

Felt Tip Sound Studio User's Manual

by Lucius Kwok

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Copyright Page

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Introduction

About Sound Studio

Welcome to Sound Studio

Sound Studio is an audio recording and editing app for the Mac OS. It allows you to take full advantage of your Mac's built-in sound recording and playback capabilities, to digitize your collection of vinyl and tapes, to do live recording of audio, to edit new and pre-existing digital audio, and to save your audio in AIFF or Sound Designer II format to be used in other audio apps. And it all costs just US\$35, if you decide to keep it beyond the 14-day trial period.

Features

Recording:

- CD-quality recording on most Macs (44.1kHz, 16-bit stereo)
- Records from any Sound Manager input device
- Can record while playing back other sound files
- Can record while you work in other applications

Editing:

- See what you're editing in the waveform display window
- Standard cut/copy/paste editing, to and from other applications Single-channel editing allows left or right channel to be edited independently
- Filters which can apply effects to the audio
- Pitch-shifting
- Resampling

Application:

- Opens and saves in AIFF, Windows WAVE, System 7 Sound, and Sound Designer II file formats
- Uses little RAM: 6MB RAM lets you open several files up to 2 GB in size each.

Requirements

- Mac OS 8.5 or later
- PowerPC Macintosh, including G3/G4
- 6 MB free RAM
- Hard disk space for working with audio files

Filters

Volume Control:

- Amplify (increase or decrease volume)
- Normalize
- Fade In / Fade Out
- Noise Gate

Special Effects:

- Backwards
- Delay
- Echo
- Invert: (180° phase change)
- Swap Channels (of stereo audio)

Equalization:

- Smooth
- Emphasize

License and Registration

Felt Tip Sound Studio is distributed as shareware. You can use it on 14 different days before you're required to either register it or remove it from your hard disk.

Registration is US\$35 and gets you a single-user license code which is good for all 1.x versions of Sound Studio (that is, any version number less than 2.0, but not including version 2.0). Site licenses and world-wide licenses are available, and other licensing schemes are possible. Please see the Felt Tip Web site to register or for details on licensing.

<http://www.felttip.com/register/>

Once you have received your license code, you can personalize your copy of Sound Studio by going to the Register menu and selecting "Enter License Code." In the dialog that appears, you can enter the name you registered with and the license code that matches that name. You can also enter your company's or organization's name in the dialog, but this is optional.

What's Included?

The Sound Studio folder should include:

1. About Sound Studio: a short document describing Sound Studio
2. User's Manual: this document
3. Felt Tip Sound Studio: the application
4. How to Register: describes registering, the process of obtaining a license for this application
5. Register Sound Studio: an app you can use to begin registration
6. Release Notes: describes the historical changes between each version of this app

If you are missing any of these items from your Sound Studio folder, please download the complete package from:

<http://www.felttip.com/products/soundstudio/>

About this User's Manual

This document has two major parts:

1. Getting Started
2. Reference for Sound Studio

The first part, "Getting Started," describes how to install Sound Studio and set it up, and what system requirements are needed and what is recommended.

The second part, "Reference for Sound Studio," is an item-by-item description of each menu and window item in Sound Studio. It contains more detailed and complete information than the other parts of this document.

If you are using Adobe Acrobat, be sure to open the document map on the left side of this window. It will allow you to more easily navigate this document.

Getting Started

This chapter describes how to install Sound Studio on your Mac and set it up for the first time. It also contains information on the minimum system requirements to run Sound Studio.

Installing Sound Studio

You can get the latest version of Sound Studio from the Felt Tip Software Web site: <http://www.felttip.com/soundstudio/>

Sound Studio is distributed as a StuffIt 5 archive. You will need Aladdin's StuffIt Expander 5.0 or later to decompress the archive, or a compatible decompression utility. Once you have decompressed the archive, you will have the Sound Studio folder on your hard disk.

You can get Aladdin StuffIt Expander from: <http://www.aladdinsys.com/expander/>

You can install Felt Tip Sound Studio by dragging the entire Sound Studio folder to any place on your hard disk. However, the application does not rely on any of the files in the folder, and does not need to be placed in any specific location on your hard disk.

