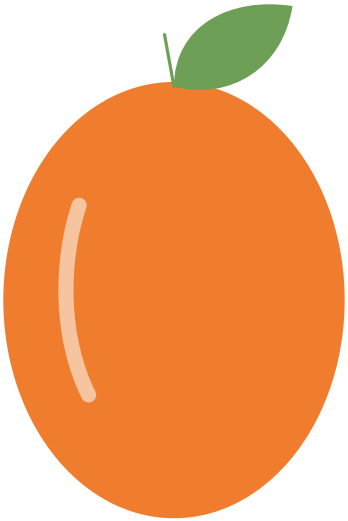


KA Limiter

Instruction manual

Kumquat Audio · Edition 1.7.11 · October 2026

kumquataudio.com

NO. 6

KA Limiter

A true-peak limiter with a clipper, three modes and a little bite.

KA Limiter holds a mix at a ceiling while making it as loud as you ask, without squashing it. A clipper in front shaves the highest peaks, three modes change how the limiter works inside, and a small control called Bite lifts the mids for presence. A picture of what the clipper and the limiter take off shows you what is happening as it happens.

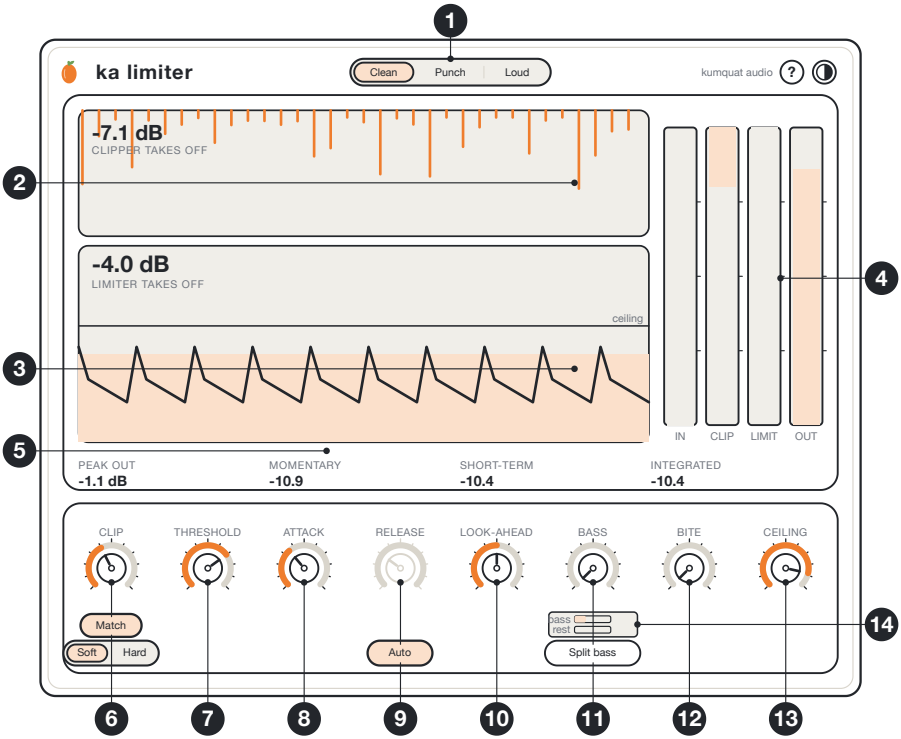


FIG. 1 The parts of KA Limiter. The numbers are explained on the next page.

Parts

fig. 1

1. **Mode**
   Clean, Punch or Loud: three ways of working inside. The knobs stay put.
2. **Clipper picture**
   What the clipper takes off the peaks, over the last few seconds.
3. **Limiter picture**
   What goes in, what the limiter takes off (grey), what comes out (orange).
4. **Meters**
   IN, CLIP, LIMIT and OUT, with a held-peak line. Click to clear.
5. **Loudness**
   Peak out, momentary, short-term, integrated. Click integrated to restart.
6. **Clip**
   Drives the sound into a clipper that shaves the highest peaks. Soft or Hard; Match.
7. **Threshold**
   Turn it down to push the sound into the limiter.
8. **Attack**
   How fast it reacts to sound that stays loud.
9. **Release**
   How fast it lets go (with Auto it chooses).
10. **Look-ahead**
    How far ahead the limiter looks.
11. **Bass**
    With Split bass on: how much low end is kept in.
12. **Bite**
    A smooth, very wide lift of the mids and high mids.
13. **Ceiling**
    The highest peak that comes out.
14. **Bass picture**
    How much the bass and the rest are being turned down.

