VEIRA

DRUM BUS SQUASHER

VEIRA Squasher

User Manual

Parallel compression for drums, on one knob. Turn SQUASH and the kit is crushed at 10:1 up to 100:1 and brought back to its own loudness; MIX tucks it under the dry drums, so the hits keep their punch while the body, the room and the ghost notes come up.



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Welcome

Thank you for choosing **VEIRA Squasher**, made for drum buses: a full kit, a loop, a break, room mics, a programmed beat. It does one job, and it does it with one knob: **parallel compression on drums**. Engineers have done it for decades on big consoles: send the drums to a second pair of channels, compress that copy much harder than anyone would dare on the drums themselves, and blend it back underneath. The real drums keep their hits; the crushed copy fills in everything between them: the body of the snare, the ring of the toms, the room, the ghost notes, the hi-hat detail. The kit sounds bigger, denser and more exciting, and it still hits.

VEIRA Squasher puts both halves of that trick in one plug-in. SQUASH sets how hard the copy is crushed, from a gentle 10:1 up to 100:1, the “all buttons in” sound. STYLE picks the character: PUNCH, SMASH or PUMP. The plug-in brings the crushed drums back up to the loudness of the dry ones by itself, rounds off the peaks the compressor lets through, and MIX blends the two. OUTPUT sets the level.

What makes it different

- **One knob for the whole compressor.** SQUASH moves the threshold and the ratio together, along a path chosen for drums. You never have to find a threshold: the plug-in measures the drums’ own peak level and sets the threshold against it, so 50 % does the same on a quiet bus as on a hot one.
- **Ratios from 10:1 to 100:1.** This is a squasher, not a glue compressor: it is meant to crush the copy so the blend can bring up what lives between the hits.
- **Automatic makeup.** The crushed drums are brought back to the loudness of the dry drums, measured the way your ears hear it. Turning SQUASH changes the density, not the level, so you judge the sound, not the loudness.
- **Three characters.** PUNCH lets the fronts of the hits through over a solid body; SMASH flattens everything; PUMP lets the kick push the room and the cymbals down so they swell back between the hits.
- **A soft clip that doesn’t alias** rounds off what the attack lets through, at the dry drums’ own peak.
- **In time and in phase.** The crushed drums and the dry drums are lined up to the sample, so MIX never colours the sound with comb filtering. At SQUASH 0 % or MIX 0 % the output is the input, bit for bit.
- **39 measured presets** in 10 folders, sorted by style of music and by job.
- **A clean, legible face.** Knobs with the value in their middle, text you can read at a glance, values you can type, and a window you can scale from 75 % to 200 %.

How it differs from VEIRA Drum Bus and VEIRA Comp. VEIRA Drum Bus is a complete drum bus processor: a hidden EQ, a COMPRESS knob with its own characters, ATTACK and RELEASE, and saturation, for the main compression on the bus. VEIRA Squasher does only the parallel part, and goes much further: ratios up to 100:1, a copy made to be blended rather than heard on its own, and no attack or release to set. Many engineers use both: VEIRA Drum Bus to glue the kit, VEIRA Squasher after it, or on an aux, for weight. VEIRA Comp is a general-purpose compressor for when you want to set every control yourself.

How this manual is organised. *Getting started* covers installing and activating. *The panel at a glance* names every part of the window and has a quick start. *How parallel compression works* explains, without maths, why a crushed copy blended under the drums makes them bigger, and what happens inside the plug-in. *Controls* explains every control with drawings computed from the plug-in's own engine. *Displays* teaches you to read the SQUASH display and the meters, and *Presets*, *Recipes*, *Specifications* and *Troubleshooting* follow.

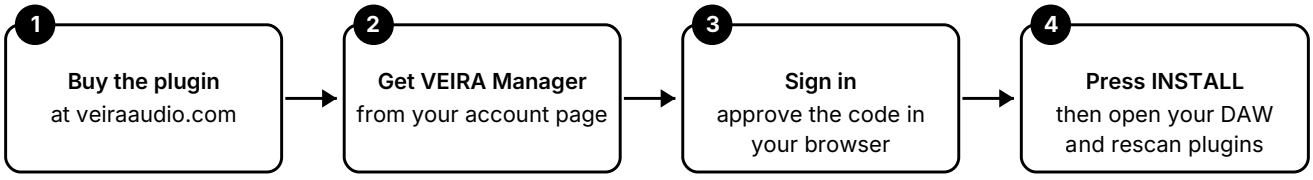
Getting started

What you need

macOS	macOS 11 Big Sur or later. Native on Apple silicon and Intel Macs (universal).
Windows	Windows 10 or 11, 64-bit.
Plugin formats	VST3 (macOS and Windows), Audio Units (macOS), and a standalone app. Pro Tools (AAX) versions arrive once they are signed for Pro Tools.
Hosts	Any DAW that loads VST3 or Audio Units: Logic Pro, Cubase, Nuendo, Ableton Live, Studio One, Reaper, FL Studio, Bitwig and others.
Account	A VEIRA account at veiraaudio.com, and the free **VEIRA Manager** app.
Internet	Needed to install and to refresh the licence. The plugin itself never goes online.

Install with VEIRA Manager

VEIRA plugins are not downloaded from the website one by one. You install them with **VEIRA Manager**, the free VEIRA app that installs, updates and activates everything you own. Its own manual covers it in full; the short version is:



One account works on up to three computers. Updates are free for life.

FIGURE 1 From purchase to first sound in four steps.

1. **Buy** VEIRA Squasher at **veiraaudio.com**. It's a one-time purchase: you own it for good, with free updates.
2. **Download VEIRA Manager** from your account page (or veiraaudio.com/manager) and install it.
3. **Sign in.** VEIRA Manager shows a short code and opens your browser; confirm the code there. Your password is never typed into the app.
4. Find VEIRA Squasher in the list and press INSTALL. When it says SHOW, it's installed. Open your DAW and let it rescan its plugins.

After installing, VEIRA Squasher appears in your DAW under the manufacturer **VEIRA** (in Logic Pro: Audio Units ▸ VEIRA ▸ VEIRA Squasher).

Activation and the licence

VEIRA Manager keeps a licence on your computer that the plugins check. It is refreshed every time VEIRA Manager opens and stays valid for 30 days offline, so you can work without internet as long as you open VEIRA Manager now and then.

Without a valid licence, VEIRA Squasher still loads and works, but **its sound fades out for 1.5 seconds every 30 seconds**, and a strip along the bottom of its window says why (for example, *NOT ACTIVATED ON THIS COMPUTER. SIGN IN WITH VEIRA MANAGER.*). Clicking the strip opens your account page.

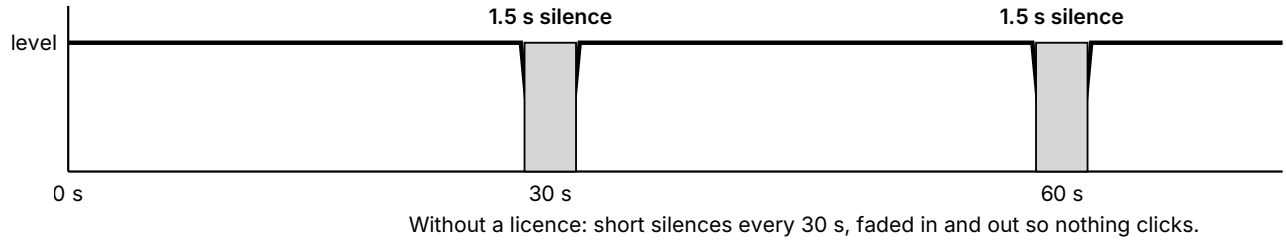


FIGURE 2 What an unlicensed copy does. With a valid licence the audio is never touched.

- **Activating while your DAW is open** takes effect within about two minutes. You don't need to reload the plugin.
- **"Not activated on this computer"**: open VEIRA Manager and sign in.
- **"Expired"**: open VEIRA Manager while online; it renews the licence at once.
- **"Not included"**: the signed-in account doesn't own VEIRA Squasher. Check that you're signed in with the account you bought it with.

Formats and where the files go

VEIRA Manager puts every format in the standard place, so you never need to copy files by hand:

Format	macOS	Windows
VST3	`~/Library/Audio/Plug-Ins/VST3` (just for me, the default) or `/Library/Audio/Plug-Ins/VST3` (all users)	`C:\Program Files\Common Files\VST3` (all users, the default) or `%LOCALAPPDATA%\Programs\Common\VST3`
Audio Units	`~/Library/Audio/Plug-Ins/Components` or `/Library/Audio/Plug-Ins/Components`	(Audio Units are macOS only)
Standalone	`~/Applications/VEIRA` or `/Applications/VEIRA`	`C:\Program Files\VEIRA` or `%LOCALAPPDATA%\Programs\VEIRA`

You choose *just for me* or *all users* in VEIRA Manager's install settings.

