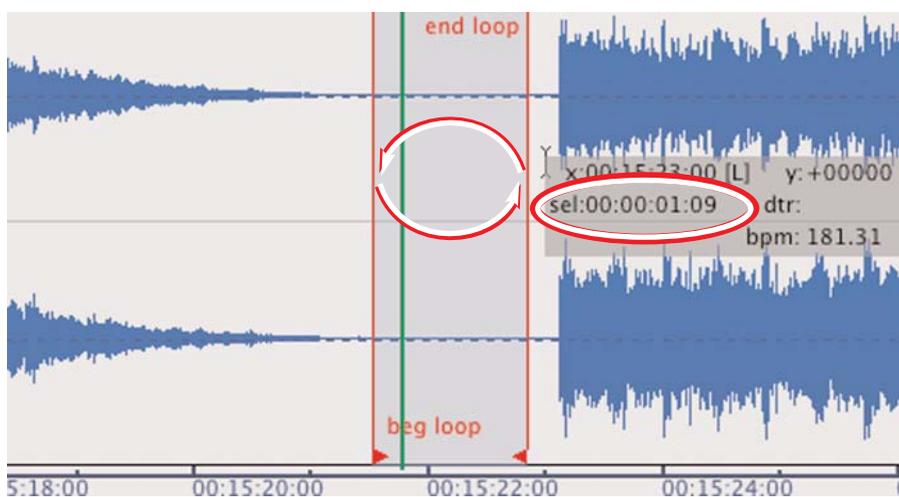
Another approach to “learning” noise in a part of a media file which contains both the unwanted background noise and the desired audio is to locate a section within the file that has the lowest signal to noise ratio. For example, in a digital recording of an audio cassette, there will likely be a low 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 2’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 2 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 2 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



*Repeating a short loop can give SoundSoap 2 enough audio material to analyze the frequencies causing the unwanted noise. In this cassette recording (shown in BIAS Peak) we’ve created a short loop between two songs – the loop contains just the unwanted broadband noise (tape hiss). The 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 2 will have enough audio material (approx. 2 seconds) to accurately create a noise profile.*

twice, SoundSoap 2 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”.



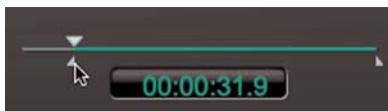

---

*Most host programs will allow certain portions of a media file to be looped. The stand-alone edition of SoundSoap 2 is also capable of this – simply set the In point and Out point to the desired locations, and then activate Loop mode. When SoundSoap 2 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.*

---

#### **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 ⌘-A on Mac, and 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.



- 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

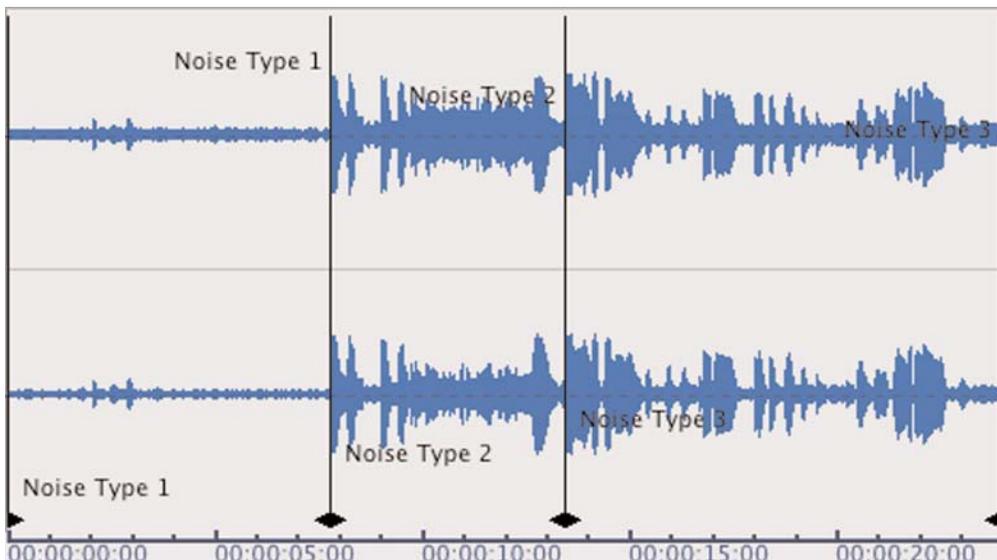
Media files with a constant noise level and type of noise are generally the easiest to clean. This noise type is typically found in recordings of audio or analog video cassettes, or in cases where there is a constant hum present due to using equipment that is plugged into poorly grounded electrical circuits. 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



