PSP Master Comp

Stereo Mastering Compressor

By using this software you agree to the terms of any license agreement accompanying it.
“PSP”, the PSP logo, “PSP MasterComp”, and “It’s the sound that counts!” are trademarks of PSPaudioware.com s.c.
All other trademarks are the property of their respective owners.
© 2002-2005 PSPaudioware.com s.c.

Acknowledgements

Sakis Anastopoulos - DigisoundMastering, Australia, http://digisoundmastering.com
Joachim Krukowski - sound engineer, Poland, http://www.achim.wla.pl
Hubert Pietrzykowski - PSPaudioware.com s.c., Poland, http://www.PSPaudioware.com

English manual edited by Orren Merton, California, USA, http://www.mertonfolio.com

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 SOFTWARE, or in its place, any prior version for the same operating system, on a single computer. 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.
Dzikiej Rózy 11/8,
05-500 Józefoslaw,
Piaseczno,
Poland.

Table of Contents

PSP Master Comp 1
Acknowledgements 3
End User License Agreement 4
Table of Contents 5
Overview 6
    Features 6
    Suggested Applications 6
Front panel 7
    Meters 7
    Knobs and Buttons 9
    Side Chain Filters Controls 11
    Master Switches 13
Rear Panel 14
    Plug-in Information Plate 14
    Rear Panel Knobs 14
Basic Operation with Meters 16
    PSP MasterComp Meters advantages 16
    Rear Panel set-up and operation 17
Block Diagram 18
Support 19
  User Comments 19

Overview

PSP MasterComp is a high fidelity stereo dynamics processor. Its double-precision (64-bit floating point) and double-sampled (FAT - Frequency Authentication Technique) processing offers transparency even at extreme compression settings and high sample rates. It includes a wide range of controls that make it an exceptionally versatile tool for mastering compression and expansion, as well as bus processing during mixing.

Features

- Extremely transparent compression thanks to double precision (64-bit floating point) and double-sampled (FAT mode) algorithms
- Low distortion thanks to MasterComp's precise level detector, which includes an optional automatic attack and release time adjustment
- Wide range of controls
- Over-threshold compression and expansion
- Advanced side chain filtering, channel linking and compression tilting capabilities
- Mix control allows you to blend processed and clean signal
- MasterComp includes a high quality brick wall output limiter with automatic release time
- Advanced PPM/VU meters with textual readings and adjustable parameters

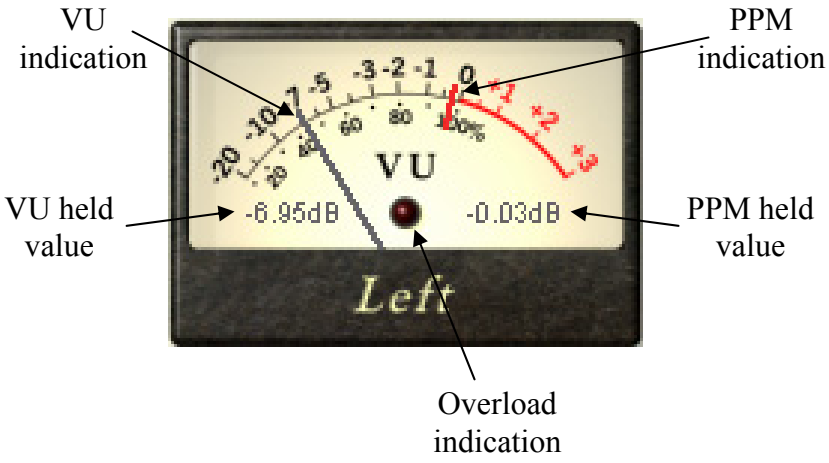
Suggested Applications

- Controlling or revitalizing the dynamics of a final mix during Mastering.
- Controlling or revitalizing dynamics of main tracks, groups and entire mix during mixing.

Front panel

Meters

The screenshot below shows you the various components of the PSP MasterComp's meters.



As you can see above, PSP MasterComp's meters contain both VU and PPM needle readings. The meters also offer a VU and PPM held textual values that refresh immediately whenever the readings are greater then displayed values and are held for two seconds. Finally, meters offer overload LED indicators. All the parameters of the meters can be adjusted via knobs available on PSP MasterComp's rear panel (see **Rear Panel** below)

The black text of the PPM held values turns red if levels of 0dBFS or greater are detected. Please note that the reading of the PPM held value will not be the same as the digital peak indication if you set the integration time for the PPM meter to a greater value then 0ms.

