

# PSP auralComp

„AVOCADO”

## Operation Manual



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

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# 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.

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**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.**

**Bugaj 12; 05-806 Komorów, Poland.**

## Credits

Concept & Specification: Ronald Prent

Design and coding: Adam Taborowski

Audio algorithms: Mateusz Woźniak & Adam Taborowski

Graphics: Adam Taborowski & Mateusz Woźniak

Platform development: Adam Taborowski

Installers: Piotr Dmuchaowski

Product Manager: Antoni Ożyński

Manual: Adam Taborowski & Mike Metlay & Antoni Ożyński



## Beta testing

Alberto Rizzo Schettino ([website](#))  
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Dave Way ([website](#))  
Jason LaRocca ([website](#))  
Jimmy Douglass ([website](#))  
Joanna Stefańska ([website](#))  
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Rafa Sardina ([website](#))

## About Ronald Prent

**Ronald Prent** started his career at Wisseloord Studios in the Netherlands in 1980 as an inexperienced assistant and has since established himself as one of the most accomplished and innovative recording & mix engineers in the world. In fact, the concept for Wisseloord Studios' recent revival began with Ronald, who had returned home after many years of working abroad, back to where his career had begun over 30 years ago. From 2011 until 2015, Ronald served as chief engineer and partner, where he directed the creative and technical development of the facility while continuing to work his magic behind the mixing console. Ronald now continues his recording, mixing, and consulting work through Proper Prent Sound, the company he has formed with his wife, mastering engineer Darcy Proper. Having recently moved their business and family to the U.S., they are now based at Valhalla Studios in Auburn, NY.

While quite content to work in stereo, Ronald specializes in surround sound, pioneering in surround recording/mixing and playing a key role in the development of new technology used in progressive high-resolution formats. In the early years of surround audio development, Ronald was a "test pilot" for Sony and Philips' DSD/SACD format. Many of the projects that he mixed in those days are still held up as benchmark examples of creative surround mixing examples include Guano Apes' "Don't Give Me Names", Kane's "So Glad You Made It", and Herbert Grönemeyer's "Mensch". API's flagship Vision console, which features simultaneous stereo and surround mixing capability, and SPL's benchmark MMC1 multichannel mastering console, are two examples of technological excellence stemming from Ronald's original and practical ideas.

Ronald has now expanded to immersive sound, working in Auro3D (9.1) and other 3D audio formats. Some of his recent projects include Pure Audio Blu-Ray releases for artists like Ozark Henry, Tiësto, and Mando Diao, as well as Peter Maffay's Tabaluga soundtrack, which was presented in Atmosphaea (Shure's 3D audio format) with accompanying animated video in planetariums in Germany.

Not one to be limited to the studio, Ronald also puts his talents to work in live broadcast, mixing live in stereo and surround for chart-topping clients throughout Europe, including the MTV Music Awards. One of his more recent undertakings was an album release by renowned German artist Peter Maffay – a live broadcast in 5.1 and stereo to 72 cinemas throughout the German-speaking market.

Ronald's knowledge and insight are well appreciated by his colleagues in the academic world. He's been asked on numerous occasions to guest-lecture and give master classes on recording and mixing for universities around the world, including McGill University, New York University, Middle Tennessee State University, and the Banff Centre for the Arts. He has participated in and hosted many workshops and panel discussions at professional seminars in

the U.S. and Europe, notably the informal PMC Listening Sessions at AES conferences where his demonstrations never fail to draw a crowd.

His long list of clients includes such notable artists as Simple Minds, Rammstein, The Scorpions, Mink DeVille, Richie Hawtin, Udo Lindenberg, Gotthard, Tina Turner, Ilse DeLange, Live, Within Temptation, Herbert Grönemeyer, Clouseau, Lori Lieberman, Manowar, Alain Clark, Peter Maffay, The Common Linnets, Ozark Henry, Raccoon, David Garrett, Jett Rebel, and Kensington.