Audio document (shown in BIAS Peak) with three distinct noise types – note use of region markers for reference

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 2 (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 2’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.

## Using SoundSoap 2 with other Software

The following section will describe the noise reduction process step by step within the following host programs (a host program being the main editing program that SoundSoap 2 “plugs into”, to expand its processing capabilities), as well as using the stand-alone edition of SoundSoap 2 with audio/video editing software that does not directly support Audio Units, DirectX, RTAS/AudioSuite, or VST format audio plug-ins:

- BIAS Peak 4 (Audio Units/VST)
- Apple iMovie 4 (Stand-Alone Edition)
- Sonic Foundry Sound Forge 7 (DirectX)
- Steinberg Cubase SX 2 (VST)
- Apple Logic Pro (Audio Units)
- Digidesign Pro Tools (RTAS)
- Apple GarageBand (Audio Units)
- Adobe Premiere Pro (VST)

It is normal for operation to vary slightly depending on the plug-in implementation in each host program. If the host you plan to use SoundSoap 2 with is not listed here, it is recommended that you consult the documentation provided with your host program for details on how to use plug-in effects. In terms of instantiating and applying effects, SoundSoap 2 will operate in much the same way as other plug-ins that conform to the Audio Units, DirectX, RTAS/AudioSuite, and VST standards.

## Using SoundSoap 2 with BIAS Peak

In this example, we’ll be using Peak 4.1 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.

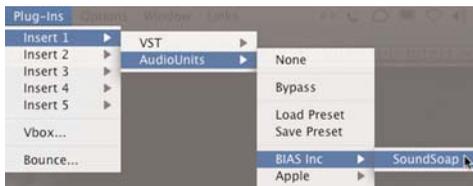


To use SoundSoap 2 with BIAS Peak, you will need to be running either Peak Express, Peak LE, Peak DV, or Peak (version 3.2 or later) and have already installed SoundSoap 2 on your Macintosh system. Peak 3.2 is available as a free update to users of Peak 3.0x – 3.1x. This update may be downloaded from the BIAS website, at:

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

The first step in reducing noise in digital media is to open the file in Peak, then open the SoundSoap 2 plug-in. The following steps will guide you through your first attempts at noise reduction.

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



In this example, we’re using the Audio Units format plug-in of SoundSoap 2. Peak supports both VST and Audio Units formats plug-ins. To use the VST format plug-in, simply choose “Insert 1>VST>SoundSoap 2” from Peak’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.

4. When the SoundSoap 2 interface appears, turn Broadband noise reduction to Off (it is on by default).



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.



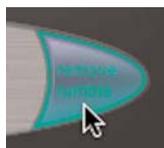
If the clicks/crackles vary greatly from song to song, you may want to work on each song separately, processing each with a more precise setting.

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 2 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 2. To learn more advanced techniques, con-

tinue along with the next few steps, and apply SoundSoap 2 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.



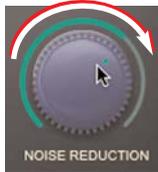
13. Click the On button to return to the regular listening mode.



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



15. 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.



16. 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).



