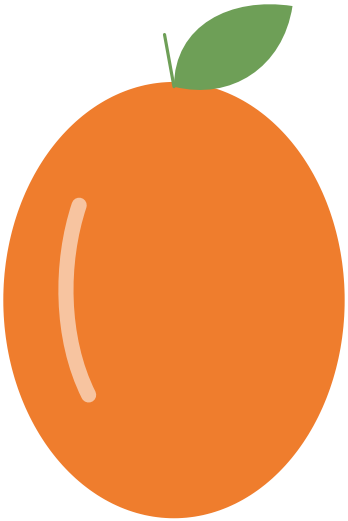


KA EQ

Instruction manual

Kumquat Audio · Edition 1.7.11 · October 2026

kumquataudio.com

NO. 5

KA EQ

Six bands, a resonance suppressor, and room made for a sidechain.

KA EQ has six bands and a high-pass and low-pass, and each band can be made dynamic so that it moves with the loudness around it. A resonance suppressor finds and turns down the bumps in a sound, and can make room for a track in the sidechain. The EQ, the suppressor and its sensitivity strip are all on one screen. The graph is the whole instrument: you work on it directly.

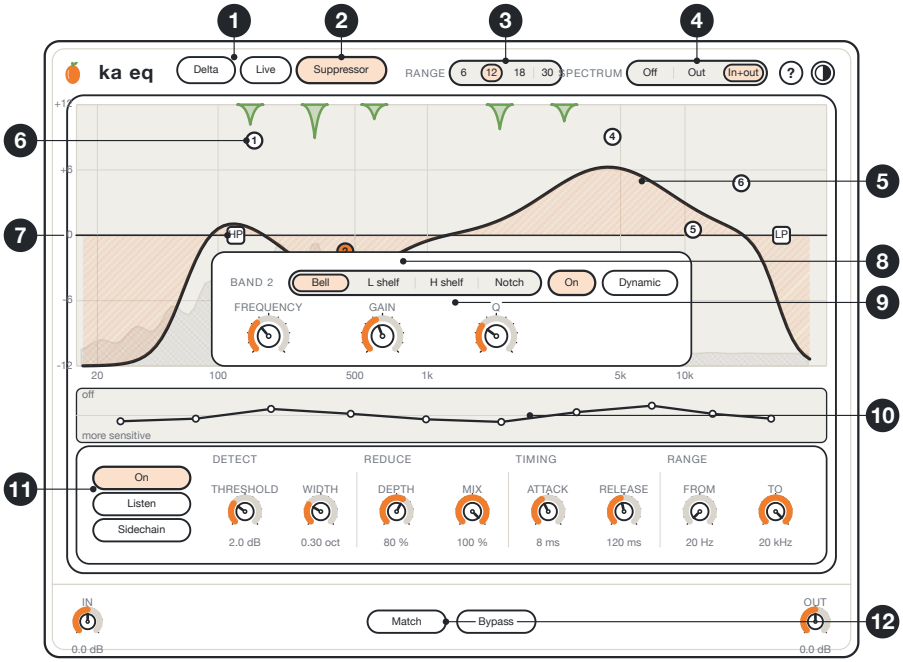


FIG. 1 The parts of KA EQ. The numbers are explained on the next page.

Parts

fig. 1

1. **Delta and Live**
   Delta plays only what the EQ is changing. Live switches the suppressor's look-ahead off, so the plug-in has no delay at all.
2. **Suppressor**
   Opens and closes the suppressor's controls under the graph. The On switch inside it is what turns the suppressor on.
3. **Range**
   How many dB the graph shows above and below the middle: 6, 12, 18 or 30.
4. **Spectrum**
   The live spectrum behind the curve: off, the output, or the input and the output.
5. **The graph**
   The curve of the EQ, over the spectrum. Click and drag on empty space to add a band. The green curtain hanging from the top is what the suppressor is taking out.
6. **A band (1 to 6)**
   Drag it for frequency and gain, scroll over it for Q. Resting the pointer on it shows its options.
7. **HP and LP**
   The high-pass and low-pass: they show on the graph only when they are on. Press one to switch it on, drag it to move it, scroll over it for its slope.
8. **Option bar**
   Appears beside a band under the pointer: type, Dynamic, and × to remove it.
9. **The selected band**
   A small card at the bottom of the graph: its type, On, Dynamic (which makes the band move with the loudness around it), and its frequency, gain and Q (and, when it is dynamic, its range, threshold, attack and release).
10. **Sensitivity strip**
    Where the suppressor is touchy, from the sub-bass (30 Hz) to the air (12 kHz), on the same scale as the graph. Drag a point DOWN to make that part of the spectrum act more readily, UP to leave it alone more.
11. **The suppressor**
    On switches the resonance suppressor on (it adds a little delay, which the plug-in tells your music software). Listen plays only what it is taking out. Sidechain turns this sound down where the track in the sidechain has energy. The knobs are in four groups: Threshold and Width (what counts as a resonance), Depth and Mix (how much is taken out), Attack and Release (how fast), From and To (where it works).
12. **In, Out and Match**
    In turns the sound up or down before the plug-in hears it, and Out turns the result up or down. Bypass plays the sound without the plug-in. Match keeps the output as loud as the sound that came in, whatever In and the plug-in do, so you hear what a setting does and not just a change in loudness.

