PSP TripleMeter

Operation Manual

Acknowledgments

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PSP TripleMeter

The PSP TripleMeter offers three different meters (VU, RMS, PPM) with separate calibration and shared features like trim faders, filters and label. The idea was to give you the ability to choose between different audio measurement tools while the audio is processed.

With only one click you can check the volume units (VU) measurements of a signal and compare it to the peak indications or even RMS values.

PSP VU3

PSP VU3 offers professional VU metering with accurate overload indicators. All of its parameters are adjustable within wide margins to make this plug-in suitable for any particular application in which accurate metering is necessary.

PSP VU3's meters are designed to work similarly to the way real VU meters and overs indicators work. To ensure that these meters would be useful in every situation we supplied them with a set of parameters designed to adjust their behavior for every practical situation. To learn more about those adjustable parameters please refer to the **Rear Panel Controls** section of this manual.

Standard VU meters are specified to work with an integration time of 300ms—every other integration time setting results in a response that is not compatible with standard VU time response. Nevertheless, PSP VU3s allows you to adjust the integration time to your particular needs. Since VU meters display an average level based on perceived loudness, it has to be calibrated to be useful for real applications. In normal situations the VU meters show a -12dB or -14dB value relative to peak value. That is why mastering and post-production engineers decided to use it as reference level for music. Nowadays, the practice of recording very hot levels is the cause for average levels to be much closer to peak value. For this reason we decided to give users a wide reference level adjustment range.

PSP RMS3

PSP RMS3 is inspired by classical European PPM meters, and with the addition of a second needle it was designed to show the relationship between RMS and Peak levels. With brand new scale the PSP RMS3 is a great alternative to our PSP PPM3 for catching peak values while observing the RMS level at the same time. It has adjustable parameters such as integration times and reference levels to make this meter suitable for any application in which accurate metering is desired.

PSP RMS3's meters are designed to work similarly to the way real PPM and RMS meters work. To ensure that these meters would be useful in every situation we supplied them with a set of parameters designed to adjust their behavior for every practical situation. To learn more about those adjustable parameters please see the **Rear Panel Controls** section of this manual.

By default the RMS metering needle is specified to work with an integration time of 1 sec and the peak needle's integration time standard is about 10 ms. Nevertheless, PSP RMS3 allows you to adjust the integration times to your particular needs. Peak integration time and RMS integration time are independent,so it is easy to make PSP RMS3 a great measurement tool with analog-style RMS behavior: standard RMS integration time and digital measurement with Peak integration time at 0ms in one meter.

PSP PPM3

The **PSP PPM3** provides professional European and BBC PPM metering with accurate overload indicators. All parameters such as integration times and reference levels can be adjusted over a wide range in order to make this plug-in suitable for any application in which accurate metering is desired.

PSP PPM3's meters are designed to work similarly to the way real PPM meters and over indicators work. To ensure that these meters would be useful in every situation we supplied them with a set of parameters designed to adjust their behavior for every practical situation. To learn more about those adjustable parameters please see the **Rear Panel Controls** section of this manual.

Standard PPM meters are specified to work with an integration time of 10ms—every other integration time setting results in a response that is not identical to standard PPM time response. Nevertheless, PSP PPM3 allows you to adjust the integration time to your particular needs. The PPM3 shows values similar to digital peak levels but it will miss some impulse levels if you adjust the integration time to be greater then 0ms. For a proper value reading, the fallback value should be set to about 1000-2000ms. It takes a proper reference setup and knowledge of how to configure PPM3 to properly use PPM meters during recording or mixing.

Front Panel Controls

PSP TripleMeter's front panel has been designed to provide only essential user interface features to keep the interface clear.

The Top Bar

G S I Calibration

Click on the one of the letters to choose the meter calibration mode. Please see the **Rear Panel operation - Meter Calibration** section in this manual for more information.

Instant Reference Control
Reference button (see the word “session” in the Top Bar”) is a quick shortcut to the Rear Panel calibration parameter of current meter. Click and drag or use mouse wheel to adjust current Reference Level. To hide this control press **- Button** in the upper right corner of the plugin.