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



*Be sure to disable SoundSoap 2 after “bouncing”. If you leave SoundSoap 2 active, you will hear the processed file being played through SoundSoap 2 in realtime, giving the effect of twice the amount of noise reduction. For your convenience, a dialog box is presented after bouncing in Peak, with options to turn plug-ins off, or to leave them active if you need to process additional files.*

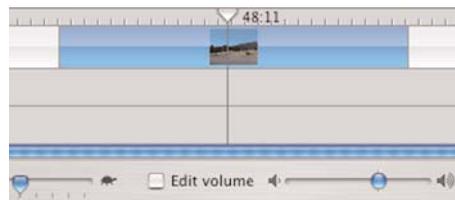


### Using the Stand-Alone Edition of SoundSoap 2 with Apple iMovie

iMovie users can also use SoundSoap 2 to remove unwanted noise that may be picked up by the built-in mic in a DV camera. While iMovie does not directly support audio plug-ins or an external audio editor, a handy feature called “Extract Audio” makes the process of cleaning clips very easy. Once audio is extracted, it can be opened in Peak and cleaned with the SoundSoap plug-in, or can be opened directly in the stand-alone edition of SoundSoap.

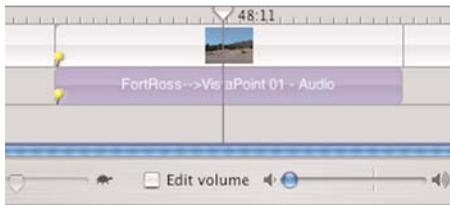
The steps below outline the fastest and easiest method of cleaning up noisy media from an iMovie project, using the stand-alone edition of SoundSoap.

1. Open an iMovie project.
2. Click on a clip in the iMovie timeline (a clip that contains broadband noise) to select it.



*DV clip highlighted in blue indicates that it is selected*

- From the “Advanced” menu, choose “Extract Audio” – the extracted audio is placed on an audio track, beneath the video track in the timeline.



Notice that the extracted audio is placed onto one of iMovie's audio tracks

- Save your iMovie project.
- Quit iMovie.
- Open the “Media” folder for the iMovie project you are working on, and notice that among the various clips, there is now also an audio clip called “Voice 01”. (Voice 01 is the default name given to the first extracted audio clip, Voice 02 for the second, and so on).



- Launch the stand-alone edition of SoundSoap 2.
- From the File menu, choose Open Media File, and navigate to the “Media” folder for your iMovie project – open the audio clip called “Voice 01” (or drag and drop the file over the SoundSoap 2 interface).



- When the SoundSoap 2 interface appears, turn Broadband noise reduction to Off (it is on by default).



- Click the Play button, and evaluate which noise reduction tools should be used.



*In this example, we'll assume that only broadband background noise is present, and will use only the broadband noise reduction tools. Broadband noise is the most common type of noise found in digital video footage.*

- Locate a portion of the media file which contains just the unwanted noise by itself, and click the Learn Noise button.

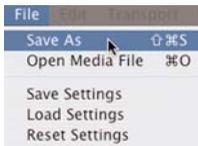


*If the media file you are working with does not contain any areas with approximately two seconds of the noise by itself, you may want to try creating a “loop” of a shorter section. To create a loop in a particular section of your media file, simply drag the In point marker to the beginning of this section, and the Out point marker to the end of this section. Then, choose “Loop” from the Transport menu. Click the Learn Noise button, and initiate playback – SoundSoap 2 will use the looped section of audio to create a noise profile. Be sure to move the In and Out point markers back to their original positions after you've learned the noise profile. For more information, please see the section on “Tips for Noise Reduction” on page 39.*

12. Start playback by pressing the space bar, or by clicking the Play button. After analyzing the audio content for approximately two seconds, SoundSoap 2 will automatically turn on broadband noise reduction.
13. Listen to the results. To apply/render the current noise reduction settings, click the Apply button.



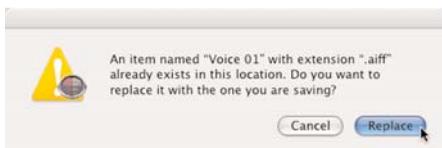
14. To save the cleaned file, choose Save As from the file menu.



15. When prompted for a location to save the file, select the Media folder for your iMovie project – AND save the cleaned clip with the exact same name as the original audio clip.



16. If the clip was originally called “Voice 01”, save the cleaned file as “Voice 01”. When prompted about replacing a file with the same name, click the Replace button.



