

PSP X-Dither



Operation Manual

www.PSPaudioware.com

Acknowledgments

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Table Of Contents

| | |
|---|-----------|
| <u>ACKNOWLEDGMENTS.....</u> | <u>2</u> |
| <u>END USER LICENSE AGREEMENT.....</u> | <u>4</u> |
| <u>PSP X-DITHER.....</u> | <u>5</u> |
| <u>USING PRESETS.....</u> | <u>7</u> |
| <u>LIMITATIONS OF THE DEMO VERSION.....</u> | <u>8</u> |
| <u>AUTHORIZATION.....</u> | <u>8</u> |
| <u>THE ABOUT SCREEN.....</u> | <u>8</u> |
| <u>A NOTE ON LATENCY.....</u> | <u>8</u> |
| <u>MINIMUM SYSTEM REQUIREMENTS.....</u> | <u>9</u> |
| <u>SUPPORT.....</u> | <u>10</u> |

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PSP X-Dither

PSP X-Dither is a mastering dither and noise shaping processor. It is designed to cover wide range of situations when dithering or noise shaping is the way to maintain the quality of an original mix, group or individual track during various stages of the recording and mastering process, including final digital mastering.



Controls and indicators

SIGNAL – These two LEDs indicate the presence of input signal in the left and right channels. When this plug-in is used on a mono track both LEDs will blink simultaneously.

MODE selector (TRUNC, ROUND, DITHER, SMOOTH NS, XENON NS) – This selector chooses the processing mode of the PSP X-Dither. The descriptions of the various modes are below. Please note that when you click any of mode LEDs if you have previously selected another mode, the previously used mode is recalled. This allows you to easily compare modes without even moving a mouse.

TRUNC – This mode allows you to monitor the signal with all content below the level of the least important bit truncated. This mode is designed only for sound comparison purposes – not for actual processing of the track. You can use this to hear the result if bit reduction would be used without dithering or noise shaping.

ROUND – This mode, like the TRUNC mode, allows you to monitor the signal using a rounding bit reduction mode. In this mode, slightly better results can be obtained, but as with TRUNC mode, the ROUND mode is not designed for processing – just to hear the result if bit reduction would be used without dithering or noise shaping.

DITHER – This mode engages a basic dithering mode without noise shaping, however there are still some parameters available for this mode in the second row. The DITHER LED stays lit for all SMOOTH and XENON noise shaping modes to indicate that the dithering and its options are a part of the noise shaping algorithm.

SMOOTH NS (A, B, C) – Sets one of our newly-designed noise shaping modes. The A is the mode with the weakest noise shaping while the C has the strongest noise shaping. Please note that while the strongest noise shaping mode offers an incredibly low noise floor in the musical frequency range it also raises the noise floor in the high frequency range above 15kHz and thus may introduce distortion or even breakage of high frequency speakers when used improperly. Mode C is not recommended together with DITHER SHAPE HIGH mode and DITHER LEVEL HIGH.

XENON NS (A, B, C) – Sets one of the original noise shaping modes found in the PSP Xenon plug-in. Some improvements have been made when we redesigned those modes for X-Dither; we added additional options to allow you to get much more from those modes. However the overall behavior of the Xenon filters and the resulting sound is in the same quality range as in the PSP Xenon plug-in.

ACTIVATE – Engages (when lit) or disengages entire processing of the X-Dither.

DITHER SHAPE (LOW, FLAT, HIGH) – Sets the dither noise spectral shape used for dither and all noise shaping modes. The FLAT setting is the most common setting which refers to triangular probability density function (TPDF) white noise. LOW and HIGH shapes refer to using spectrally shaped noise to reduce noticeable though source sound changing hiss. The LOW setting results in mostly low frequency oriented noise. The HIGH setting results in mostly high frequency oriented noise. The latter is not recommended to be used together with SMOOTH NS C.

DITHER LEVEL (LOW, OPTIMUM, HIGH) – Sets the dither noise level used for the dither and all noise shaping modes. The OPTIMUM setting is the mathematically proper level, however sometimes switching to the LOW level combined with the noise shaping modes will provide an alternate proper, undistorted sound with a reduced noise floor. Using HIGH setting may result in more noticeable noise while the overall smoothness and depth of the processed track may be improved.

OUT BIT DEPTH – determines the output bit reduction during processing. Please select the bit depth which will be required for your target media.

AUTO BLACK – Engages (when ON LED is lit) or disengages the auto blacking mode. When engaged the dithering or noise shaping noise will be muted to avoid noise on silence. When silence is detected the STATUS LED is lit. The auto blacking mode is preferred when used on individual tracks in the mix, when silence is required to suspend processing of the track on digitally silent parts. It can also be used during digital mastering of the entire mix.

CLIP – Sets the output clip of the signal above 0dBFS which might occur on earlier stages of processing or because of the addition of dithering or noise shaping.

Using presets

PSP X-Dither is provided with factory sets of presets.

The main aim of the included presets is to show you the features of the plug-in and help you to learn how to use the controls. In addition, the presets can be used as a starting point for further adjustments or as quick fix presets.

The PSP X-Dither presets can be accessed from the PSPaudioware standard PRESET bar at the bottom of the plug-in interface. Here you can select from among the factory presets, as well as load and save individual presets or 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 and 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.

Limitations of the demo version

The demo will operate without any limitations for 14 days from its initial installation. During the demo period you will just need to click on the GUI to engage processing once the plug-in is inserted. After the end of evaluation time you would not be able use the plug-in without authorization.

Authorization

Each PSP plug-in has to be authorized using an automatic authorization application or a batch authorizer downloaded from user's account page on our site.

The About Screen

Each PSP plug-in offers an About window. This screen contains your authorization details, as well as the version number of the plug-in. To access each plug-in's about box, click on the name of the plug-in. To return to the controls view, click the name of the plug-in again (or anywhere in the about screen).

A note on latency

The PSP X-Dither introduces 1ms of latency. This latency should be automatically compensated in most of audio applications during mixing or mastering. In case your application is not able to do this please manually adjust the position of your track by 1ms. Please find sample delay values in the table below when required.

| Sample Rate | X-Dither's latency in samples |
|-------------|-------------------------------|
| 44.1kHz | 44 |
| 48kHz | 48 |
| 88.2kHz | 88 |
| 96kHz | 96 |
| 176.4kHz | 176 |
| 192kHz | 192 |

Minimum System Requirements

PC

VST

- Windows x32 or x64 (XP Service Pack 2, Vista or 7)
- VST 2.4 compatible application

RTAS

- Windows x32 or x64 (XP Service Pack 2, Vista or 7)
- ProTools LE 8.0.0 or ProTools TDM 8.0.0 (or later)

AAX

- Windows x32 or x64 (XP Service Pack 2, Vista or 7)
- Pro Tools 11 or Pro Tools HD 11

Mac

AudioUnit

- Mac OSX 10.5 or later
- 32 or 64-bit host application capable of running AudioUnit plug-ins with Cocoa view

VST

- Mac OSX 10.5 or later
- 32 or 64-bit VST 2.4 compatible host application

RTAS

- Mac OSX 10.5 or later
- ProTools LE 8.0.0 or ProTools TDM 8.0.0 (or later)

AAX

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

Support

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

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.

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