Expert Sleepers
Little Spacey
v1.0.0
User Manual

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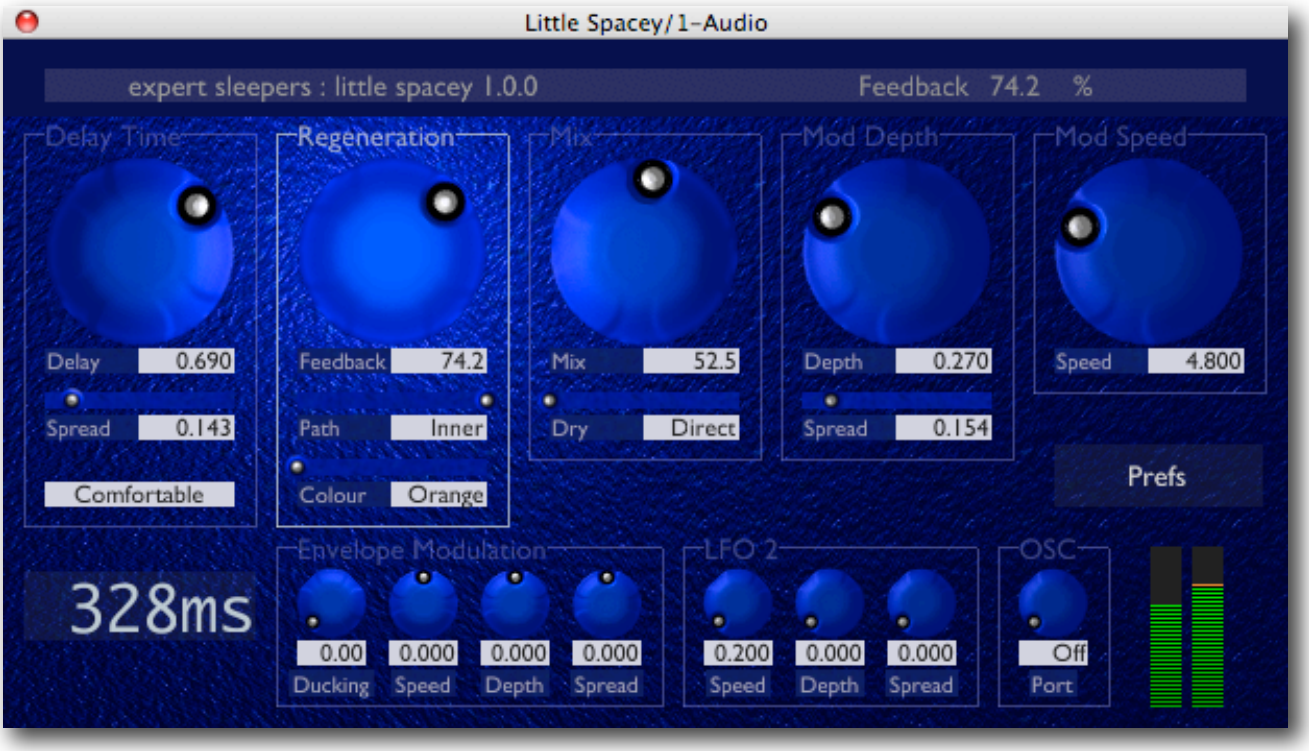
Introduction



Little Spacey is delay effect, inspired by classic analogue 'bucket brigade' delays but with refinements only possible in the digital arena - not to mention a maximum delay time that would cost a small fortune to realise in hardware.

Great care has been taken to give Little Spacey the smooth, creamy sound which makes analogue delays still popular today.

In common with the best analogue delays Little Spacey allows you to modulate the delay time for chorus or vibrato effects. Unlike most analogue delays, Little Spacey is not restricted to mono operation, and works well in stereo or multi-channel (AU only) settings, offering variation of the effect between the channels for particularly rich and involving sounds.

Installation

Mac OS X, Audio Unit (AU)

The plug-in file is called `ExSlLittleSpacey.component`.

