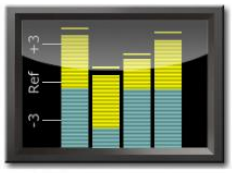
zplane

PPMulator+

Metering software plugin



PPMulatorXL

Metering software plugin + loudness

PPMulator

Metering & Loudness

User Manual

Version 3.6.4 / 6 February 2023

VST VST3 Audio Units AAX mac OS

Table of Contents

1 Introduction

PPMulator is a software-based tool which emulates “Peak Program Meters”. Unlike most other types of digital meters, Peak Program Meters, or “PPMs”, are designed and operate to a very strict set of standards which are universally accepted in broadcast and audio post-production.

By installing and using **PPM**ulator, you can be sure that your audio is at the perfect level for film, radio, or TV, something which is virtually impossible to achieve using the meters found in most audio and video editing systems.

PPMulator comes in two versions: **PPM**ulator**+** (**PPM+**) and **PPM**ulator**XL** (**PPMXL**). As a convention throughout this manual, we will speak of “**PPM**ulator” when the info is related to both versions equally. Otherwise, the explicit names will be used to describe features unique to those versions.

1.1 Differences between PPM+ and PPMXL

In general, **PPM**ulator**XL** has all features of **PPM**ulator**+** and adds both loudness metering and the possibility to meter audio faster than real-time. The list of new features and options for **PPM**ulator**XL** include:

- EBU R128 (2020) compliant loudness metering
- ATSC A/85 compliant loudness metering
- ARIB TR-B32 (2013)
- FreeTV OP-59
- BS 1770-3
- True-peak metering (ITU-R BS.1770 compliant)
- Batch-mode offline metering in multiple real-time
- Three-stage over indication
- IEC-268-18 Digital Audio dBFS meter
- Dolby Atmos® support
- Up to 10 channels supported
- Dolby Dialogue Intelligence™ speech-gating for loudness measurement

1.2 Installation

In order to download the **PPM**ulator installer, you need to register your copy with zplane. After the successful registration, the installers will be available in the download section of your personal account. Find below a step-by-step description of the installation procedure:

1.2.1 Windows

- Download the **PPM**ulator Windows Installer application (.exe)
- Double-click on the file to launch the Installer
- Click **[Next]** in the installer window
- Read the End User License Agreement and, if you agree, click **[Next]**, otherwise, click **[CANCEL]** to abort installation
- Follow the instructions of the installer to complete the installation—you can choose which variants of the plug-in you wish to install and which to omit during the installation process

1.2.2 macOS

- Download the **PPM**ulator macOS Installer disk image (.dmg)
- Double-click on the downloaded .dmg to mount it, then double-click the installer file (.pkg) contained within
- Click **[Continue]** in the installer window
- Read the End User License Agreement and, if you agree, click **[Next]**, otherwise click **[CANCEL]** to abort installation
- Follow the instructions of the installer installation—you can choose which variants of the plug-in you wish to install and which to omit during the installation process
- When installation is complete, you can unmount the disk image by right-clicking on it and clicking **“Eject”** from the context menu

1.3 Registration & Activation

PPMulator is protected by both a *serial number* and a corresponding *unlock key*. The serial number will be sent to you by e-mail upon purchasing **PPM**ulator. You will receive your unlock key by registering **PPM**ulator at the zplane website.

1.3.1 Registering Your Product

In order to receive your unlock key, please log in to your account at the zplane website —please create a new account there if you don't have one already. After logging in:

1. Click the **[REGISTER]** button in the menu bar:

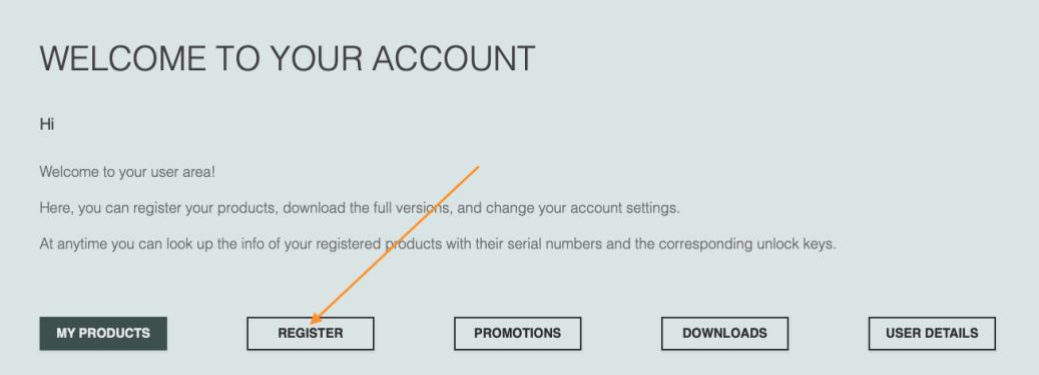


Figure 1: The Account page

2. In the area provided **(1)**, paste in your **PPM**ulator serial number and click the **[REGISTER]** button **(2)** to the right:

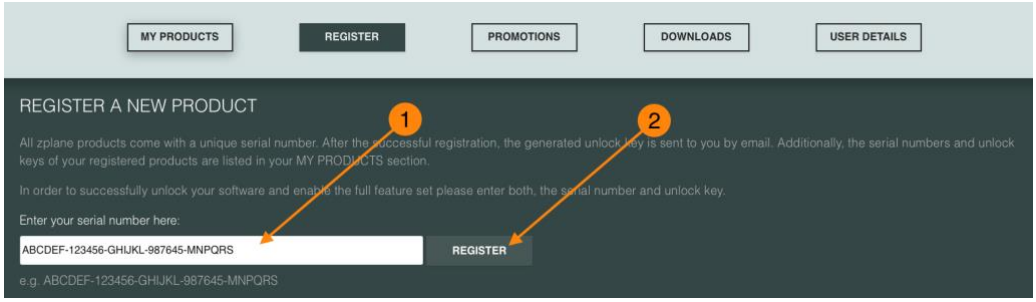


Figure 2: The Product Registration page

3. Your **PPM**ulator unlock key will then be shown.

Note: You can recall any of your serial numbers and unlock keys anytime in the future by logging in to your account and clicking the **[MY PRODUCTS]** button in the menu. This will display the serial numbers and unlock keys for all the zplane products you have registered in your account.