Operation

step by step

1. Put the plug-in last on the master. Set Ceiling (–1 dB is a good place to begin).
2. Turn Threshold down to push the sound into the limiter. It gets louder and the limiter works harder.
3. Add a little Clip (a few dB, with Match on) if the peaks are doing the harm. The upper picture shows what it takes off.
4. Choose a mode: Clean for the most transparent, Punch to keep the snap of the hits, Loud for the most volume.
5. Leave Release on Auto. Shorten Look-ahead for snappier hits; lengthen it to be smoother, most of all on the bass.
6. If the kick pulls the mix down, turn Split bass on and raise Bass. The two small bars show who takes how much.
7. Raise Bite a little for presence, and compare with it off: the ceiling is the same.
8. Press Compact (top right) to shrink the window to two meters, the Clip and Threshold knobs and the loudness readings, and leave it open on the master while you mix. Press Full to come back.

Controls and settings

range · start

Control	Range	Starts at	What it does
Mode	Clean / Punch / Loud	Clean	How it works inside: three engines. The knobs are left alone.
Clip	0 to 20 dB	off	Drives the sound into a clipper that shaves the highest peaks. Soft or Hard; Match brings the level back down.
Threshold	–20 to 0 dB	0 dB	How far the sound is pushed into the limiter.
Attack	0.05 ms to 10 s	15 ms	How fast it reacts to sound that stays loud. At seconds, only the brick wall works.
Release	1 ms to 10 s	150 ms	How fast it lets go. Works when Auto is off.
Look-ahead	0.5 to 5 ms	2.5 ms	How far ahead it looks.
Bass	0 to 100 %	0 %	With Split bass: how much low end is kept in.
Bite	0 to 100 %	off	A smooth, very wide lift of the mids and high mids, centred on 3 kHz.
Ceiling	–6 to 0 dB	–1 dB	The highest peak that comes out (true peak).
Compact / Full	button	Full	Compact is a small window with the Clip and Limit meters, the Clip and Threshold knobs and the loudness readings (momentary, short-term, integrated). Full is the whole window.

CAUTION Release of a millisecond or two, with a long Attack, is the dirtiest setting there is: the gain moves inside every bass wave. Use Auto, or 60 to 100 ms.

TIP In Punch and Loud, part of the reduction is done by a soft clipper: the readouts count it, so they show the whole of the limiting.

Specifications

Formats	Audio Unit, VST3
Channels	mono or stereo
Delay	746 samples (15.5 ms at 48 kHz), whatever Look-ahead is
Ceiling	true peak, with an exact last limiter
Window	860 × 688, can be resized [4]

How it works

the signal path

The sound goes through Bite (if it is on), then Clip, then Threshold, which turns it up into the limiter, then the limiter, then the ceiling. The ceiling is a true peak: the height of the wave between the samples, which is what a converter or an encoder makes of it.

Inside the limiter there are two steps. A slow one reacts only to sound that stays loud, so a drum hit hardly moves it. Then a look-ahead brick wall takes what is left over the ceiling: it finds the lowest gain needed in the next few milliseconds, lets go with a release that is longer the longer it has been working, and smooths the result so that the gain never has a corner.

In Clean mode that is all there is: only the gain moves. In Punch and Loud the limiter is allowed to leave the very tips of the peaks a little over the ceiling, and a soft clipper takes them off, instead of the gain ducking everything around them. A short last limiter makes sure the ceiling still holds exactly.

