

# PSP stepDelay



## Operation Manual

[www.PSPaudioware.com](http://www.PSPaudioware.com)

## Acknowledgments

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## PSP stepDelay

PSP stepDelay is a creative delay plug-in designed to provide a wide range of sounds from lush analog tape delays to crazy modulated ping-pongs. Realistic tape saturation, head cueing emulation and versatile control makes a usage of this plug-in a hypnotic experience and a long lasting pleasure.

### Controls



**Display** — this multi-functional, interactive LED-style display shows the delay time, LFO rate, or tempo depending on which parameter is in focus. The display will switch between these parameters by clicking on or mousing over one of the above parameters in the LFO Rate and Delay Time sections. You can adjust the displayed value by dragging your mouse or scroll wheel.

In order to switch between permanently displaying the LFO rate or the delay time, click the LFO Rate or the Delay Time label.

**Sync**— this tree-position switch sets the synchronization mode 'on' for setting the LFO Rate and the Delay Time. When the switch is in the leftmost position, 'off' will appear as the caption to the switch, and synchronization is disabled. In this mode the LFO Rate is set in Hz and the Delay Time is expressed in milliseconds. In the middle and rightmost position the synchronization is on and both the LFO Rate and the Delay Time are synchronized to tempo. In 'BPM' position a manually set tempo is used. To set up the tempo in the BPM mode press the 'Alt' or 'Command' key and use the Delay Time knob. In 'hostBPM' position to DAW tempo. When synchronization is enabled, the plug-in's internal beat rate as well as note values for setting the delay time are synchronized to the tempo. Additionally for 'hostBPM' mode, the LFO is synchronized to the beginning of the bar closest to the starting point for the song's playback in the host.



**LFO Rate** — adjusts the LFO frequency between 0.01 Hz to 15 Hz, or when the synchronization is on, while the Alt key is depressed, shows the host tempo.

Here is an example of the display with the Sync in 'off' state for the LFO Rate in Hz:



In the synchronization mode (when the Sync control is set to 'on') the LFO frequency is quantized to the musical note chosen by selecting the numerator (number of notes) and the denominator (note value) on the display. You can set the musical note division to which the frequency will quantize.

Below is an example of the display with the Sync in 'on' state for the LFO Rate in quantized notes:



You can choose values from a list of quantized values ranging from sixty-fourth notes to octuple whole notes.

Note values are displayed as fractions, for example:

- **1/2** – a half note,
- **1/4** - a quarter note,
- **3/64** - a dotted thirty-second note.

In the synchronization mode when the LFO Rate (frequency) approaches maximum allowed value (15 Hz), the LED display will start blinking.

The LFO Rate can always be set in two ways:

- by clicking on a digit on the LED display and moving the mouse up/down,
- by click-dragging the LFO Rate knob control.

**Wave** — (LFO wave selector) selects the LFO waveform. You can choose between three waveforms: triangle, square and spike (pulses).

**Spread** — adjusts the LFO phase difference between the left and right channels, within a range of +/- 180° (values of 180° and -180° indicate that the LFOs for the left and right channels are in counterphase).



**Delay Time** — adjusts the delay time between 0.1 and 2000ms (2 seconds), or when the synchronization is on, while the Alt key is depressed, shows the host tempo.

Here is an example of the display with the Sync in 'off' state for the Delay Time in milliseconds:



In the synchronization mode (Sync is in on state) the Delay Time is quantized to the musical note by selecting the numerator (number of notes) and denominator (note value) in the display. You can set the musical note division to which the delay time will quantize. Here is an example of the display with the Sync in 'on' state for the Delay Time in quantized notes



You can choose from a list of note values ranging from sixty-fourth note triplets to octuple whole notes by click-dragging the Delay Time encoder knob. Moving the knob while the Shift key is pressed allows you to fine-tune the desired delay time value.

For a precise setting you can use the LED display, by clicking on a digit and moving the mouse up/down for the numerator and the denominator separately, where is allowed full range of values.

Note values are displayed as fractions, for example:

- $1/2$  – a half note,
- $1/4$  - a quarter note,
- $3/64$  - a dotted thirty-second note.

In the synchronization mode when the Delay Time (milliseconds) approaches maximum allowed value (2000 ms), the LED display will start blinking.

Always the Delay Time can be set in three ways:

- by clicking on a digit on the LED display and moving the mouse up/down,
- by click-dragging the Delay Time knob control,
- by click-dragging the Delay Time slider control.

Please note – the controls on the Delay Time LED display (the numerator and the denominator) and the Delay Time knob appear to the plug-in host as separate automatable parameters of the plug-in.

**Glide** — three-position switch adjusts the timing of the tape simulation when you are adjusting the delay tap manually.

You can choose between the following states: slow, smooth, fast.