The standalone app runs VEIRA Squasher on its own, with your audio interface's input and output, which is handy for trying presets without a DAW.

The panel at a glance

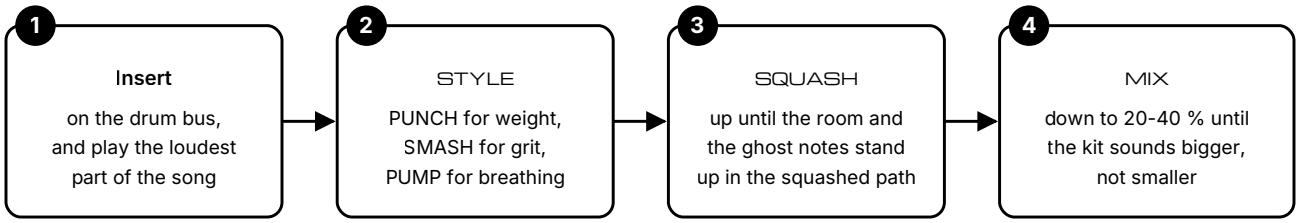


FIGURE 3 VEIRA Squasher with the *Init* preset (PUNCH, SQUASH 50 %, MIX 50 %) while a rock drum kit plays.

	Part	What it does
1	Preset browser	Steps through and saves presets. See *Presets*.
2	SQUASH display	The last five seconds: the drums coming in, the squashed drums, and the gain reduction.
3	Legend	Names the three traces: IN, SQUASHED, REDUCTION.
4	Read-outs	REDUCTION now, the automatic MAKEUP, and the RATIO the knob has set.
5	CLIP lamp	Lights while the soft clip is rounding off peaks.
6	STYLE	PUNCH, SMASH or PUMP: the character of the compression.
7	SQUASH	How hard the drums are squashed: the threshold and the ratio together.
8	MIX	The squashed drums blended under the dry ones.
9	OUTPUT	The level going out.
10	Meter bridge	Input and output level and loudness.

The window has four areas: the **SQUASH display** across the top, the STYLE buttons and the big SQUASH knob below it on the left, MIX and OUTPUT to their right, after a thin divider (the parallel controls), and the **meter bridge** down the right.

Quick start: bigger drums in four moves

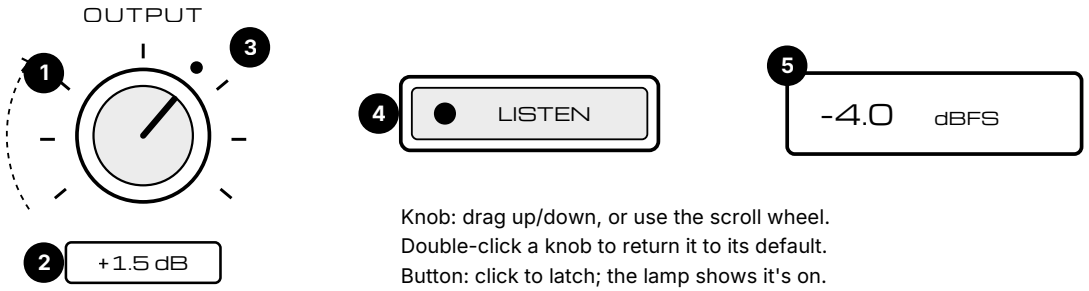


The makeup keeps the level steady, so judge by ear, not by loudness. Tip: set SQUASH with MIX at 100 %, then bring MIX down.

FIGURE 4 The quickest way to a good result. Or load a preset from the folder that matches your music: each one is a STYLE, a SQUASH and a MIX for a job.

Using the controls

Every VEIRA plugin is played like a piece of hardware. The same few parts appear on every panel:



Knob: drag up/down, or use the scroll wheel.
Double-click a knob to return it to its default.
Button: click to latch; the lamp shows it's on.
Readouts always carry a unit (dB, dBFS, LUFS, LU, ms, %).

FIGURE 5 The parts you'll find on every VEIRA panel (the labels are examples).

- 1 **Knob.** Drag up to turn it clockwise, down to turn it back, or use your mouse wheel. **Double-click** returns it to its default. The engraved pointer and the small dot on the scale show where it's set.
- 2 **Value window.** The backlit window under each knob shows its exact value with its unit.
- 3 **Silkscreen label.** The control's name, as it appears in your DAW's automation list.
- 4 **Push button.** Click to switch on; the lamp lights and the cap sits lower in its bezel. Click again to switch off.
- 5 **Readout.** Live numbers update ten times a second so you can read them while the meters move. A value over 0 dBFS shows as a warning.

Tooltips: hover over any control or display for a short explanation. On displays, the tooltip depends on where you point.

Automation: every knob and button is a host parameter, so you can automate it in your DAW and control it from a MIDI controller or control surface that your DAW maps.

Units: VEIRA never shows a bare number. **dBFS** is level against digital full scale (0 dBFS is the loudest a digital signal can be); **dB** is a change in gain; **LUFS** is loudness as streaming services and broadcasters measure it; **LU** is a difference in loudness (1 LU = 1 dB).

On VEIRA Squasher's panel the parts look a little different from the drawing above:

- **Knobs** show their value **in their middle**, and a lit ring (blue on screen; in print, the lighter arc) with a short pointer tick at the rim shows how far each is turned. Drag, use the wheel, or double-click (or Alt/Option-click) for the default, as on every VEIRA knob.
- **Type a value:** right-click a knob (Control-click on a Mac). A field opens over the knob with the current value; type the new one and press Return. The number is enough: **65** for SQUASH, **30** for MIX, **-1.5** for OUTPUT. Press Escape or click elsewhere to leave it unchanged.
- **The STYLE buttons** work as one switch and have no lamps: the selected style is filled (orange on screen; in print, the solid, lighter button), the other two are dark with an outline.
- **Resize the window:** drag its bottom-right corner (the small diagonal lines). It scales from 75 % to 200 % of its normal size and keeps its proportions, so the display and the text stay sharp. Your DAW saves the size with the session.

How parallel compression works

If you have used a compressor before, some of this will be familiar. These pages explain what parallel compression does to drums, why it needs such extreme settings, and how VEIRA Squasher makes them safe.

The gap between the hit and the body

Every drum hit has two parts. The **hit** is the first few milliseconds: the stick on the head, the beater on the kick, the loudest moment by far. The **body** is everything after it: the snare's tone and wires ringing out, the shell of the tom, the room answering, and in between the hits, the ghost notes and the hi-hat. On a recorded kit the body sits 20 to 30 dB under the hits. That gap is what makes drums sound like drums, but it also makes them sound small in a dense mix: the body disappears under the guitars and the keys, and only the clicks of the hits are left.

A **compressor** makes the gap smaller by turning the hits down. Used on the drums themselves it works, but it costs the punch: the hits get softer, the drums lose their attack, and pushed hard, they sound flat and lifeless.

Parallel compression takes another route. It leaves the drums alone, compresses a *copy* very hard, so hard that the hits come down much closer to the body, turns that copy back up, and blends it *underneath* the drums. In the blend, the hits still come from the untouched drums, at their full level. The body comes from both, and the copy's body is loud. So the gap closes from below: the quiet parts come up, the hits stay where they were.

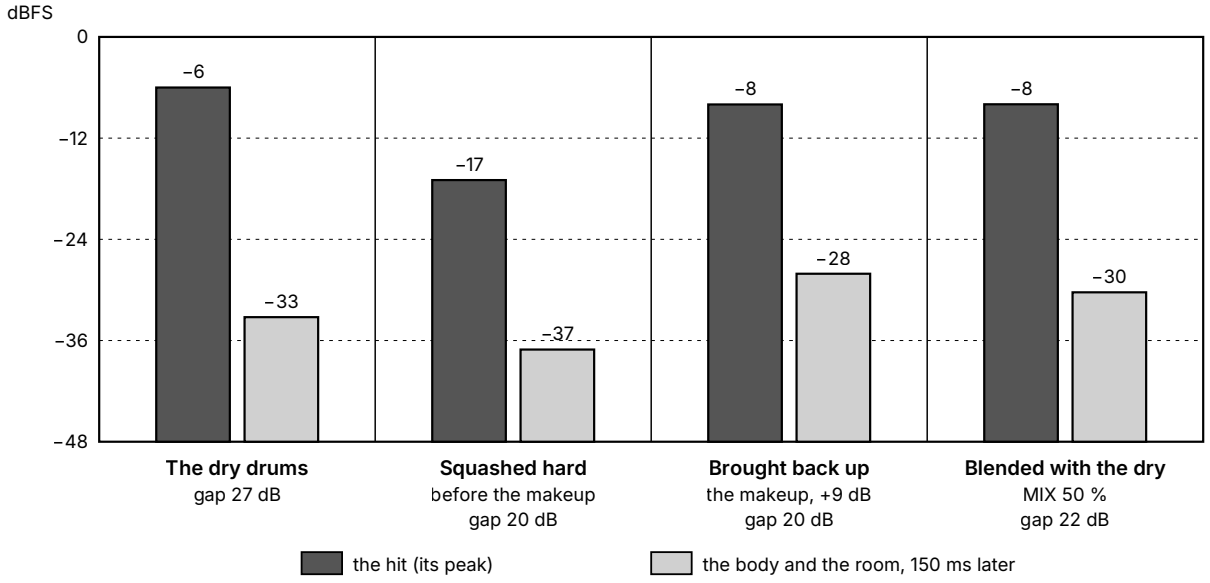


FIGURE 6 A snare hit measured through VEIRA Squasher at its defaults (PUNCH, SQUASH 50 %). The dark bars are the hit's peak, the light ones the body 150 ms after it. Squashing closes the gap; the makeup lifts the copy back up; blended at MIX 50 %, the hit stays within 2 dB of its peak and the body comes up 3 dB.

