

ProAudioDeclipper User Manual (v1.1.0)

Introduction	1
How to Install	2
How to register	3
How to change a Setting value	3
Settings:	4
Declipper Settings	4
Declipper Detection Settings	5
Meters of Declipper	7
Tips about Settings and Usage	8
Known Issue:	9
Support info:	9

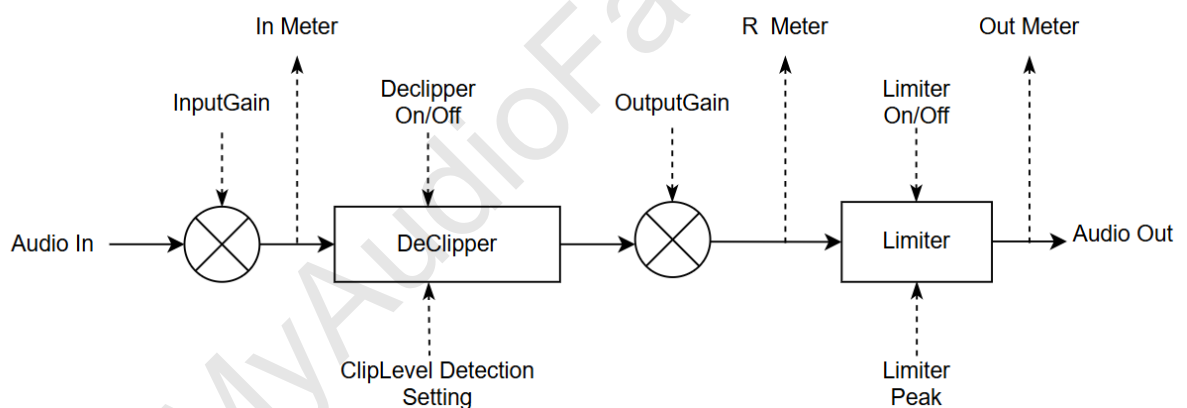
Introduction

ProAudioDeclipper is a plugin developed by [MyAudioFactory](#) It is a powerful real-time audio processing tool that enhances audio quality by restoring the original dynamic

range of clipped and saturated audio, effectively eliminating distortion caused by clipping and saturation. Unlike traditional declipper algorithms, ProAudioDeclipper uses an Innovative Algorithm to restore the original signal from clipped data. In many cases, the result is indistinguishable from the original, unclipped recording.

ProAudioDeclipper is an automatic audio de-clipping tool that requires minimal interaction. It can automatically detect clipping and saturation artifacts and restore them. Additionally, it features a soft peak limiter to adjust the final output level.

The flowchart for ProAudioDeclipper is as follows:



How to Install

For Windows, unzip the downloaded ProAudioDeclipper_Plugins_Installer.zip file, right-click the install script, and run it as an administrator.

For macOS, run the downloaded ProAudioDeclipper_Plugins_Installer.pkg and follow the prompts in the Apple installer to complete the installation.

After installing the plugins, most Digital Audio Workstations (DAWs) can find the installed plugins automatically after being reopened. If not, you may need to manually rescan for plugins from the DAW's options.

How to register

Copy your activation code to the text field located in the license window, and then click "Confirm". If you would like to take advantage of a free trial, start ProAudioDeclipper and click the "FreeTrial" button in the license window.

"FreeTrial" is limited to limit days with limited features, and the total duration for processed audio files is limited to 300 seconds. The processed audio has random 1-second intervals of silence every 10 seconds. Some settings options are locked, so the restoration capabilities during the free trial may not be fully optimized.

How to change a Setting value

The sliders can be adjusted by dragging it or using the mouse wheel. For more precise value changes, hold the SHIFT key while adjusting. Additionally, you can edit the value directly by double-clicking the value field.

Other buttons and the items in drop-down menus can be selected using the mouse.

When this plugin is run in real-time mode, setting changes take effect immediately. However, making changes to settings during playback may result in a short-term audible artifact, or 'spark.' It is recommended to adjust settings when the

plugin is not in playback, or in stop status. The 'Real-Time Mode' status on the user interface indicates that the plugin is operating in real-time mode.

Settings:

General you do not need to change the settings, as the default configuration can handle most cases. However, if you wish to enhance performance beyond the default settings, please follow the introductions below.

Declipper Settings

1 Declipper On/Off Switch

Enable or Bypass de-clipping processing. When bypass de-clipping processing, input gain, output gain and Limiter can still work.

2 InputGain

Input gain of the audio sample before de-clipping processing. Input audio samples with a relatively large headroom can make it difficult to detect the audio samples' clipping level. Please adjust input audio data to has a clipping level at least greater than -12 dB for better clip level detection.

3 OutputGain

Output gain of the audio sample after de-clipping processing.

4 SpeedVsQuality

It is a balance parameter between de-clipping processing speed and de-clipping processing performance. High value has better performance, low value has better processing speed. In most cases, value 3 or 4 is good enough.

5 Processors

The number of the processor used. Using multiple processors speeds up De-clipping processing.

6 Look-ahead samples

It is used to better restore the original samples. More look-ahead samples result in better restoration performance, but require more computational power and latency.

7 Fix glitch On/Off Switch

Fix significant audio glitch or not.

8 LimiterPeak

Limiter Peak parameter to determine the peak value of output audio samples when limiter is enabled.

9 Limiter On/Off Switch

Apply a low distortion Limiter for final audio samples output or not. The peak value of the limiter is determined by the Limiter Peak parameter.