**Ronald Prent**

Proper Prent Sound

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## Foreword

You now have at your command one of the most important and powerful tools for multi-channel and immersive audio – the first in a series of plug-ins created in partnership with Ronald Prent. Thank you for supporting us and being a part of this exciting immersive adventure.

### Ronald Prent

I started working in immersive audio in the early 2000s at Galaxy Studios, and got completely into it with the beginning of SACD, doing a lot of pioneering work for Sony and Philips.



During that time, together with Paul Wolff of API (now of [Fix Audio](#)), we built the multi-channel version of API 2500, still the only multichannel analog compressor out there. It offers full control of threshold preference and side chain selections, resulting in a great and open-sounding multichannel bus compression. To this day, it is my go-to buss compressor in any immersive audio format.

Being a longtime early user of the PSP plugins, I took my chances and reached out to them 7 years ago. We discussed whether they would be interested in making a multichannel compressor and limiter plug-in following the concepts that Paul and I used in the API 2500, but taken further thanks to things only plugins can do.

This led to the development of the Aural Series of Ronald Prent Signature Immersive plugins. We began with [PSP auralControl](#), a project initiated by [Scott Michael Smith](#) and [Thorir Fienberg](#) and has become a daily studio lifesaver. Now we are introducing the **PSP auralComp** – multi-channel compressor and

limiter - Avocado edition.

PSP has taken our ideas and turned them into a fabulous compressor and limiter with an unbelievably open and punchy sound, controlling your audio but also keeping your image stable and powerful.

I'm really looking forward to hearing how you use this fantastic new approach to buss compression, one that will give you back what you have been missing all along.

[Ronald Prent](#) - *Immersive Mix Engineer, Proper Prent Sound, Auburn, NY, June 2023*



## Adam Taborowski

Ronald Prent contacted us about 7 years ago with an idea to create a very complex multi-channel compressor. We were busy with other projects that time, but we promised to come up with a solution. Ronald has helped us many times as a beta tester on multiple projects, and I was honored to get amazing feedback from Ronald during my 7-year crafting journey with the PSP InfiniStrip plug-in. Reading those emails with ideas and unpacking presets brought a lot of joy and satisfaction to my work life, so I was incredibly excited to do my part in this very special collaboration with Ronald on his first signature plug-in.



I was raised on rock and metal music. As a kid, I was more focused on melody and lyrics than sound quality or tone. I was not able to point out those elements in the music until the day I heard the *Warriors of the World* album – which was mixed by Ronald Prent. Sound quality, power, clarity, tone, and punch changed my view of the music; I started to be aware of those exciting elements and their importance. Without this experience I wouldn't have chosen this carrier

path... Ronald's work made me become a sound engineer. Who would have guessed that 20 years later I'd be working with the master himself?

Over these 2 years of development I had ups and downs – a lot of work and rearranging concepts, coding, drafting, building, crafting, you name it. I jog in the woods whenever I feel a little bit low. I always listen to music while doing that – and whenever Ronald's mixes were in my ears, I was blown away - "Am I really working with the guy behind my favorite albums?"

Thank you, PSPaudioware, for this amazing opportunity. What an exciting journey!

Thank you to everyone involved in this project: beta testers, alpha testers, friendly souls on our life paths. Thank you – it means a lot.

Thank you to my support group More67s – you guys rock! Our weekly meetings give me a lot of strength and inspiration, and I wouldn't make it without you, my friends.

[Adam Taborowski](#) – *Plug-in Blacksmith, PSPaudioware, Stockholm, Sweden, June 2023*

# Overview

**PSP auralComp** is designed to handle the complex process of multi-channel compression in the simplest way possible.

The main part of the plug-in consists of compressor strips for each channel on the current bus/track channel configuration, with support for up to 16 channels for a single multi-channel bus.

The control part (right panel) of the plug-in controls multi-channel configuration and allows you to quickly group compressors to set up multiple parameters at once.

PSP auralComp is also equipped with an output stage brick wall limiter for final peak control of the compressed multi-channel signal.



## Compressor – upper section

Each compressor is independent from the others, but they can be grouped using controls on the right panel to aid in adjusting the same parameter on multiple channels at once.