1.3.2 Activating Your Product

Activation of **PPM**ulator is done within **PPM**ulator itself. You must therefore first load **PPM**ulator as a plug-in within any host program you have or run the **PPM**ulator standalone application. Once you've loaded **PPM**ulator:

1. Click the **[+]** button in the corner of the meter to open the Preferences:

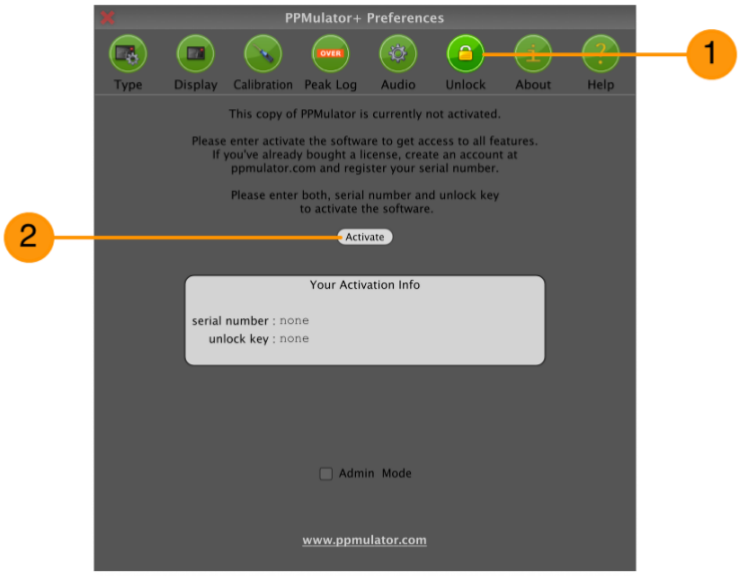


Figure 3: Unlock Tab of the Preferences

2. The Unlock tab should already been selected as shown above. If it is not, click the **[Unlock]** tab at the top of the Preferences **(1)**. Click the **[Activate]** button **(2)** to open the Unlocking window.
3. Paste your Serial Number **(1)** and Unlock Key **(2)** into the spaces provided, then click the **[Save unlock info]** button **(3)**:

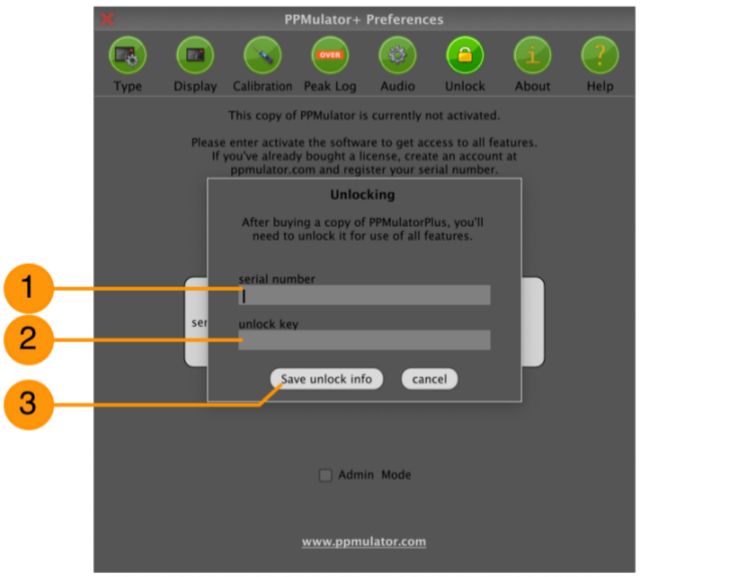


Figure 4: Serial Number and Unlock Key entry areas

4. **PPM**ulator will then be activated and will show a confirmation message.

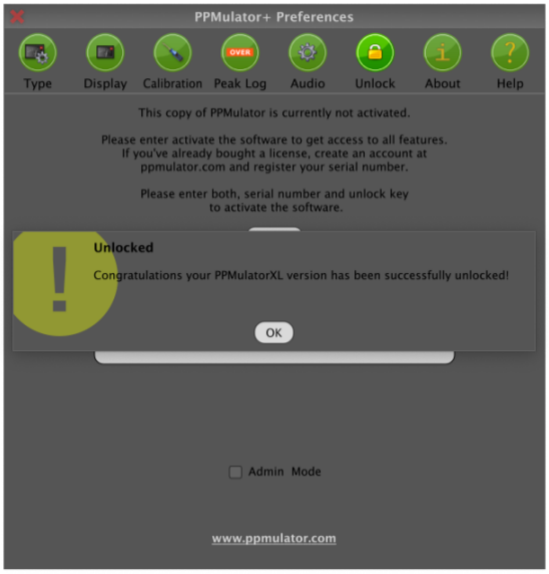


Figure 5: Activation confirmation

1.4 Upgrading from PPM+ to PPMXL

If you would like to upgrade **PPM**ulator**+** to **PPM**ulator**XL**, you must first purchase an upgraded serial number. This can be done conveniently by clicking the **[BUY UPGRADE]** button **(1)** next to your **PPM**ulator**+** Serial Number and Unlock Key in your User Account—this will automatically add the upgrade to your basket and you can proceed to check out.

