

# PSP B-Scanner



## Operation Manual

## Credits

Plug-in Design: Mateusz Woźniak & Piotr Kryger

Programming and Algorithms: Piotr Kryger

Algorithms' Supervision and Programming Assistance: Mateusz Woźniak

Graphics: Mateusz Woźniak

Documentation: Piotr Kryger & Orren Merton

Product Manager: Antoni Ożyński

## Acknowledgements

Thanks to all our customers around the world for ideas and help in development of new plug-ins!

By using this software you agree to the terms of any license agreement accompanying it. “PSP”, the PSP logo, “PSP B-Scanner”, and “It’s the sound that counts!” are trademarks of PSPaudioware.com s.c.

Hammond, Hammond A-100, Hammond B-2, Hammond B-3, Hammond C-2, Hammond C-3 and Hammond RT-3 are trademarks of respective owners and are used only for reference purposes.

All other trademarks are the property of their respective owners.

© 2016 PSPaudioware.com s.c.

# Table of Contents

<b>CREDITS.....</b>	<b>2</b>
<b>ACKNOWLEDGEMENTS.....</b>	<b>2</b>
<b>TABLE OF CONTENTS.....</b>	<b>3</b>
<b>END USER LICENSE AGREEMENT.....</b>	<b>4</b>
<b>OVERVIEW.....</b>	<b>5</b>
COMPATIBILITY.....	5
LIMITATIONS OF THE DEMO VERSION .....	5
<b>CONTROLS .....</b>	<b>6</b>
CENTER SECTION.....	6
FAST SECTION.....	8
SLOW SECTION.....	9
MIDI BAR.....	10
PRESET BAR.....	11
<b>SUPPORT.....</b>	<b>12</b>
<b>USER COMMENTS.....</b>	<b>12</b>

# End User License Agreement

**PREFACE:** This End-User License Agreement (“EULA”) is a legal agreement between you and PSPaudioware.com s.c. (PSP) for the PSP product accompanying this EULA, which includes computer software and may include associated media, printed materials, and “online” or electronic documentation (“SOFTWARE”). By installing, copying, or using the SOFTWARE, you agree to be bound by the terms of this EULA. If you do not agree to the terms of this EULA, you may not use the SOFTWARE.

The SOFTWARE is protected by copyright laws and international copyright treaties, as well as other intellectual property laws and treaties. The SOFTWARE is licensed, not sold.

**LICENSE:** You may install and use a copy of the current version of the SOFTWARE, or in its place, any prior version for the same operating system, on as many machines as you want as long as you are the only user of those DAWs. If more users use the software you must buy an additional license for each workstation. The DEMO VERSION of the SOFTWARE is NOT LICENSED FOR COMMERCIAL USE.

**RESTRICTIONS:** You may not transfer, modify, rent, lease, loan, resell, distribute, network, electronically transmit or merge the SOFTWARE. You may not reverse engineer, decompile or disassemble the SOFTWARE, or otherwise attempt to discover the SOFTWARE source code. You are not permitted to copy the SOFTWARE or any of the accompanying documentation.

**COPYRIGHTS:** All title and copyrights in and to the SOFTWARE (including but not limited to any images, photographs, animations, video, audio, music, text, and “applets” incorporated into the SOFTWARE), the accompanying printed materials, and any copies of the SOFTWARE are owned by PSP. The SOFTWARE is protected by copyright laws and international treaty provisions. Unauthorized reproduction or distribution of the SOFTWARE or documentation is subject to civil and criminal penalties.

**DISCLAIMER OF WARRANTY:** The SOFTWARE is provided “AS IS” and without warranty of any kind. The entire risk arising out of the use or performance of the SOFTWARE and documentation remains with user. To the maximum extent permitted by applicable law, PSP further disclaims all warranties, either express or implied, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose, with regard to the SOFTWARE, and any accompanying hardware. To the maximum extent permitted by applicable law, in no event shall PSP be liable for any consequential, incidental, direct, indirect, special, punitive, or other damages whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss) arising out of this EULA or the use of or inability to use the SOFTWARE, even if PSP has been advised of the possibility of such damages.

**MISCELLANEOUS:** This EULA is governed by Polish law. Should you have any questions concerning this EULA, or if you wish to contact PSP for any reason, please write to:

PSPaudioware.com s.c.