LEDs react according to rear panel's overs counter setting. This means that if you set the PPM integration time to greater then 0ms and the overs counter is set to low values, you'll notice the LEDs may often blink while the PPM level is still far from reaching 0dBFS.

The opposite situation may also occur if you set the PPM integration to 0ms and the meter reads over 0dBFS. In this case, the LEDs may not blink at all because they are waiting for minimum overloaded samples number.

After an overload indication occurs (a red blink), LEDs hold a darker red to indicate that an overload detection occurred.

To reset the LEDs from held overs, simply click one of meters.

Knobs and Buttons

These controls all affect the compression expansion of the source material.

Ratio
The Ratio knob sets the compression/expansion ratio. It offers 11 steps, including 7 compression ratios ranging from 1.2:1 to ∞:1. Compression ranges of 1:1 and 3 expansion ratios 0.84 : 1, 0.71 : 1 and 0.5 : 1 have been omitted.

Attack
The Attack knobs can set an attack time within a wide range of values from 0.01ms to 1s. This knob also sets the nominal attack time for automated attack mode.

Auto Attack button
This button engages the automatic attack adjustment mode. In this mode, the Attack control sets a nominal attack time while the automation algorithm shortens or lengthens the attack according to current transient content of the material being processed. While generally the automation algorithm provides the most transparent attack behavior possible, depending on your specific source material and plug-in settings you may find that disengaging the Auto Attack button will offer a more musical result.

Release
The Release knob sets the release time within a wide range of values from 0.1s to 10s. This knob also sets the nominal release time for automated release mode.

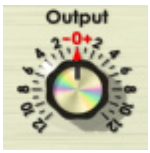
Auto Release button
This button engages automatic release adjustment mode. In this mode, the Release control sets a nominal release time while automation algorithm shortens or lengthens the release according to current transient content of the material being processed. While in most cases the automation algorithm provides the most transparent release behavior possible, depending on your specific source material and plug-in settings you may find that disengaging the Auto Release button will offer a more musical result.

Threshold
The Threshold knob allows you to set the PSP MasterComp's compression or expansion threshold between the range of -30dB and +6dB. Please note that with Soft knee engaged the knee extends down to -6dB below threshold.

Makeup
The Makeup knob controls the post compression/expansion make-up gain. This makeup gain is added before the Mix, Output and Limit sections.

Auto Makeup button
This button engages the automatic makeup control. The setting of this control depends on the current ratio and threshold settings. Due to the fact that some manual calibration may still be needed, even after engaging this button, you may still want to use the Makeup control for fine-adjustments.
Caution! Turning on Auto Makeup during playback may produce a dramatic gain change and corresponding click.

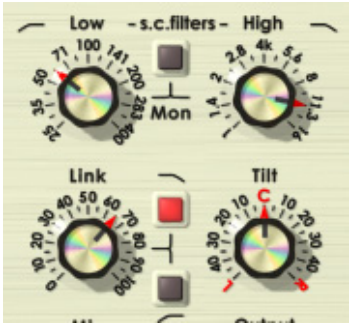
Mix
The Mix knob sets the amount of processed signal (post make-up) and input signal sent to the output level control and output limiter. This control allows you to blend the processed and dry signal if you want to preserve original transients.



Output
The Output knob controls the output gain of a signal just before the output limiter. You can set the output level from –12dB to +12dB.

Side Chain Filters Controls

The controls below all affect how the PSP MasterComp processes the side chain signal.



Low
This knob adjusts the low cut or low boost frequency of side chain filter between 25Hz and 400 Hz.

Low Cut/Low Boost filter type icon
Clicking on low cut / low boost icon left of the "Low" label switches between filter type. The boost filter is set to + 12dB while a cut filter offers attenuation down to -15dB.

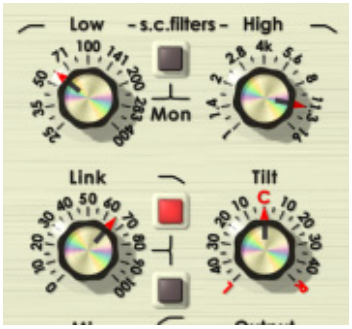
High
This knob adjusts the high cut or high boost frequency of side chain filter between 1kHz and 16kHz.

High Cut/High Boost filter type icon
Clicking on high cut / high boost icon right of the "High" label switches between filter type. The boost filter is set to + 12dB while a cut filter offers attenuation down to -15dB.