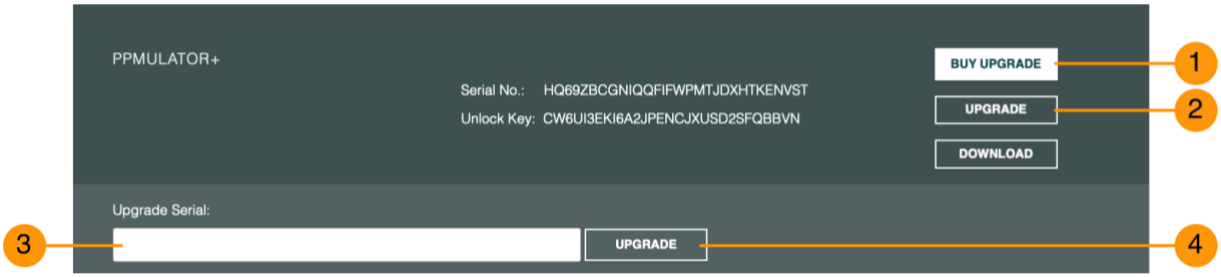


Figure 6: The Buy Upgrade button for PPM+

You will receive a new Serial Number after your purchase. To register this new Serial Number, click the **[UPGRADE]** button **(2)** in your user account and paste the new Serial Number into the area that appears **(3)**. Click the **[UPGRADE]** button **(4)** and your **PPM+** license will be converted to **PPMXL** and a new Unlock Key will be provided.

After registering your upgraded Serial Number, launch **PPM**ulator**+**, open the Preferences, and click on the **[Unlock]** tab **(1)**. Click the **[Upgrade to XL]** button **(2)** and paste in the new Serial Number and Unlock Key. Upon clicking **[Save unlock info]**, **PPM**ulator**+** will be upgraded to **PPM**ulator**XL**.

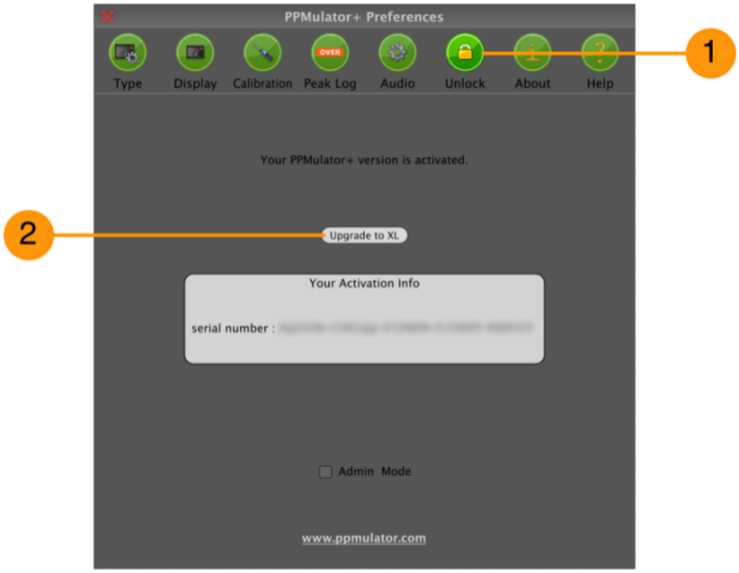


Figure 7: Upgrading PPMulator+ to PPMulatorXL

1.5 Demo Version Limitations & Options

The PPMulator demo version (as well as the unactivated full version) has the limitation that it will cease to work after a few minutes of use. When the time limit has expired, a restart of the software is necessary.

While using them **PPM**ulator demo, you have the option to switch between **PPM**ulator**+** and **PPM**ulator**XL** to compare their respective features. You'll be presented with a selector menu whenever you open the Preferences Panel so you can choose the version you want to test:

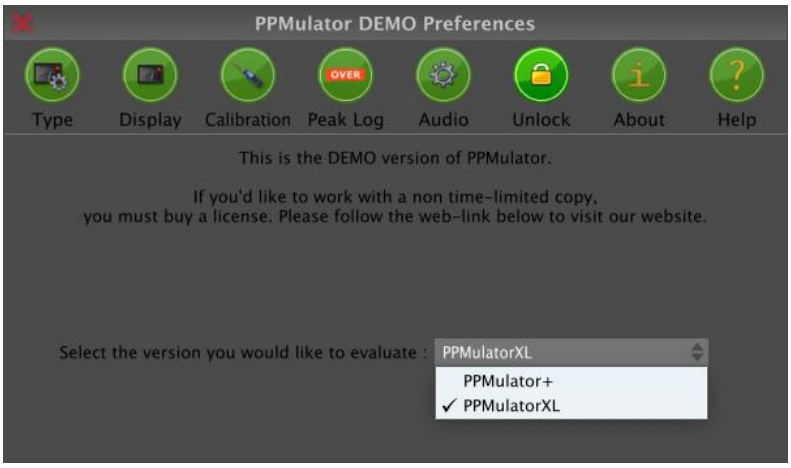


Figure 8: Choosing which PPMulator version to test

> **NOTE:** The demo version of **PPM**ulator cannot be upgraded to the full version! You need to remove the demo first and install then the full version with a different installer. You'll find the full installer in your Account section on the zplane website after registering your **PPM**ulator serial number.