Requirements

Sound Studio has the following system requirements:

- Mac OS 8.5 or later, for the Appearance Manager and Navigation Services
- Power Macintosh, including the G3/G4 and PowerPC PowerBooks.
- 6 MB of available RAM
- Hard disk to use as a scratch disk

Also, it is recommended that you have the following:

- Mac OS 9 or later
- 16- or 32-bit graphics display
- Sound input device, such as the built-in microphone or the sound input port.
- Available hard disk space approximately twice the size of the audio files you will be working with.

Setting Up Sound Studio

Scratch Disk

The first time you launch Sound Studio, you will want to set up your scratch disk. Choose "Preferences" from the Edit menu, select the name of the disk you want to use as your scratch disk. This is where Sound Studio stores audio data while it is recording and editing. You will want to select a disk with sufficient available disk space and speed.

Other than the scratch disk, there is nothing else you need to set up in Sound Studio.

Reference for Sound Studio

This chapter describes in detail each of the commands in Sound Studio, and the parts of its windows.

Balloon Help has been built into the menus of Sound Studio. To turn on Balloon Help, choose "Show Balloons" from the Help menu. Then select any menu item and help will be shown next to the item.

This chapter is organized into two sections, "Commands" and "Windows," with several sub-sections:

- "File Commands" describes the File menu, which allow the filing of audio files and changing the properties of the entire file. This includes resampling and pitch-shifting.
- "Edit Commands" describes the Edit menu, which allow you to insert, remove, silence audio, as well as normal copy-and-paste to and from other applications.
- "Filter (Effects) Commands" describes the Filter menu, which allows you to apply filters or effects to the audio.
- "Document Window" describes the features of the parts of the main document windows, where you record, edit and play back an audio file
- "Sound Input Palette" describes the features of the floating palette window which allows you to set various sound input settings.

Commands in Sound Studio

This section describes the menu commands in Sound Studio. It describes how each of the commands works, and contains tips on getting the most out of each command.

File Commands

This sub-section describes the commands in the File menu of Sound Studio

New

Asks you what sound settings to give the new file, and creates a new, empty audio file which can be recorded or pasted into. Depending on which model Macintosh you have, not all of the sound settings are compatible for recording. For example, on most newer Macs you can only record at 44.1kHz. If you select a different sample rate, your new window will have its Record button disabled. To allow recording, after you have created a new file, go to the Resample command and select a compatible sample rate.

Open

Opens an existing AIFF, Windows WAVE, System 7 Sound, or Sound Designer II audio file. Sound Studio can open audio files saved with an 8 or 16 bit sample size, one or two channels, and any sample rate up to 65335 Hz.

Close

Closes the active window, asking to save changes if the window hasn't been saved.

Save / Save As

A normal save will save the active window in the same format it was last saved as, which is AIFF by default. Disabled if no changes have been made to the window.

Save As will ask you where you want to save the active window, and allows you to change the file format to AIFF, Windows WAVE, System 7 Sound, or Sound Designer II.

Revert

Discards all changes you've made to the active window, and reloads the last saved version of the window.

Resample

Changes the sample rate, sample size (8 or 16 bits), and number of channels (mono channel or stereo) of the active window, without changing the pitch or the overall duration of the entire audio file. This command is a bit slower than the other commands in this application, so it's advised that you use it with small or empty files only.

In the Resample dialog, there is a sample rate field where you can type in a sample rate or select a pre-defined one from a pop-up list. Not all rates are supported by all Macs, so for some rates you will see an alert saying that you can't record at that rate. This does not affect the editing or saving functions of Sound Studio, only recording.

Change Pitch and Duration

Changes the sample rate of the active window without touching the actual audio data, resulting in audio that runs at a different speed and has a higher or lower pitch, based on your new settings. Both pitch and duration are simultaneously changed.

Preferences

Shows the preferences dialog, where you can select which disk to use as your scratch disk, and whether to scroll the window while playing in order to keep up with the green playback marker.

Quit

Closes all open windows, asking to save those with unsaved changes, closes the sound input driver, and quits the application. When Sound Studio is launched, it automatically tries to open the default sound input driver, and presents an alert if it couldn't open it.

Edit Commands

This sub-section describes the commands in the Edit menu, which allow you to undo your last action, put and retrieve audio data on the clipboard, insert silence in and remove selections from the audio, and make parts of the audio silent.

Undo / Redo

After you have done something that can be undone, you can use this command to undo that action. This item toggles between undo and redo, where redo repeats your action after you undo it. With this command you can switch between the before and after states of a filter or edit, and compare how they sound.