Mon
This button engages side chain monitoring mode, which provides an input processed by side chain filters to the output.

Link
Sets the amount of linking between side chain channels. Use this parameter allow to find the most musical setting that offers the least amount of stereo field shifting.

Link Low Cut button
Engaging this button gently cuts low frequencies from the linked side chain signal. This button offers an alternative stereo field response when you don't want the low frequencies to affect stereo linking.



Link High Cut

Engaging this button gently cuts high frequencies from a linked side chain signal. This button offers an alternative stereo field response when you don't want the high frequencies to affect stereo linking.

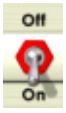
Tilt

The Tilt button controls the side chain balance, allowing for precise adjustment of the channel processing depth in case your side chain input signal is not stereo balanced.

Master Switches

Each of these switches globally affect the processing or metering of the PSP MasterComp.

Pre/GR/Post
This toggles the meters between representing the input (**Pre**-processed) signal, the amount of Gain Reduction (**GR**) and output (**Post**-processed) signal.



On/Off
The On/Off switch engages or disengages processing. When set to 'Off' metering still occurs, although the signal is untouched.
Caution! Toggling this switch during playback may produce a gain change and corresponding click.

Fat/Off
This switch engages PSP's proprietary Frequency Authentication Technique (FAT) for high quality double sampled processing. Keeping FAT engaged will produce the highest quality, most transparent results so we recommend that you leave it on for complex operations on busses and during mastering. Please note that when FAT mode is engaged the plug-in requires about 2.5x more CPU then with FAT mode switched off.
Although FAT is often a great solution in standard sample rates (44.1, 48kHz), you can set it to off in high sample rates to preserve CPU power.
Caution! Toggling FAT mode during playback may produce considerable audio glitches and clicks.

Hard/Soft
This switch toggles between standard hard and soft knee compression/expansion curves.

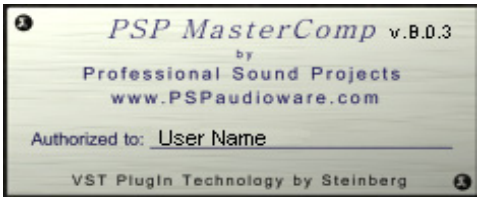
Peak/RMS
This switches level detection response between Peak and RMS modes.
Caution! Switching between Peak and RMS detection requires MasterComp's internal processing to briefly reset; toggling this switch during playback may produce a sudden gain drop and corresponding click.

Limit/Off
This switch engages the high quality output brick wall limiter. The limiter is the last processing stage of this plug-in, after mixing the dry and processed signal and the output gain stage. The limiter is set to 0dBFS. Note that the limiter does not use FAT processing mode.

Rear Panel

To access the PSP MasterComp rear panel, click on the PSP MasterComp label at the bottom of the editor GUI. When you click on this, the interface will reveal the "rear panel" GUI shown below.

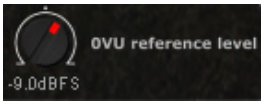
Plug-in Information Plate



The Plug-in Information plate consist of the version number of the plug-in to the right of the plug-in name, and your authorization details. Clicking anywhere in the Plug-in Information Plate switches the GUI back to the front panel.

Rear Panel Knobs

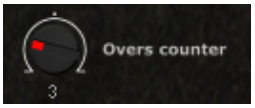
VU integration time
The VU integration time knob sets the ballistics for the VU meters. The default value is 300ms. This value is stored as a preference setting.



0VU Reference Level
The 0VU Reference Level knob sets the sine wave reference level. The default value is -14dBFS. This value is stored as a preference setting.

PPM integration time
The PPM integration time knob sets the attack ballistics for the PPM meters. The default value is 10ms. This value is stored as a preference setting.

PPM return time
The PPM return time knob sets the return ballistics for the PPM meters. The default value is 2800ms. This value is stored as a preference setting.



Overs counter
The Overload counter knob sets the number of overloaded samples it takes to light the overload LEDs. The default value is 3 samples. This value is stored as a preference setting.

Basic Operation with Meters

PSP MasterComp Meters advantages

PSP MasterComp meters are designed to both look and operate similarly to hardware VU and PPM meters with overs indicators. To ensure that these meters will be a useful tool in every situation we endowed them with enough parameters to allow you to adjust the meters' behavior to nearly any practical situation. To learn more about those adjustable parameters read the **Rear Panel** section of this manual.

