

Envelope Follower

Limiter

Saturator

Input/Output

Bypass

Clip (Atk)



Release



Type



Aggressive

Slow

Clean

Transient

Drive



Color



Lookahead



DryWet



Transient

Clean



# Maxhead

A Limiter with Character!

---

User's Manual

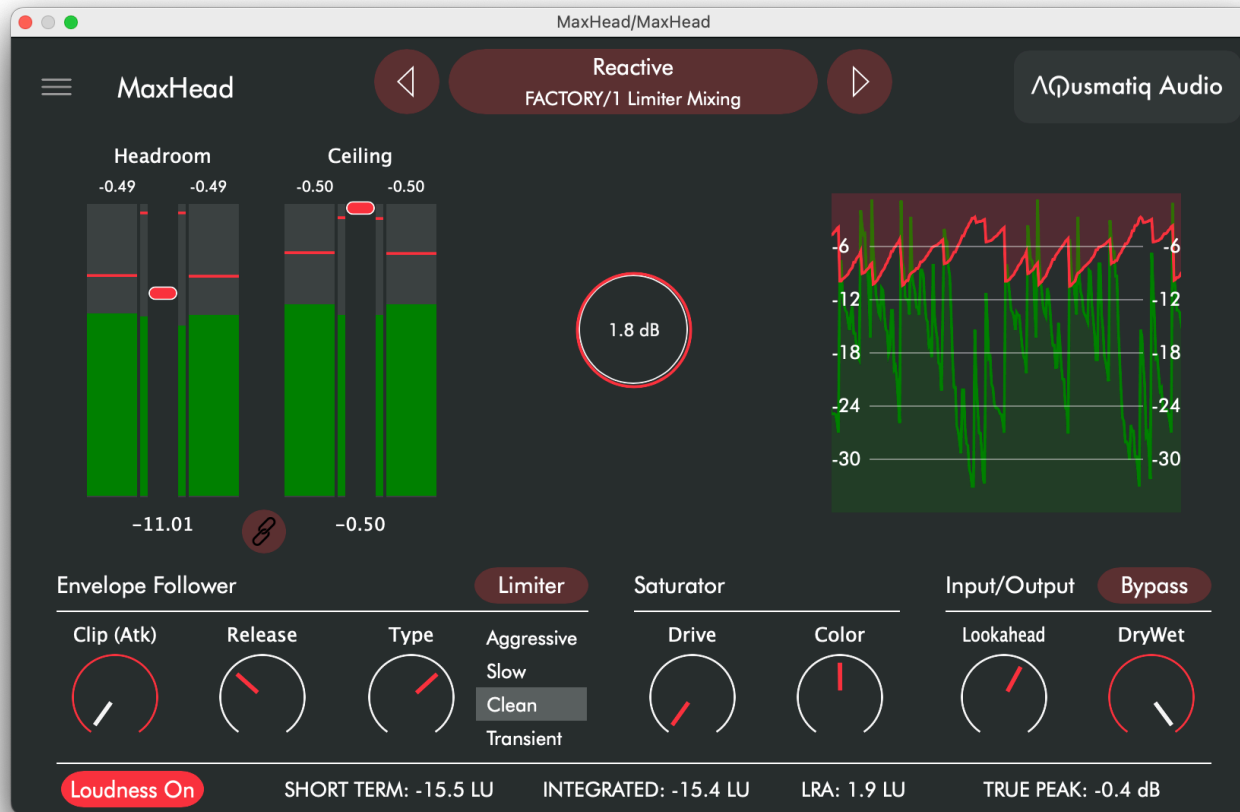
Version 1.0: for macOS and Windows

# CONTENTS

---

|                             |      |
|-----------------------------|------|
| Intro .....                 | p. 3 |
| Headroom and Ceiling .....  | p. 4 |
| Envelope Follower(s) .....  | p. 5 |
| Saturator .....             | p. 7 |
| Input/Output .....          | p. 8 |
| Loudness Monitor .....      | p. 8 |
| Presets .....               | p.10 |
| Authorize/Deauthorize ..... | p.11 |
| Aqumatiq Shortcuts .....    | p.11 |

## Maxhead User's Manual



MaxHead is a powerful peak-limiting plugin for total audio volume control. It offers a wide range of dynamic processing, from gentle attenuation to heavy distortion. It features four limiting algorithms that allow for transparent and detailed dynamics shaping. Its "analog-style" saturator adds warmth and depth to the sound and adds the slight distortion typical of hardware limiters.