Simply copy the file to the folder:

`Library/Audio/Plug-Ins/Components`

Mac OS X, VST

The plug-in file is called `ExSlLittleSpacey.vst`.

Simply copy the file to the folder:

`Library/Audio/Plug-Ins/VST`

Windows (VST)

The plug-in file is called `littlespacey.dll`.

Simply copy the file to your VST plug-ins folder.

System Requirements

Mac OS X

Little Spacey requires at least Mac OS X version 10.2.8. Version 10.4 or higher is recommended.

The plug-ins are Universal Binaries and so will work on PowerPC or Intel Macs.

The Audio Unit version will work in any Audio Unit host.

The VST version requires a "VST 2.4" compatible host.[1]

Windows

Little Spacey has been developed and tested with Windows XP SP2. It may work with other versions of Windows (Vista included) but this is by no means guaranteed.

The plug-in requires a "VST 2.4" compatible host.

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[1] VST is a trademark of Steinberg Media Technologies GmbH.

Registration

The downloadable version of Little Spacey stops working after 15 minutes every time you use it. To stop this happening, you need to buy a registration.

You can buy a registration key online using a credit card or PayPal from the Expert Sleepers Licence Manager application. See here for more information. Note that you need at least version 1.0.14 of the Licence Manager.

The e-commerce side of things is handled by eSellerate. If you have any security concerns, have a look at their website which is pretty informative.

Your registration key allows you to install Little Spacey on up to 3 different computers (useful if for example you have a desktop computer in the studio and a laptop for live use).

You need an internet connection to activate the software, though not necessarily on the computer on which you want to use it.

Quickstart

For a quick overview of Little Spacey, load up the plug-in in your host application of choice and try out the factory presets, which are listed below.

In some cases you will probably need to set up your levels appropriately, as described below in the Envelope Modulation section, so that the envelope tracking works optimally.

Factory presets

Defaults

In this preset all parameters are at their default value, giving a single fairly short delay. This is a plain 'vanilla' preset from which to start creating your own sounds.

With Feedback

Adds some feedback to the default settings for a repeating echo.

Subtle Shimmer

Adds some modulation, with spread, for a rich 'chorus-y' sound.

Vibrato

A deeper modulation, with a very short (almost inaudible) delay, turns the effect into more of a vibrato than a delay *per se*.

Oil Drum

A tiny delay with high feedback gives what sounds a little like a reverb, but in a highly coloured environment.

Stereo Delay

The spread on the delay time is turned up to give quite different delay times on the left and right channels.

Two LFOs

LFO 2 applies a modulation to the LFO 1 modulation depth. LFO 2 Spread is set to 0.5 so left and right channels are out phase.

Ducky

Maximum ducking is applied. With an appropriate input level you should hear that the delays are inaudible when the incoming sound is loud, only appearing when the level tails

off. This effect is typically used to let the initial note 'cut through' the delays, with the delays then fading up during the note's decay tails.

Env Mod Depth

Negative envelope depth modulation is applied, so there is very little modulation when the sound is loud, but the modulation increases as the sound fades out.

Env Mod Speed

Envelope speed modulation means the modulation gets slower as the incoming sound fades out.

Murky Swirl

A composite effect, offering dark delays with a slow swirl from the modulation section.

Bright Slap

The inner feedback path is used to brighten up the delay.

So Dark

The colour is wound down to Infra-Red and the dry mix is set to Filtered for a maximally dark sound.

Hard Crush

110% feedback and inner feedback path make for a grungy noise.

Deep Crush

As Hard Crush but with outer feedback for a dark, dark wub.

Using Little Spacey

Using the controls

Knobs

Basic use of the knobs is to click on them and drag the mouse up and down. However you can obtain different results by holding keys as follows:

- Shift : Values change more slowly as you move the mouse.
- Command[1] (Mac OS X) / Alt (Windows) : The knob assumes its default position.
- Option[2] (Mac OS X) / Control (Windows): The knob assumes integer values only.

Sliders

Sliders behave similarly.

- Shift : Values change more slowly as you move the mouse.
- Command : The slider assumes its default position.