Cut / Copy / Paste

These commands behave like standard clipboard commands, moving data to and from the clipboard so that it can be used elsewhere in Sound Studio and in other

applications. The paste command does not overwrite existing sound data, but it does replace the current selection with audio from the clipboard.

Clear

Removes the selected audio and moves the audio after it to fill in the gap. If you want to remove audio without changing the timing of the audio, use the "Silence" command instead.

Select All

Selects the entire sound file from beginning to end. If only one channel of a stereo file was selected, it only selects the entirety of that channel, and not the other channel.

Silence

Makes the selected part of audio silent, so that it has zero amplitude. This creates a silent passage in your audio. The first and last 0.5 milliseconds of the selection will be blended (cross-faded) between the existing audio and silence, to create a smooth transition. The duration of the blending is not adjustable.

Insert Time

Inserts an amount of silence, which you specify in a dialog, at the insertion point or in place of your selection, and moves the audio after it to accommodate the new silence.

Crop

This command keeps your selection and discards the unselected remainder.

Filter (Effects) Commands

This sub-section describes the Sound Studio filters, found in the "Filter" menu. All the filters work on the selected part of the audio only, or the entire file if there is no selection.

Except for the "Swap Channels" and "Backwards" filters, all the filters below will blend (cross-fade) the first and last 0.5 milliseconds of the selection between the existing audio and the new, amplified audio, to create a smooth transition. The duration of the blending is not adjustable.

Amplify

This is the volume control knob for the sound. 100% equals the current volume. Turn it up, get a louder sound. Turn it down, it's quieter. You want to be sure not to turn it up too much or it will clip the sound. Clipping is when the waveform tries to be bigger than the height of the channel it is in, and since there's no more room (headroom), the parts that don't fit simply get chopped off. Unless you want that kind of distortion, you should try not to amplify it too much.

If you're trying to get the sound volume to a specific peak loudness, try the Normalize filter.

Power user note: you can go past 200% by typing in the desired amplification, for example for 4x amplification, just type in 400% in the input field, and it'll amplify at 400%.

Backwards

I don't know if anybody really uses this filter for anything but having fun. It turns your sound around so that it plays backwards. The effect is the same as playing a tape backwards.

Delay

This filter mixes a single copy of your selection with itself, but at a lower volume and offset by the amount of time you specify. It's kind of like having a tape loop which records what you say and plays it back a certain amount of time later, or shouting across a valley and hearing your reflected echo once -- but it reflects the sound only once, unlike a true echo.

You can control how long of a delay you want (you can use decimal numbers such as 1.345 here), and the strength, or the volume, of the delayed sound.

Echo

This filter is just like Delay except it keeps repeating itself over and over at lower and lower volumes until it dies out. It's like a real echo, one you'd get if you were to shout inside a canyon. The controls are pretty much the same as for Delay. Note that the echo will end abruptly at the end of the selection unless you first insert silence at the end of the sound file and select the audio plus the silence when applying the echo filter.

Emphasize

This is an equalization filter which emphasizes the high tones (treble) in a sound. It tends to make sounds more crisp, but also introduces more noise.

Fade In/ Fade Out

This pair of filters do what they say: they fade in from silence and fade out to silence. The fade is a linear fade, so if you have a constant volume sine wave and you fade it out, you'll see it taper off at the same rate throughout the entire fade to silence. You'll want to select just the part that you want to fade. For example, if you wanted to start fading out at five seconds before the song ends, you would select the last five seconds and apply the Fade Out filter.

Invert

This filter simply turns your waveform upside down. You won't hear a difference after you've applied the filter. If you consider waves which go above the centerline of the display to be positive and waves which go below to be negative, the Invert filter just makes the positive parts negative and vice-versa. This filter is useful when you have a stereo file and one of its channels is inverted relative to the other. The audio will sound like it's coming from the sides when you listen to it in stereo, with no audio coming from the center. This filter will be useful in the future when you can select each channel individually.

Noise Gate

This is a more complex filter. It silences passages of audio which fall below a certain 'threshold' volume for a certain length of time (the 'attack'). If the noise level is high, increase the threshold. If you end up silencing too much of your audio, decrease the threshold. If short lengths of noise are not being silenced, decrease the attack. If there is too much noise hanging around the edges of the audio, increase the attack.