A peak limiter is an audio plug-in used to control and limit the peak levels of audio signals. Its primary purpose is to prevent clipping and distortion in audio recordings and mixes. However, it can also maximize output loudness and create controlled audio clipping that enhances the brightness and impact of percussive transients.

## Headroom and Ceiling

---



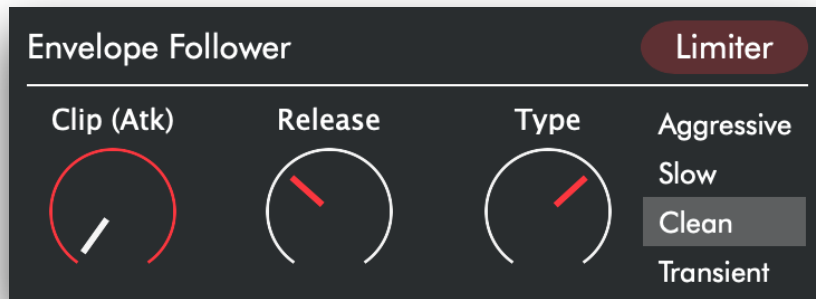
**Ceiling** represents the limit not to be exceeded, while **Headroom** determines the distance between the signal and the Ceiling. These two parameters are closely related: if you lower the value of the Headroom toward the signal peaks, the output sound approaches the Ceiling; that is, it grows in amplitude. If a part of the signal exceeds the Headroom level, a gain reduction is activated so that the Ceiling level is never exceeded.

The Link button, located at the bottom center, causes Headroom and Ceiling to have the same value; this way, if we decrease the Headroom value, the volume of the output signal will not increase, and we can concentrate on the Limiter effect without being affected by the higher amplitude, which perceptually gives the feeling of a better sound. Once we have found the right level of headroom, we can turn off the Link and increase the Ceiling value.

## Envelope Follower(s)

---

The Envelope Follower detects the signal's amplitude and allows the limiter to determine the amount of gain reduction to be applied.



The first parameter is **Clip (Atk)**, which sets the amount of time before the limiter is triggered when the signal exceeds the headroom level. This parameter should always be set to 0 so that the attack is immediate and the output signal never exceeds the threshold set by the Ceiling. If we increase the value of the parameter, the signal may exceed the Ceiling and clip. In many cases this is undesirable but, especially with percussive sounds, it can be useful to

give more impact and brilliance to the transients of the sound.

**Release** sets the reaction time of the limiter when the signal amplitude decreases; this is one of the most critical parameters of the plugin. The most useful values for transparent limiting are 150 ms to 1 second. With lower values, the sound can have a "pumping" effect, with the gain varying very quickly; below 10 ms, the sound will be distorted or overly compressed. Conversely, very high values (greater than 1 second) slow the gain variation and generate a "brick-wall" effect, in which the volume is kept almost constantly low to prevent peaks from exceeding the ceiling.

However, the final effect is influenced by the type of envelope follower used.

There are, in fact, four types of envelope followers: Aggressive, Slow, Clean, and Transient. These types are selectable via the buttons on the right or via the **Type** knob, with which you can continuously interpolate between the four types and have, for example, an envelope follower that is 20 percent Clean and 80 percent Transient (or any other percentage between adjacent types).

**Aggressive** type: this is a somewhat "brutal" envelope follower, which tends to follow the signal's amplitude quickly and in which the change in gain follows a segmented pattern, not softened by curves.

**Slow** type: as the name implies, this algorithm is slower than the previous one, and the gain change follows an exponential type curve: it is slow at the beginning of the release and accelerates as the gain reaches the endpoint.

**Clean** type: is a much more transparent algorithm than the previous ones; the gain curve is "S-shaped",

i.e., it is slow at the beginning and end of the path, while it is fast in the middle.

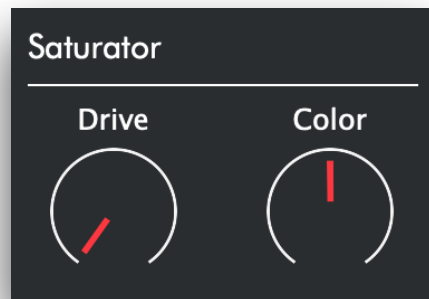
**Transient** type: this is the most complex algorithm; in this case, the speed of the envelope following depends on the transients of the sound. With very fast, percussive transients, the gain reaction is very fast; with slower transients, the gain moves slowly.

