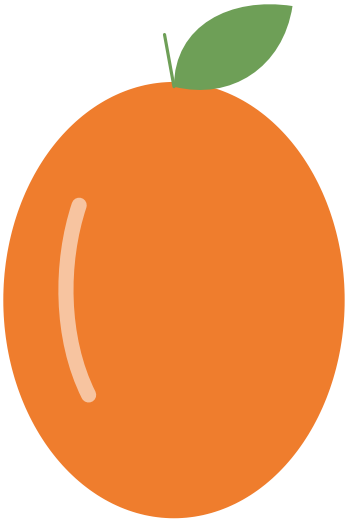


KA Bus Comp

Instruction manual

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kumquataudio.com

NO. 13

KA Bus Comp

A compressor for gluing a mix or a group of tracks together.

KA Bus Comp is a compressor for gluing a mix, or a group of tracks, together. It works on the stereo sound as a whole, it does not listen to the bass (so the kick does not make everything pump), and its Auto release follows the music.

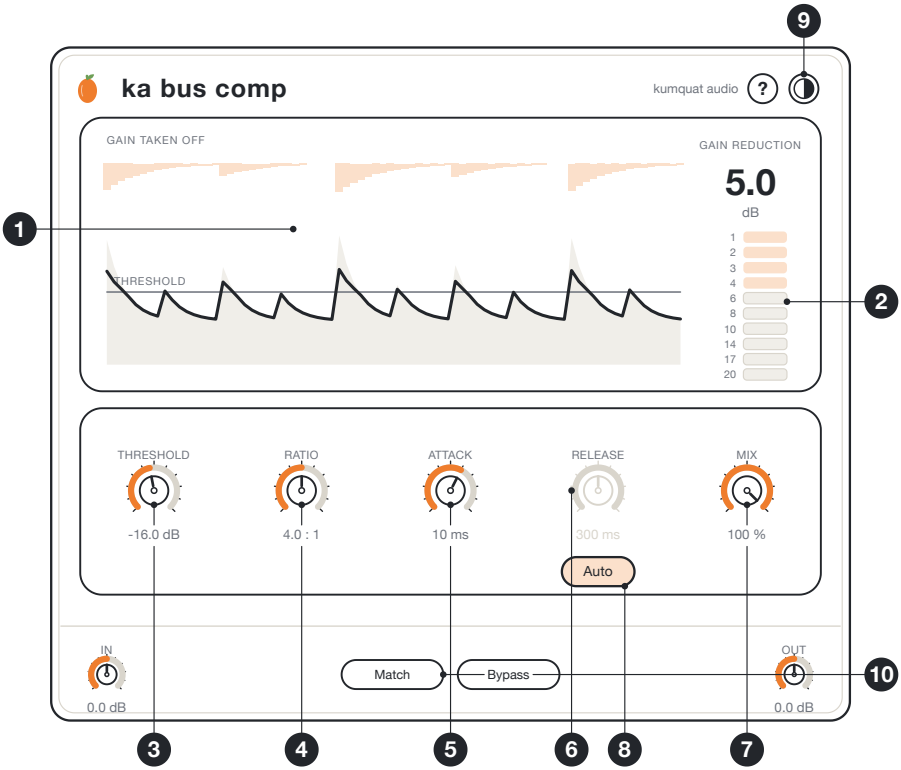


FIG. 1 The parts of KA Bus Comp. The numbers are explained on the next page.

Parts

fig. 1

1. **The picture**
   The level coming in (grey), the level going out (the line), the threshold (a thin line), and the gain being taken off, hanging from the top in orange.
2. **Gain reduction**
   How many dB it is turning the sound down now, on a ladder of ten lights: each comes on when that much is being taken off, and the last three are red. The number holds the deepest value for a moment so that it can be read; the outlined light is the deepest lately.
3. **Threshold**
   The level above which the sound is turned down.
4. **Ratio**
   How firmly it is turned down once it is over the threshold. It clicks between 2, 4 and 10.
5. **Attack**
   How fast it reacts to a loud sound. It clicks between 0.1, 0.3, 1, 3, 10 and 30 ms. Slower keeps the punch of each hit.
6. **Release**
   How fast it lets go: 100 ms, 300 ms, 600 ms or 1.2 s. Not used while Auto is on.
7. **Mix**
   How much compressed sound is blended with the original.
8. **Auto**
   Chooses the release from the music: short after a lone hit, longer when the mix has been held down for a while.
9. **Help and light/dark**
   The ? turns the pop-up help on and off. The half circle switches light and dark.
10. **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 gain to make up for the compression is the Out slider.

