# PSP BinAmp

The Class A triode preamplifier



# Operation manual

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

# Acknowledgements

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**PSPaudioware.com s.c.**
Bugaj 12;
05-806 Komorów,
Poland.

# OVERVIEW

**PSP BinAmp** is a Class A triode preamp emulation. The specific preamp's implementation is based on that of the legendary Binson Echorec 2 delay.

The Echorec 2 (in Italian, Echorec 2° meaning "the second Echorec") was one of a line of famous magnetic drum delays designed by Binson Amplificatori Hi-Fi S. p. A. since the 1950s. The Echorec 2 was released in 1960, and is considered by many to be the best-sounding in the line. It had unprecedented quality compared to the tape delays of the era, with a warm and musical sound due to the distinctive character of its Class A triode tube design.

Although the Echorec 2 was incredible in many ways, the inspiration for PSP BinAmp came from the ingenious design and wonderful sound of its preamplifier.

For readers who might not be familiar with the terms:

*Triode*: an amplification vacuum tube (thermionic valve) with three electrodes in the tube. It was the first and simplest amplification component of the tube era.

*Class A audio path*: a circuit in which all components process both the positive and negative voltage swings of the signal. This kind of design results in asymmetric nonlinearities and a buildup of even-order harmonics in the output signal. Although Class A is not the most efficient means of amplification, it is definitely one of the most desirable when the character of the sound is considered a higher priority than transparent gain.

## Features

- High-quality signal processing algorithms
- Internal quad sampling (up to 192 kHz) for great sound even at low sample rates
- High Pass filter
- Preamp Character control
- High frequency Rolloff control
- Drive level control ±20 dB
- Output level control up to ±20 dB
- Adjustable Variation between channels and instances of the plug-in
- Input PAD –20 dB for processing high level signals
- Separate input and output Polarization buttons
- Drive or Output level indication
- Parameter filtering for smooth and click-free parameter adjustment
- Support for sample rates up to 384 kHz
- Only 13 samples of latency, regardless of sample rate
- Quad sample rate internal processing (176.4 or 192kHz) for low sample rates

## Applications

PSP BinAmp can be used on individual tracks or whenever its strong vintage character is required:
- kick, snare and other drum tracks
- vocals
- drum loops
- electromechanical keyboards e.g. Rhodes, Clavinet...
- electronic keyboards and synthesizers – especially digital ones
- reamplified guitar and bass guitar tracks
- ...or any other track that would benefit from the added character of the old-school sound!

# USER INTERFACE

Most of PSP BinAmp's controls are located on its front panel, giving instant access to all processing parameters.

Although the plug-in looks simple, we recommend that you read this manual to get the most out of all of the included features.



## Buttons



**POWER** – turns the entire plug-in's processing on or off. When it's turned off, the level indicator and all labels dim, and the audio signal will pass through unprocessed.

**PAD** – engages –20 dB of attenuation at the input. This allows the plug-in to properly process high-level signals. However, the PAD function has a trick no analog preamp can do: It not only attenuates the input signal, but it also applies equal gain to the output signal, so the overall signal level doesn't change.