Kwadratowa 4/19

05-509 Józefosław

Poland

# Overview

We're very excited to present to you the **PSP B-Scanner**, an emulation of the analog scanner-based effect available in the most sought-after models of vintage Hammond tonewheel organs (such as B-3, C-3, A-100 and others). Although the **PSP B-Scanner** has been meticulously designed to recreate the classic sound of the Hammond B-3 Vibrato and Chorus, it offers a wide range of options allowing you to maximize the potential of this unique effect.

## Compatibility

**PSP B-Scanner** is compatible with most applications that can host VST, RTAS, AAX and Audio Unit plug-ins.

### Minimum System Requirements

#### PC

##### VST

- Windows XP, Vista, 7, 8 or 10
- VST 2.4 compatible application

##### RTAS

- Windows XP, Vista, 7 or 8
- ProTools LE 8.0.0 or ProTools TDM 8.0.0 (or later)

##### AAX

- Windows XP, Vista, 7 or 8
- Pro Tools 11 or Pro Tools HD 11

#### Mac

##### AudioUnit

- Mac OSX 10.8 – 10.11 or later
- 32 or 64-bit host application capable of running AudioUnit plug-ins with Cocoa view

##### VST

- Mac OSX 10.8 – 10.11 or later
- 32 or 64-bit VST 2.4 compatible host application

##### RTAS

- Mac OSX 10.8 – 10.10 or later
- ProTools LE 8.0.0 or ProTools TDM 8.0.0 (or later)

##### AAX

- Mac OSX 10.8 – 10.10 or later
- Pro Tools 11 or Pro Tools HD 11

## Limitations of the demo version

We offer a 14-day evaluation period without any audio interruption or control limitations. To get access to the plug-in and your unique authorization details simply log-in to your account at our [user area](#). Enjoy!

# Controls

PSP B-Scanner's front panel is divided into three sections. The center section contains general controls, and the upper and lower sections offer dedicated controls for the Fast and Slow speed settings, respectively. Please read the description of individual controls below in order to learn how to get the most out of this plug-in.

## Center Section



This section of the plug-in contains the global parameters controls of the plug-in. These include the Mode Selector, various emulation settings as well as input and output amplifier settings. The most important parameter is the Mode Selector, allowing you to set the character of the effect by selecting one of six different modes. Other important features include the Speed Lever, which allows you to set the rotation speed, and the Speed and Stop buttons, which are used respectively for switching between speeds and stopping the rotation of the scanner motor completely.

### PSP B-SCANNER

Click on this label to open the about box of the plug-in. The about box contains information about this plug-in, the current version number and your authorization details. Click anywhere in the about box area to close it.

### SPEED Lever

The speed lever is the main way to smoothly control the speed of the plug-in. It is possible to jump to any chosen position by clicking on that position, or by clicking the SLOW and FAST labels (which automatically set the lever position to minimum/maximum, respectively). Please note that this lever does not control the speed directly as the rotation speed is always subject to inertia – its parameters (acceleration time, deceleration time) can be defined for both channels in the Slow and Fast sections of the plug-in.

### SPEED Button

This button immediately shifts the speed lever to Fast or Slow positions depending on the current state of the plug-in's speed settings including the previously set speed and lever setting.

### STOP Button

Use this button to stop the scanner motor. When clicked, stop mode is engaged and the button illuminates red. The second click of this button disengages stop mode and switches the rotation to its previous settings (as set by the lever).

### EMULATION

This set of knobs controls various settings of the scanner emulation.

- **MODE Selector**

The mode selector lets you choose from one of the six modes available in the plug-in: V1, C1, V2, C2, V3 and C3.

The control's settings correspond to the Vibrato Switch available on Hammond tonewheel organs equipped with the Selesctive Vibrato system (Hammond A-100, B-2, B-3, C-2, C-3, RT-3 and similar). The setting names beginning with **V**, indicate **Vibrato** modes, while the modes beginning with **C** stand for **Chorus** modes. The number next to the letter V or C, generally, refers to the perceived “depth” of the chorus or vibrato effect. The larger the number, the stronger the effect.

You may also click on the mode name labels to change the current MODE setting.