1.6 Naming Conventions

In this documentation, the names of on-screen buttons, sliders, and indicators will be written in bold font between brackets, such as **[Type]** and **[Display]**.

Selectable menu options will be written in bold font between quotes, such as **“Stereo”** and **“mono”**.

References to numbered pointers in images will be written in bold font between parenthesis, such as **(1)** and **(2)**.

2 The Meter Window

The main view of **PPM**ulator is the Meter Window. In order to allow **PPM**ulator to easily remain in view over all your other applications without creating lots of clutter, the Meter Window is extremely compact and has minimal controls. Nearly all the controls for configuring **PPM**ulator's appearance and behaviors are accessed through the Preferences Window.

Figure 9: Assortment of Meter Types

2.1 Context Menu

Each Meter Type has its own unique behaviors, some of which can be accessed via the Context Menu. Simply right-click on the meters and a menu will appear with various commands related to the meter—you can also access the Preferences Window this way in case you have trouble finding the **[+]** button in a particular meter.

Figure 10: The Context Menu

2.2 Loudness Meter Controls

While the Level Meter types are just read-only meters with no interactions (other than clicking to clear the “over” indicators), the Loudness Meter types in **PPM**ulator**XL** have additional interactions for controlling behavior and configuring the display.

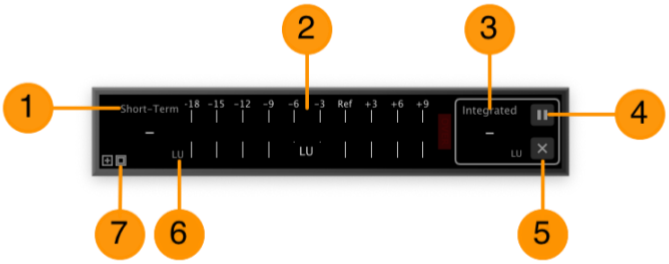


Figure 11: The EBU R 128 Loudness Meter

2.2.1 Short-Term vs. Momentary Loudness

By default, Short-Term Loudness will be shown on the loudness meters. By clicking on the **[Short-Term]** label **(1)** in the meter, this will toggle the button and meter over to Momentary Loudness. Click on **[Momentary]** to change back to Short-Term Loudness.

2.2.2 Loudness Scale Range

Clicking on the numbered scale above the barmeter **(2)** will toggle the range. The default setting provides a “zoomed in” view of loudness while clicking the scale will increase the range, thus providing a “zoomed out” view.

2.2.3 Integrated Loudness vs. Loudness Range

Integrated Loudness and the associated Loudness Range are measurements which are accumulated and averaged over time. Therefore, instead of being an instantaneous value visualized on a barmeter like Short-Term or Momentary Loudness, these measurements are simply shown as their calculated values at the right side of the meter.

By default, the Integrated Loudness is visible. However, clicking on the **[Integrated]** label **(3)** will toggle it to **[Range]** which then displays the calculated Loudness Range (“LRA” for short). Both Integrated Loudness and Loudness Range are simultaneously calculated regardless of which one is in view, so you can freely toggle this view during or after a measurement session to inspect the results.

2.2.4 Start/Pause Loudness Measurement

As Integrated Loudness and Loudness Range are measurements which are accumulated and averaged over time, the associated **[⏸]** button **(4)** can be clicked

to pause measurement data collection—any audio received by **PPM**ulator at this point will then be ignored in the IL and LRA calculations. Clicking the **[▸]** button will resume measurement data collection.

2.2.5 Resetting Loudness Measurement

As mentioned earlier, Integrated Loudness and Loudness Range are measurements that are accumulated and averaged over time. If you want to reset **PPM**ulator to start collecting new data for IL and LRA measurement, click the **[✕]** button **(5)**.

2.2.6 Loudness Units

Click on the units **(6)** to toggle between LU and LUFS/LKFS. This will affect the values of the scale above the barmeter.

2.2.7 Switching to Numerical View

Clicking the **[◘]** button **(7)** will switch the loudness meter to a numerical view where you can see the Integrated Loudness (“Integrated”), Loudness Range (“Range”), and True Peak/Max. Momentary levels as numbers—this replaces the Short-Term/Momentary Level bargraph. Clicking the **[◘]** button will return to the bargraph view.

When in numerical view, the right display can be toggled between showing Maximum True Peak (“Max. True-Peak”) and Maximum Momentary Loudness (“Max. Momentary”) by clicking the name at the top of the display **(8)**.

Figure 12: Numerical Display

3 Preferences Window

PPMulator can be configured in a number of different ways to accurately model the ballistics, responses, and graphics of a wide range of standard peak program meters.

To access the Preferences Panel, simply click the **[+]** icon displayed in the corner of any of the **PPM**ulator Meters, or you can right-click on the meters and choose **"Show Settings Panel"** from the pop-up menu.