**IN and OUT POLARITY** – sets the input and output polarity separately. This gives control not only of the polarity of the signal, but also the way the Class A preamp processes asymmetric signals like kick drum. Click on the POLARITY label to switch both buttons simultaneously.
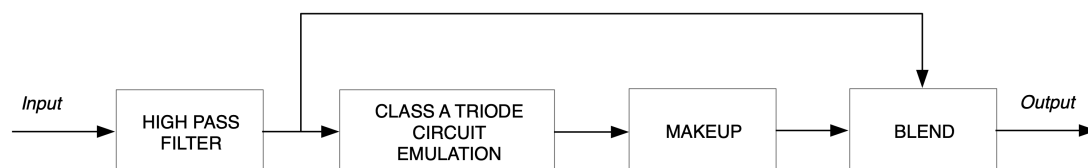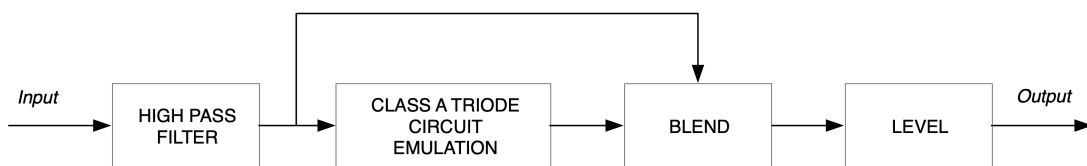
# Knobs
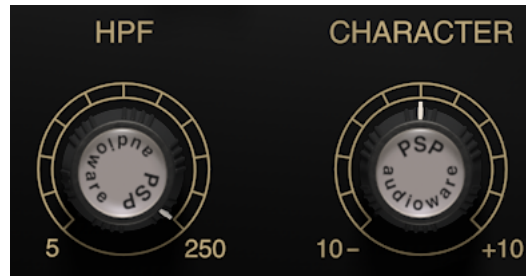


**HPF** – controls the high pass filter cutoff frequency.

**CHARACTER** – controls the time response of the preamplifier circuit, which in turn influences the character of the saturation.



**DRIVE** – sets the drive level of the preamp. It simultaneously controls the input and output levels, so it can control the saturation without also causing large changes in the output level.

**LEVEL / MAKEUP** – by default, this knob controls the output gain. Click on the LEVEL label to switch to Makeup mode, which lets you control the post-saturation level before the BLEND / MIX (see below). Click on the MAKEUP label to get back to the default Level mode.



Simplified signal flow diagrams for Level and Makeup modes with Blend / Mix set to Blend mode.

## Trim Knobs



**ROLLOFF** – sets up the amount of the high frequency rolloff characteristic to vintage tube preamplifiers. Turn down for a progressively darker output signal.

**VARIATION** – controls the variation in preamplifier characteristics between channels and between instances of the plug-in, so as to give a more realistic overall sound (avoiding the "every channel sounds exactly the same" trap).

**BLN / MIX** – by default, this trim knob controls the Blend between the unsaturated (dry) and saturated signals. Note that in Blend mode, the unsaturated signal is not completely dry, as it includes the High Pass filtering. Click on the BLN label to switch this trim knob to Mix mode. In this mode, this trim knob performs as a mix control. Note that in Mix mode, the Dry signal does not include the HPF filtering before mixing with the saturated signal. Click on the MIX label to set this control back to the Blend mode.
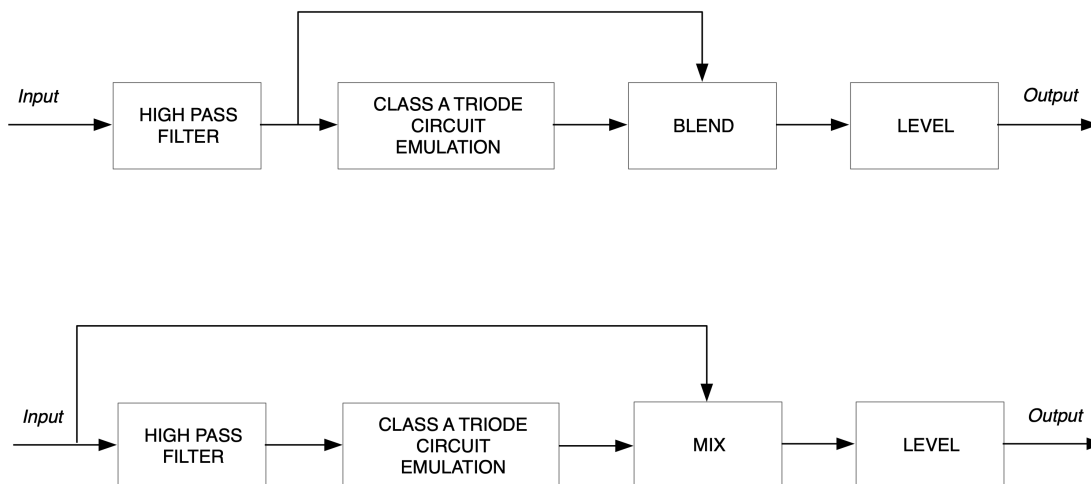


Simplified signal flow diagrams for Blend and Mix with Level / Makeup set to Level mode.