Read the drawing from left to right:

1. **The dry drums.** The snare peaks at −6 dBFS; 150 ms later its body has fallen 27 dB.

2. **Squashed hard.** The compressor takes 11 dB off the hit but only 4 dB off the body, which it is already letting go of, so the gap shrinks to 20 dB. On its own, this copy is quieter than the drums.
3. **Brought back up.** The makeup turns the copy up by 9 dB, until it is as loud as the dry drums. Now its hit is close to the dry hit, and its body is 5 dB louder than the dry drums' body.
4. **Blended with the dry.** Half and half, the hit stays within 2 dB of its dry peak, because the dry drums carry it, and the body is 3 dB louder, because the copy carries it. The gap has closed by 5 dB, mostly from below. With more SQUASH and MIX, the factory presets bring the body up by as much as 9 dB.

That is why a squasher uses ratios a normal compressor never would: the copy is never heard alone, so it can be crushed as far as it takes. And it is why the makeup matters so much: if the copy were left quiet, the blend would do nothing; if it were turned up by guesswork, every move of SQUASH would change the level of your drum bus.

Inside VEIRA Squasher

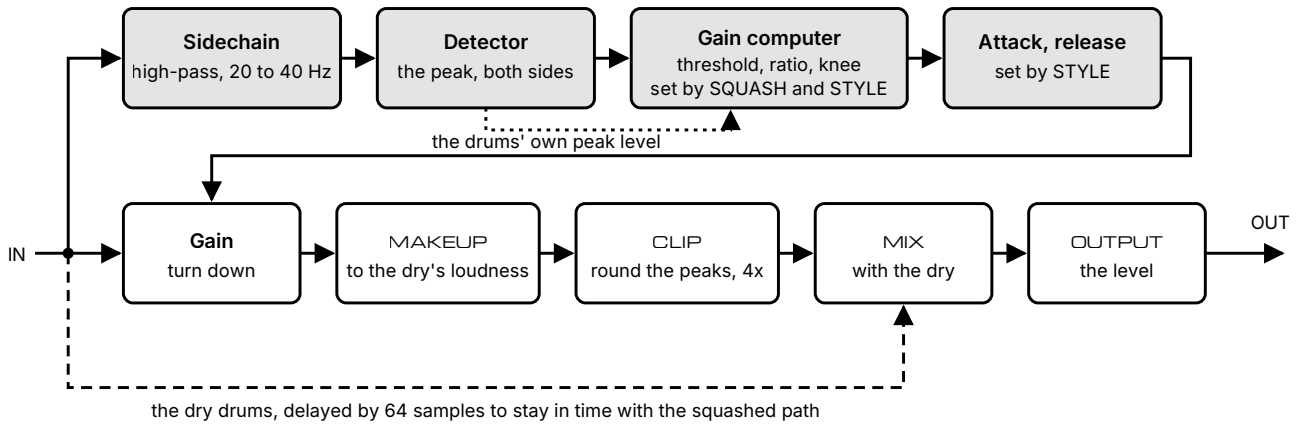


FIGURE 7 Signal flow. The top row decides how far to turn the drums down; the bottom row is the squashed path, blended at MIX with the dry drums (dashed), which are delayed to stay in time.

Step by step:

1. **The sidechain** is what the compressor listens to: the drums, with the deepest lows filtered out (below 20 to 40 Hz, by STYLE), so a subsonic rumble or an 808's sub can't drive it on its own.
2. **The detector** takes the peak of both channels together, so left and right are always turned down by the same amount and the stereo image never moves.
3. **The gain computer** compares the level with the threshold and decides how far to turn the drums down. The threshold is not a fixed level in dBFS: it is set **against the drums' own peak level**, which the plug-in measures all the time (the hits' peaks, averaged over about two and a half seconds of playing). SQUASH moves the threshold down from just above those peaks, and raises the ratio at the same time. See *SQUASH*.
4. **Attack and release** set how fast the turning down follows the hits, by STYLE. See *STYLE*.
5. **The gain** turns the drums down.
6. MAKEUP turns the squashed drums back up, to the loudness of the dry drums. See *The makeup*.
7. CLIP rounds off whatever the attack lets through, at the dry drums' own peak level. See *The clip*.

8. MIX blends the squashed drums with the dry ones, and OUTPUT sets the level.

The soft clip is computed at a higher sample rate to keep it clean, which takes **64 samples** (1.3 ms at 48 kHz). That is the plug-in's latency, and the dry drums are delayed by exactly the same amount, so the two paths line up to the sample.

Insert or send

There are two ways to set up parallel compression, and VEIRA Squasher does both.

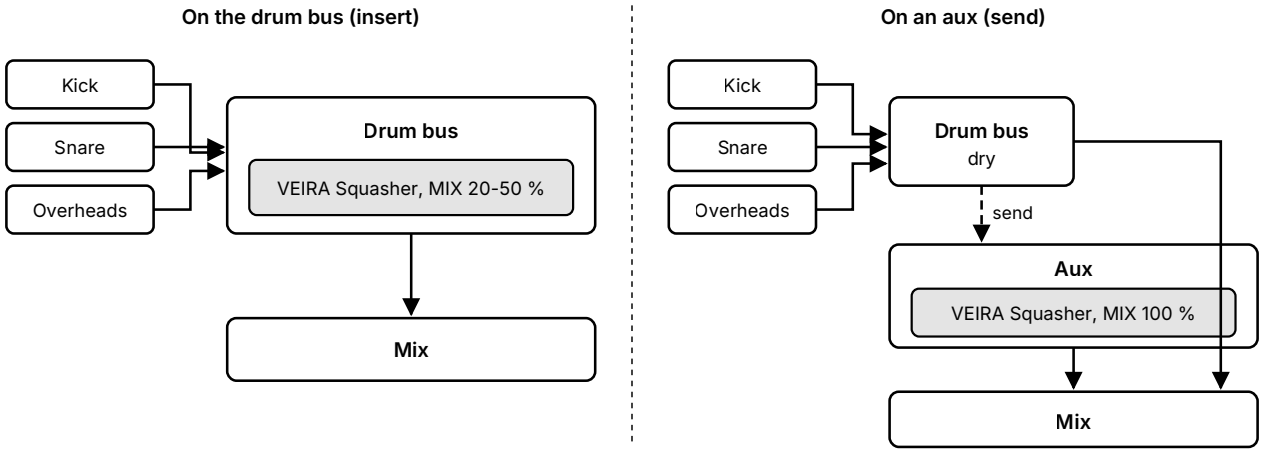


FIGURE 8 Left: VEIRA Squasher on the drum bus, blending the squashed drums itself with MIX. Right: the classic console way, on an aux fed by a send from the drum bus, at MIX 100 %; the aux fader is the blend.

- **On the drum bus, as an insert** (left). The simplest way: the plug-in does the blend itself, MIX is the amount, and the dry and squashed drums are perfectly in time. This is how the factory presets are set up.
- **On an aux, as a send** (right). Feed an aux from the drum bus with a send, put VEIRA Squasher on the aux at MIX 100 % (the *Creative FX* presets *All Buttons In*, *Full Pump* and *Punch Only* are set up like this), and use the aux's fader as the blend. This lets you EQ the squashed drums separately (a common move: a high-pass at 80 to 100 Hz so the squashed kick doesn't swamp the bass), send it to a different reverb, or automate it on its own. Your DAW compensates for the 64 samples of latency on the aux, so the two paths stay in time; make sure delay compensation is on.