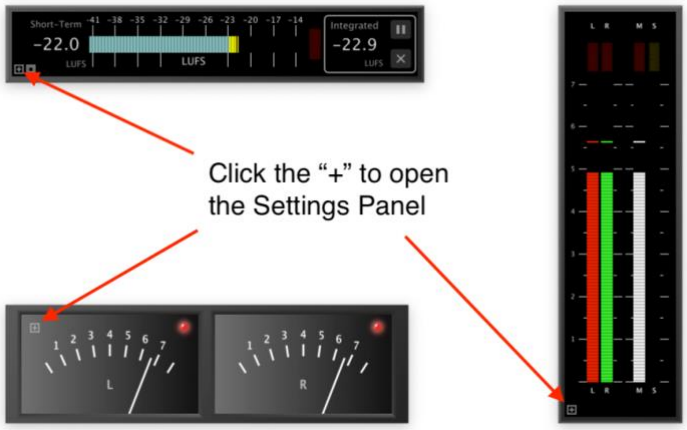


Figure 13: Examples of where to open the Preferences Window

Across the top of the Preferences Panel are seven tab icons, one for each area of **PPM**ulator's functionality. The following sections outline each tab's functions in detail.

3.1 Type Tab

The Type Tab allows **PPM**ulator's standard, scale, and ballistics settings to be adjusted.

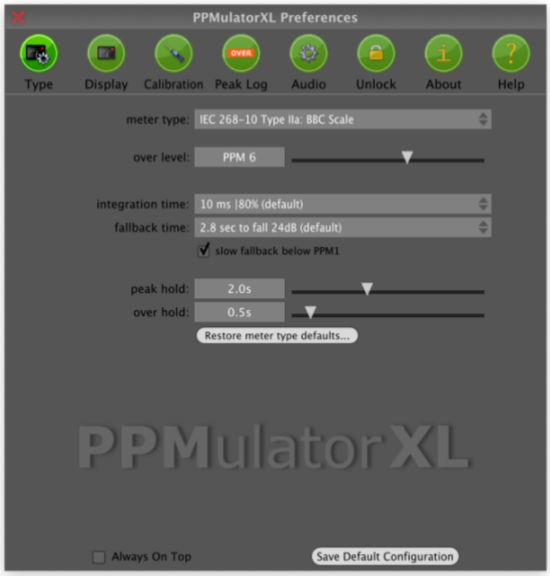


Figure 14: The Type Tab

3.1.1 Meter Type

The **[Meter Type]** drop-down menu contains a list of the types of Peak Program Meters which are emulated in your version of **PPM**ulator—this list will be longer in **PPM**ulator**XL** compared to **PPM**ulator**+**. The type you select here can affect which other options are available on the Type Tab as well as the Display Tab (see next section).

- IEC 268-10 Type I: Nordic N9
- IEC 268-10 Type I: DIN 45406
- IEC 268-10 Type IIa: BBC Scale PPM Meter
- IEC 268-10 Type IIb: EBU Scale PPM Meter
- IEC 268-18: Digital Audio (dBFS)
- ITU-R BS. 1770-2: "True-Peak" Level Meter
- EBU R 128: Loudness metering *****
- EBU R 128: Loudness metering (SimpleView) *****
- ATSC A/85:2009 - Loudness metering *****
- ATSC A/85:2013 - Loudness metering *****
- ITU-R BS.1770-3 - Loudness metering *****
- ARIB TR-B32 (2013) - Loudness metering *****

- FREETV OP-59 (2013) *****

****** *These modes are only available in PPMulatorXL, and each includes the option to enable Dolby speech-gating*

3.1.2 Over Level

This parameter sets the level at which the meter's "Over" indicators will illuminate. You can either slide the slider to adjust this point or type a value directly into the box.

3.1.3 Dolby™ Speech-Gating

This checkbox is only available when using one of the Loudness metering types available in **PPM**ulator**XL**. It enables the speech/dialogue detection which ensures that only the loudness during dialogue is measured.

3.1.4 Integration Time

Integration Time is a carefully-defined part of a PPM meter's standard and is defined as the amount of time required for the meter to reach a particular dB value. This can be thought of as a form of "attack time". Unlike true digital peak-reading meters, PPMs are designed to "miss" or "overlook" short transients in the signal. Consequently, material mixed using PPM meters tends to be several dB louder than when using meters with a faster response.

PPMulator adheres to the PPM standards closely and uses the correct integration time for each PPM meter type. You can adjust this time to give the meter a faster response time (such as zero, where it will show all digital peaks) but this will, of course, make it a non-standard PPM meter and will therefore give results which can't be used to verify your audio against any audio delivery specifications.

3.1.5 Fallback Time

Like Lntegration Time, above, the Fallback Time—the time taken for the needle or bargraph to drop after reaching a particular value—is a carefully-defined part of the PPM specifications. Changing this will make a faster- or slower-reacting meter which will no longer react like a true PPM meter.

With the BBC-style meters, there is an additional checkbox option to mimic the **"slow fallback below PPM1"** and zero sometimes found on older models of PPM meters.

3.1.6 Peak Hold

By setting the Pak Hold time, you can configure how long the peak bar meter stays at its peak location. When setting this parameter to infinite, it will always stay at maximum position and will never return to zero. You can reset the Peak Hold by

clicking on the “Over” indicator, or right-click the **PPM**ulator display and select **“Reset peaks and overloads”** from the pop-up menu.

3.1.7 Over Hold

The Over Hold parameter works the same as Peak Hold: By setting Over Hold to infinite, you can make sure that any overs are displayed permanently so you don’t miss any that might occur when you look away from **PPM**ulator for a short time.

3.1.8 Restore Defaults

Clicking this button restores any changes you made back to the default settings for the currently-selected Meter Type.

3.1.9 Always On Top

If you check the **“Always On Top”** box, this will force the **PPM**ulator window to the top “layer” of your computer’s screen such that it remains in the foreground of all application windows, thus keeping it in view at all times.