PROCESS Button

Press this button to process audio through the trim fader and filters strip. By default this button is inactive, so PSP TripleMeter works like a traditional meter and doesn't affect audio.

? Button
Click on the question mark in the upper right corner of the plug-in whenever you need to open the operation manual.

+/- Button
Click on the + button in the upper right corner of the plug-in to show/hide Filters and Label strips.

Level Trim

Set the input signal level with this fader. The measured level is post trim fader and post filters. Double-click on the fader to return to 0dB gain. Use the SHIFT key with your mouse to fine tune this parameter. Single-click on the numerical value below the fader to enter an exact dB value using your keyboard. Press the PROCESS button to process audio through the trim fader. By default the PROCESS button is inactive, so PSP TripleMeter works like a traditional meter and doesn't affect audio.

Shared bottom meter's controls

LR-MS Switch
The LR-MS switch lets you change the meters' operation mode between stereo and mid-side modes. In MS mode LEFT and RIGHT labels change into MID and SIDE

OFF-oo-HOLD Switch
Configure the meter to never display a hold indicator, to display a hold indicator for an infinite time (until clicked), or or to display a hold indicator for a time set on the rear panel.

<< Meters Navigator >>

Clicking these arrows lets you switch between meters. Click in the middle of the navigator (the current meter's name) to switch to the rear panel of the current meter.

Meters

VU Meter

PSP VU3's analog-style meters indicate VU (Volume Units) levels. The meter scale ranges from -20 to +3. The meters have an adjustable integration time (300ms by default), which offers standard analog VU needle ballistics. Usually, the 0VU reading refers to a -18dBFS or -14dBFS sine wave, however this can be adjusted. The default VU reference value is -18dBFS. Use the rear panel to change the integration time or reference level.

The meters contain overload LEDs that by default react to three or more overloads. The overload counter and the LED indication reference level can be adjusted on PSP VU3's rear panel. After an overload occurs, the LED fades in intensity, however the indicator remains a dark red color to indicate that an overload has occurred. Click on the LED to reset it.

RMS Meter

PSP RMS3 analog-style meters indicate PPM and RMS level using a single scale. The meters have an adjustable integration time (10ms by default for Peak and 1s for RMS), which features standard analog needle ballistics and an adjustable peak fallback time (2s by default). By default, the 0dB for both needles refers to a 0dBFS sine wave, however this can be adjusted. The idea was to show the relationship between those two measurements in the digital world, so for a 0dBFS sine wave both needles reach 0dB at scale. Use the rear panel to change the integration and fallback times, or to set the reference level.

The meters can also be switched to display a held level with a short red marker. The hold time is adjustable on the rear panel.

The meters contain overload LEDs which, by default, react to three or more overloads, although you can adjust the overload level and number of overload samples. After an overload occurs, the LED fades in intensity, however the indicator remains a dark red color to indicate that an overload has occurred. Click on the LED to reset it.

PPM Meter

PSP PPM3 analog-style meters indicate PPM level using the EBU and BBC scale. The meters have an adjustable integration time (10ms by default) which features standard analog PPM needle ballistics and an adjustable fallback time (1s by default). By default, the 0dB PPM or 4 BBC reading refers to a -12dBFS sine wave, however this can be adjusted. Use the rear panel to change the integration and fallback times, or to set the reference level.

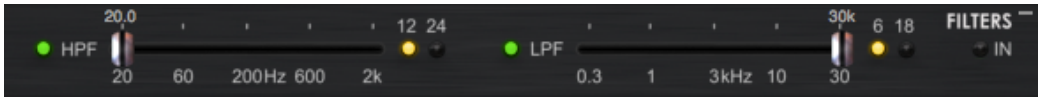
The meters can also be switched to display a held level with a short red needle. The hold time is adjustable on the rear panel.

The meters contain overload LEDs which, by default, react to three or more overloads, although you can adjust the overload level and number of overload samples. After an overload occurs, the

LED fades in intensity, however the indicator remains a dark red color to indicate that an overload has occurred. Click on the LED to reset it.