*The stand-alone edition of SoundSoap 2 always creates a new file, and never changes the original media. However, by choosing to replace the original extracted audio file with the cleaned audio file, and using the exact same file name – the next time iMovie is launched, it will load in the cleaned audio clip, in sync with the video. This technique of overwriting the extracted audio clip will only alter the extracted audio, not the audio contained in the original DV clip. If at any point you wish to return the DV clip to its original state, simply delete the extracted audio from the iMovie audio track, and un-mute the audio in the video track.*

Another method that can be used is saving the cleaned file under a different file name, and then importing it into the iMovie project. Using this technique requires replacing the original audio clip (the audio that was originally extracted) with the cleaned version.

Congratulations! You’ve just learned the basics of using SoundSoap 2. Now, we’ll show some advanced techniques to fine tune your noise reduction results.

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



18. 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.



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



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



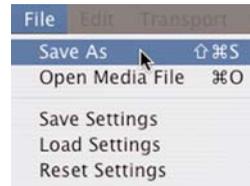
21. Now, slowly turn the Noise Reduction knob to the right (clockwise), until you reach the optimal balance between broadband noise reduction and introducing any unwanted artifacts.



22. 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).



23. When you are satisfied with the results, choose “Save As” from the File menu.



### Using SoundSoap 2 with Sony Sound Forge

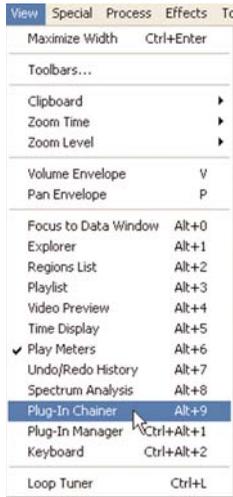
To use SoundSoap 2 with Sound Forge, you will need to have already installed SoundSoap 2 on your PC system.

In this example, we'll be using Sound Forge as a host program, and we'll be restoring an LP recording which contains multiple types of noise. 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 is to open the media in Sound Forge, and then open SoundSoap 2. The following steps will guide you through your first attempts at noise reduction.

1. Launch Sound Forge.

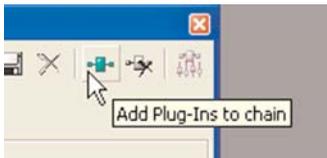
- Open media file.
- From the View menu, choose Plug-In Chainer.



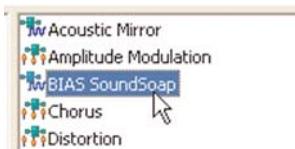
- Play the LP recording from the beginning, and slowly raise the Click & Crackle slider until you no longer hear this type of noise. When you find the ideal setting, try playing various parts of the recording, to make sure that the setting you have chosen will repair clicks/crackles of varying degrees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



- Click the Add Plug-Ins to Chain button.



- Select BIAS SoundSoap and click the OK button.



- When the SoundSoap 2 interface appears within the Plug-In Chainer, turn Broadband noise reduction to Off (it is on by default).



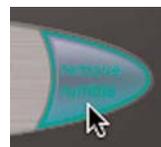
**!** *If the clicks/crackles vary greatly from song to song, you may want to work on each song separately, processing each with a more precise setting.*

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...

- Click the 60Hz Hum Removal button.



- Click the Remove Rumble button.





---

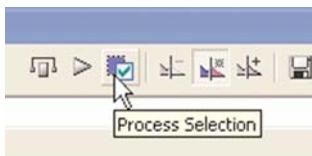
*The Hum Removal, Remove Rumble, and Preserve Voice features operate independently of the other noise reduction tools (Click & Crackle Slider, Noise Tuner & Noise Reduction knobs, and Learn Noise button), and can be toggled on or off either before or after learning a noise profile, and will not affect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

---

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



- Start playback – after analyzing the audio content for approximately two seconds, SoundSoap 2 will automatically turn on broadband noise reduction.
- Listen to the results. To apply/render the current noise reduction settings, click the Process Selection button in the Plug-In Chainer window.



Congratulations! You've just learned the basics of using SoundSoap 2. To learn more advanced techniques, continue along with the next few steps, and apply SoundSoap 2 when you have completed all the advanced steps.