Latency, bypass and bouncing

- **Latency** is 64 samples at 44.1 to 96 kHz (1.3 ms at 48 kHz), and none at 176.4 and 192 kHz, where the plug-in doesn't need the higher internal rate. It is constant and reported to your DAW, which compensates for it on playback and in a bounce.
- **Bypass stays in time.** Bypassed, the plug-in still delays the drums by the latency, so switching bypass on and off never makes the drums jump.
- **Bounces** (export, bounce in place, render, freeze) sound exactly as playback. The plug-in needs a second or two of drums to learn their level (see *SQUASH*), so a bounce of a whole song is the same as playback; a bounce that starts on the very first hit lets that hit pass unsquashed while the plug-in learns.

Controls

STYLE

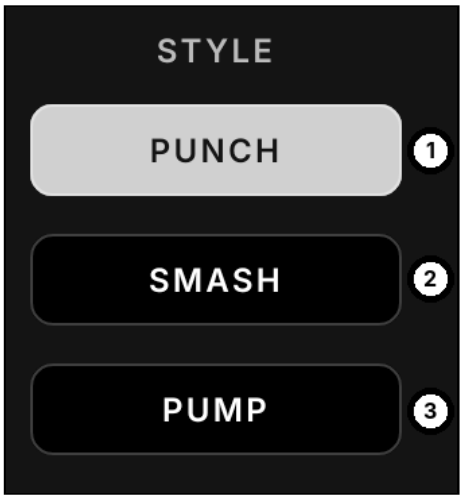


FIGURE 9 The STYLE switch: 1 PUNCH (selected), 2 SMASH, 3 PUMP. The selected style is filled; the others are dark.

Control	Range	Default	What it does
STYLE	PUNCH, SMASH, PUMP	PUNCH	The character: how fast the compressor reacts, its range of ratios, its knee, what its sidechain hears and where the clip sits.

STYLE is the only choice VEIRA Squasher asks you to make about *how* it compresses. Each style is a complete set of settings, made for one kind of parallel drum sound:

	PUNCH	SMASH	PUMP
Ratio (SQUASH 0 → 100 %)	10:1 → 20:1	20:1 → 100:1	12:1 → 30:1
Threshold at 100 %, against the drums' peaks	−28 dB	−34 dB	−30 dB
Attack	1 ms	0.05 ms	0.3 ms
Release	90 ms	50 ms	280 ms
Knee	6 dB	3 dB	4 dB
Sidechain high-pass	40 Hz	30 Hz	20 Hz
Clip ceiling, against the dry drums' peak	at it	3 dB under	1 dB under

The drawing shows one snare hit, on its own, through each style at SQUASH 75 % and MIX 100 %, so you hear only the squashed path. These are measured on the plug-in's own engine.

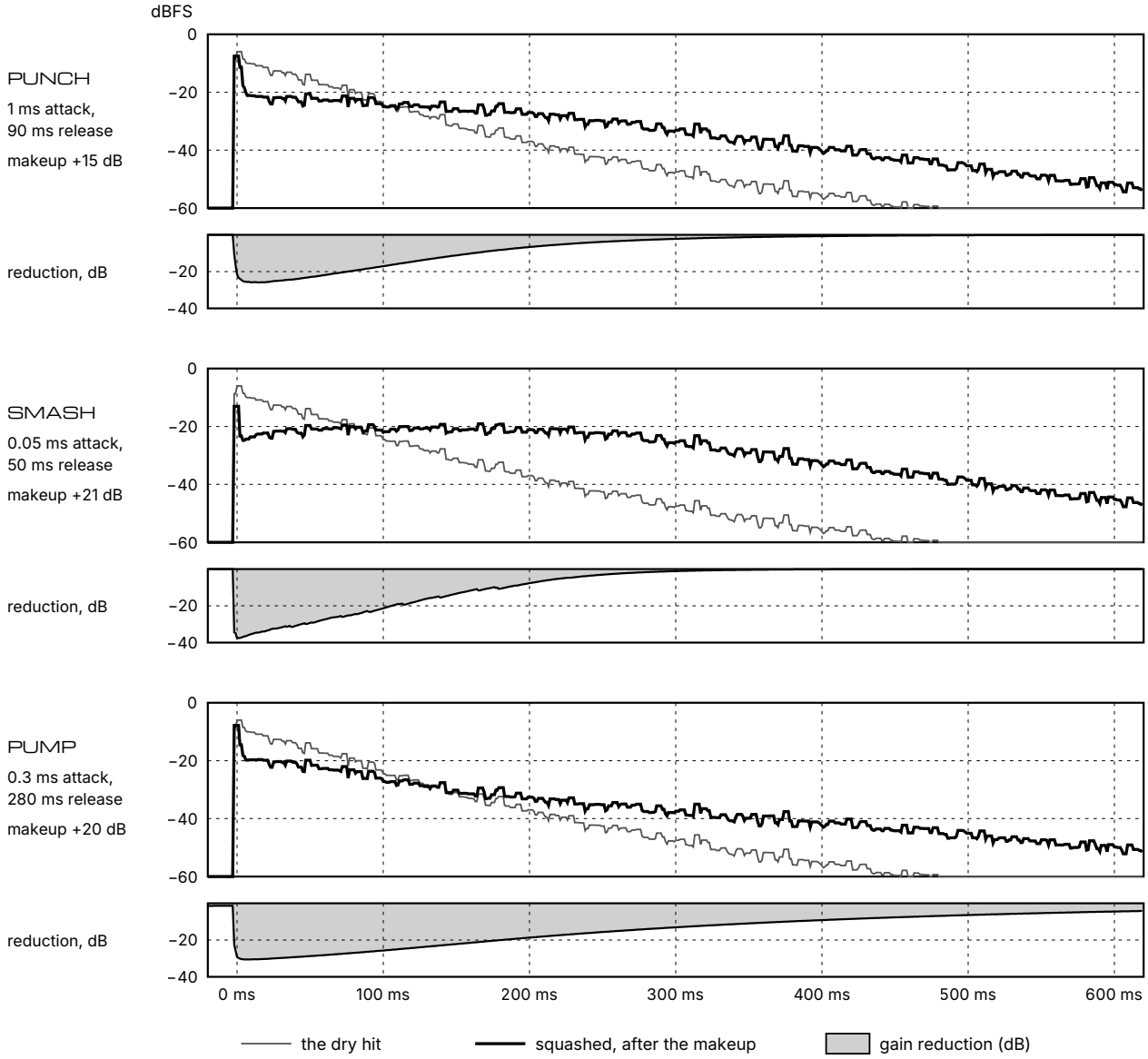


FIGURE 10 One snare hit, dry (thin grey line) and squashed (heavy line, after the makeup), at SQUASH 75 %, MIX 100 %. The shaded lane under each is the gain reduction. Time runs from 20 ms before the hit to 620 ms after it.

PUNCH

The classic parallel drum sound, and the default. The 1 ms attack is fast, but not instant: the first moment of each hit slips through before the compressor clamps down, so the squashed drums keep a short, sharp front. Then the reduction holds the hit's body down, and the 90 ms release lets go in time for the next hit. In the drawing, the squashed snare starts with a click at nearly the dry level, drops to a solid plateau, and its tail stays 5 to 16 dB above the dry tail all the way down: that is the body and the room coming up. The sidechain ignores everything below 40 Hz, so the kick's sub doesn't push the whole kit around.

Use it for weight and size that still hits: rock, pop, funk, hip-hop, anything where the drums should sound bigger without sounding processed. Blended at 20 to 50 % it's hard to overdo.

SMASH

Everything flattened: the “all buttons in” sound of a famous studio compressor with all its ratio buttons pressed at once. The attack is practically instant (0.05 ms), the ratio goes all the way to 100:1, and the clip sits 3 dB under the dry drums’ peak, so nothing of the hit survives in the squashed path. In the drawing, the squashed snare’s front is cut to 7 dB under the dry snare’s peak, and the tail is lifted almost up to it: 300 ms after the hit it is 22 dB above the dry tail. The fast 50 ms release lets the room and the decay snap back up after every hit, which is what gives SMASH its aggressive, crunchy, distorted energy.

Use it for grit, density and excitement: garage, punk, metal, boom bap, breakbeats, lo-fi. On its own it sounds destroyed; blended at 20 to 40 % under the dry kit it adds energy without losing the hits.

PUMP

The kick drives the whole kit. The sidechain hears the full range (only below 20 Hz is filtered), so the low, loud kick dominates what the compressor reacts to, and the 280 ms release is slow enough that you hear the drums recover. In the drawing, the squashed snare’s tail is held down for a long time after the hit and swells back as the reduction lets go. On a groove, everything that follows a kick or a snare (the hi-hats, the cymbals, the room) is pushed down and breathes back up before the next hit: the pumping, breathing sound of dance music and of big, ambient rock drums.

Use it for movement: house, electronic, doom, big-room ambience. Faster tempos pump harder, because the release has less time to recover between hits.