Normalize

This filter brings the volume of your audio as high as it can without clipping. This way, you can make sure you're using all the bandwidth (height of the channel) that you can get. Adjusting the 'Normalize to' value changes the maximum amount of bandwidth you want to use. At 50%, the sound volume will be brought up (or down) so that only half of the available bandwidth will be used.

The 'Adjust tracks individually' option controls whether you want to treat the two left and right tracks as independent audio tracks or as one stereo track. If the audio you're

editing already has its balance between the left and right sides perfectly set, then you want to leave this option off. However, if one side is much louder than the other and you want them balanced, select this option.

Smooth

This is the complementary filter to Emphasize. This one reduces the high tones (treble) in the sound file, making it less bright. It can also help reduce perceived noise in the audio by smoothing out the waveform.

Swap Channels

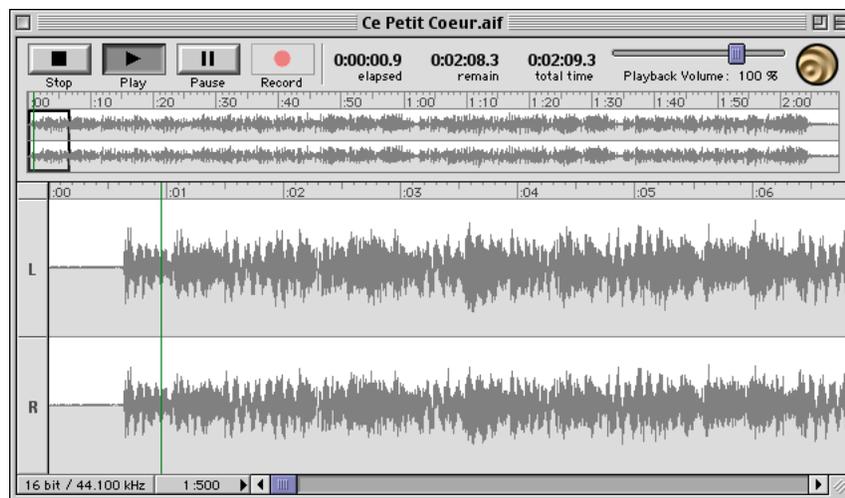
This filter simply swaps the left channel with the right channel, in case you had the left and right cables mixed up when you recorded the audio.

Windows in Sound Studio

This section describes the windows in Sound Studio, and the controls, views, and other items in them. Information on dialog boxes is found with their corresponding commands.

Document Window

The document window is the window you see when you create a new file or open an existing one. It is the main working area where you will record, edit, and play back your audio.



The descriptions below start with the items at the top left of the window and work their way first to the left, and then down.

Transport Controls

The transport controls are in the upper left corner of the window and control both playback and recording of audio. The stop and pause buttons work while playing or recording, but the play and record buttons can only be used one at a time.



(keyboard equivalent: Space Bar, while playing, or Command-Period)

The stop button will end playback or recording.



(keyboard equivalent: Space Bar)

The play button will start playback from the current insertion point. If you have made a selection, it will only play the selected part of the audio file. Currently, single-channel playback of stereo files is not supported. Stereo files will play in stereo regardless of which channel is selected.



(keyboard equivalent: P)

The pause button will pause playback or recording until the button is pressed again.



(no keyboard equivalent)

The record button will start recording from the sound input and append the audio data to the end of the current file.

Time Displays

The “elapsed” time displays the amount time from the beginning of the audio file to the insertion point or left edge of the selection. The “remaining” time displays the amount of time from the insertion point or left edge of the selection to the end of the audio file. The “total” time displays the amount of time from the beginning to the end of the file.

Playback Volume Control

The playback volume control is a logarithmic slider with a percentage readout which controls the playback volume of the audio file. It only affects the volume which Sound Studio plays, and its setting is not saved with the file.

Double-click on the slider to reset it to 100%. The slider has a range from 0% to 300%. At volumes above 100%, clipping may occur on playback.

Waveform Overview

This area in the top half of the window shows the entire audio file, and has a box which defines the current area being shown in the Waveform Main View below. Drag the left and right edges of the box to resize it.

Double-clicking on the overview sets the zoom level to “Fit On Screen.”

Waveform Main View

This area in the bottom half of the window is where you will edit the audio waveform. It shows the area outlined by the Waveform Overview above. In this view you can select audio data for editing and for applying filters.