Dropdown menus

Clicking on the menu displays the list of options. Move the mouse over the desired option and release the mouse to select it.

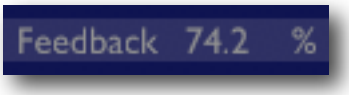
Value edit boxes

These boxes (below each knob and slider) let you enter parameter values directly. Clicking on the value highlights it in green - you can then type the desired value using the keyboard. Press enter to finish and accept the new value.

While you're typing the value, the box goes red to indicate that the value you see has not yet been accepted.

Name/value display

As you move the mouse around the interface, the name and current value of the control currently under the mouse is displayed in the top right of the window. This area also provides tool-tips for buttons.



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[1] The 'Command' key is also known as the 'Apple' key - the one next to the spacebar.

[2] The 'Option' (alt) key is the one between the Control (ctrl) key and the Command (cmd) key.

Delay Time

The Delay Time section controls the length of the delay.

Delay

Sets the length of the delay within the limits set with the Size control. The value simply goes from 0.0 to 1.0. Refer to the read-out at the bottom of the section for the actual delay time in milliseconds.

Spread

Sets the difference in delay times between the channels (i.e. left and right for stereo operation). At 0.0, the two channels have the same delay time.

Size

Sets the maximum length of the delay - the length of the 'bucket brigade' in hardware terms.

The actual maximum delay time will depend on this setting and on your audio clock rate. E.g. at 88.2kHz the delays will be exactly half as long as at 44.1kHz. The range of delay times at 44.1kHz is as follows:

Size setting	Minimum delay time	Maximum delay time
Tiny	5.8ms	116.1ms
Small	11.6ms	232.2ms
Comfortable	23.2ms	464.3ms
Large	46.4ms	928.8ms
Very Large	92.9ms	1857.6ms
Huge	185.8ms	3715.2ms

Regeneration

The Regeneration section controls how the delay repeats.

Feedback

Sets the amount of the delayed signal that gets routed back to the input of the delay, causing repeated echoes.

Note that the control goes up to 110%. Settings above 100% cause 'positive feedback' i.e. the delays get louder over time.

Path

In common with all 'bucket brigade' designs, Little Spacey uses filters either side of the delay to remove aliasing and clock noise.

The Path setting lets you control whether the feedback goes around the full signal path (including the filters) or just around the delay itself (not the filters).

In practice this means that the 'inner' path gives a relatively bright delay while the 'outer' path tends to lose the top end off the delays much more quickly.

Settings between 'inner' and 'outer' simply use a mixture of both feedback paths.

Colour

Allows you to lower the cut-off frequencies of the low pass filters, resulting in delays that lose more of their high frequency components.

Mix

The Mix section controls the relative levels of the delayed and original sounds.

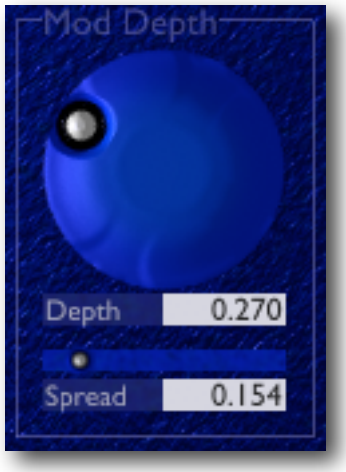
Mix

The Mix settings is a simple cross-fade between the 'dry' sound (the un-delayed input to the plug-in) and the 'wet' sound (the delays themselves).

Dry Mix

Controls whether the 'dry' output is indeed the true dry sound or a filtered version. The filtered version can be useful when using fairly 'dark'-sounding delays to match the dry sound more closely to the delayed sound.

Mod Depth



The Mod Depth section controls the depth of the delay modulation. The delay time is modulated by a simple sinusoidal LFO (low frequency oscillator).

Depth

Sets the amount of modulation.

Spread

Varies the phase of the LFO applied to each (stereo) channel.

At 0.0, the LFOs are in phase i.e. the same modulation is applied to each channel. At 0.5 the LFOs are exactly out of phase i.e the LFO for channel 1 is at its maximum when the LFO for channel 2 is at its minimum.