## Magic Eye indicator



**SATURATION / OUTPUT level indicator** – shows the amount of saturation or the output signal level. Click on the Saturation or Output label to switch the function of the indicator. The "wings" of the display will angle upward toward a vertical position as the metered signal grows stronger, and then cross one another at very high levels.

- When in Saturation mode, the wings reach vertical at heavy saturation.
- When in Output mode, the wings reach vertical at 0 dBFS.

# Back panel



Clicking on the front panel's PSP BinAmp label opens the rear panel About box, on the Plugin Information & Settings tab. Click on the link to open the PSPaudioware.com website.  Click on any label other than the web site link to close the rear panel and return to the front panel.
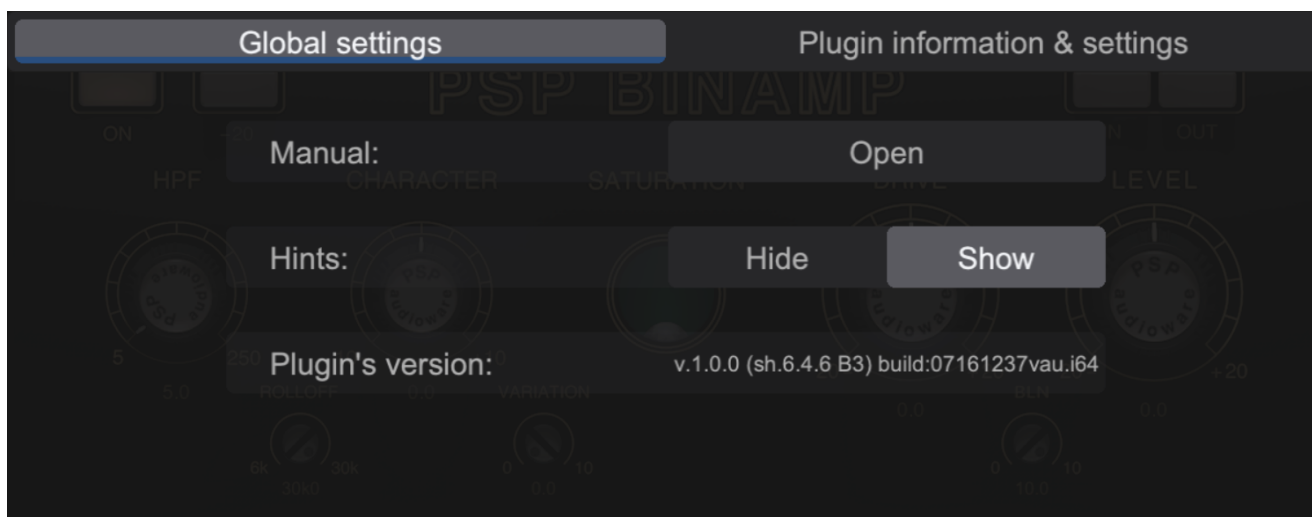


The Global Settings tab lets you access this manual or set whether Hints (floating information boxes that appear when hovering over a control) are visible or not. It also shows the installed version of the software, for help with troubleshooting.