FILTERS Strip

Use the +/- button on the strip to show or hide the FILTERS strip. Click on the main led to activate filters strip processing (the PROCESS button has to be active).



Adjust the frequency of the filters with the sliders and use the yellow LEDs to change the slope of the chosen filter. Green LEDs are used to activate the high-pass and low-pass filters.

LABEL Strip

Use +/- button on the strip to show or hide the LABEL strip. Single-click on the label tape to enter text entry mode. Press Enter to exit entry mode.

LAG TIME

Most DAWs offer latency compensation based on reported information about the output latency of the channel. If the value is incorrect, lag time should be set manually. Double-click on **LAG TIME** to set automatic latency compensation. Click and drag up or down to change the **LAG TIME** of meters' needles. You can also click the up or down arrows to change the value by 10ms.

TIP: Lag time can be used to set up latency compensation for meters indicators (processing is latency compensated by default by most hosts, but it doesn't concern PSP Meters, because filter processing is 0 latency samples). Set up Lag Time to be sure that the meter is synchronized with the sound coming out from the speakers.

TIP: Output latency information and size of plug-in windows are elements that are dependent on your host DAW. If something doesn't work correctly, please try other host software and check the **Support** section of this manual.

Rear Panel Controls

Clicking on the current meter's name opens the Rear Panel window, which contains the plug-in's preference settings. These settings allow you to adjust the behavior of the meters and LEDs. All settings are dependent on the calibration mode (check **Rear Panel operation - Meter Calibration** section in this manual). To return to the front panel, click on the about box.

Rear Panel Operation - Meter Calibration

PSP TripleMeter's Rear Panel consists of the plug-in information box and current meter calibration parameters.

Those parameters do not affect audio processing, they only determine the way the meters behave. Meter calibration can be set in one of three modes: Global calibration, Session calibration or Instance Calibration. Click on the one of the letters to choose meter calibration mode.

Global calibration
This setup is known from previous version of our metering plug-in called PSP 2Meters. Global calibration the means meter's parameters are shared immediately between all instances and are automatically stored in the Windows Registry or in the Mac OSX Preferences folder. This option is mostly used in studios , where meters are properly calibrated with hardware and you need to make the same calibration in every host on the studio computer.

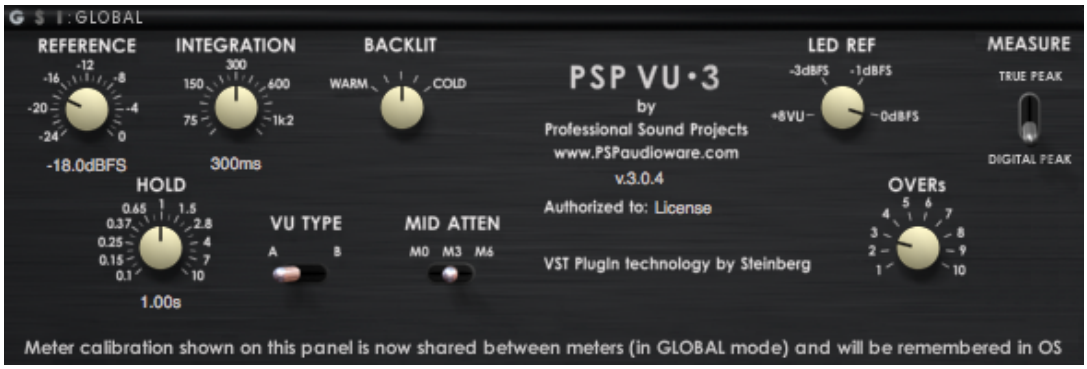
Session calibration
This is the default setup. In this mode the meter's parameters are shared between all instances in the specific session. In this mode the PSP TripleMeter's calibration is saved in the project, so you are certain that on every machine the session will be restored with the proper set of meters' parameters.

Instance calibration
Instance mode calibration is reserved for specific tracks. Meter calibration in this mode is independent of other instances and is saved in session.