Switching

Switching STYLE while the music plays never clicks: every number of the old style glides to the new one over 40 ms. STYLE can be automated, so a chorus can pump while the verse punches.

SQUASH

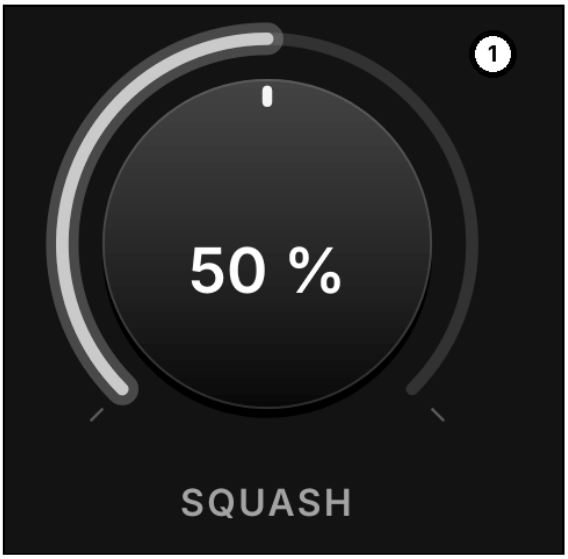


FIGURE 11 1 SQUASH, with its value in its middle and the lit arc showing how far it is turned.

Control	Range	Default	What it does
SQUASH	0 to 100 %, in 1 % steps	50 %	How hard the drums are squashed: lowers the threshold and raises the ratio together. 0 % leaves the drums untouched.

SQUASH is the compressor. It moves two settings at once, along a path chosen for each STYLE:

- **The threshold** goes down from 4 dB *above* the drums' own peak level at 0 % (so nothing at all happens) to about 30 dB under it at 100 % (−28, −34 or −30 dB, by STYLE), in a straight line.
- **The ratio** goes up, from the style's lowest to its highest: 10:1 to 20:1 for PUNCH, 20:1 to 100:1 for SMASH, 12:1 to 30:1 for PUMP. The RATIO read-out under the display shows it.

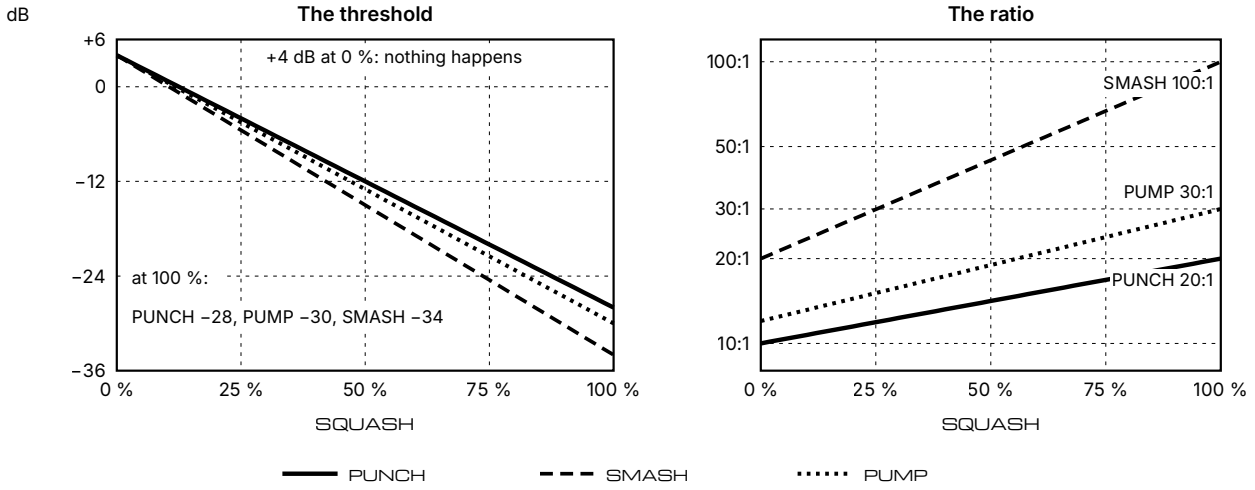


FIGURE 12 What SQUASH sets, per style: the threshold, in dB against the drums' own peak level (left), and the ratio (right, on a log scale).

Why against the drums' own level. A threshold in dBFS would make SQUASH 50 % mean something different on every drum bus: a quiet bus might not reach it at all, a hot one would be crushed. VEIRA Squasher listens to the drums and measures their **peak level**, the level the hits reach, averaged over about two and a half seconds of playing. The threshold is set against that, so SQUASH does the same to the same drums whatever level they arrive at: the same kit 26 dB quieter comes out exactly the same, only 26 dB quieter. Through a break, when the drums stop, the plug-in keeps the level it had, so the first hit after the break is squashed just like the last one before it.

The level is learnt when the drums start: the plug-in takes the loudest of the first 60 ms, then settles over about a second and a half. During those first 60 ms the drums pass unsquashed. This happens again only if your DAW resets the plug-in (for example when the sample rate changes).

The drawing below shows what the gain computer does with that threshold and ratio: the level coming out (before the makeup) against the level going in, both against the drums' peak level, at four settings of SQUASH.

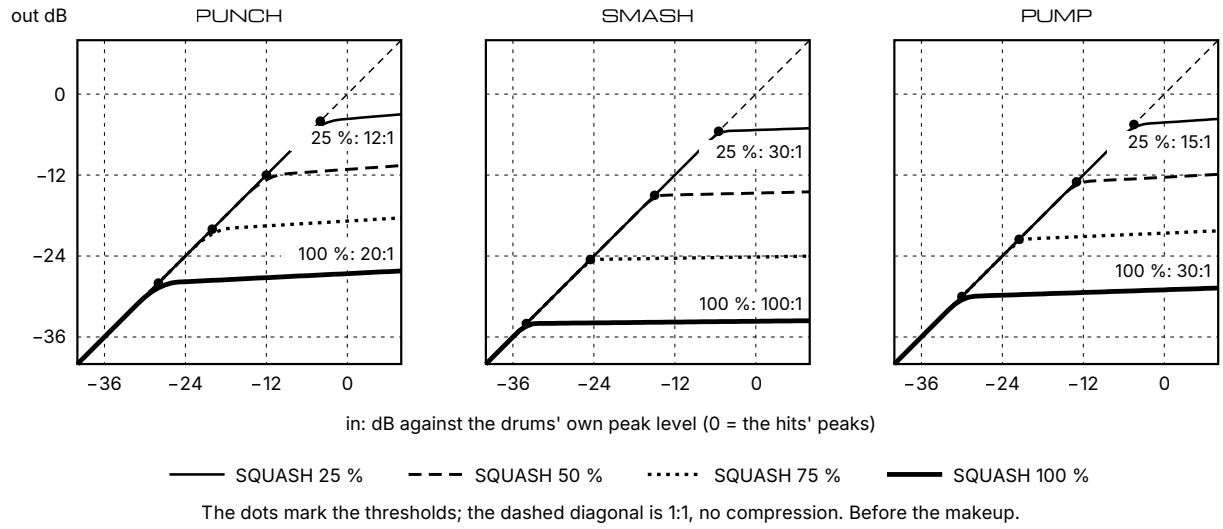


FIGURE 13 The compressor's curve per style at SQUASH 25, 50, 75 and 100 %, before the makeup. Above its threshold (the dot), each curve is nearly flat: at these ratios, a hit 10 dB over the threshold comes out about 1 dB over it, or less.

What you hear as you turn it up, with MIX at 100 % so you hear only the squashed path:

- **0 to 25 %:** a light hold on the loudest hits. The threshold sits just under the peaks, so only the snare and the kick are touched, by a few dB on average. Blended, a little thickness.
- **25 to 50 %:** the hits are clamped and the body starts to come up. At 50 % (the default) PUNCH takes about 4 dB off on average and 15 dB off the loudest hits, and brings the body up 6 dB against them.
- **50 to 75 %:** the hi-hats, the room and the ghost notes stand up next to the snare. This is where most of the factory presets live.
- **75 to 100 %:** almost everything is over the threshold: the squashed drums turn into one dense, even wall, the room as loud as the hits. Blended low, it adds size; heard alone, it's an effect.

Measured on a rock groove with MIX 100 %, the average and the most reduction were:

SQUASH	PUNCH	SMASH	PUMP
25 %	1.1 dB avg, 7.7 dB most	1.6 dB avg, 12.8 dB most	3.2 dB avg, 9.9 dB most
50 %	3.9 dB, 15.1 dB	5.7 dB, 22.2 dB	8.3 dB, 18.1 dB
100 %	14.5 dB, 30.5 dB	20.7 dB, 41.3 dB	22.4 dB, 34.9 dB

It glides. SQUASH follows the knob smoothly over about 60 ms, so you can turn it, or automate it, while the drums play. The squashed path fades in over the first 3 % of the knob: at exactly 0 % it is gone and the output is the input, bit for bit, delayed by the latency.