# 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

PSP BinAmp 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 PSP BinAmp. 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.
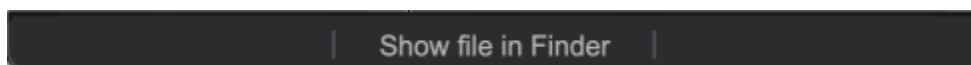
For Windows users, this is located at:

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

For Mac users, this is located at:

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

**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



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



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**.
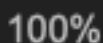
## Undo / Redo



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



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.
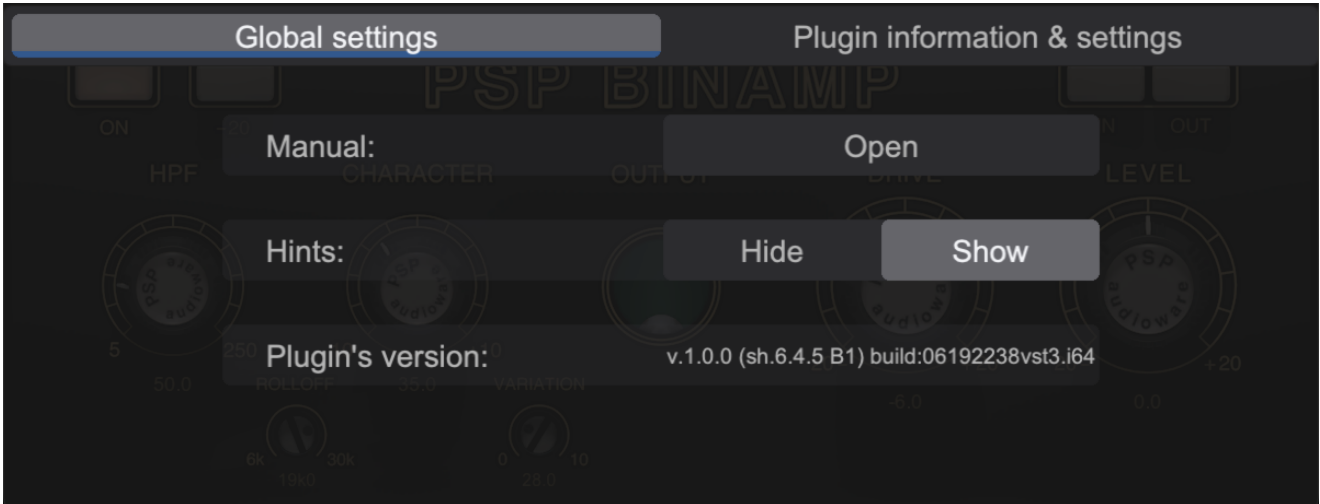


These functions are also available in the **Global Settings tab** on PSP BinAmps's back panel, which is accessed by clicking the plugin name on the front panel.

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

# Minimum System Requirements

In order to run PSP BinAmp you need to install the free **iLok License Manager** application but you don't need any hardware dongle. By default we provide 3 licenses which can be activated in 3 separate locations, each of which can be either a computer or an iLok dongle (2nd generation or above). You can move these licenses at any time using PACE's iLok License Manager software.

## 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

**All DAWs**
- Up to date iLok License Manager application installed

## macOS Intel or macOS AppleSilicon

**AudioUnit**
- macOS 10.14 – macOS 14 Sonoma
- 64-bit AudioUnit compatible host application

**VST**
- macOS 10.14 – macOS 14 Sonoma
- 64-bit VST3 compatible application

**VST3**
- macOS 10.14 – macOS 14 Sonoma
- 64-bit VST3 compatible host application

**AAX**
- macOS 10.14 – macOS 14 Sonoma
- 64-bit Pro Tools

**All DAWs**
- Up to date iLok License Manager application installed

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# Processing

- All internal processing done with 64-bit double precision floats.
- PSP BinAmp supports 32-bit and 64-bit floating point audio streams.
- PSP BinAmp supports sample rates up to 384 kHz.
- Quad sample rate internal processing is available for sample rates below 352.8 kHz.
- Adds only 13 samples of latency regardless of sample rate.
- Quad sample rate internal processing (176.4 or 192kHz) for all low sample rates

# Limitations of the demo version

We offer a 30-day evaluation period without any audio interruptions or control limitations. To get access to the plug-in and your unique authorization details, simply login to your account at our [user area](#).

**Enjoy !**

PSP team

# Support

If you have any questions about any of our plug-ins, please visit our website:
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.
We will gladly answer all of your questions. As a rule we respond within 24 hours.

PSP BinAmp