To give you a more detailed explanation of what “Glide” refers to:

The acceleration and deceleration of mechanical tape elements (in other words, the way PSP stepDelay emulates the effects of fast forward or rewinding magnetic tape) are simulated (or more accurately, are shaped) by using a fourth-order filter algorithm. Glide is the time constant for this filter.

**Tap** — (Tap Pad button) the timing between clicks on the tap button sets the delay time.

In order to automate this parameter effectively, you need to record the changes of the DelayTime parameter in Mode:time or the NoteTime parameter in Mode:BPM and hostBPM.



**Tap LED indicator** — this indicator has two functions:

The indicator flashes for the Tap button, after the Tap button is clicked.

The indicator flashes with a frequency equal to the inverse of the delay time.



**Cutoff (High-Pass Filter)** — sets the cutoff frequency between 250 Hz and 20000 Hz of the high-pass second order filter in the feedback loop.

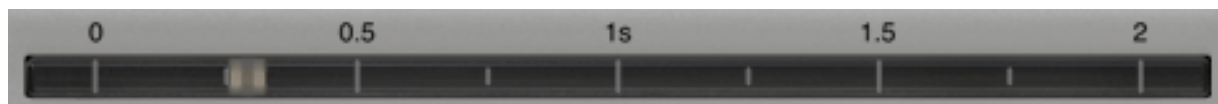
**HPF label** — click to switch the HP filter on/off.

**Cutoff (Low-Pass Filter)** — sets the cutoff frequency between 20 Hz and 2500 Hz of the low-pass second order filter in the feedback loop.

**LPF label** — click to switch the LP filter on/off.

**Filters label** — click to switch HP and LP filters on/off simultaneously.

In order to automate this parameter effectively, you need to also write the changes of the following parameters: HPF on/off and LPF on/off.



**Delay Time Slider** — adjusts the delay time or delay note depending on the Synchronization mode.

The delay time/note can be changed either by clicking and dragging the grey indicator to the desired value or by pressing the Alt (Option – Mac) key and clicking anywhere on the Delay Time slider.



**Input Gain** — sets the input level between -24 and + 24dB.

**LFO Depth** — adjusts the amount of the LFO applied to the delay tap. The maximum value possible depends on the delay time.

**Delay Ping-Pong** — three-position switch sets the amount of the ping-pong effect. There is no ping-pong delay present in the Center position. Moving the control to the left from Center sets the plug-in's left delay shorter than the right one. Moving the control to the right from Center sets the right delay shorter than the left one.

**Delay FB** — sets the feedback amount from 0% to 150%. This control has 7 pre-set values: 0%, 25%, 50%, 75%, 100%, 125% and 150%. You can choose between them by clicking on a corresponding (clockwise) dot next to the control or by clicking on the Delay Feedback knob with the CTRL key pressed.

**Delay FB label** — click to remove all feedback. This is useful as a kind of panic button if your delays are out of control.

**Delay FB LED indicator** — indicates the saturation level. PSP stepDelay features a built-in limiter module which also simulates the saturation effect of an analogue tape recorder. FB LED indicator shows the current level of limiter saturation.

**Delay Image** — three-position switch controls the stereo spread (image) of the delayed signal. Values to the left of Mono reverse the stereophony. Setting it to Stereo provides a standard stereo dry signal at the output. Middle position sets Mono.

**Output Level Dry** — sets the level of the dry output signal.

**Output Dry label** — click to add/remove the dry signal from the output. This parameter has global mode, settings are stored in all presets in a bank.

**Output Level Wet** — sets the level of the wet (processed) output signal.

**Output Wet label** — click to add/remove the wet (processed) signal from the output. This parameter has global mode, settings are stored in all presets in a bank.