> **Tip:** Set SQUASH with MIX at 100 %, so you hear only the squashed drums: turn it up until the room, the ghost notes and the decays stand up as loud as you want them in the blend. Then bring MIX down until the kit sounds bigger, not smaller.

The makeup

There is no makeup knob: VEIRA Squasher turns the squashed drums back up by itself. It measures the loudness of the dry drums and of the squashed drums, both the same way (K-weighted, the way loudness meters hear, over about a second and a half), and turns the squashed drums up until the two match. What the clip then takes off (see below) is measured too and given back, up to 6 dB.

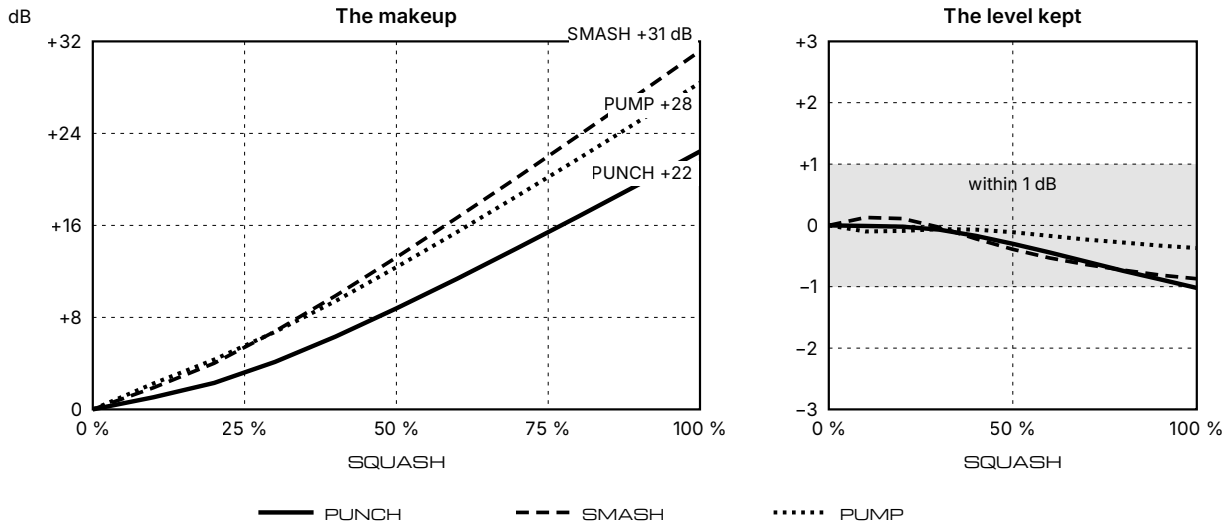


FIGURE 14 Measured on a rock groove, MIX 100 %: the makeup the plug-in applies along SQUASH (left), and how far the output's loudness is from the input's (right). The squashed drums stay within 1 dB of the dry drums at every setting.

The makeup grows with SQUASH: about +9 dB at the defaults, up to +22 dB on PUNCH and +31 dB on SMASH at 100 %. The MAKEUP read-out under the display shows it live.

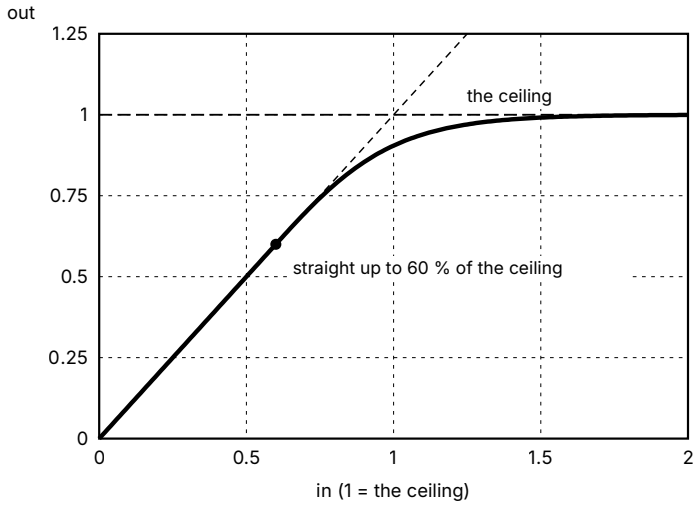
This is what makes the plug-in easy to use. SQUASH **changes the density, not the level**: the squashed drums sound denser, flatter and more roomy as you turn it up, but no louder, so you never mistake "louder" for "better". And MIX **blends two signals of the same loudness**, so moving it changes the balance between punch and body, not the level of your drum bus: every factory preset sits within 1 dB of the input's loudness.

The makeup only listens while the drums play: through a break it holds, so the drums come back in at the same level. It starts once the plug-in has learnt the drums' level, and settles within a second or two.

> **Tip:** Because the makeup can reach +30 dB, anything quiet between the hits comes up a long way in the squashed path: the room, the spill, and also noise or a hum on the drum mics. If MIX 100 % reveals a buzz you didn't know was there, gate or clean the source track, or keep MIX lower.

The clip

The compressor's attack lets a little of each hit through before it clamps down; on PUNCH that's deliberate. The makeup then turns that up by 10 or 20 dB, so the squashed path's peaks could end up far above the dry drums' peaks. The clip prevents that: it rounds off whatever rises over a **ceiling** set against the dry drums' own peak level.



The ceiling, by STYLE
against the dry drums' own peak,
held and falling 3 dB a second

PUNCH	at the dry's peak
SMASH	3 dB under it
PUMP	1 dB under it

Only what the curve changes is computed at four times the sample rate; the rest of the squashed path passes straight.

FIGURE 15 The clip's curve: straight up to 60 % of the ceiling, then a smooth bend that never quite reaches it. The ceiling follows the dry drums' peak, by [STYLE].

- **It acts on 1 to 3 % of the time**: the fronts of the hits, nothing else. The body and the room never reach the ceiling.
- **It is clean.** The bend is computed at four times the sample rate (twice at 88.2 and 96 kHz), and only what the curve changes is computed that way and added back, so the drums themselves never pass through the extra filtering unless they are being clipped. Nothing folds back as aliasing.
- **It keeps the output's peaks in check.** The squashed path's peaks stay within about 1 dB of the dry drums', so blending it in doesn't push your drum bus into your limiter.
- **On** [SMASH] the ceiling is 3 dB under the dry drums' peak, so the clip becomes part of the sound: the flat, crunchy top of "all buttons in".

The [CLIP] lamp under the display lights whenever the clip takes more than 1 dB off a peak. It is normal for it to flicker on every hit, and on [SMASH] to be lit most of the time.

MIX and OUTPUT

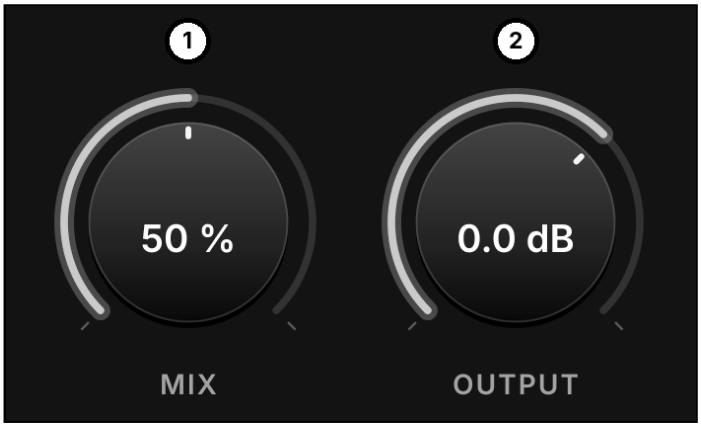


FIGURE 16 1 [MIX] and 2 [OUTPUT].

Control	Range	Default	What it does
MIX	0 to 100 %, in 1 % steps	50 %	The squashed drums against the dry ones. 0 % is the dry drums only, 100 % the squashed drums only.
OUTPUT	−24 to +12 dB, in 0.1 dB steps	0.0 dB	The level going out, after the blend.

MIX

MIX is where parallel compression happens. It is a straight blend, sample for sample: at 50 % you hear exactly half of each. Because the two paths are as loud as each other and lined up to the sample, moving MIX changes the *balance* between the dry drums' punch and the squashed drums' body, without changing the level and without any phasing.