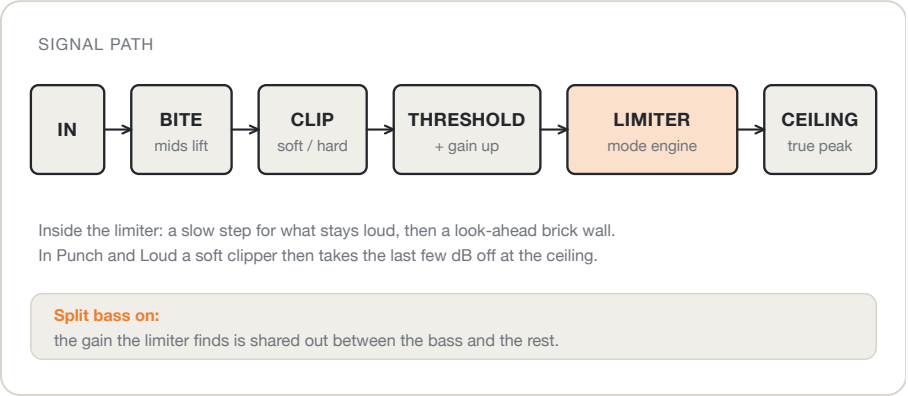


FIG. 2 The signal path.

The modes

and the bass

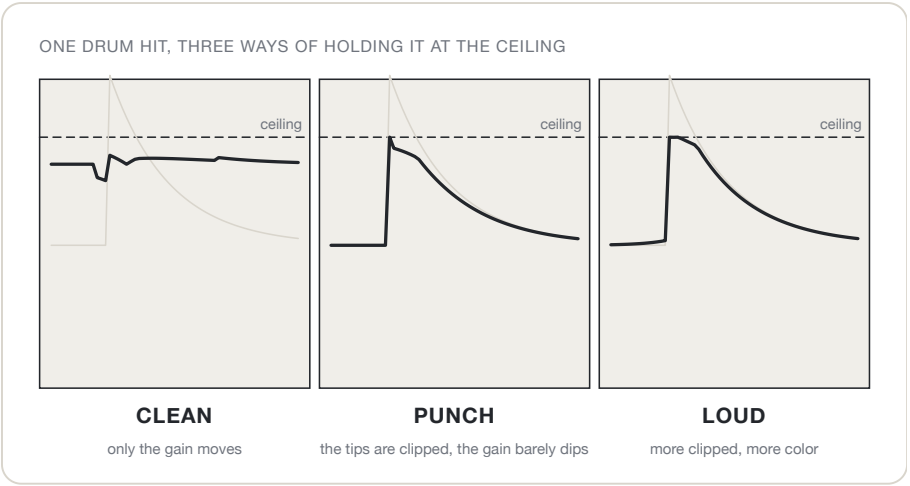


FIG. 3 The three modes hold the same hit at the same ceiling in different ways.

Split bass divides the sound at about 140 Hz. The limiter still works out one gain from the whole sound, but the bass is given less of it, and the rest takes the difference, worked out from how much of the peak each part is. So the sound still stops exactly at the ceiling, while the kick no longer pulls the voice down. Bass at 0 % is the same as having Split bass off.

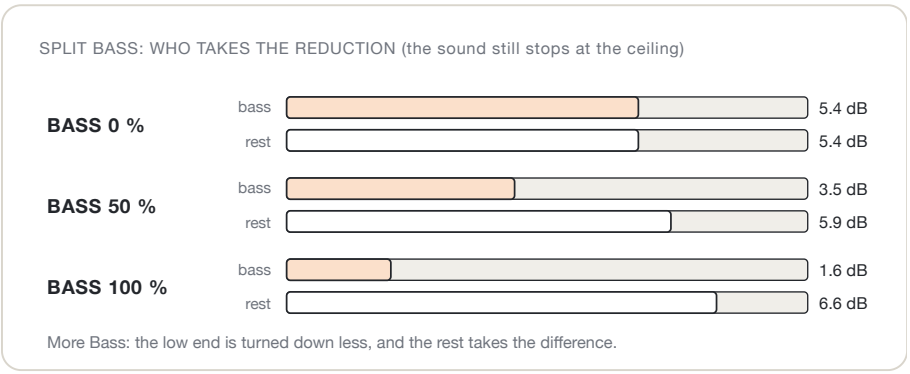


FIG. 4 Split bass moves the reduction onto the bass; the ceiling still holds.

