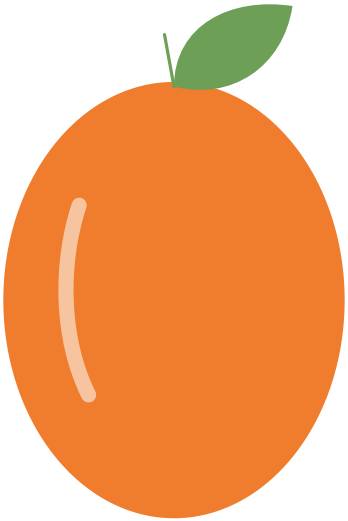


KA Reverb

Instruction manual

Kumquat Audio · Edition 1.7.11 · October 2026

kumquataudio.com

NO. 14

KA Reverb

A reverb with five spaces (one plays a room from a sound file) and a send EQ. A drum kit sounds like it is in the room.

KA Reverb is a reverb for putting sound in a space. Choose the kind of space (Room, Chamber, Hall, Plate or Room file), set its Size and Decay, and shape the tail with Bass, Highs and Mod. The Send EQ filters what goes into the reverb. The first reflections follow the walls of a room of the size you set, so a drum kit sent through it sounds like it was recorded there.

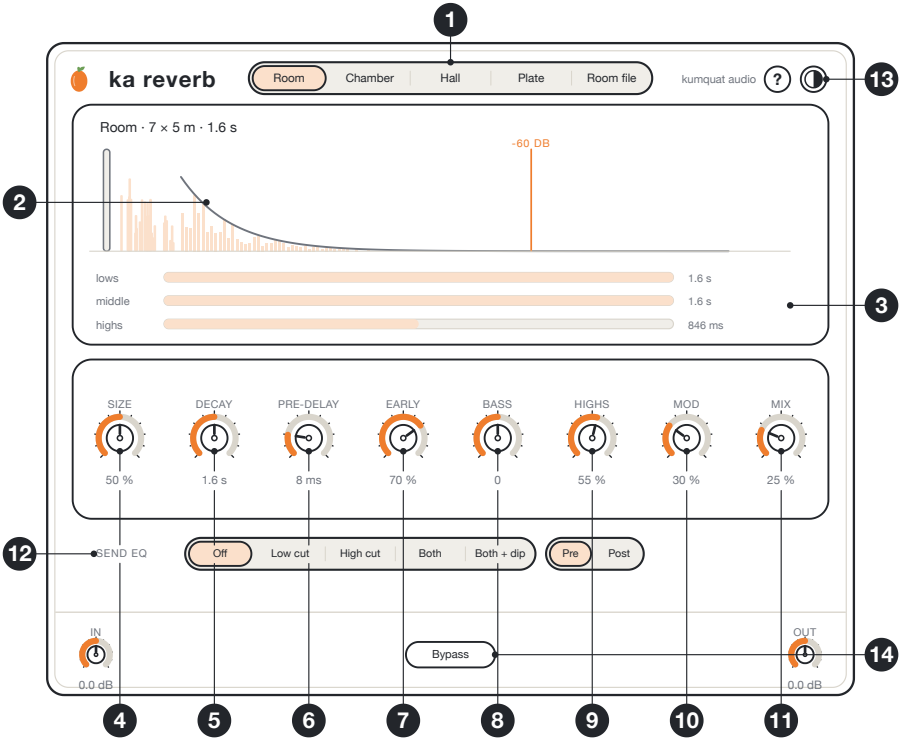


FIG. 1 The parts of KA Reverb. The numbers are explained on the next page.

Parts

fig. 1

1. **Space**
   Room: the first reflections follow the walls of a room. Chamber: bigger, smoother. Hall: large and slow. Plate: no room, a dense shimmer. Room file: a room loaded from a sound file (Load room... appears on the picture).
2. **The space**
   What a clap would sound like here: the grey bar is the sound, the tall bars the first reflections off the walls, then the tail. The thin line: the time to fall by 60 dB.
3. **Lows, middle, highs**
   How long each part of the sound lasts. Bass and Highs move them.
4. **Size**
   The size of the space: how far away the walls are, so how soon the first reflections come.
5. **Decay**
   How long the reverb lasts: the time it takes to fall by 60 dB.
6. **Pre-delay**
   The wait before the reverb starts.
7. **Early**
   How loud the first reflections are. Up: the sound sits in the room. Down: mostly tail, and further away.
8. **Bass**
   How long the lows last compared with the middle. Up: they bloom. Down: the reverb stays clean and tight.
9. **Highs**
   How soon the highs are lost. Down: dark, soft walls. Up: bright and airy.
10. **Mod**
    How much the tail drifts: lush and alive, and never ringing at one pitch.
11. **Mix**
    How much reverb is mixed in with the original.
12. **Send EQ**
    Filters the reverb, like an EQ on an aux send. Off: nothing. Low cut: high-pass (no rumble). High cut: low-pass (soft top). Both: high-pass and low-pass. Both + dip: both and a gentle scoop around 800 Hz, to keep the reverb out of the voice. Each choice is drawn with the shape of what it lets through. Pre: it filters what goes into the reverb. Post: it filters the reverb that comes out. The dry sound is never touched.
13. **Help and light/dark**
    The ? turns the pop-up help on and off. The half circle switches light and dark.
14. **In and Out**
    In turns the sound up or down before the plug-in hears it, and Out turns the result up or down.