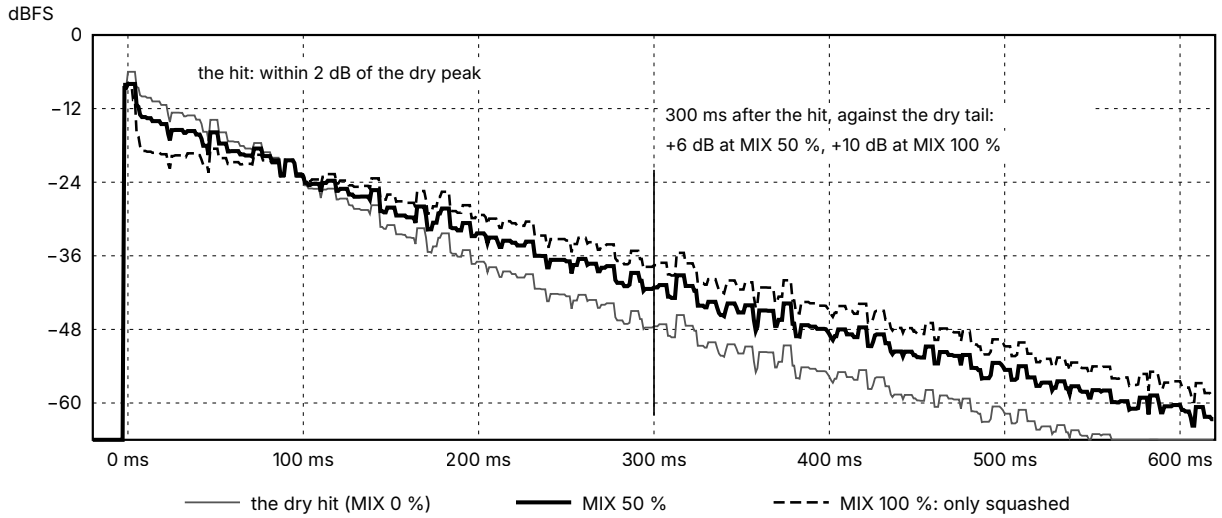


FIGURE 17 One snare hit at the defaults (PUNCH, SQUASH 50 %), measured at MIX 0, 50 and 100 %. The peak of the hit drops by 2 dB; the tail comes up as MIX rises.

Where to set it:

- **15 to 30 %:** thicker drums that still sound natural. The everyday setting for pop, rock and anything where the drums shouldn't sound processed (*Subtle Parallel*, *Indie Glue*, *Tight Pocket*).
- **30 to 50 %:** bigger, heavier drums; the room and the ghost notes are clearly part of the sound (*Rock Parallel*, *Arena Drums*, *Room Mics Up*).
- **50 to 100 %:** the squashed drums take over. Use it for effect, or on an aux where the fader does the blend.

MIX glides over 20 ms, so it can be automated: more for the chorus, less for the verse, 100 % for a breakdown. At exactly 0 % the output is the input, bit for bit, delayed by the latency.

OUTPUT

OUTPUT sets the level after everything else, from −24 to +12 dB. Because the makeup keeps the squashed drums at the dry drums' loudness, you rarely need it: most factory presets leave it at 0.0 dB, and a few raise it by 0.3 to 0.5 dB to make up for what a heavy SMASH blend loses. Use it to match bypass exactly, or to trim the drum bus into the rest of your mix.

Displays

The SQUASH display

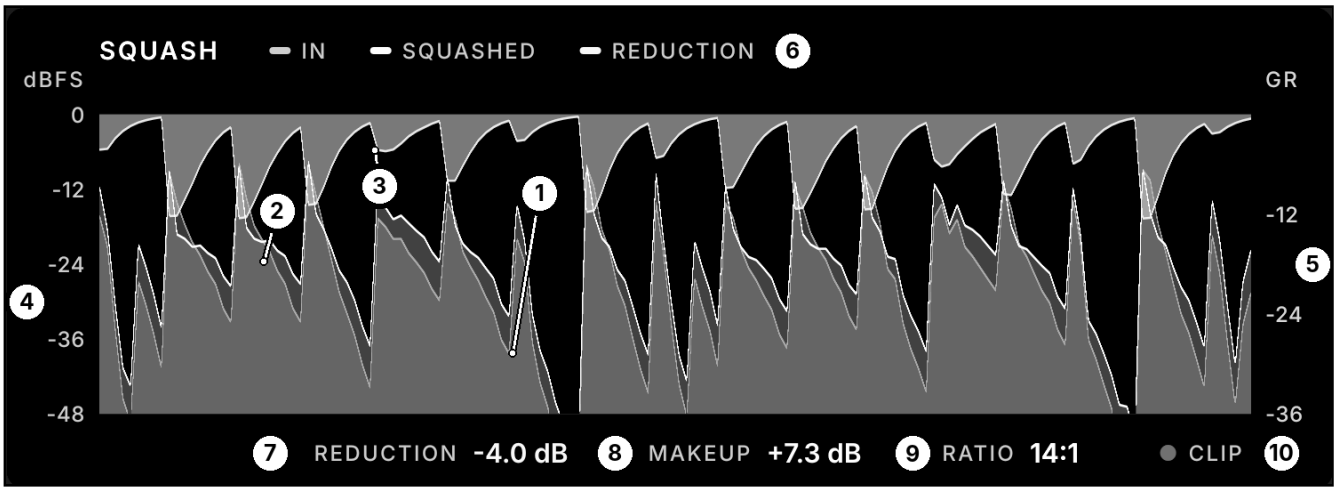


FIGURE 18 The SQUASH display with the *Init* preset: 1 the input (grey on screen, the fainter filled shape behind), 2 the squashed drums (blue, the brighter filled shape with the bright outline), 3 the gain reduction (orange, hanging from the top), 4 the level scale in dBFS, 5 the reduction scale in dB, 6 the legend, the 7 REDUCTION, 8 MAKEUP and 9 RATIO read-outs, and 10 the CLIP lamp.

The SQUASH display scrolls the **last five seconds**, the newest at the right edge. It draws three traces, named in the legend 6 :

- IN 1 is the drums coming into the plug-in, drawn in grey as a faint filled shape with a thin outline, against the level scale on the left 4 (0 to −48 dBFS).
- SQUASHED 2 is the squashed path after the makeup and the clip, drawn in blue as the brighter filled shape with a bright outline, on the same scale. Without colour: it's the shape with the strong edge. Where it sits above the grey input (between the hits), the squashed drums are louder than the dry ones: that is the body and the room being brought up. Where it sits under it (on the hits), the hits are being held down. With MIX or SQUASH at 0 % this trace is not drawn, because none of it is heard.
- REDUCTION 3 is how far the compressor is turning the drums down, drawn in orange **hanging from the top** of the display, against the scale on the right 5 (GR, marked −12, −24 and −36 dB). Without colour: it's the only shape that grows downward from the top edge. Each hit pulls it down; the release brings it back up.

Under the plot, from the left:

- REDUCTION 7 is the gain reduction now, in dB. It jumps with each hit and falls back over about 300 ms, so you can read it.
- MAKEUP 8 is the automatic makeup, in dB.
- RATIO 9 is the ratio SQUASH has set for this STYLE, from 10:1 to 100:1. It reads - at SQUASH 0 %.
- CLIP 10 lights (red on screen) whenever the clip is rounding off peaks.

Hover over the display for a short explanation of the traces.

What to look for:

- **The gap between the grey and the blue.** Between the hits the blue should sit above the grey: that is what you're adding. The further above, the more body and room the blend will bring up.
- **The shape of the reduction.** On PUNCH it's a series of sharp dips that recover before the next hit. On PUMP the dips are deep and slow and barely recover between hits: that's the pumping. On SMASH the reduction barely leaves the bottom of its range.
- **A reduction that never recovers** (it stays low across the whole display) means the drums never fall under the threshold: everything is squashed equally, and the squashed path loses its movement. That's the sound of SMASH at 100 %; if you didn't want it, lower SQUASH.

Here are the other two styles, with the factory presets *Creative FX* ▸ *All Buttons In* (SMASH, SQUASH 100 %, MIX 100 %) and *Electronic* ▸ *Pump It* (PUMP, SQUASH 75 %, MIX 50 %), on the same drums:



FIGURE 19 *All Buttons In*: 1 the reduction (from the top) hardly ever recovers, 20 to 40 dB most of the time (RATIO 100:1, MAKEUP +27.8 dB), and 2 the squashed drums are a flat, dense band: the hits barely stand out from the room.