TIP: In a newly created session (project) – Session mode calibration is based on Global calibration settings. The first time you use PSP TripleMeter, it is wise to calibrate meters with used hardware in Global Mode, so every new session will start with proper settings (in all calibration modes).

TIP: Use Session calibration to avoid unexpected changes made by studio coworkers. Use Global calibration to share settings between Hosts.

PSP VU3 – rear panel



REFERENCE
The 0VU Reference Level knob sets the sine wave reference level. The default value is -18dBFS. Usual settings corresponding to analog equipment are -18dBFS or -14dBFS.

INTEGRATION
The VU Integration Time knob sets the ballistics of the meter's VU needles. The default value is 300ms.

BACKLIT
The VU backlit color sets the background color of meters.

HOLD
The hold time knob sets the amount of time for the red hold indicators to be kept at a maximum level when set to hold mode on the front panel. The default value is 1s.

VU TYPE
The VU type switch changes the needle ballistics between two behaviors. Setting A refers to the original VU specification's needle behavior. Setting B corresponds to the common behavior in which large analog VU meters have a slightly greater overshot then mentioned in the original VU specification.

MID ATTEN
The Mid Atten switch sets the amount of the Mid signal component when the LR MS switch is set to the MS position. Because the Mid component of a signal may have a greater level then the L or R signals by up to 6dB, the aim of this attenuation is to bring its measurements to within the scale range . Most meters working in Mid-Side mode use -3dB or -6dB attenuation.

LED REF
The LEDs' reference level knob sets the level at which an overload will be indicated.

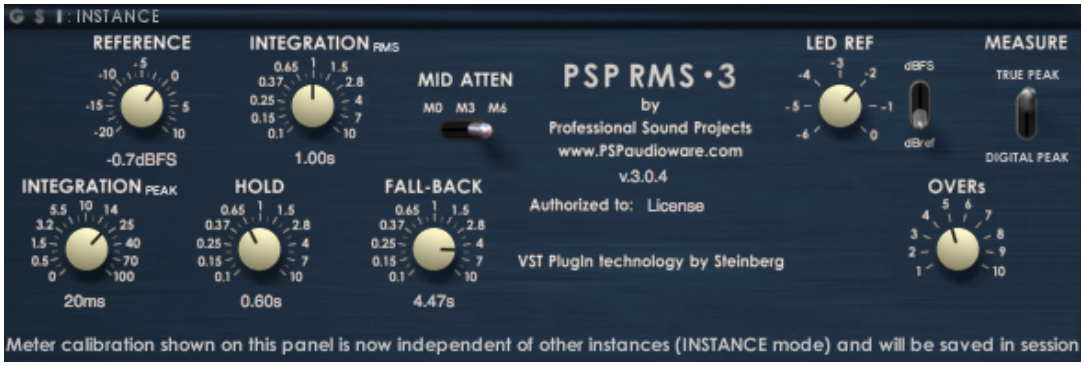
MEASURE
Setting this switch to True Peak sets the measurement to oversampled mode. When True Peak mode is on, the measured sound is oversampled, hence inter-sample peaks are engaged into measuring algorithms. The indications of the meters in True Peak mode attempt to estimate the actual level emitted from digital-to-analog converter. This mode is preferable whenever an accurate measurement is required in a session using low sample rates. Set this switch to Digital Peak mode to make all measurements in standard mode. When using Digital Peak mode in low sample rates the

measurement may not be adequate for high frequency content (the measurements might be lower by 2dB to 3dB).

OVERs counter

The Overload counter knob sets the number of overloaded samples required to light the overload LEDs. The default value is 3 samples.

PSP RMS3 – rear panel



REFERENCE
The 0dBu Reference Level knob sets the sine wave reference level for 0dB scale indication. The default value is 0dBFS. This control refers to both: peak and RMS indications.

INTEGRATION RMS
The RMS Integration Time knob sets the attack ballistics of the shorter meter's needles. The default value is 1s.

MID ATTEN
The Mid Atten switch sets the amount of the Mid signal component when the LR MS switch is set to the MS position. Because the Mid component of a signal may have a greater level then the L or R signals by up to 6dB, the aim of this attenuation is to bring its measurements to within the scale range . Most of meters working in Mid-Side mode use -3dB or -6dB attenuation.