At the top right of the image, we see the Limiter/Maximizer button, which allows you to toggle between the two modes of the algorithm. Use the Limiter mode when you want to prevent the signal from exceeding the Ceiling level, and you also want the intervention to be as transparent as possible. Use the Maximizer mode when you want to increase the loudness of the signal instead.

## Saturator

---

The Saturator modifies the waveform (especially at low frequencies), creating a slight warm distortion typical of analog hardware limiters.



The **Drive** parameter determines the amount of saturation applied: below 0.25, it can add warmth to the sound without the distortion effect being noticeable; above 0.25, the distortion becomes increasingly apparent.

Of course, the effect also depends on the setting of the envelope follower parameter. If you want to add warmth to your sound, you can increase the Drive parameter while leaving the Headroom parameter at

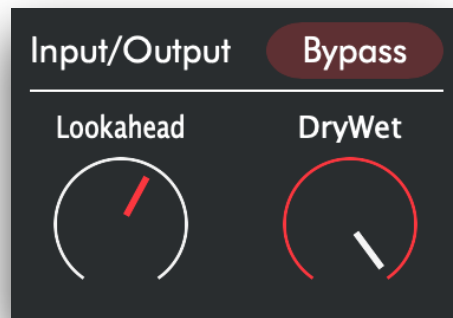
0 dB so that the limiter effect is not activated (this is only true if the input signal does not exceed 0 dB!)

The **Color** parameter sets the frequency band on which the saturator acts. The default value, 0.5, favors low-mid frequencies; as the parameter is increased, high frequencies also pass through the saturator, and the brightness of the effect increases. Below 0.5, the low frequencies tend to overpower the other frequencies, and the sound becomes increasingly darker.

## Input/Output

---

The last two parameters affect the input and output signals.



**Lookahead** delays the input signal before it is processed, giving the limiter time to reduce the gain before a peak arrives. This time is added to the attack time but does not cause clipping. It can be kept very low to make the limiter react faster on percussive sounds, while for instrumental or vocal sounds, it is advisable to keep it at the default position (3 ms) or higher.

**DryWet** mixes the input signal with the processed signal (parallel limiting). Caution: The signal may

exceed the Ceiling level with values other than the default (100% wet) since the dry part is not limited.



## Loudness Monitor

---



The values displayed at the bottom of the plug-in window represent perceived loudness according to a set of algorithms recommended by the International Telecommunication Union and specified in the ITU-R BS.1770-4 document "Algorithms to measure audio program loudness and true-peak audio level."

Here is a brief explanation of what each value means:

**Short Term** Loudness measures loudness in LU (Loudness Units) over a 3-second period.

**Integrated** Loudness (also known as Program Loudness) provides an average loudness measurement over the entire material duration.

Loudness **Range** (LRA) quantifies the statistical spread of short-term loudness values within a program.

True Peak measures the precise detection of potential intersample peaks.

To reset the values, click on the bottom of the window. The Loudness On/Off button lets you turn off the calculation to save CPU.

## PRESETS



Click on the preset name (upper button in the middle) to show the Preset Manager Menu. From here, you can select any factory preset or save your own preset (Add New) into the User folder.

TO AUTHORIZE: click on the "Aqusmatiq Audio" button on the top right to reveal the authorization window. Click the "Authorize" button and insert your Serial Key. Then click the "Register" button.

TO DEAUTHORIZE: click on the "Aqusmatiq Audio" button on the top right to reveal the authorization window. Click the "Deauthorize" button.

## **AQUSMATIQ SHORTCUTS**

Ctrl-drag a parameter value for fine-tuning.

Double-click or Alt-click a knob to reset it to the default value.

The DAW Undo/Redo commands work on the plugin parameters, too.

**MORE INFO:**

**<https://www.aqusmatiq.com>**

**SUPPORT EMAIL:**

**[support@aqusmatiq.com](mailto:support@aqusmatiq.com)**

**YOUTUBE CHANNEL (with several tutorials):**

**<https://www.youtube.com/@aqusmatiq>**