- Start playback of the audio material, and click the Noise Only button – in Noise Only mode, you

should hear only the unwanted broadband noise.



- 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.



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



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



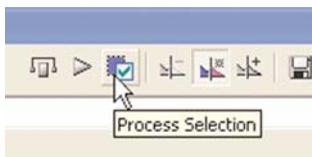
- Now, slowly turn the Noise Reduction knob to the right (clockwise), until you reach the optimal balance between broadband noise reduction and introducing any unwanted artifacts.



18. 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).



19. When you are satisfied with the results, click the Process Selection button in the Plug-In Chainer window, and be sure to save the file.



### Using SoundSoap 2 with Steinberg Cubase SX

To use SoundSoap 2 with Steinberg Cubase SX, you will need to have already installed SoundSoap 2 on your PC or Macintosh system.

The first step in reducing noise is to open the media in

Cubase SX, and then open SoundSoap 2. The following steps will guide you through your first attempts at noise reduction.

In this example, we'll be using Cubase SX as a host application, and we'll be restoring an LP recording which contains multiple types of noise. 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.

1. Launch Cubase SX, and open a project/create a new project.
2. Import noisy media file into the project.
3. In the track control area to the left of the track, click the Edit button ("e").



4. In the VST Audio Channel Settings window, add SoundSoap 2 as the first effect insert.



5. When the SoundSoap 2 interface appears, turn Broadband noise reduction to Off (it is on by default).



- 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, to make sure that the setting you have chosen will repair clicks/crackles of varying degrees throughout the entire recording.



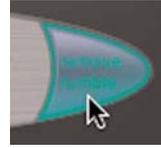
*If the clicks/crackles vary greatly from song to song, you may want to work on each song separately, processing each with a more precise setting.*

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...

- Click the 60Hz Hum Removal button.



- 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.*

---

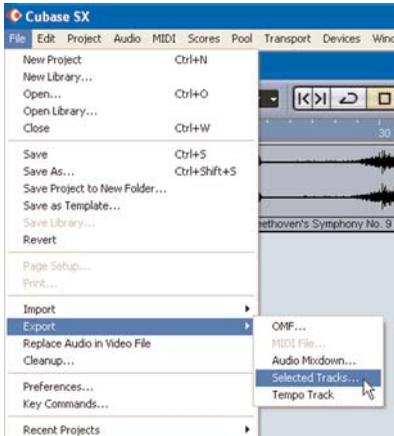
- Return to the beginning of the recording (before the music or other program material begins), and click the Learn Noise button.



- Start playback— after analyzing the audio content for approximately two seconds, SoundSoap 2 will automatically turn on broadband noise reduction.

- Listen to the results – to process the file with the current settings, select the desired range to process with the Left/Right selection markers, and from the File menu choose Export>Selected Tracks.





Congratulations! You've just learned the basics of using SoundSoap 2. To learn more advanced techniques, continue along with the next few steps, and apply SoundSoap 2 when you have completed all the advanced steps.



*If you need to use the cleaned file within this Cubase project, import the cleaned file – otherwise, the cleaned file is ready to use in the directory where you exported.*

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



- 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.



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



- 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.

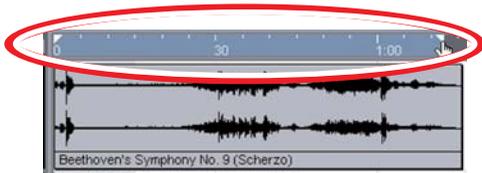


- Slowly raise the Enhance slider to help add tonality and boost frequencies that are commonly lost in degraded media sources (if you are working with a recording made from a degraded media source).

**4**



- When you are satisfied with the results, select the desired range to process with the Left/Right selection markers, and from the File menu choose Export>Selected Tracks.



*If you need to use the cleaned file within this Cubase project, import the cleaned file – otherwise, the cleaned file is ready to use in the directory where you exported.*

### Using SoundSoap 2 with Logic Pro

To use SoundSoap 2 with Logic Pro, you will need to have already installed SoundSoap 2 on your Macintosh system.