### **ATTACK knob:**

Adjusts the attack time from 0.1 ms to 160 ms.

### **RELEASE knob:**

Adjusts the release time from 25 ms to 2500 ms.

### **THRESH knob:**

Adjusts the compression threshold between  $-40$  dB and  $+10$  dB.

### **MAKEUP knob:**

Adjusts the amount of post-compression gain (up to  $+20$  dB) added to the signal to make up for the reduction in volume from the compressor. This gain is added before the MIX knob.

### **RATIO knob:**

Adjusts the compression ratio between 1:1 to  $\infty$ :1.

### **MIX knob:**

Adjusts how much of the compression signal is mixed with the source audio signal at the output. At 0% only the original audio signal is output, and at 100% only the compressed signal is output.

**LED Meters:** display the channel's input level, gain reduction applied by the compressor, and output level.



## Compressor – side chain section Part 1: the linking

Each compressor is triggered by a fully customizable side chain (key) signal, making PSP auralComp one of the world's most flexible multi-channel compressor plug-ins. Scenarios like “rears are listening only to the fronts, sides are listening partially to the center channel, ceilings are listening to the high end information of all channels, and the LFE is excluded” are very simple to set up.

### LINK knob:

Adjusts the side chain signal blend between individual channel's signal and currently selected side chain submix.

0% link means that the compressor is being triggered entirely by its own channel's signal.

100% link means that the compressor is being triggered entirely by the currently selected side chain submix.

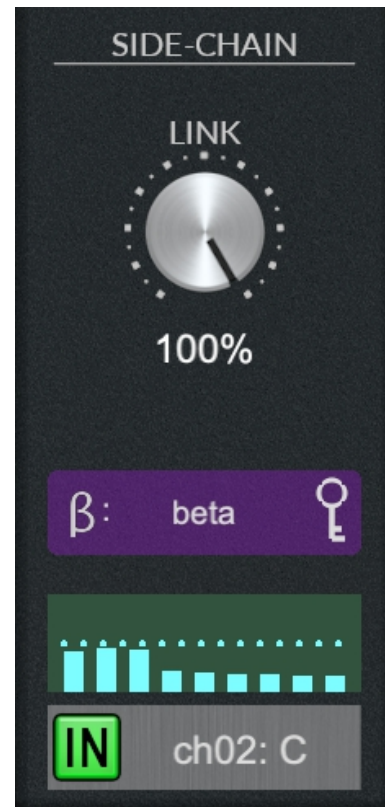
### KEY menu:

Selects one of the 8 available submixes (named alpha through theta) to trigger the compressor

### SIDE CHAIN display:

Shows a visualization of the currently selected key submix. Vertical bars represent levels of the signals used in the side chain submix.

The horizontal dotted line represents the actual level of the side chain signal triggering the compressor. This signal contains all the processing applied to the submix (applying gains, summing signals with the selected method, filtering the side chain) and is further determined by the LINK knob setting.



## Compressor – side chain section Part 2: the submix



### **GAIN faders:**

Adjust the levels of signals creating the side chain submix shown in the popup window. The example shown above shows the beta side chain submix.

### **NAME control:**

Sets the name for the submix. Double-click to rename the submix via a popup dialog box.

### **FILTER TYPE control:**

Selects one of the available options

- OFF – disables filtering the submix
- HPF – enables a high pass filter with adjustable frequency

- **BANDPASS** – enables a band pass filter with adjustable frequency and Q
- **EQUAL POWER** – enables a special filtering curve designed by PSPaudioware to equalize energy across entire spectrum
- **LPF** – enables low pass filter with adjustable frequency

**FILTER FREQUENCY knob:**

Adjusts the side chain filter's frequency from 20 Hz to 20 kHz for the submix shown in the popup window.

**FILTER Q knob:**

Adjusts the side chain filter's Q from 0.01 to 10.0 for the submix shown in the popup window.

**SETTINGS control:**

Allows you to copy/paste settings between different submixes.