- **HiEQ knob** – controls the high frequency response (brightness) of the scanner.
- **QUALITY rotary switch** – offers the following scanner configurations:
  - **B3** – modelled on the classic 16-position scanner,
  - **HiRes** – an original 48-position design, much smoother (especially when the scanner motor is rotating at a low frequency, such as 1 Hz).
  - **SMOOTH** – softens the output of the scanner further by replacing the scanner with smooth, continuous modulation.
- **TREM knob** – controls the amount of the tremolo effect in the scanner emulation.
- **C-MIX knob** – controls the chorus mix – the ratio between the wet signal (i.e. processed through the scanner) and the dry (unprocessed) signal. This setting has no effect in the Vibrato (V) modes.

## INPUT

There are three knobs in the INPUT section.

- **GAIN knob** – controls the scanner input gain.
- **WIDTH knob** – sets the input width, values higher than 100% widen the stereo image of the input signal.
- **DRIVE knob** – controls the non-linear behavior (saturation) of the scanner emulation.

## OUTPUT

Similarly to the INPUT section, the OUTPUT section also features three knobs:

- **LPF knob** – sets the cutoff frequency of the low-pass filter processing the output of the scanner.
- **WIDTH knob** – sets the stereo width of the output signal, values higher than 100% widen the stereo image of the output signal.
- **GAIN knob** – controls the master output gain.

## MODE SWITCH

This switch lets you select how individual rotation speeds and inertia parameters are expressed for the left and the right channel.

- **L R mode** – the speed/inertia parameters for both channels are set as separate values (in Hz/seconds, respectively [when the TEMPO SYNC switch is off, otherwise as note values]),
- **LINK mode** – the parameters are shown separately (like in the L R mode), but the ratio between them remains constant (within possible range),
- **B D mode** – the parameters are shown in BASE DEV pairs consisting of a base value and the deviation, applied to both channels, in opposite directions.

## TEMPO SYNC SWITCH

Clicking on the TEMPO SYNC switch toggles the TEMPO SYNC mode. When the TEMPO SYNC mode is enabled, the speeds and inertia parameters for both channels are expressed as note values ranging from a sixty-fourth note triplet to a quadruple whole note. Note values are displayed as fractions with additional symbols, e.g.:

- **1/2** – a half note,
- **1/4.** - a dotted quarter note,
- **1/8t** – an eighth note triplet,
- **1/16q** – a sixteenth note quintuplet,
- **1/32s** – a thirty-second note septuplet.

## **BYPASS**

Clicking on the BYPASS label will activate the bypass mode. When clicked, the label will turn bright red and all processing inside the plug-in will be bypassed.

## **PHASE LED**

The PHASE LED indicates the **rotational** phase difference between the left channel and the right channel. The bright-yellow LED is lit when the channels are in-phase and unlit when the channels are out of phase.

## **SCANNER LED RING**

The SCANNER LED RING, located to the right of centre of the EMULATION section, indicates the momentary position of the scanner. When the **left-channel** scanner is in a position corresponding to a given LED in the RING, the LED will turn **bright green**.

Similarly, when the **right-channel** scanner is in a position corresponding to the same LED, the diode will turn **bright red**. If both channels are in the same position, the LED correlated with that position will turn **yellow**. In general, the more yellow the LED, the higher the correlation between the momentary phases in the channels.

# **Fast Section**

This section of the plug-in contains the set of controls that configure the FAST speed setting parameters.

## **SPEED**

Contains two mode-switch-position-dependent controls:

In the L R or LINK modes:

- **LEFT knob** – controls the frequency of the fast rotation for the left channel.
- **RIGHT knob** – controls the frequency of the fast rotation for the right channel.

In the B D mode:

- **BASE knob** – controls the base frequency of the fast rotation (for both channels).
- **DEV knob** – controls the fast rotation frequency deviation for both channels.

## **ACCEL**

Contains two mode-switch-position-dependent controls:

In the L R or LINK modes:

- **LEFT knob** – sets the transition time between slow and fast rotation speeds for the left channel.
- **RIGHT knob** – sets the transition time between slow and fast rotation speeds for the right channel.

In the B D mode:

- **BASE knob** – controls the base acceleration time (for both channels).
- **DEV knob** – controls the deviation of the acceleration time for both channels.

## **RANDOM**

Contains the following controls:

- **DEPTH knob** – sets the random speed modulation depth (for both channels) when the Speed Lever is set to FAST.
- **DIFF knob** – sets the amount of difference between the FAST random speed modulation in the left channel and in the right channel (expressed as a percentage).