Operation

step by step

1. Put the plug-in on a bus or on the master, and play the loudest part.
2. Lower Threshold until the meter shows 1 to 3 dB of gain reduction on the loud parts.
3. Choose Ratio: around 2 is gentle, 4 is the usual setting for a bus, 10 is firm.
4. Set Attack. A slower attack (10 to 30 ms) lets the start of each hit through, which keeps the punch.
5. Leave Release on Auto, or set it by ear: short follows the rhythm, long is smooth.
6. Use the Out knob (at the bottom right) to bring the level back up, and compare with the plug-in switched off, or press Match. Mix below 100 % is parallel compression.

Controls and settings

range · start

Control	Range	Starts at	What it does
Threshold	–60 to 0 dB	–14 dB	The level above which the sound is turned down.
Ratio	2, 4, 10	4	How firmly it is turned down once it is over the threshold. The knob clicks between the steps.
Attack	0.1, 0.3, 1, 3, 10, 30 ms	10 ms	How fast it reacts to a loud sound. The knob clicks between the steps.
Release	100, 300, 600 ms, 1.2 s	300 ms	How fast it lets go (used when Auto is off). The knob clicks between the steps.
Auto	on / off	on	Chooses the release from the music.
Mix	0 to 100 %	100 %	How much compressed sound is blended with the original.
In / Out	–24 to +24 dB	0 dB	In turns the sound up or down before the plug-in hears it; Out turns what comes out (it is the make-up gain).
Match	on / off	off	Keeps the output as loud as the sound that came in, whatever In and the plug-in do. See In, Out and Gain Match.

TIP If it takes the life out of the drums, make Attack slower or Mix lower.

CAUTION A very fast attack with a very short release makes the compressor follow the waves themselves, which can sound distorted. Slow one of them down.

Specifications

Formats	Audio Unit, VST3
Channels	mono or stereo (the two sides are linked)
Delay	none
Window	700 × 520, can be resized

How it works

a closer look

The compressor listens to the louder of the two sides, after a gentle high-pass at 90 Hz, and measures how far over the Threshold it is. Over the threshold it turns the sound down, and Ratio says by how much: at 4:1, a sound 8 dB over comes out 2 dB over.

The knee is soft: the compressor starts to act a little before the threshold and reaches its full ratio a little after it, so it comes in smoothly.

Attack and Release say how quickly the gain falls and recovers. Auto release follows the music: short after a lone hit, up to 1.2 seconds when the mix has been held down for a while.

Mix blends the compressed sound with the original, for parallel compression. There is no make-up knob: the Out knob at the bottom right is the make-up gain.

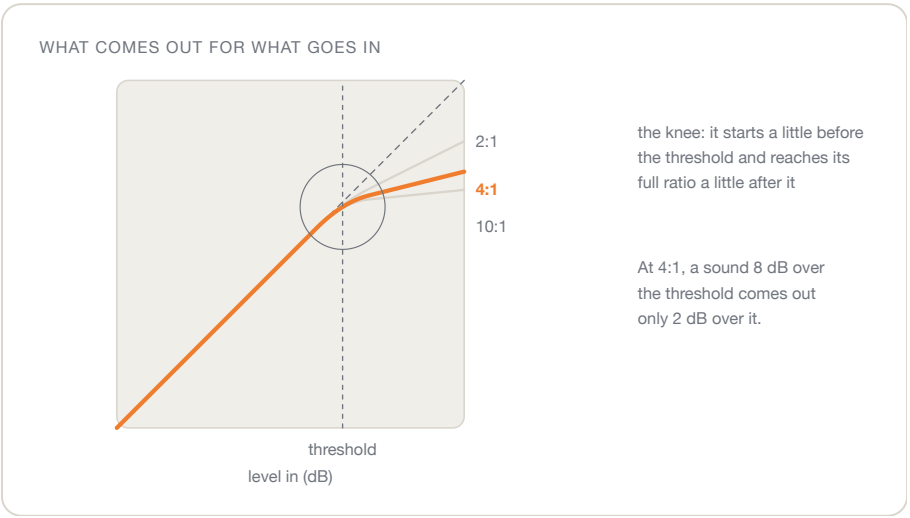


FIG. 2 The curve of the compressor, with its soft knee.

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.

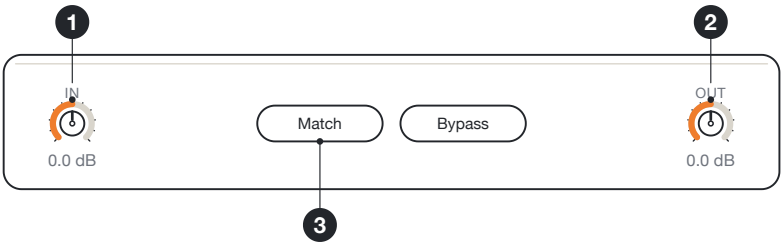


FIG. 3 The strip along the bottom of a window.

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