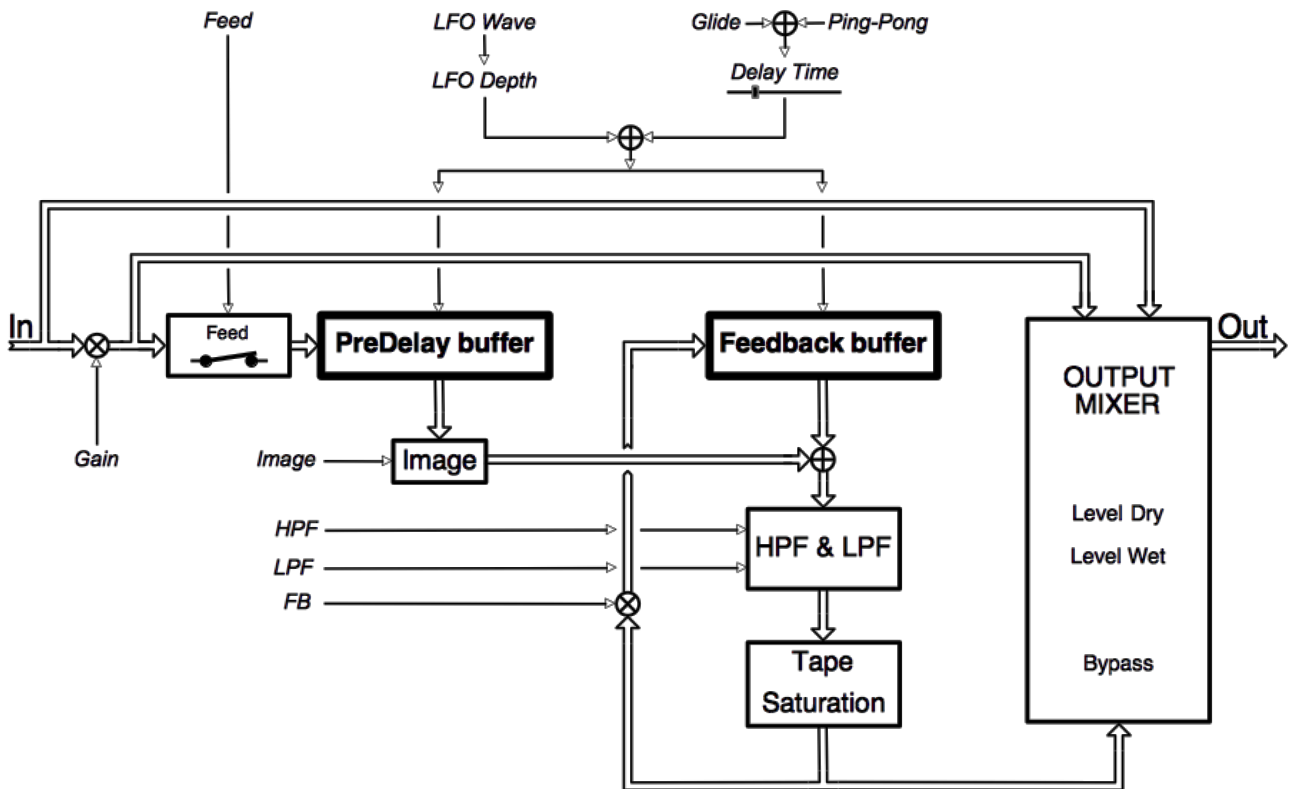


**Feed** — toggles feeding signal to the delay buffer. The LED indicates the plug-in is feeding signal to the delay processor. When toggled off, the input signal remains undelayed. However, the delay processor still processes the signal contained in the delay buffers in the background, so when you toggle Delay Feed back on, the delay processing will continue immediately.

**Bypass** — toggle the plug-in on/off.

# PSP stepDelay Signal Flow

This diagram shows the signal flow inside PSP stepDelay.



## PRESET HANDLING AND VIEW OPTIONS

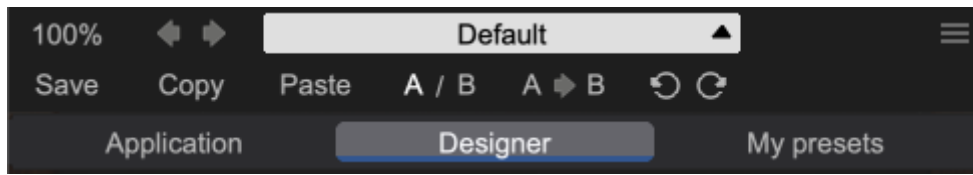
Every PSP plug-in comes with a large library of factory presets. You can use them as a starting point for experimenting with your own sounds, examine them to understand how the various features work, or keep them handy for when a track or mix needs a quick and high-quality way to create an effect or fix a problem.

To access the preset library, just click on the Preset Bar along the top of the plug-in window. If you're familiar with other PSPaudioware plug-ins, you'll find that this one works exactly the same way.



## Preset Browser

This plugin features a comprehensive preset management and browser system. To access the preset browser, simply click on the preset name window at the top of the plug-in (which displays 'Default' when the plug-in loads).



The new preset manager has three main categories which can be accessed via the tabs at the top of the preset browser: **Application**, **Designer**, and **My presets**.

**Application** – shows all factory presets, sorted by application or type of effect. These can be selected from a list on the left side of the preset browser.

**Designer** – shows all factory presets, sorted by designer. A photo of the designer is displayed for each of their presets. Click on the photo to open the designer's website.

**My presets** – shows only the presets you have created and saved, or downloaded and added to your custom presets for plugin.

**NOTE:** The Factory presets are built into this plugin. While you can't edit them directly, you can make adjustments to them, and then save the result as a user preset.

To add categories to the preset list, you can create new subfolders in the preset directory.