Double-clicking on the view selects all of it.

Modifier keys. You can use several modifier keys by holding down these keys while clicking and dragging the mouse. Holding down the shift key allows you to extend the selection. Holding down the command key allows you to scroll the view by

dragging left and right. Holding down the option key lets you zoom in, while holding down both the option and control keys lets you zoom out.

Single-channel selection. For stereo files, clicking in the top half of the left channel selects the left channel, and clicking in the bottom half of the right channel selects the right channel. Clicking in the middle of the view selects both channels. When you have made a single channel selection, subsequent selections will generally be kept in the same channel.

Ruler. The ruler along the top of the view has markings in minutes, seconds and milliseconds.

Playback Marker (the Green Line)

While playing back the audio, this green line shows you where the playback head currently is. Some time drift may occur since the timer is only about 99% accurate.

Sample Size / Sample Rate Display

In the lower left corner of the window is a button which shows the file's sample size (8 or 16 bit) and sample rate (in kilohertz). Clicking on this button brings up the Resample dialog.

Zoom Pop-up Menu

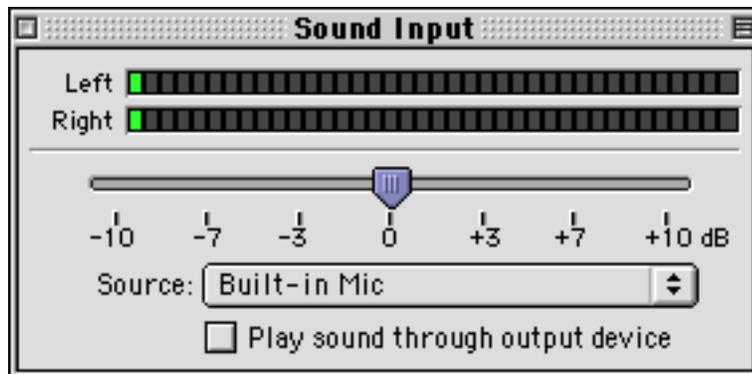
The Zoom button, located next to the Sample Size/Rate Display, shows the zoom ratio, or how many samples each pixel (dot) represents. A ratio of 1:1 means that you are seeing every sample, while a ratio of 1:100 means that each pixel (dot) represents 100 samples in the audio file.

Clicking on this button reveals the pop-up menu where you can select a predefined zoom ratio. You can also change the zoom using the View menu, by changing the box in the Waveform Overview, or by option-clicking and command-option-clicking the Waveform Main View.

Sound Input Palette

The sound input palette is a floating window that shows the current levels at the sound input, and lets you control the input gain (amplification), the input source, and whether or not to play the input signal through your selected sound output device (usually your speakers or headphones).

You can show and hide the Sound Input palette by using the Window menu.



Level Meter

The level meter, at the top of the palette window, shows the current levels in the left and right sound input channels. When there's one bar, that means there's no signal at the inputs, and when the bar lights up all the way to the right, that means the signal is saturating the input. The bars turn yellow at approximately 70% and red at 90%. The levels are not exact, since it only reports the levels that the Sound Manager drivers report, on a scale of 0-255.

Input Gain Control

The input gain control is directly under the level meter, and controls the gain, or amplification, at the sound input, before the audio is digitized. You want increase the gain as much as possible without going into the red on the level meter and possibly causing clipping.

Double-clicking on the control will return it to the zero position.

The dB markings on the control are only approximate. On Macs produced in the past two years, the actual gain spans about 46.5 dB, and other Macs can have either 46.5 dB or 22.5 dB gain. You will have to experiment to determine the actual effect of the input gain.

For programmers, the slider range corresponds to an input gain setting of 0.5 to 1.5, with 1.0 being at the center.

Input Source Pop-up Menu

The input source pop-up menu is labeled "Source" and contains a list of input sources provided by the current default sound input driver.

You can change the current input driver by opening the Sound control panel in the System and selecting a different driver. You will have to quit and relaunch Sound Studio to use the new driver.

Play-Through Checkbox

The play-through checkbox is labeled "Play sound through output device" and when checked, does what it says. When it is on and your speaker is in near your microphone, you may get feedback. However, if you're not recording from a microphone, or you are using headphones, you can turn this on to hear what you are recording.

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