The Spread setting is useful for creating 'wide'-sounding effects from mono sources.

Mod Speed

The Mod Speed section controls the speed of the delay modulation.

Speed

Sets the frequency (in Hz i.e. cycles per second) of the delay modulation.

Envelope Modulation

The Envelope Modulation section controls the response of the plug-in to the envelope (i.e. the loudness) of the incoming sound.

For these features to work effectively you should ensure that the signal level going into the plug-in is appropriate. Use the level meters - the signal should be peaking into the yellow area at least.

Ducking

Ducking reduces the level of the delays when the signal level is high. This is typically used to let the initial note 'cut through' the delays, with the delays then fading up during the note's decay tails.

Speed

Sets the amount by which the envelope modifies the modulation speed. Positive settings cause the modulation to speed up when the sound is louder; negative settings cause the modulation to slow down when the sound is louder.

Depth

Sets the amount by which the envelope modifies the modulation depth. Positive settings cause the modulation depth to increase when the sound is louder; negative settings cause the modulation depth to decrease when the sound is louder.

Spread

Sets the amount by which the envelope modifies the modulation LFO's spread.

LFO 2

The LFO 2 section lets you control a second LFO which modulates the depth of the main modulation LFO.

Speed

Sets the speed of the second LFO.

Depth

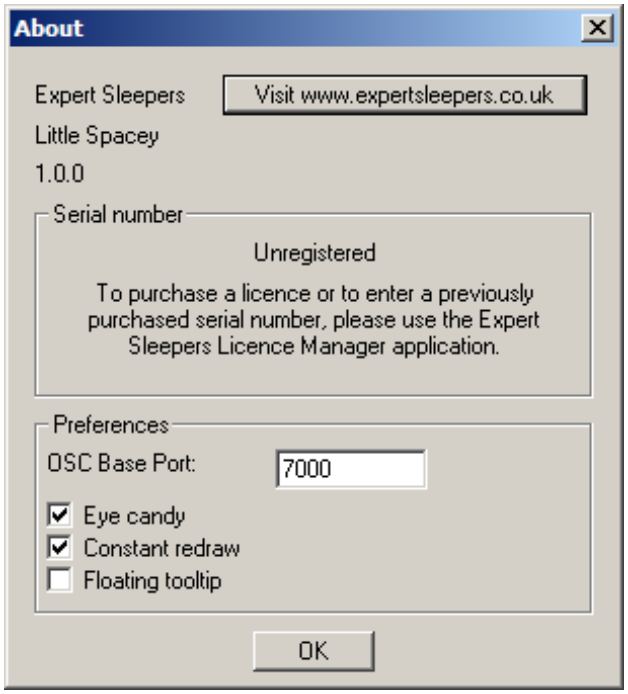
Sets the amount by which the second LFO affects the depth of the main LFO.

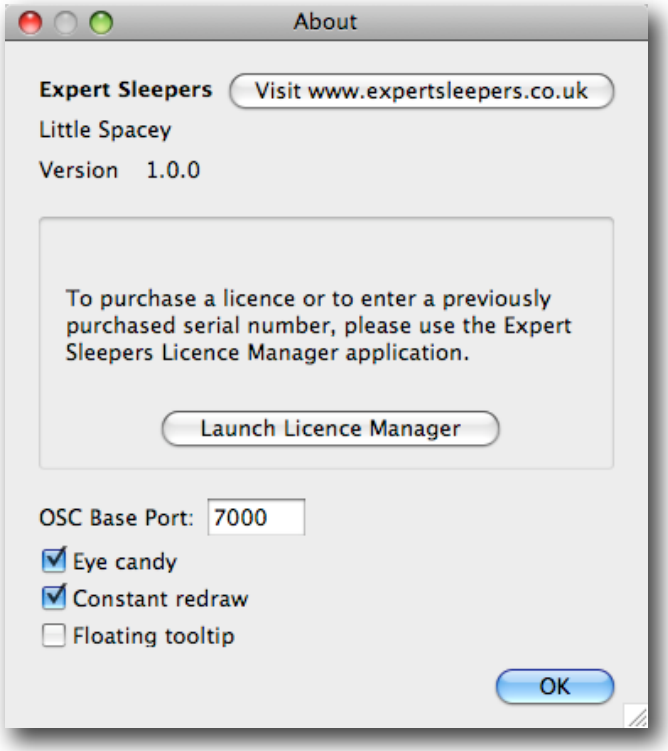
Spread

Varies the phase of the second LFO applied to each (stereo) channel.