In this example, we'll be using Logic Pro as a host application, and we'll be restoring an LP recording which contains multiple types of noise. 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.

- Launch Logic Pro.
- Create a new session, and drag a noisy media file from the Finder into the Arrange Window.
- In the Mixer Window, assign SoundSoap 2 as an insert in the channel that corresponds to the track where the noisy audio file was placed.



- When the SoundSoap 2 interface appears, turn Broadband noise reduction to Off (it is on by default).



- 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, to make sure that the setting you have chosen will repair clicks/crackles of varying degrees throughout the entire recording.





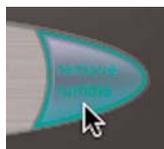
*If the clicks/crackles vary greatly from song to song, you may want to work on each song separately, processing each with a more precise setting.*

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 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 Logic's transport window – after analyzing the audio content for approximately two seconds, SoundSoap 2 will automatically turn on broadband noise reduction.
10. Listen to the results – to apply/render the current noise reduction settings, click the Bounce (Bnce) button in the master outputs section of the Logic mixer window.



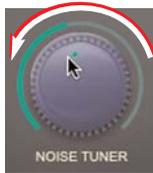
Congratulations! You've just learned the basics of using SoundSoap 2. To learn more advanced techniques, continue along with the next few steps, and apply SoundSoap 2 when you have completed all the advanced steps.

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-clock-

wise), 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.



15. 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.



16. 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).



17. When you are satisfied with the results, click the Bounce (Bnce) button in the master outputs section of the Logic mixer window, and be sure to save the file.



## Using SoundSoap 2 with Pro Tools

To use SoundSoap 2 with Pro Tools, you will need to have already installed SoundSoap 2 on your PC or Macintosh system.

In this example, we'll be using Pro Tools as a host application, and we'll be restoring an LP recording which contains multiple types of noise. 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.

1. Launch Pro Tools.
2. Create a new session and import a noisy media file to a track in the Pro Tools session.
3. In the Mixer window, add SoundSoap 2 as an effect insert on the channel that corresponds to the track where the noisy audio file was added.



4. When the SoundSoap 2 interface appears – turn Broadband noise reduction to Off (it is on by default).



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, to make sure that the setting you have chosen will repair clicks/crackles of varying degrees throughout the entire recording.



4



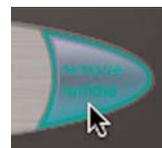
*If the clicks/crackles vary greatly from song to song, you may want to work on each song separately, processing each with a more precise setting.*

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.



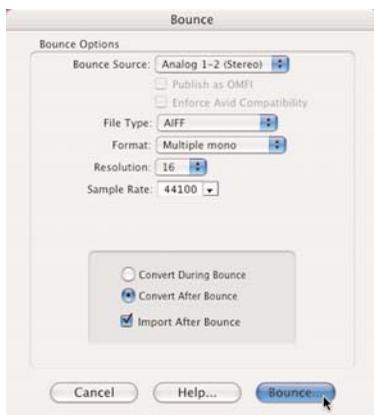


*The Hum Removal, Remove Rumble, and Preserve Voice features operate independently of the other noise reduction tools (Click & Crackle Slider, Noise Tuner & Noise Reduction knobs, and Learn Noise button), and can be toggled on or off either before or after learning a noise profile, and will not affect 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 – after analyzing the audio content for approximately two seconds, SoundSoap 2 will automatically turn on broadband noise reduction.
10. Listen to the results – to apply/render the current noise reduction settings, choose Bounce to Disk from the File menu.



Congratulations! You've just learned the basics of using SoundSoap 2. To learn more advanced techniques, con-

tinue along with the next few steps, and apply SoundSoap 2 when you have completed the additional 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.



15. Now, slowly turn the Noise Reduction knob to the

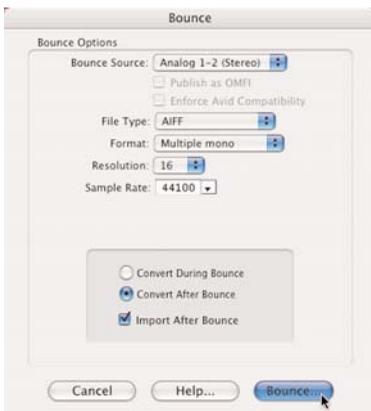
right (clockwise), until you reach the optimal balance between broadband noise reduction and introducing any unwanted artifacts.