INTEGRATION PEAK
The Peak Integration Time knob sets the attack ballistics of the longer meter's needles. The default value is 10ms.

HOLD
The Peak Hold Time knob sets the red needle maximum indication time. The default value is 1s.

FALL-BACK
The Peak Fallback Time knob sets the fallback ballistics of the meter's needles. The default value is 1.8s.

LED REF
The LED Reference Level knob sets the overload reference level. The default value is 0dBFS. This setting is made to inform about digital overdrive.

LED REF Type
LEDs can work in two different reference modes. They can react to dBFS levels or Peak needle (current **REFERENCE** knob setting)

MEASURE
Setting this switch to True Peak sets the measurement to oversampled mode. When True Peak mode is on, the measured sound is oversampled, hence inter-sample peaks are engaged into measuring algorithms. The indications of the meters in True Peak mode attempt to estimate the actual level emitted from digital-to-analog converter. This mode is preferable whenever an accurate

measurement is required in a session using low sample rates. Set this switch to Digital Peak mode to make all measurements in standard mode. When using Digital Peak mode in low sample rates the measurement may not be adequate for high frequency content (the measurements might be lower by 2dB to 3dB).

OVERs counter

The Overload counter knob sets the number of overloaded samples required to light the overload LEDs. The default value is 3 samples.

PSP PPM3 – rear panel

REFERENCE
The 0dBu Reference Level knob sets the sine wave reference level for PPM 4 (TEST) indication. The default value is -12dBFS.

INTEGRATION
The PPM Integration Time knob sets the attack ballistics of the meter's needles. The default value is 10ms.

MID ATTEN
The Mid Atten switch sets the amount of the Mid signal component when the LR MS switch is set to the MS position. Because the Mid component of a signal may have a greater level then the L or R signals by up to 6dB, the aim of this attenuation is to bring its measurements to within the scale range . Most of meters working in Mid-Side mode use -3dB or -6dB attenuation.

HOLD
The PPM Hold Time knob sets the red needle maximum indication time. The default value is 1s.

FALL-BACK
The PPM fallback Time knob sets the fallback ballistics of the meter's needles. The default value is 1s.

LED REF
The LED Reference Level knob sets the overload reference level. The default value is 0dBFS. In the CCW position +8.15dBu is used for overload indication. This is typical for a PPM overload, which is calculated using a 0dBu reference level setting. In other positions a 0dBFS reference is used for overload indication setup.

MEASURE
Setting this switch to True Peak sets the measurement to oversampled mode. When True Peak mode is on, the measured sound is oversampled, hence inter-sample peaks are engaged into measuring algorithms. The indications of the meters in True Peak mode attempt to estimate the actual level emitted from digital-to-analog converter. This mode is preferable whenever an accurate measurement is required in a session using low sample rates. Set this switch to Digital Peak mode to make all measurements in standard mode. When using Digital Peak mode in low sample rates the measurement may not be adequate for high frequency content (the measurements might be lower by 2dB to 3dB).

OVERs counter
The Overload counter knob sets the number of overloaded samples required to light the overload LEDs. The default value is 3 samples.

Minimum System Requirements

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

PC

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

RTAS
- Windows 7, 8 or 10
- ProTools 10.0.0 or ProTools TDM 10.0.0 (or later)

AAX
- Windows 7, 8 or 10
- Pro Tools 11 or Pro Tools HD 11 (or later)

Mac

AudioUnit
- Mac OSX 10.6 – 10.12 or later
- 32 or 64-bit host application capable of running AudioUnit plug-ins with Cocoa view

VST
- Mac OSX 10.6 – 10.12 or later
- 32 or 64-bit VST 2.4 compatible host application

RTAS
- Mac OSX 10.6 – 10.12 or later
- ProTools 10.0.0 or ProTools TDM 10.0.0 (or later)

AAX
- Mac OSX 10.9 – 10.12 or later Pro Tools 11 or Pro Tools HD 11 (or later)

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!

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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