Operation

step by step

1. Put the plug-in on an effects bus (or on a track) and set Mix to taste.
2. Choose a Space: Room, Chamber, Hall, Plate or Room file. Set Size (the walls move away as you turn it up) and Decay.
3. Use Early for how much of the room you hear: up puts the sound inside it, down moves it back.
4. Shape the tail with Bass, Highs and Mod. The bars in the picture show how long the lows, the middle and the highs last.[3]
5. Add Pre-delay, 10 to 40 ms for instance, to keep a voice clear in front of its reverb.

Controls and settings

range · start

Control	Range	Starts at	What it does
Space	Room, Chamber, Hall, Plate, Room file	Room	The kind of space. Room file plays a room loaded from a sound file (Load room...).
Size	0 to 100 %	50 %	The size of the space, from small to very large.
Decay	0.2 to 10 s	1.6 s	How long the reverb lasts (the time to fall by 60 dB).
Pre-delay	0 to 250 ms	8 ms	The wait before the reverb starts.
Early	0 to 100 %	70 %	How loud the first reflections are. In Room file: how loud the first 80 ms of the loaded room is against the rest.
Send EQ	Off, Low cut, High cut, Both, Both + dip	Off	Filters the reverb. Low cut: high-pass at 150 Hz. High cut: low-pass at 5.5 kHz. Both: both. Both + dip: both, and a gentle scoop near 800 Hz.
Send EQ position	Pre, Post	Pre	Pre: the EQ filters what goes into the reverb. Post: it filters the reverb that comes out.
Bass	–100 to +100 %	0	How long the lows last compared with the middle.
Highs	0 to 100 %	55 %	How soon the highs are lost. Down: dark. Up: bright and airy.
Mod	0 to 100 %	30 %	How much the tail drifts. A little keeps it lush and alive.
Mix	0 to 100 %	25 %	How much reverb is mixed in with the original.
In / Out	–24 to +24 dB	0 dB	The two knobs under the meters: before and after the plug-in.

TIP To put a drum kit in a room: use Room on an effects bus at Mix 100 %, and raise the send until the kit sits in it. Early does most of the work; Pre-delay

How it works

a closer look

First the sound waits for the Pre-delay. Then it goes three ways: to the early reflections, into a smear, and from there into the tail.

The early reflections follow the walls of a room. The plug-in takes a box-shaped room (a Room is 6.4 by 4.8 by 3 metres, a Hall 30 by 21 by 13), puts two sources a little apart in it, and two ears, and follows the bounces off every wall, the floor and the ceiling. Each bounce arrives at its own moment, from its own side, and a little quieter and darker than the last.

The smear is a few all-pass filters, so that a snare hit becomes a soft cloud and not a string of separate echoes. The tail is sixteen delay lines whose sound is mixed together on every trip round, so one echo becomes many very quickly. Each line drifts a little (Mod), so that nothing rings at one pitch.

On each trip the sound is made quieter, so that the tail falls by 60 dB in the time set by Decay. Bass makes the lows fall more slowly or more quickly than the middle, and Highs sets how soon the highs are lost. Size moves the walls: the reflections come later and the echoes of the tail are spaced further apart.

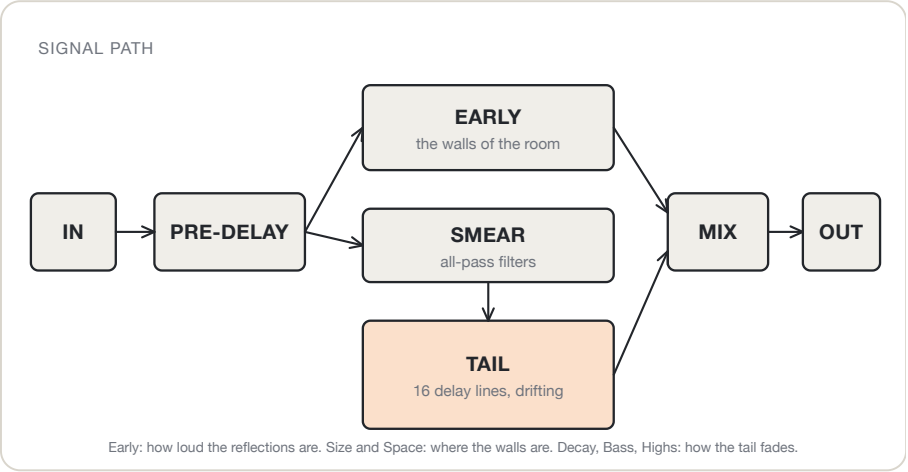


FIG. 2 From the sound to the reverb.

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.

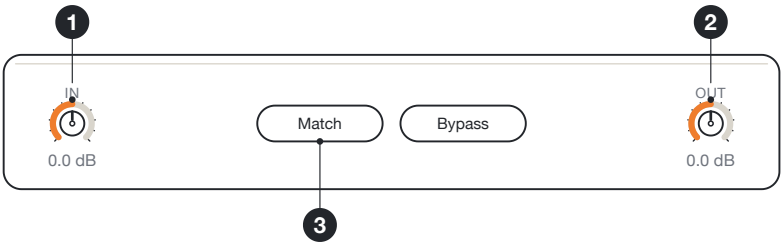


FIG. 3 The strip along the bottom of a window.

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