**PHASE SPREAD** – controls the scanner position phase offset between the left channel and the right channel (in degrees).

# **Slow Section**

This section of the plug-in contains the set of controls that configure the SLOW speed setting parameters.

## **SPEED**

Contains two mode-switch position-dependent controls:

In the L R or LINK modes:

- **LEFT knob** – controls the frequency of the slow rotation for the left channel.
- **RIGHT knob** – controls the frequency of the slow rotation for the right channel.

In the B D mode:

- **BASE knob** – controls the base frequency of the slow rotation (for both channels).
- **DEV knob** – controls the slow rotation frequency deviation for both channels.

### **DECEL**

Contains two mode-switch-position-dependent controls:

In the L R or LINK modes:

- **LEFT knob** – sets the transition time between fast and slow rotation speeds for the left channel.
- **RIGHT knob** – sets the transition time between fast and slow rotation speeds for the right channel.

In the B D mode:

- **BASE knob** – controls the base deceleration time (for both channels).
- **DEV knob** – controls the deviation of the deceleration time for both channels.

### **RANDOM**

Contains the following controls:

- **DEPTH knob** – sets the random speed modulation depth (for both channels) when the Speed Lever is set to SLOW.
- **DIFF knob** – sets the amount of difference between the SLOW random speed modulation in the left channel and in the right channel (expressed as a percentage).

**PHASE SPREAD** – controls the scanner position phase offset between the left channel and the right channel (in degrees).

## MIDI Bar



Underneath the main plug-in's GUI area there is a MIDI Bar which contains a set of MIDI controls and indicators.

### MIDI

Click the green arrow icon to load MIDI settings from a file on disk.

Click the red arrow icon to save MIDI settings.

Double click the MIDI label to permanently store the default MIDI settings

Press Command (Mac) or Control (PC) and double click the MIDI label to restore the factory default settings.

### Channel Selector

This control allows you to select the MIDI channel to receive MIDI CC messages from. Available settings are MIDI OFF, channel 1-16 or OMNI (receives messages from all MIDI channels).

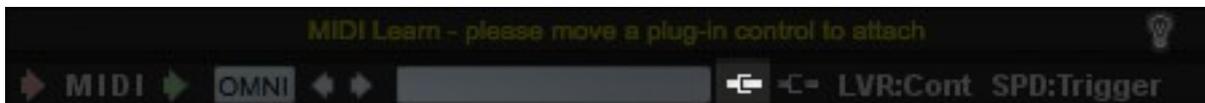
### Display

This display works in two modes. Upon placing the mouse pointer on one of the automatable controls in the plugin editor, it displays the currently assigned MIDI controller (if no controller is assigned, the display will read "not assigned"). If a MIDI CC message is received and the mouse pointer is not placed over one of the controls, this control will display the name of the controller in bright green.

### Learn

This control lets the user attach MIDI controller to one of the plug-in's parameters.

A short guide on linking a controller to a parameter:

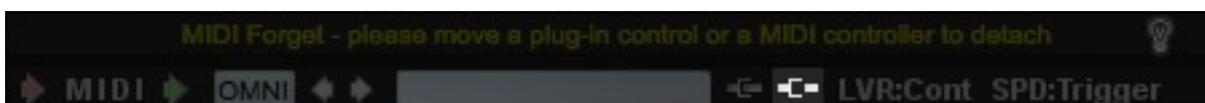


1. Click the MIDI Learn icon (shown above, highlighted), it will turn bright white upon clicking. The hint text should display "MIDI Learn - please move a plug-in control to attach".
2. Move the parameter that you want to map (for example, the Lever). The hint text should now display "MIDI Learn for: Lever - now please move a MIDI controller...".
3. Move the desired controller on your MIDI keyboard or controller (for example, the mod wheel). The Lever should now be linked to the mod wheel. The MIDI Learn icon's color should change back to gray. The hint text will now display "MIDI Learn - successfully attached parameter: Lever to CC#1" for about 3 seconds. To save this configuration as the default, double-click the 'MIDI' label located in the bottom left corner of the plug-in window.

### Forget

This control lets the user to detach a MIDI controller.

A short guide on unlinking a controller from a parameter.