- 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 to Disk from the File menu to apply/render the current noise reduction settings.



## Using SoundSoap 2 with GarageBand

To use SoundSoap 2 with GarageBand, you will need to have already installed SoundSoap 2 on your Macintosh system.

In this example, we'll be using GarageBand as a host application, and we'll be restoring an LP recording which contains multiple types of noise. 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.

- Launch GarageBand, and create a new song project.
- Delete the default virtual instrument that is automatically loaded into a new song project – select the track, and from the Track menu, choose Delete Track.

4



- Create a new Basic Track – from the Track menu, choose New Basic Track.



4. Drag a noisy media file from the Finder into the new track.



8. Click the Open Editor button to access the SoundSoap 2 interface.

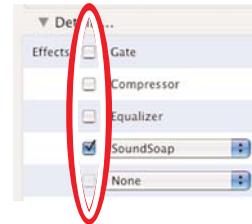


The previous step assumes that we're working with a pre-recorded media file. As an alternative, you may also record directly into GarageBand, and then apply noise reduction. For more information on recording directly into GarageBand, please consult the GarageBand Help file.

Be sure that all other effects are inactive while adjusting noise reduction controls! This can be done by unchecking the checkbox to the left of the Effect's name. If other effects are active at the same time as SoundSoap 2, it will be difficult to focus on removing the unwanted noise! Other effects may be used at the same time as SoundSoap 2, but it is recommended to first finalize noise reduction settings, and to add other desired effects later.



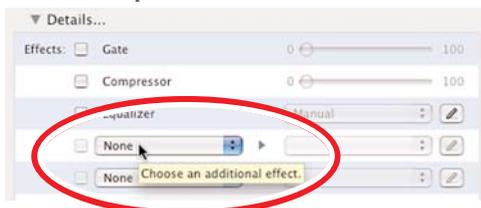
5. Double-click the track header area – the Track Info window appears.



6. Click the Details... disclosure triangle to show additional information about effects.



7. In the first (upper) Effects pop-up menu, choose SoundSoap.



9. When the SoundSoap 2 interface appears – turn Broadband noise reduction to Off (it is on by default).



10. 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, to make sure that the setting you have chosen will repair clicks/crackles of varying degrees throughout the entire recording.



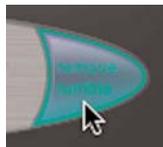
*If the clicks/crackles vary greatly from song to song, you may want to work on each song separately, processing each with a more precise setting.*

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...

- Click the 60Hz Hum Removal button.



- Click the Remove Rumble button.

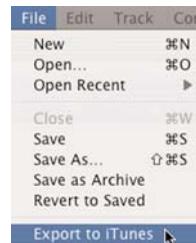


*The Hum Removal, Remove Rumble, and Preserve Voice features operate independently of the other noise reduction tools (Click & Crackle Slider, Noise Tuner & Noise Reduction knobs, and Learn Noise button), and can be toggled on or off either before or after learning a noise profile, and will not affect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

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



- Start playback – after analyzing the audio content for approximately two seconds, SoundSoap 2 will automatically turn on broadband noise reduction.
- Listen to the results – to apply/render the current noise reduction settings, choose Export to iTunes from the File menu.

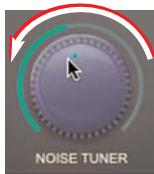


Congratulations! You've just learned the basics of using SoundSoap 2. To learn more advanced techniques, continue along with the next few steps, and apply SoundSoap 2 once you have completed them.

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



17. 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.



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



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



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

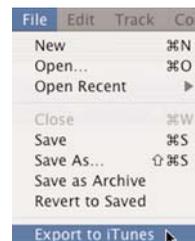
introducing any unwanted artifacts.



21. 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).