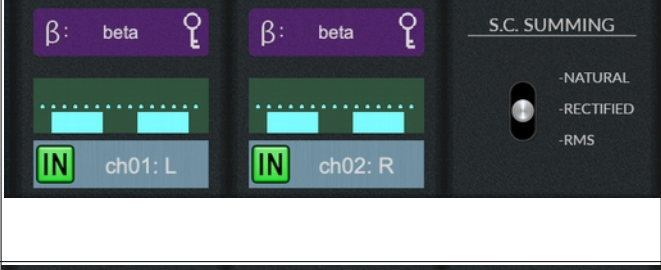

### Compressor – side chain section Part 3: the summing method

Due to the complexity of surround sound (multiple signals, many phase shifted on purpose), PSP auralComp is equipped with different summing methods for the side chain trigger signal.

- Natural – a simple blend in the same way any DAW would blend signals on a bus.
- Rectified – signals are rectified before blending and creating a summed submix.
- RMS – signals are analyzed to derive the RMS (root mean square) level, and this is used to trigger the compressor

A choice of summing method should be based on the actual material being compressed.

Simple explanation with dual mono signal:

|  |  |
|--|--|
| <p>Right channel is muted, so compressor is only triggered by the Left channel's signal.</p> <p>Trigger level (dotted lines on the display) is equal to the Left channel's input level (left bar on the display).</p>  |    |
| <p>Left and Right channels are triggering the compressor.</p> <p>Trigger level (dotted lines on the display) is equal to the sum of both channels, so it is higher than either of the single levels (the left and right bars on the display).</p>  |   |
| <p>Left and right channels are triggering the compressor. Right channel is flipped.</p> <p>Trigger level (dotted lines on the display) is equal to the sum of both channels – which is <math>-\infty</math> dB in this case. The signals cancel each other out</p>   |  |
| <p>Same case as above, but using the Rectified method.</p> <p>Trigger level (dotted lines on the display) is equal to the sum of rectified channels – so it is higher than either single-channel level, even though they are out of phase.</p>   |  |
| <p>Same case as above, but using the RMS method.</p> <p>Trigger level (dotted lines on the display) is equal to the RMS sum of both channels – so it is higher than either single-channel level, but slightly lower than with the Rectified method, and it depends less on the number of channels in the submix.</p> |  |

## Limiter section

### INPUT knob:

Sets the input gain of the plug-in (before compression) between  $-10$  dB and  $+10$  dB.

### BRICKWALL button:

Enables limiting.

### DRIVE knob:

Sets the input gain of the limiter between  $0$  dB and  $+20$  dB. It allows you to raise the overall volume level and smash the signal if needed. It is applied after compression and before limiting.

### CEILING knob:

Sets the threshold of the limiter between  $-20$  dB and  $+0$  dB.

### OUTPUT knob:

Sets the output gain of the plug-in (after limiting) between  $-10$  dB and  $+10$  dB.





## Right (Configuration) Panel

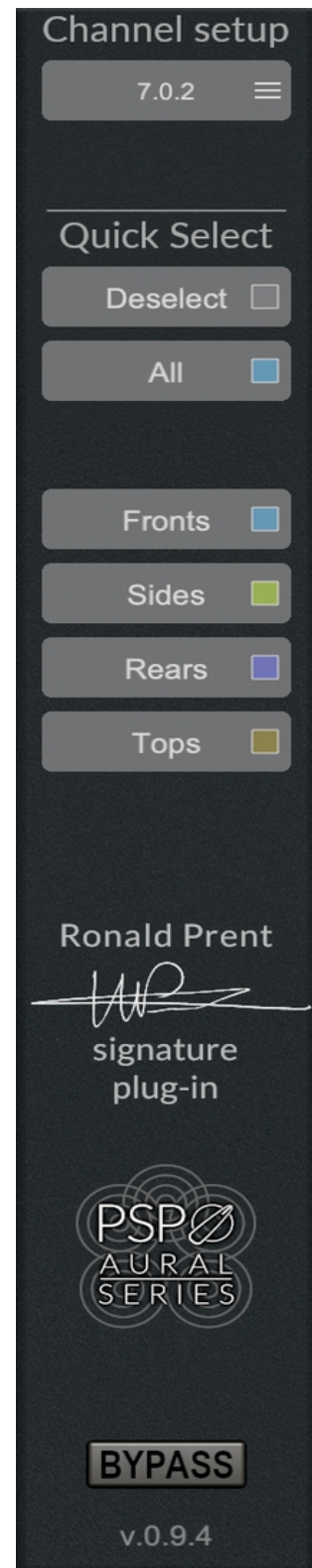
### CHANNEL SETUP menu:

Your current channel setup should be detected automatically when you insert PSP auralComp. However, some different host applications give only the *number of channels* instead of the *specific setup* (like 7.1 DTS or 7.1 SDDS). In this case you can manually change PSP auralComp's channel setup by clicking the **Channel Setup** button. You can manually set **Mid-Side** processing for stereo tracks.

### QUICK SELECT buttons:

Click a channel name to enable linking for the channel. Linking is relative inside a group. The last-used group will be enabled for the channel.

Use the **Quick Select** section on the Right Panel to create typical linking groups.

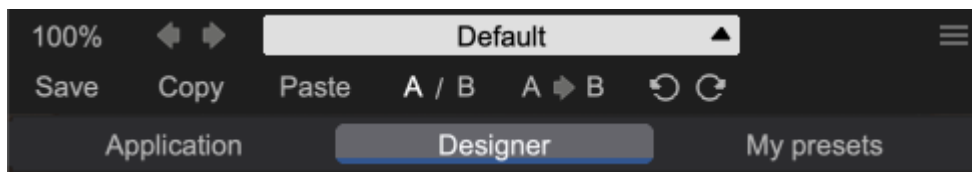


## Preset Handling & View Options

We provide all PSP plug-ins with a collection of factory presets. These presets can be used as a starting point for further adjustments, or for quick fixes. You access presets from the PSPaudioware standard PRESET BAR at the top of the plug-in interface.

### Preset Browser

The PSP auralComp edition features a comprehensive new preset management and browser system. To access the preset browser, you click the preset name window at the top of the plug-in (which displays 'Default' when the plug-in loads).



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

**Application** – shows all factory built-in presets grouping by application.

*Factory presets are built into the plug-in and cannot be directly edited!  
You can adjust them and save separately as user presets.*

**Designer** – shows all factory built-in presets grouped by designer.

**My presets** – shows only user presets.

This view shows all of the presets you have created and saved, or downloaded and added to your custom presets for PSP auralComp.

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

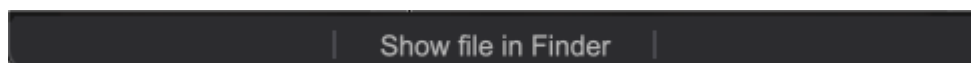
For Windows users, this is located at:

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

For Mac users, this is located at:

~/Documents/PSPAudioware.com/User Presets/PSP auralComp

*You can always check the exact path by clicking on the "Show file in Finder" tab at the bottom of the preset browser window.*



To select a preset, click a preset name in the right window. When clicked, the preset will be applied so that you can audition it. To confirm the preset choice, you can click the preset name once more to load it.

Each preset has own picture; click on it to open the designer's website.

## Copy / Paste



The **Copy/Paste** feature allows you to quickly transfer settings between plug-in instances.

To use this feature, you can click '**Copy**' at the top of the plug-in below the preset browser window. Then, open a new instance of the plug-in on another track (or on the same track) and click '**Paste**' to paste the settings to the new instance of the plug-in.

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

## A/B System

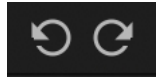


The **A/B system** for quickly checking and auditioning changes to the plug-in settings.

The **A/B Button** at the top of the interface below the preset browser window allows you to A/B between the current and previous setting of the plug-in. This can be used to audition changes made to your mix, or to audition between two presets.

The **A>B Button** quickly copies the settings of the **A** setting to the **B** setting. This allows you to save your place and apply further tweaks and the audition them with the **A/B Button**.

## Undo / Redo



The **Undo/Redo** feature of the plug-in lets you quickly navigate between setting changes.