Standard VU meters are specified to work with a 300ms integration time. Choosing a different integration time setting results in a response that is not "authentic" to standard VU time responses, but you may find a different integration time better suits your particular needs. As the VU meters show a sort of "average level," they need to be calibrated to be useful for real applications. In normal situations the VU meters show a -14dB value relative to the peak value. That is why mastering and post production engineers decided to use it as reference level for music. Today, the practice of mastering to very (in some opinions, excessively) hot levels tends to result in average levels being much closer to the peak values. This is why we decided to offer users such a wide reference level adjustment range.

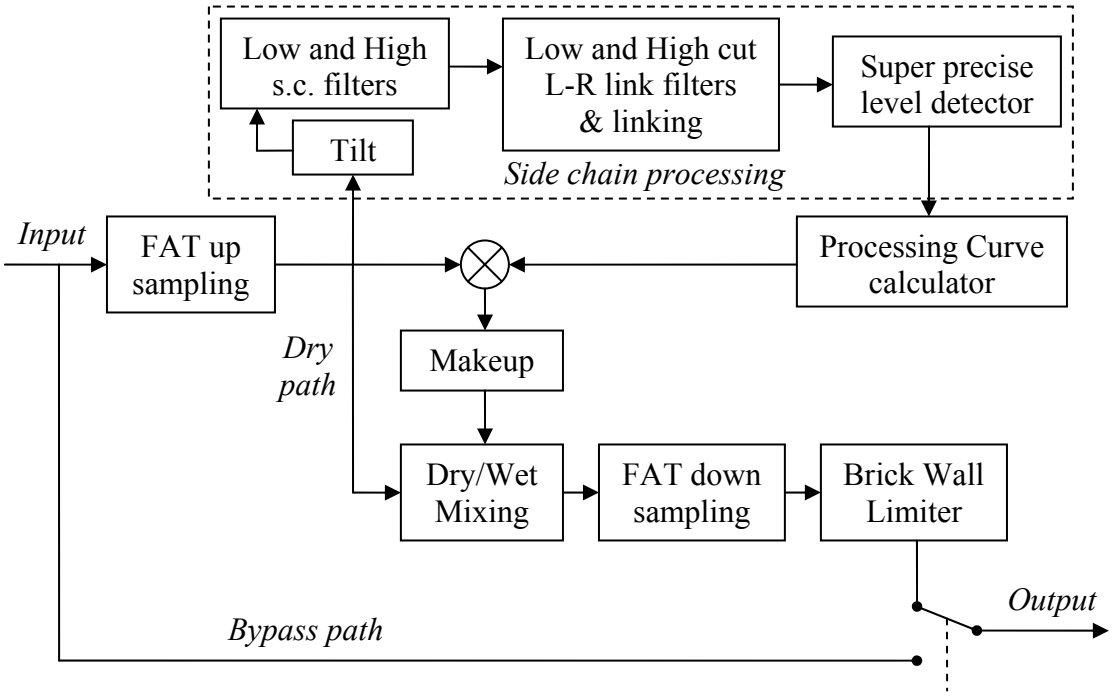
PPM meters are basically peak meters. They show the level value very close to digital peak values. Typically they have 10ms or 5ms attack and about 2800ms release times. In many cases PPM meters are more practical then Digital peak meters. You can, however, configure the PPM meters to be accurate digital peak meters by setting attack to 0ms.

Rear Panel set-up and operation

PSP MasterComp's Rear Panel consists of the plug-in information box and meter preference parameters. These Meter preference parameters are not related to the sound processing. They set the way meters operate.

The Meter preference parameters allows you to adjust the meters' behavior to your needs. The values that you set in this panel are automatically stored in the Windows Registry (Windows) or in the Preferences folder (Mac OS X) every time this plug-in is closed. Those parameters are not accessible through audio application's automation. Whenever you start a new instance of the plug-in or start a project that uses the PSP MasterComp, all preference parameters are recovered from last settings regardless of the project or even the host application that is used.

Block Diagram



Support

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

PSPaudioware.com s.c.
Dzikiej Rozy 11/8 Jozefoslaw
05-500 Piaseczno
Poland.
ph. +48 601 96 31 73
www.PSPaudioware.com
contact@PSPaudioware.com

User Comments

We welcome any opinions and comments related to PSP MasterComp. We would also be grateful if you shared with us your experiences using PSP MasterComp. For example, if you've created a useful preset then let us know.

Please, contact us at: contact@PSPaudioware.com