3.1.10 Save Default Configuration

When the **[Save default configuration]** button is clicked, it saves the current configuration of **PPM**ulator (the settings on both the Type and Display tabs)—this configuration will then be recalled automatically any time a new instance of the **PPM**ulator *plug-in* is loaded into a host.

If you have one particular configuration of **PPM**ulator that you always like to use, you can set it in the Type and Display tabs, click this button, and then **PPM**ulator will load using this configuration for every future project (any previous host projects using the **PPM**ulator plug-in will *not* be affected by this—they will retain their states as saved in the projects).

This saved configuration is only used by the plug-in versions of **PPM**ulator—the standalone version of **PPM**ulator will always relaunch using the settings from the previous standalone session.

3.2 Display Tab

The Display tab allows **PPM**ulator's graphical display settings to be adjusted.

Figure 15: Two examples of the Display Tab based on Meter Type

3.2.1 Display Type

This menu contains a list of the types of Peak Program Meters which are emulated in **PPM**ulator. It allows a choice of "analog-style" needle meters (Type IIa and IIb only), horizontal, or vertical bargraph meters. There is also the choice of multi-channel / surround meters for use in 5.1 and surround projects:

- Mono needle meter
- Stereo needle meter
- Mid-Side needle meter
- Stereo + M-S needle meter
- Multi-channel/surround needle meters
- Optional phase meter
- Mono bargraph meter
- Stereo bargraph meter
- Mid-Side bargraph meter
- Stereo + M-S bargraph meter
- Multi-channel/surround bargraph meters
- Optional phase meter

3.2.2 Show Peak Needles

When the Display Type is set to a one of the needle meter options, enabling this parameter displays an additional thin red needle which temporarily shows the peak level before being reset (similar to the Peak Hold function on a regular bargraph meter).

3.2.3 Channels (Multi-channel / Surround Meters Only):

If a multi-channel or surround meter type is chosen, above, you have the option to enable or disable up to 6 channels for metering with a choice of which audio channel is assigned to which meter channel. Click each of the six grey squares to display a drop-down list of possible audio channels to meter.

> **NOTE:** Some hosts will only allow a stereo plug-in on a stereo track or bus, and a multi-channel plug-in on a multi-channel bus. If **PPM**ulator does not appear to be functioning correctly, check that you've selected an appropriate metering mode—either stereo or mult-ichannel—for the type of track or bus.
>
> Also, although most hosts will map the correct channels to **PPM**ulator in the correct order (i.e. L, R, C, Lfe, Ls and Rs, respectively "Left", "Right", "Centre", "Low Frequency Effects", "Left Surround" and "Right Surround"), it may be necessary to change the order of these channels using this option so that the appropriate channels are metered.

3.2.4 Needle / Bargraph Color (Multi-channel / Surround Meters Only)

If a multi-channel or surround Meter Type is chosen, above, the Needle / Bargraph Color buttons select the colour of each meter's needle or bargraph for easier recognition when working in 5.1. If the meter type is set to IEC 268-10 Type IIa or b (BBC or EBU meters), then each channel's bargraph is composed of a single color. If the Meter Type is set to IEC 268-10 Type I (Nordic N9 or DIN), then you have additional "mid" and "peak" colours for each bargraph.

3.2.5 Label (Multi-channel / Surround Meters Only)

The Label section allows you to give each meter channel a short on-screen label which will identify the channel being metered. The defaults are L, R, C, Lfe, Ls and Rs (respectively "Left", "Right", "Centre", "Low Frequency Effects", "Left Surround" and "Right Surround"), but these can be changed by simply typing in a new label.

3.2.6 Phase Meter (Multi-channel / Surround Meters Only)

The Phase Meter option enables or disables the phase meter which shows phase-correlation (and therefore mono-compatibility) between any pair of channels. Use

the drop-down list to select which two audio channels you wish to measure phase-correlation between.

A reading of “+1” indicates that the two channels are in phase (i.e. mono) while a reading of “-1” means that the two channels being metered are 180° out-of-phase (which will result in silence when mixed to mono). This is also indicated by a yellow warning indicator and, with bargraphs, the meter also turns red. Any phase-correlation of less than zero will result in some cancellation in mono, so this should be carefully checked for maximum mono broadcast compatibility.

> **NOTE:** If you select a stereo PPM meter, there is no phase meter option available. However, if you wish to have a phase meter alongside a stereo PPM meter, simply select the multi-channel/surround meter option and disable all channels other than “L” and “R”.

3.2.7 Goniometer / Jellyfish

The Goniometer, or “Jellyfish”, is another option to get a quick glance of phase-correlation in stereo signals. You can decide where it should be located, either to the right of or below the main metering display. There are two parameters: Delay, which regulates the fadeout, and Brightness, which regulates the maximum contrast. If the signal level is low, there is an option to amplify it for the display. Simply click on the **“0dB”** label and it will cycle through gains of **“+3dB”**, **“+6dB”**, and **”0dB”**.

3.3 Calibration Tab

The Calibration panel allows **PPM**ulator to be set up with a particular reference level.