To use this feature, use the undo/redo buttons (CCW and CW arrows, respectively) located below the preset browser window.

These buttons will undo changes to the current plug-in settings, or allow you to undo a preset change depending on the last action in the plug-in.

## 100% GUI resizing



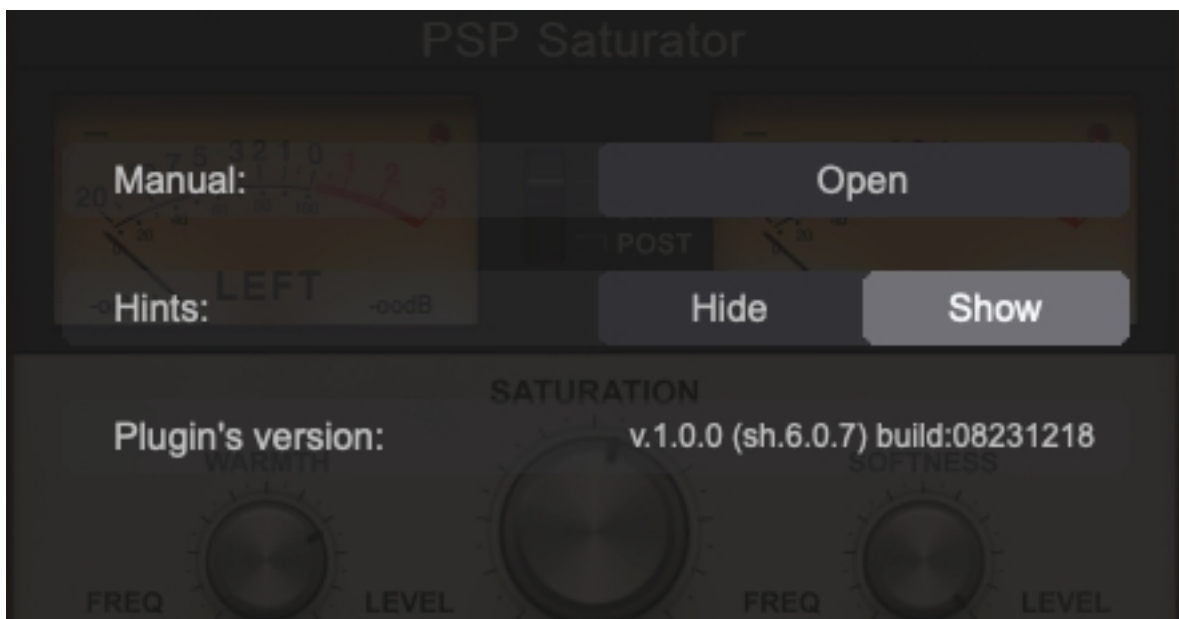
Scroll this percentage up or down to change the GUIs zoom factor. Double click to reset its state to the default size (100%).

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

## CONFIG section



Clicking the *three parallel lines* glyph opens the **CONFIG** menu where you can open the manual, check the current plug-in version number and turn *hints* on or off.



# Minimum System Requirements

In order to run PSP auralComp in [30-day trial mode](#) or [activate it](#), you need an **iLok userID** which you can create for free at [www.ilok.com](http://www.ilok.com) and you need to install the free iLok License Manager application (but you **don't need any hardware dongle**).

You can activate the license **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

### VST3

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

### AAX

- Windows 7 – Windows 11
- Pro Tools

### All DAWs

- The latest iLok License Manager application installed

## macOS Intel or macOS Silicon

### AudioUnit

- macOS 10.10 – macOS 12.01 Monterey
- 64-bit AudioUnit compatible host application

### VST3

- macOS 10.10 – macOS 12.01 Monterey
- 64-bit VST3 compatible host application

### AAX

- Pro Tools

### All DAWs

- Up to date iLok License Manager application installed

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# Technical Specifications

## Processing

- All internal processing done with 64 bit double precision floats.
- 32 and 64 bit floating point audio streams supported
- Sample rates up to 192kHz supported.

## 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 authorisation?

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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