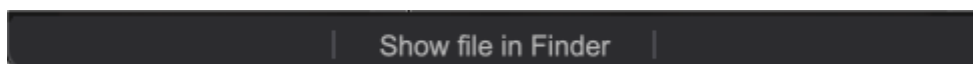
For Windows users, this is located at:

**C:\Users\Username\Documents\PSPaudioware.com\User Presets\PSP stepDelay**

For Mac users, this is located at:

**~/Documents/PSPaudioware.com/User Presets/PSP stepDelay**

**NOTE:** You can find the exact file location by clicking on the **Show File in Finder** button at the bottom of the preset browser window.



To select a preset, simply click a preset name in the right window. On the first click, the preset will be temporarily loaded so that you can audition it while still in the preset browser. To confirm the preset choice and get back to the main user interface, double-click the preset name again.

## Copy / Paste

A dark rectangular button with the text 'Copy' on the left and 'Paste' on the right, both in a light gray font.

The **Copy/Paste** feature is useful for when you're running two or more instances of the plugin and you want them to have identical settings.

Of course, you can always open a new instance and load the same preset as your first instance has, but this only works if your first instance hasn't been tweaked at all since the preset was loaded. To share your tweaks between instances, use **Copy** and **Paste**.

To use this feature, simply click the **Copy** button, open a new instance of the plugin where it's needed, and click the **Paste** button to load the first instance's settings.

This feature can be particularly useful for processing similar instruments or sounds, when only a few minor tweaks are needed for each instance.

## A/B System

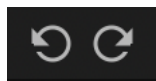
A dark rectangular button with the text 'A / B' on the left and 'A → B' on the right, both in a light gray font.

The **A/B system** lets you quickly audition changes to your settings. You can compare how different tweaks work in a track or mix, or even audition two different presets on the fly.

The **A/B Button** allows you to quickly switch between the current plug-in settings (**A**) and a previous group of settings that you've previously stored (**B**).

The **A>B Button** copies the **A** settings over to the **B** slot. This lets you temporarily 'bookmark' your current settings, make more tweaks, and then compare the new tweaks with your 'bookmarked' settings using the **A/B Button**.

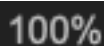
## Undo / Redo



The **Undo/Redo** feature can be extremely important when designing presets! We all know the frustration when we make one too many edits and ruin a previously great sound. With the **Undo** and **Redo** buttons (the counterclockwise and clockwise arrows as shown above), you can step backward and forward through your edit actions until you're back where you wanted to be.

These buttons will let you undo a preset selection, returning you to your previous preset with all settings as they were when you stopped editing it.

## GUI resizing

A dark rectangular button with the text '100%' in a light gray font.

The percentage at the top left shows the current user interface size. Click on it to reveal a dropdown menu of size choices, or hover your mouse on it and scroll up and down to change the size quickly. Double-click to reset it to the default size (100%).

You can also resize the plug-in interface by click- dragging the right bottom corner of the plug-in to any size you like.

## Config section



Click the icon with three parallel lines in the top right corner to open the **CONFIG** menu. You will find controls to open the manual, hide or show mouse-hover tool tips (Hints), and check your current plug-in version with build number.



These functions are also available in the **Global Settings tab** on plugin's back panel, which is accessed by clicking the plugin name on the front panel.

Clicking the Plug-in Information and Settings tab returns you to the main view.

# Minimum System Requirements

## Windows

### VST

- Windows 7 – Windows 11
- 64-bit VST3 compatible application

### VST3

- Windows 7 – Windows 11
- 64-bit VST3 compatible application

### AAX

- Windows 7 – Windows 11
- 64-bit Pro Tools

## macOS Intel or macOS AppleSilicon

### AudioUnit

- macOS 10.12 – macOS 14 Sonoma
- 64-bit AudioUnit compatible host application

### VST

- macOS 10.12 – macOS 14 Sonoma
- 64-bit VST3 compatible application

### VST3

- macOS 10.12 – macOS 14 Sonoma
- 64-bit VST3 compatible host application

### AAX

- macOS 10.12 – macOS 14 Sonoma
- 64-bit Pro Tools



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## Processing

- All internal processing done with 64-bit double precision floats.
- Supports 32-bit and 64-bit floating point audio streams.
- Supports sample rates up to 384 kHz..
- No latency.

**Enjoy !**

PSP team

# Support

If you have any questions about any of our plug-ins, please visit our website:

[www.PSPAudioware.com](http://www.PSPAudioware.com)

Where you can find the latest product information, free software updates, online support forum and answers to the most frequently asked questions.

Problems with the installation, activation or authorization?

Please watch our [troubleshooting video tutorials](#) on our YouTube channel.

You can also contact us by e-mail: [support@PSPAudioware.com](mailto:support@PSPAudioware.com).

We will gladly answer all of your questions. As a rule we respond within 24 hours.

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