The EQ

working on the graph

1. To add a band, click on empty space in the graph and drag. The new band starts where you pressed and follows the pointer. Hold Option while you do it to make a dynamic band.
2. Drag a band for its frequency and gain. Scroll (two fingers on a trackpad, the wheel on a mouse) over it, or with the band selected, to change its Q: up narrows it, down widens it. On HP and LP, scrolling sets the slope.
3. Rest the pointer on a band: a small bar appears beside it with the band's type, Dynamic, and × to remove it.
4. Hold Control and press on a band, the high-pass or the low-pass to hear only what it works on (for the high-pass and low-pass, what they take away); the same on a point of the suppressor's sensitivity strip to hear its part of the spectrum. Double-click a band to delete it. Option-click a band to make it dynamic, or not; hold Option while dragging, or while scrolling, to set how much dynamic EQ it has (scrolling with Option makes the band dynamic if it is not).
5. Press HP or LP (in the bottom corners of the graph) to switch it on. Once on, it shows on the graph: drag it to move it, scroll over it to set the slope.
6. Right-click a band for its menu.
7. The band's own controls float over the graph beside the band when you select it. The suppressor's controls open under the graph from the Suppressor button at the top: switch it on with On (see the suppressor pages).

Specifications

Formats	Audio Unit, VST3
Channels	mono or stereo, with a sidechain input
Delay	none; 4096 samples (85 ms) with the suppressor on, and none with Live on
Window	1000 × 578, can be resized

Controls and settings

range · start

Control	Range	Starts at	What it does
Band 1–6	20 Hz – 20 kHz	off	Bell, low shelf, high shelf or notch; frequency, gain ±24 dB, Q.
High-pass	20 Hz – 1 kHz	80 Hz, off	Slopes of 6, 12, 18, 24, 36, 48, 72 or 96 dB per octave.
Low-pass	1 kHz – 20 kHz	12 kHz, off	The same slopes.
Dynamic range	–24 to +24 dB	–6 dB	How far a dynamic band moves when the sound around it is loud.
Dynamic threshold	–60 to 0 dB	–30 dB	How loud it must get before the band moves.
Dynamic attack / release	0.5–100 ms / 10–1000 ms	8 / 120 ms	How fast the band moves, and lets go.
Range	6, 12, 18, 30 dB	12	What the graph shows above and below the middle.
In / Out	In ±24, Out ±18 dB	0 dB	The two knobs under the meters: before and after the plug-in.
Match	on / off	off	Keeps the output as loud as the input. See In, Out and Gain Match.
Live	on / off	off	Switches the suppressor off, so there is no delay at all.

TIP For playing through the EQ, switch Live on: no delay, and the suppressor is off until you switch Live off.

TIP A dynamic band with a negative range and a narrow Q is a de-esser; with a wide Q it is a gentle way of keeping a boomy voice under control.

How it works

the EQ

Each of the six bands, and the high-pass and low-pass, is a smooth filter that adds no delay. A band can be a bell, a shelf or a notch. Dragging a band on the graph changes its frequency and gain; scrolling changes its Q.

A dynamic band has a second detector that listens to the sound around the band. When that sound gets louder than Threshold, the band's gain moves, by up to Range: a negative range makes a band that cuts when it is loud (a de-esser), a positive one a band that opens up.