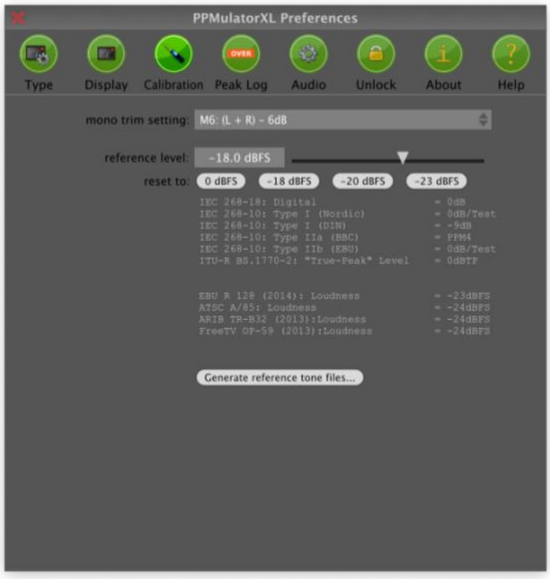


Figure 16: Calibration Tab

3.3.1 Mono Trim Setting

PPMulator has several types of mono PPM meter options, all of which display the sum of the left and right stereo channels. Generally, most PPM meters use a gain trim to deduct either 6dB or 3dB from this sum to give a more accurate indication of the mono level. These gain trims are known as “M6 mode” or “M3 mode”, respectively.

The Mono Trim parameter allows you to select either -6dB of mono trim (the most widely-used amount), -3dB (less usual, although still a standard within certain obscure parts of the BBC), or no mono trim (where mono = left + right).

3.3.2 Reference Level

The Reference Level slider is used to calibrate **PPM**ulator to your system’s reference level. Generally, most TV audio post-production studios work at a reference level of 0VU = -18dBFS and film studios tend to work at 0VU = -20dBFS.

You can either drag this slider to change the Reference Level, or type a value directly into the **“dBFS”** box (**hint**: press and hold the CTRL key while dragging the slider for more accurate control over values).

3.3.3 Generate Reference Tone Files

You can use the Generate Reference Tone Files function to create stereo sine wave files at a known level which you then import back into your host program to calibrate **PPM**ulator and the rest of your system. Clicking this button will open a pop-up menu allowing you to select the level of the sine wave (in dBFS), the frequency (a choice of A=440Hz, the standard 1kHz (or 997 Hz) line-up tone, or a 5kHz tone), the sample rate (44.1, 48 or 96kHz), and the bit-depth (16 or 24-bit).

3.4 Peak Logging Tab

The Peak Logging page can be used to log all instances of peak overloads measured by **PPM**ulator against the timecode where they occurred for unattended measurements of mixes, playouts, or laybacks. At the end of the Peak Logging session, any overs can be sorted in order of time or by peak (in dB) so that you can adjust the mix at these locations by the amount of the highest peak, then run the measurement again for 100% confidence.

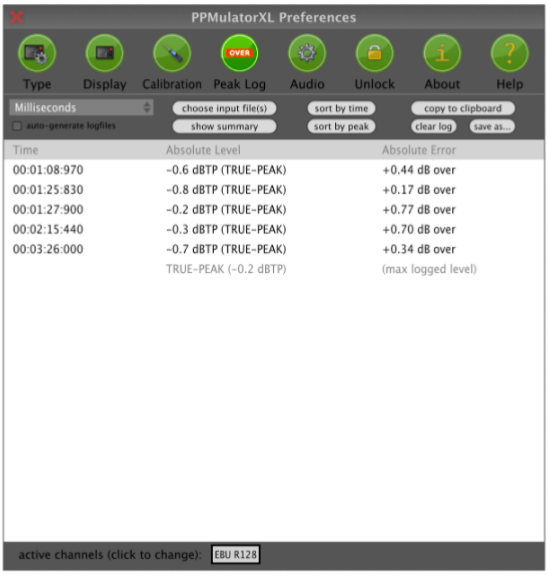


Figure 17: Peak Logging Tab

3.4.1 Start Logging / Stop Logging

These buttons can be used to start and stop the Peak Logging when using **PPM**ulator as a plug-in. Note that clicking **[start logging]** will not reset this page nor clear any previously-recorded peaks. This start/stop behavior can therefore be used to pause a logging session while you adjust levels, and then continue where you left off.

> **NOTE:** Whenever **[start logging]** is clicked, **PPM**ulator will automatically show the maximum level shown on the meters until the first peak is logged. This can be useful in the case of logging a session which contains no peak overloads—at the end of the logging session, it will then be possible to see the maximum level measured during the session. If it was too low, the mix can be increased by the appropriate level and simply run again.

3.4.2 Sort By Time

Clicking **[sort by time]** will sort the list in ascending order of time.

3.4.3 Sort By Peak

Similar to the above, clicking **[sort by peak]** will sort the list in descending order of peak overload, starting with the highest measured peak.

3.4.4 Active Channels

The Active Channel buttons allow certain channels to be shown or hidden in the log. Note that overloads on all channels, including phase errors, are always logged at all times—toggling the buttons simply hides or shows those channels' values in the list.

3.4.5 Timebase Selector

The Timebase Selector drop-down list allows you to select a timebase (milliseconds) or timecode standard for the logging session. Normally, this standard is passed to **PPM**ulator by the host program, but alternative timecode formats for the peak log list can be selected using this option.

3.4.6 Clear Log

Clicking the **[clear log]** button clears the current logging session.

3.4.7 Copy To Clipboard

Clicking **[copy to clipboard]** copies the current logging list to the system clipboard which you can then paste into a document, such as for printing.

3.4.8 Save As

Clicking **[save as...]** opens a standard dialog box where you can provide a file name for the current log. The log is saved as a standard tab-delimited text file.

> **NOTE:** If **PPM**ulator registers several peak overloads in succession for more than 5 seconds, rather than listing multitudes of overlapping peaks individually, a more general error message is displayed informing you that it's all gone horribly wrong and the mix should be adjusted.

3.5 Audio Tab (Standalone Version Only)

The Audio Tab allows the standalone version of **PPM**ulator to be configured to monitor one of several audio devices present on the computer.