22. When you are satisfied with the results, choose Export to iTunes from the File menu to apply/render the current noise reduction settings.



The cleaned LP recording is now available as an AIFF file in your iTunes library, which can easily be burned to CD, transferred to an iPod, or imported into many other applications.



### Using SoundSoap 2 with Adobe Premiere Pro

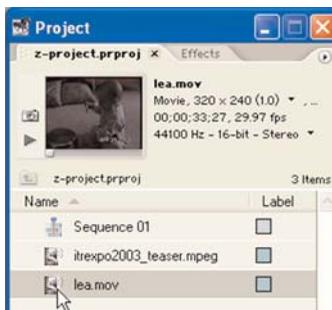
To use SoundSoap 2 with Premiere Pro, you will need to have already installed SoundSoap 2 on your Windows system.

In this example, we'll be using Premiere Pro as a host program, and we'll be cleaning up a noisy video clip.

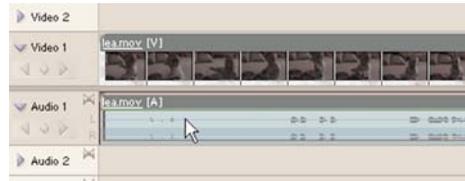


*The steps below outline using SoundSoap 2 as a real-time VST format plug-in, within the Premiere audio mixer. SoundSoap 2 may also be used as an "offline" effect, by dragging the SoundSoap 2 effect from the Project window onto a noisy media clip placed in the timeline. For more information on using SoundSoap 2 as an offline effect, please consult the Premiere Pro user's guide – SoundSoap 2 is applied in the same way as other offline effects.*

1. Launch Premiere Pro and create a new project/open an existing project.
2. Import a noisy media file.



3. Drag noisy media file into the Timeline window.



4. From the Window menu, choose Audio Mixer.
5. In the Audio Mixer; add SoundSoap 2 as an effect insert (corresponding to the audio track containing the audio portion of the noisy media file).



4

6. Once SoundSoap 2 is added as an insert, right-click on its name in the active insert, and choose Edit... from the pop-up menu.



7. When the SoundSoap 2 interface appears, set the Broadband mode to Off, and play back the project,

listening to the noise content, and evaluating which noise reduction tools should be used.



---

*In this example, we'll assume that only broadband background noise is present, and will use only the broadband noise reduction tools. Broadband noise is the most common type of noise found in digital video footage.*

---

8. Locate a portion of the file which contains just the unwanted broadband noise and place the Timeline's playhead at the beginning of this section.



---

*If the media file you are working with does not contain any areas with approximately two seconds of the noise by itself, you may want to try creating a "loop" of a shorter section. To create a loop in a particular section of your media file, simply drag the In point marker to the beginning of this section, and the Out point marker to the end of this section. Then, choose "Loop" from the Transport menu. Click the Learn Noise button, and initiate playback – SoundSoap 2 will use the looped section of audio to create a noise profile. Be sure to move the In and Out point markers back to their original positions after you've learned the noise profile. For more information, please see the section on "Tips for Noise Reduction" on page 39.*

---

9. Click SoundSoap 2's Learn Noise button and start playback. After analyzing the audio content for approximately two seconds, SoundSoap 2 will automatically turn on broadband noise reduction.



10. Listen to the results – if you are happy with the results, simply close the SoundSoap 2 interface and leave the insert active in the Audio Mixer window. Noise reduction settings will be applied when you export the project from Premiere Pro.

Congratulations! You've just learned the basics of using SoundSoap 2. To learn more advanced techniques, continue along with the next few 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.



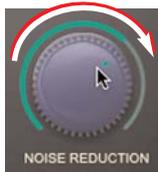
- Click the On button to return to the regular listening mode.



- 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, close the SoundSoap 2 interface and leave the insert active in the Audio Mixer window. Noise reduction settings will be applied when you export the project from Premiere Pro.

---

## Conclusion

You should now be familiar with the “hands-on” aspects of using SoundSoap 2 with a variety of other software. We hope you enjoy using SoundSoap 2 for cleaning up your noisy recordings and adding a professional touch to your audio projects!