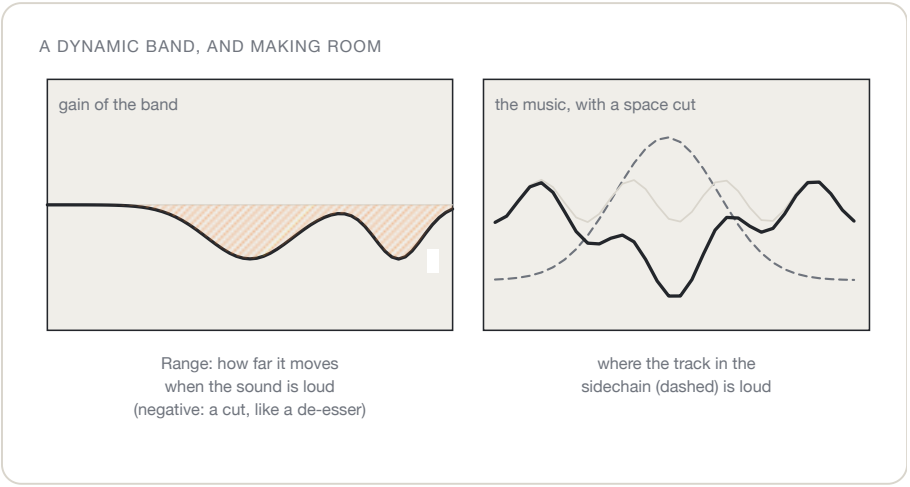


FIG. 2 A dynamic band moves with the sound; The sidechain cuts a space for another track.

The resonance suppressor

and making room

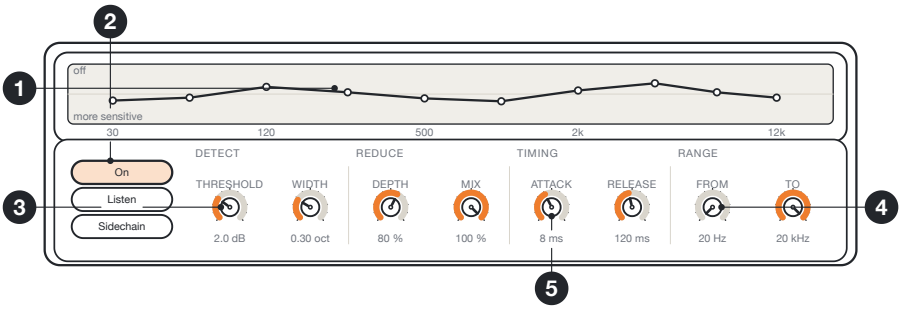


FIG. 3 The suppressor view: what it takes out hangs from the top of the graph, in green.

1 Sensitivity strip
Ten points from 30 Hz to 12 kHz. Drag a point DOWN to make that part of the spectrum more sensitive (the suppressor acts more readily), UP for less; at the very top it leaves that part alone. Dragging across the strip paints. Double-click a point to reset it.

2 On, Listen, Sidechain
On switches the suppressor on. Listen plays only what it takes out; Sidechain makes room for the track in the sidechain.

3 Threshold, Width, Depth, Mix
How far a bump must stick out before it is touched, how wide a bump may be (down to 0.01 octave), how much of each resonance is taken out, and how much of the processed sound is mixed with the original.

4 From and To
The range it works in. They can cover the whole spectrum: From goes down to 20 Hz, To up to 20 kHz.

5 Attack and Release
How fast the reduction comes in, and how fast it lets go (down to 5 ms).

Using the suppressor

step by step

1. Press Suppressor at the top to open its controls under the graph, then On to switch it on.
2. Raise Depth until the resonances are tamed. Lower Threshold to find more of them; make Width smaller to be more exact.
3. Press Listen (in the suppressor's controls) to hear only what is being taken out, and check that it is the right thing.
4. Use From and To to say where it works (they can cover the whole spectrum, from 20 Hz to 20 kHz). Drag the points of the sensitivity strip under the graph to make a part of the spectrum act more readily (down) or less (up), all the way up to leave it alone. The first two points are the sub-bass, at 30 and 60 Hz.
5. To make room for another sound (music under dialogue): send the dialogue track to this plug-in's sidechain in Logic, and press Sidechain. The music is turned down where the dialogue has its energy.

Control	Range	Starts at	What it does
Depth	0 to 100 %	30 %	How much of each resonance is taken out.
Threshold	0 to 24 dB	6 dB	How far a bump must stick out before it is touched.
Width	0.01 to 1 oct	0.30 oct	How wide a bump may be.
Attack	1–50 ms	8 ms	How fast the reduction comes in.
Release	5–500 ms	120 ms	How fast it lets go.
From / To	20–2000 Hz / 2–20 kHz	20 Hz / 20 kHz	The range it works in: the whole spectrum, to begin with.
Sensitivity strip	10 points, 30 Hz to 12 kHz	flat	Down: that part of the spectrum is treated more readily. Up: less, and at the very top not at all.
Mix	0 to 100 %	100 %	How much of the processed sound is mixed with the original.