Preferences

Pressing the 'Prefs' button brings up a dialog where various preferences are set. These settings are shared by all instances of Little Spacey, and are not stored with presets.





The top section shows the product version. The central section will show your serial number once you've bought a registration.

OSC Base Port

Sets the base port number for OSC. See the section on OSC, below.

Eye candy

Enables the pretty graphics. Turn off if you don't like them, or if your computer has compatibility issues with drawing such things.

Constant redraw

Is on by default. If turned off, the GUI is only redrawn when a control changes. Use this if you're concerned that the GUI is wasting your CPU resources. Note that the display of tracked pitch and envelope is useless if constant redraw is disabled.

Floating tooltip

Causes the parameter name and value display (usually in the top right of the GUI) to be displayed above the mouse pointer.

MIDI control

All of Little Spacey's parameters can be controlled via MIDI CC's (Continuous Controllers) according to the table below.

0	Mix
2	Dry Mix
3	Size
4	Delay Time
5	Spread
8	Feedback
9	Feedback Path
11	Colour
12	LFO 1 Speed
13	LFO 1 Depth
14	LFO 1 Spread
15	LFO 2 Speed
16	LFO 2 Depth
17	LFO 2 Spread
18	Ducking
19	Env->LFO 1 Speed
20	Env->LFO 1 Depth
21	Env->LFO 1 Spread
22	OSC Port Offset

OSC Control

Little Spacey can be controlled via the Open Sound Control (OSC) protocol.

If you're new to OSC, start by visiting opensoundcontrol.org.

Two settings control what port the plug-in uses to listen on for OSC commands. One is the base OSC port, set in the preferences. The second is the OSC Port Offset control. If the port offset is set to something other than 'Off', then the two numbers are added together and the result used as the port number. E.g. if the base port is 6000 and the port offset is 1, then the plug-in will listen on port 6001.

Reference

All Expert Sleepers plug-ins that support OSC share a common implementation. This is documented in the 'OSC Control Manual', available from the Expert Sleepers website.

MIDI & OSC Scripting

It is possible to extend the plug-in's MIDI & OSC functionality via user-writeable scripts. Indeed, the standard MIDI functionality described above has been re-implemented using such a script, which you can use as reference for your customisations.

The language used for the MIDI scripts is Lua. You will find a complete description of the language, and some useful tutorials, at the Lua website: www.lua.org

All the standard language features of Lua are available in the scripts, plus some extra functions specific to the Expert Sleepers system.

Reference

All Expert Sleepers plug-ins that support MIDI/OSC scripting share a common implementation. This is documented in a the 'MIDI & OSC Scripting Manual', available from the Expert Sleepers website.

Script locations

The plug-in name for constructing the script locations is '`Little Spacey`'.

Version History

1.0.0 21/5/2009

- First release.

Contact

The Expert Sleepers website is here:

http://www.expert-sleepers.co.uk/

Or you can email

info@expertsleepers.co.uk

Or you can use the forum, which is here:
http://www.kvraudio.com/forum/viewforum.php?f=85

Acknowledgements

The software described in this manual makes use of the following open source projects. The author is greatly indebted to them for their efforts and generosity.

Below are reproduced the various copyright notices and disclaimers that accompany these software projects, in accordance with their terms of use.

Lua

oscpack

oscpack -- Open Sound Control packet manipulation library
http://www.audiomulch.com/~rossb/code/oscpack

glew

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FTGL

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libpng

http://www.libpng.org/pub/png/libpng.html

zlib

http://www.zlib.net/