Declipper Detection Settings

1 "Dynamic Threshold"

When using Dynamic threshold, Audio samples between $(\text{Sample Peak} * \text{ClipBelow})$ and $(\text{Sample Peak} * \text{ClipAbove})$ are considered possible clipped samples. For these samples, Declipper finds a dynamic threshold to determine which samples have been clipped and restores them by de-clipping processing. When disable Dynamic threshold, all audio samples between $(\text{Sample Peak} * \text{ClipBelow})$ and $(\text{Sample Peak} * \text{ClipAbove})$ are treated as clipped samples and are restored by de-clipping processing.

2 "ClipAbove"

Audio samples larger than $(\text{Sample Peak} * \text{ClipAbove})$ are treated as clipped samples. These samples will be restored by de-clipping processing.

3 NotClipBelow

Audio samples smaller than $(\text{Sample Peak} * \text{NotClipBelow})$ are treated as unclipped samples. De-clipping processing will not touch these samples

4 NotClipAmp

Audio samples smaller than NotClipAmp will never be considered clipped samples. The De-clipping processing will not touch these samples.

5 PeakDisRate

The sample peak is the maximum value of an audio sample over a period of time. Given some anomalous samples, it is reasonable to discard some of the largest samples as sample peaks. Generally, a discard rate of 1 in 10,000 is reasonable.

6 PeakTime

Length of time window to find the Sample Peak.

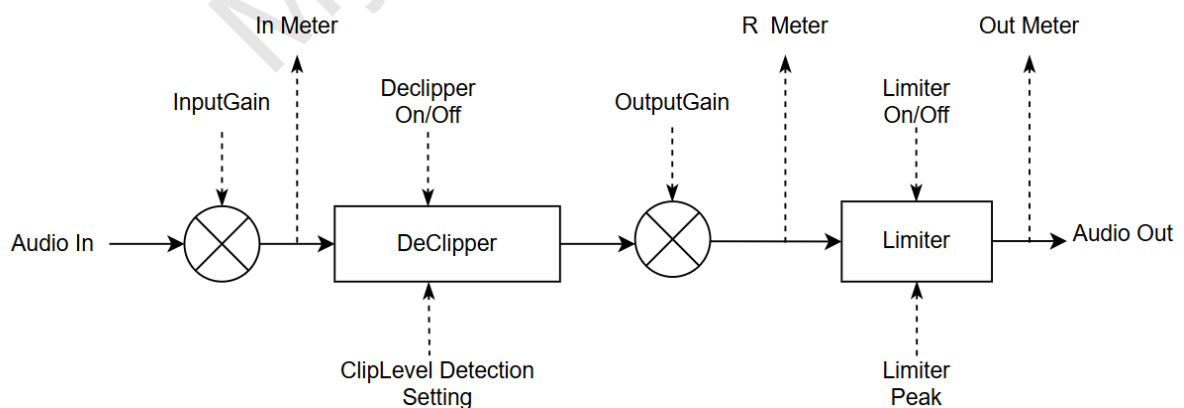
7 ResetAmp

For streaming audio, different audio clips usually use muted or low amplitude audio as transitions. Different audio clips may have significantly different clip levels. ResetAmp is used as an amplitude threshold for detecting transition audio. Audio smaller than ResetAmp may be transition audio.

8 ResetTime

The minimum time for transitions between different audio clips. If the amplitude of the streaming audio is always less than the ResetAmp amplitude during the ResetTime time, the detector treats the subsequent audio as a new audio clip.

Meters of Declipper



There are three meters used to indicate the audio amplitude at different stages:

1. The Input Gain meter displays the audio's amplitude with input gain applied. It assists in adjusting the Input Gain so that the audio's peak level is just above -12dBFS to facilitate clip level detection.
2. The Restored Audio meter indicates the restored audio with output gain applied. If this meter shows levels above 0dBFS, you should reduce the output gain to prevent dynamic range compression at the limiter.
3. The Output meter shows the final audio amplitude.
4. Plugin running mode: 'RealTime Mode' and 'Offline Mode'. This status indicates whether the DAW is running in real-time or offline mode. In real-time mode, changes to settings during playback will not take effect until the next playback action.

Tips about Settings and Usage

1. In general, to achieve better performance than the default settings, you should select a larger number of lookahead samples and increase the "SpeedVsQuality" parameter.
2. If run this plugin in real-time mode, please adjust the audio buffer size to prevent audio glitches. The declipping process is computationally intensive and may cause the output audio buffer to underrun if your computer's processing power is insufficient, especially when the "SpeedVsQuality" parameter is set to a high value.

3. When dealing with clipped audio that is at or near 0dBFS, to provide the necessary headroom for restoring the clipped audio, you can either attenuate the input audio beforehand or set a negative post-gain in the settings.
4. If you already know the specific clip level you prefer for restoring clipped audio, please set the appropriate 'ClipAbove' parameter, which determines your preferred clipping level. Then, set the 'NotClipBelow' parameter to its maximum value.
5. For clips that have been transcoded using lossy codecs such as MP3, AAC, OGG, etc., you may slightly increase 'PeakDisRate' parameter. This adjustment allows the clipping detector to find a more accurate clipping level.

Known Issue:

Switching between VST3 and AU formats of this plugin within the same DAW may cause crashes. Please use only one format, either VST3 or AU, within the same DAW session. If you wish to switch formats of this plugin, please remove this effect from your track, close the DAW and reopen it to select the new format of this plugin.

Support info:

Please send email to contact@myaudiofactory.com or leave message via our website:

<https://www.myaudiofactory.com/>