1. Click the MIDI Forget icon (shown above, highlighted), it will turn bright white upon clicking. The hint text should display "MIDI Forget - please move a plug-in control or a MIDI controller to detach".

2. Move the parameter that you want to unlink with the mouse pointer (for example, the Lever). Alternatively, you can instead move the controller that you want to unlink on your MIDI keyboard or controller. The MIDI Forget icon's color should change back to gray. The hint text will now display “MIDI Forget – successfully detached parameter: Lever from CC#1“ for about 3 seconds. In order to reset to default MIDI configuration, hold CMD (Mac) or CTRL (PC) and double-click the 'MIDI' label located in the bottom left corner of the plug-in window.

### Lever Mode Switch

This control sets the lever mode. Three modes are available:

- **Cont** - continuous mode
- **Snap** - quantized mode
- **Swi3** - the 'three-state switch' mode (the lever acts as a three-state switch with stop in the middle)

### Speed Mode Switch

This control sets the speed mode. Four modes are available:

- **FastDwn** - fast speed is set when the speed button is pressed, slow speed is set when the speed button is released
- **FastUp** - fast speed is set when the speed button is released, slow speed is set when the speed button is pressed
- **Trigger** - pressing the speed button triggers the scanner speed (from slow to fast, from fast to slow)

### Hint Bar



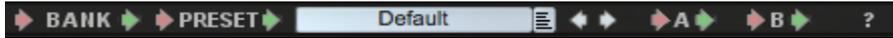
### Hint Text / MIDI Learn Guide

A short description of the control that your mouse is hovering over. In MIDI Learn/Forget mode, hint text displays information related to the parameter and/or control that is currently being linked. Double-clicking the displayed address ([www.PSPaudioware.com](http://www.PSPaudioware.com)) opens our website in a new browser window.

### Hints on/off

Click to show or hide hints in the hint bar.

# Preset Bar



PSP B-Scanner is provided with a factory set of presets. Those presets were prepared to help you discover available range of sounds and to better understand this plug-in. In addition, the presets can be used as a starting point for further adjustments or as quick fix presets.

You can access these presets from the PSPaudioware standard PRESET bar at the bottom of the plug-in interface. Here you can select from among the factory presets, and load and save individual, as well as banks of presets. There are three sections to this bar, the PRESET section, the Preset window, and the BANK section.

## **BANK SECTION**

Click the green arrow icon to load a bank from a disk.

Click the red arrow icon to save a bank.

Double click the BANK label to permanently store the default preset bank.

Press Command (Mac) or Control (PC) and double click to restore the factory default bank.

## **PRESET SECTION**

Click the green arrow icon to load a preset.

Click the red arrow icon to save a preset.

Double click the PRESET label to permanently store the default preset.

Press Command (Mac) or Control (PC) and double click to restore the factory default preset.

## **PRESET EDIT BOX**

Click the menu button to the right of the preset edit box to see the popup menu of all the presets in the currently loaded preset bank and to choose a preset from the list.

Click the name of the preset to rename it.

## **PRESET SELECTION**

Click on the bright left arrow to switch to a previous preset on the list.

Click on the bright right arrow to switch to a next preset on the list..

## **MEMO A and B**

Both A and B are permanently stored on your disk. This allows you to compare alternative settings or share a preset between various instances of the plug-in in the same project or even between various projects.

Click the green arrow icon to load a preset from memo A or B.

Click the red arrow icon to save a preset to memo A or B.

?

Click on the question mark whenever you need to open the operation manual.

# Support

If you have any questions about the principles or operation of our plug-ins, please visit our web site [www.PSPaudioware.com](http://www.PSPaudioware.com) where you can find the latest product information, free software updates and answers to the most frequently asked questions. 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.

## **PSPaudioware.com s.c.**

Kwadratowa 4/19  
05-509 Józefosław  
Poland

ph. +48 601 963 173

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

[support@PSPaudioware.com](mailto:support@PSPaudioware.com)

# User Comments

We welcome any opinions and comments related to the PSP B-Scanner. We would also be grateful if you shared with us your experiences using PSP B-Scanner. Please, contact us at:

[contact@PSPaudioware.com](mailto:contact@PSPaudioware.com)

**PSPaudioware.com s.c.**

Kwadratowa 4/19  
05-509 Józefosław

Piaseczno  
Poland