Bite

presence without level

Bite is four wide, smooth bells: a very wide one at 3 kHz (Q 0.2, about five octaves across), a small one at 1.6 kHz, one at 6.5 kHz, and a small scoop in the low mids. It lifts the range where the ear is most sensitive, so a mix feels louder and more present at the same ceiling. It adds no delay.

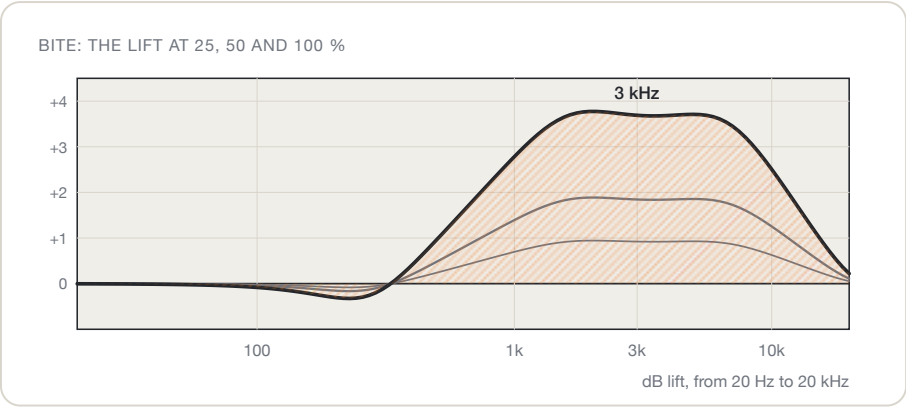


FIG. 5 Bite: a wide, smooth lift, and the bass is left alone.

Places to start

then adjust by ear

For	Mode	Try	You get
A gentle master	Clean	Threshold –2 to –4 dB; Clip off; Release Auto; Bite off	A few dB of reduction. The most transparent.
Loud, with snap	Punch	Threshold –4 to –6 dB; Clip 2 to 4 dB with Match on; Look-ahead 1.5 to 2.5 ms	Louder, and the hits keep their front.
As loud as it goes	Loud	Threshold –6 dB or more; Clip 4 dB, Hard if you like the bite	The most volume, and the most color.
A kick that pulls the mix down	any	Split bass on; Bass 30 to 60 %	The low end is turned down less, the rest more.
A mix that needs presence	any	Bite 20 to 50 %	Compare with it off: the ceiling is the same.

CARE

Care and troubleshooting

If this happens	Do this
A plug-in does not appear in the list	Restart the music software. In Logic Pro, open the Plug-in Manager, select the Kumquat plug-ins and choose Reset & Rescan Selection.
An old name is still showing	Quit Logic with Cmd+Q and open it again. If it persists, remove the old copies from /Library/Audio/Plug-Ins/Components.
My key was not accepted	Copy all of it, from KA1 to the end, with no spaces added or lost. A key for one plug-in does not unlock the others.
The pop-up help does not show	Press the “?” at the top of the window to turn it on. It is one choice for all the plug-ins.
Which part of the picture does a knob change?	Point at the knob, or hold it down while you turn it: the part of the picture it controls lights up, with the knob’s name and value.
KA Drum Gate, Silence Trim, Auto Mixer or Time Align shows a message instead of a picture	Open Logic Pro using Rosetta, put the plug-in first in the Audio FX list, select a region and press play.
The sound is late	KA De-Click, De-Verb, De-Noise, Contour, Mic Blend, Saturator (it oversamples), EQ (with the suppressor), Multiband (in Linear phase) and Limiter delay the sound a little and tell the music software, which lines everything up. Do not compensate by hand. For playing through a plug-in, the Saturator, EQ and Multiband have a Live switch that takes the delay away; the compressors, De-Esser, Delay, Reverb and Rider have no delay at all.
A window is too small or too big	Drag the corner at the bottom right. The size is remembered, and it is the same for all the plug-ins: make one bigger and the others open that big.
The Limiter pumps	Leave Release on Auto, or set 60 to 100 ms. A release of a millisecond or two is the dirtiest setting.

If something is not right, write to **audiokumquat@gmail.com** and say which plug-in, which music software, and what you were doing.

FOR YOUR OWN NOTES

Notes