How it works

the suppressor

The suppressor looks at the sound in slices of 4096 samples (85 ms) and compares each narrow bump with its wider surroundings. A bump that sticks out by more than Threshold is turned down by Depth, but only between HP and LP. Make room does the same with a second sound: the spectrum of the sidechain says where to cut.

EVERY INSERT PLUG-IN

In, Out and Gain Match

Along the bottom of most windows is a strip with two knobs, one under each level meter, and two buttons. In turns the sound up or down before the plug-in hears it, and Out turns the result up or down. Double-click either knob to return it to 0 dB. Bypass plays the sound without the plug-in (it stays in time with the other tracks, and fades in and out without a click); your music software's own bypass button for the plug-in does the same. The four plug-ins that read whole recordings, and KA Limiter, have the Bypass button at the top of the window instead.

A louder sound almost always seems better, even when it is not. That is how a setting can fool you: you turn something up, the sound gets louder, and you think it got better. Match takes that away. When it is on, the plug-in listens to how loud the sound is as it arrives and as it comes out, and turns the output up or down by the difference, slowly, so the two stay the same. That includes In: drive the plug-in harder and the output stays where it was. Now when you change a setting you hear what it did to the sound, and nothing else. Out is then yours to trim on top.

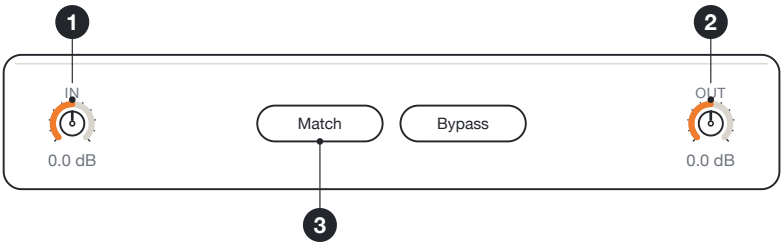


FIG. 4 The strip along the bottom of a window.

1. **In**
   Turns the sound up or down before the plug-in hears it.
2. **Out**
   Turns what comes out up or down.
3. **Match**
   Keeps the output as loud as the sound that came in, whatever In and the plug-in do. The number beside it shows how much it is adding or taking away.

Use In to drive a plug-in harder or softer: more In into KA Saturator or KA Bus Comp gives more effect. Use Out to set the level you want to leave with; with Match on it moves the level up or down from the level that arrived. The number beside Match shows how much it is adding or taking away.

Who has what

In, Out and Match

Plug-in	The strip has	Note
KA De-Esser	In · Out · Match	Match is on hold while Listen is on.
KA De-Noise	In · Out · Match	Match is on hold while Listen is on.
KA De-Verb	In · Out · Match	Match is on hold while Listen is on.
KA De-Click	In · Out	It changes the level so little that matching is not needed.
KA EQ	In · Out · Match	Out is the level after the EQ and the suppressor.
KA Bus Comp	In · Out · Match	Makeup is still there as the compressor's own make-up gain.
KA Saturator	In · Out · Match	Drive already keeps the level close; Match finishes the job.
KA Zing	In · Out · Match	Match is on hold while Delta is on.
KA Contour	In · Out · Match	Match is on hold while Listen is on.
KA Mic Blend	In · Out	In is applied to both mics, including the sidechain.
KA Delay	In · Out	Mix is meant to change the level, so there is no Match.
KA Multiband Comp	In · Out · Match	Each band has its own Gain as well.
KA FET Comp	In · Out · Match	In is the compressor's Input: the threshold is fixed.
KA Opto Comp	In · Out · Match	Out is the compressor's make-up gain.
KA Rider	In · Out	Match would undo the ride, so there is none. Delta plays only the ride.
KA Chladni, KA Root	none	Instruments have no audio input, so no In, Out or Match: use the Level drawing.
KA Reverb	In · Out	Mix is meant to change the level, so there is no Match.

TIP To set a compressor or a saturator fairly: turn Match on, switch the plug-in off and on, and choose the setting that sounds best at the same loudness.

CAUTION KA Limiter has no In and Out: its Threshold is its input and its Ceiling is its output. The four plug-ins that read whole recordings do not have the strip. Every plug-in has a Bypass button.

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