Figure 18: Audio Tab

3.5.1 Audio Device

The **"Audio Device"** drop-down presents a list of all audio devices present on the system. Select which one you wish **PPM**ulator to meter. Note that **PPM**ulator will only monitor input audio streams (such as your audio interface's inputs) rather than the outputs.

3.5.2 Sample Rate

The **"Sample Rate"** parameter is used to set **PPM**ulator to your audio interface's native sample rate.

3.5.3 Audio Buffer Size

The **"Audio Buffer Size"** setting tells **PPM**ulator how large (or small) an audio buffer to use. Generally, it's better to have the smallest buffer size as possible since the meter will react faster and update more smoothly. But if this size is set too low, then glitches in audio recording and playback may result which can negatively affect measurements.

3.5.4 Input Channels

Use the Input Channels selectors to map input channels on your selected audio device to the **PPM**ulator audio channels for metering.

3.6 Unlock Tab

The Unlock Tab is for activating **PPM**ulator as described earlier in this manual. After activation, it shows the serial number used to activate PPMulator. In the case of **PPM**ulator**+**, it also allows you to enter an upgraded **PPM**ulator**XL** Serial Number and Unlock Key.

3.7 About Tab

The About Tab will show the version number of **PPM**ulator you are using. This information can be important to share if you submit a support request to zplane.

3.8 Help Tab

The Help Tab shows a page with helpful links. You can quickly access this PDF manual or jump to the **PPM**ulator product page on the zplane.de website.

4 Using PPMulator

PPMulator can be run in one of two ways: either as a standalone program or as a VST/AU/AXX plug-in.

4.1 Standalone Version

The standalone version of **PPM**ulator simply looks at the signal coming into your audio interface and shows the measurements on the meters. This can be useful for setting the levels of audio to a known value before recording.

To set up **PPM**ulator for standalone usage, double-click the program icon and then click the small **[+]** icon on the Main Meters to access the Preferences Panel (you can also right-click on the meters to access this feature). On the Preferences Panel, click the **[Audio]** tab (indicated by a loudspeaker icon) and select the audio inputs you wish **PPM**ulator to monitor.

To quit the **PPM**ulator standalone app, use the standard keyboard commands (ALT+F4 on Windows or CMD+Q on macOS) or right-click the meters and select **"Quit"** from the pop-up menu.

4.2 Plug-in Versions

PPMulator is best suited to being run as a VST/AU/AAX plug-in within a compatible host application. Check your host program's documentation for how to add a plug-in to your audio mix but, generally, **PPM**ulator is most useful when placed on the "main" or "master" outputs of your mix bus. Note that some host programs allow plug-ins to be used as both "pre-fader" and "post-fader" inserts which will make a difference if the master output fader is not at unity (zero). It is generally better to place **PPM**ulator in the post-fader position on the master output, as changes to the master level will then be reflected in the metering (showing what levels will exist when you render or export your final mix).

Alternatively, the **PPM**ulator plug-in can be placed on any individual tracks, groups, or even on the input channels to measure their respective levels when needed.

When placed pre-master fader (or with the master output at unity) it is possible to use **PPM**ulator to work in a calibrated environment, such that you adjust all your individual clip and channel levels to give a good peak reading on the meter. When you then export the project as either OMF or AAF to another system, you can be confident that the overall project levels will be correct on the destination system.

4.3 Peak Logging

When run as a VST/AU/AAX plug-in, **PPM**ulator has a unique Peak Logging feature which allows you to accurately view (and correct) all instances of peaks within the program material. For more details on this feature, see the Peak Logging section later in this guide.

The standalone version of **PPM**ulator does not contain this feature as there will be no timebase to log the peaks against. **PPM**ulator has to be run as a plug-in within a compatible host application for this feature to be used.

> **NOTE:** The standalone version of **PPM**ulator**XL** also has a Peak Logging page where you can check any audio file (supported formats are wav, aiff, and mp3) faster than real-time!

5 References

General information about loudness metering and the various loudness specifications can be found here:

- http://tech.ebu.ch/loudness
- http://tech.ebu.ch/docs/tech/tech3341.pdf
- http://tech.ebu.ch/docs/r/r128.pdf

6 Technical Specifications

Operating Systems	• macOS 11, 12 & 13 • Windows 10 & 11
CPU Architecture	• Windows: Intel 32- and 64-bit • macOS: Intel & M1 64-bit
Audio Formats	• 1-8 channels (I/O) • 32kHz - 192kHz sample rate
Plug-in Formats	• VST2 • VST3 • AU (macOS only) • AAX
Audio Latency	• None

7 Feedback & Support

Our website products.zplane.de always provides the latest information and news about our products. Any issues you encounter may either be addressed in the FAQ section of the appropriate product or reported directly to us via post or email. Before contacting us directly, please ensure you are using the latest version of the product. Please also make sure that your issue is not covered in the manual, the forum, the FAQ or elsewhere on our website.

If you cannot find answers using the methods above and need to contact us directly, please provide the following details to enable us to help you as fast as possible:

- Your registration information (such as the name of your User Account or your login e-mail)
- Your system specifications (hardware, operating system, host software)
- The exact version number of the plugin (see the “About” information by opening the Preferences Window and clicking on the **[About]** tab)
- Include a detailed description of your problem with a step-by-step description of what led up to it so we can try to reproduce the issue

Please use the following contact methods:

✎ : zplane.development GmbH & Co. KG
Grunewaldstr. 83
D-10823 Berlin
Germany

∅ : products.zplane.de/support

@ : support@zplane.de