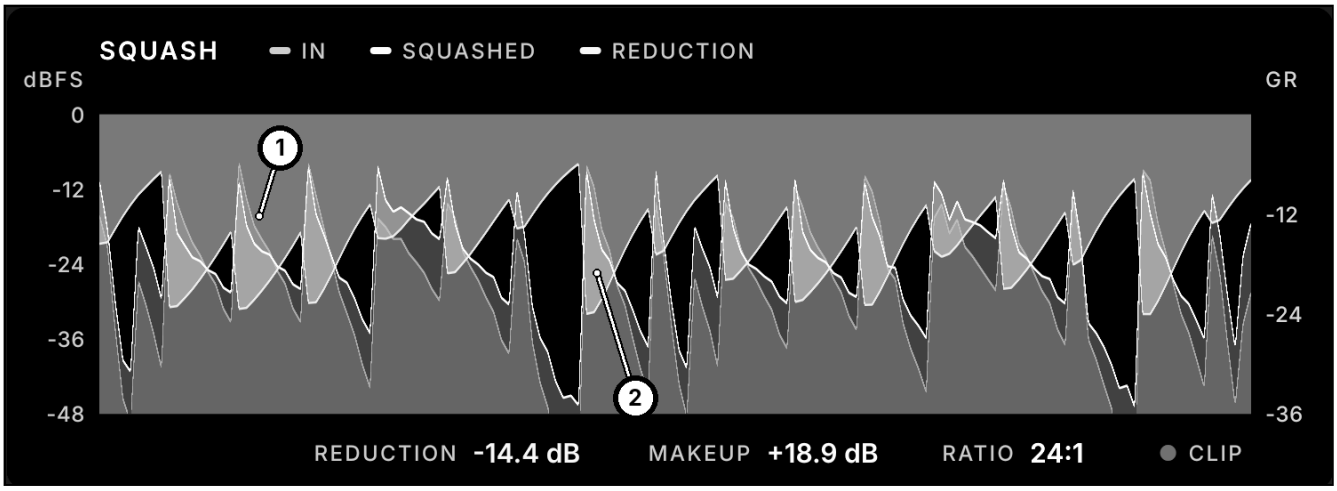


FIGURE 20 *Pump It*: 1 each hit pulls the reduction down and it swells back in a slow curve, and 2 the squashed drums duck under each hit and climb back before the next.

Meter bridge (IN | OUT)

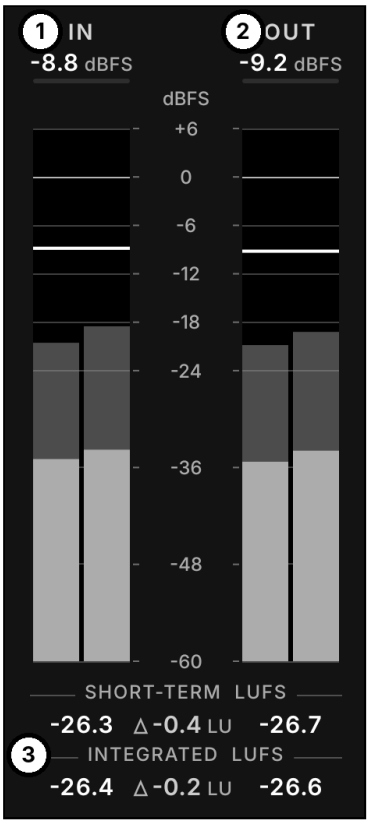


FIGURE 21 The meter bridge: 1 input and 2 output level, 3 short-term and integrated loudness with the OUT − IN difference.

VEIRA Squasher's meter bridge is the standard one, measured on the plug-in's input and output. Because the makeup keeps the squashed drums at the dry drums' loudness, the Δ readings should sit close to 0 LU at any setting (−0.4 and −0.2 LU in the picture); a larger difference usually means OUTPUT has been moved. The peak readings tell you the other half of the story: the output's peaks stay close to the input's, because the clip keeps the squashed path's peaks at the dry drums' level. On a mono track, both bars of each meter show the same mono signal.

Reading the IN and OUT meters

The meter bridge measures what goes into VEIRA Squasher and what comes out, in level and in loudness. The drawing shows the input and output columns; any extra column on your plugin's bridge is described above.

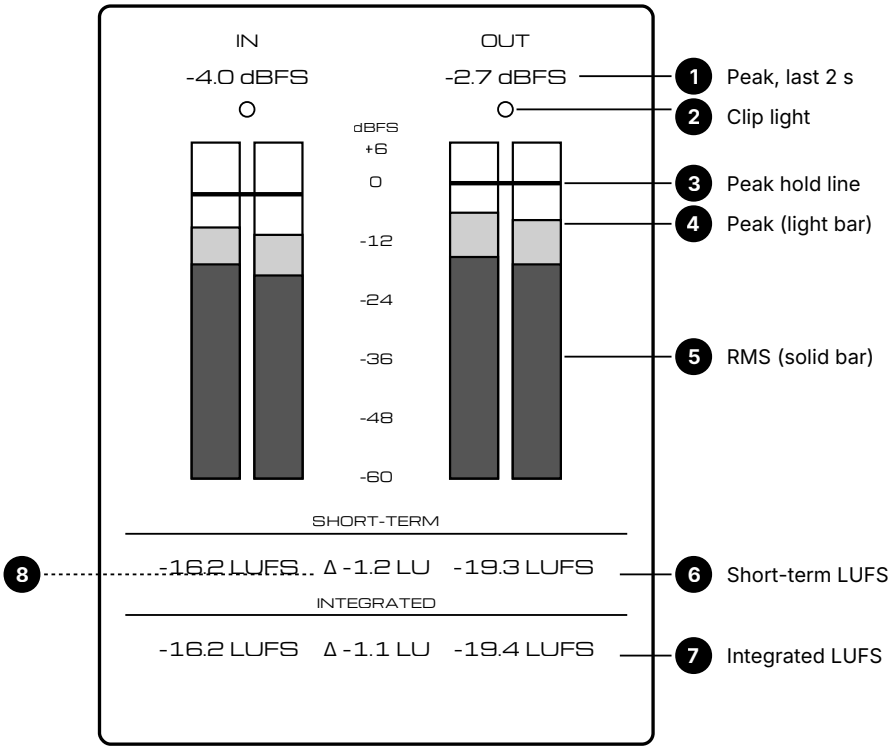


FIGURE 22 The meter bridge, left and right channel bars for input and output, with loudness below.

- 1 **Peak readout:** the highest sample peak of the last two seconds, in dBFS. It turns to a warning above 0 dBFS.
- 2 **Clip light:** lights on any sample at or over full scale. It stays lit until you click the meter.
- 3 **Hold line:** marks the recent peak on the bar.
- 4 **Peak bar** (the lighter part): the instantaneous sample peak of each channel.
- 5 **RMS bar** (the solid part): the average level over 300 ms, closer to how loud it sounds.
- 6 **SHORT-TERM:** loudness over the last 3 seconds, in LUFS, for the input (left) and the output (right).
- 7 **INTEGRATED:** loudness of everything since the measurement started, gated as the ITU-R BS.1770-4 and EBU R 128 standards require.
- 8 **Δ (delta):** OUT minus IN, in LU. It tells you how much louder (+) or quieter (−) VEIRA Squasher made the signal, so you can match levels fairly when you compare with bypass. It reads [--] while either side is too quiet to measure (below −70 LUFS).

The scale: on screen the bars are coloured like a studio console: green below −12 dBFS, yellow from −12 to −3, orange from −3 to 0 and red above 0 dBFS.

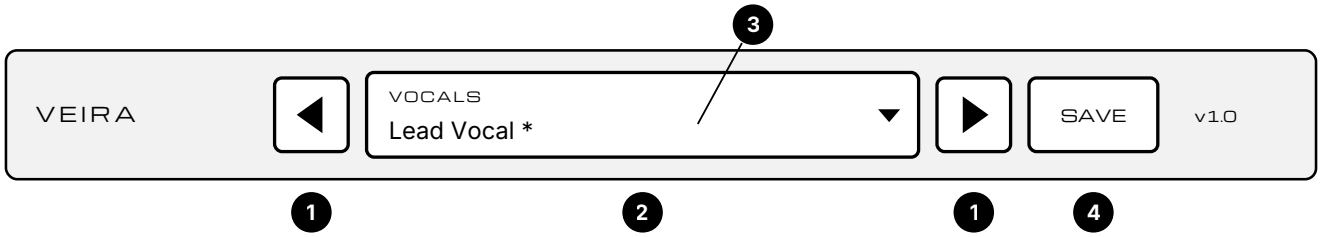
Clicks: click a level meter to reset its hold and clip light. Click the loudness readouts to restart the integrated measurement, for example at the start of a song.

Presets

VEIRA Squasher comes with **39 factory presets** in 10 folders. Each one is a starting point made for a real job. Load one close to what you need, then adjust the first control its note mentions.

The preset browser

The preset browser sits in the header, at the top of the window.



The header: logo and plugin name, then the preset browser, then the version.

FIGURE 23 The preset browser.

- 1 ◀ ▶ step to the previous or next preset, through every folder in order.
- 2 **The display** shows the folder (small, above) and the preset's name. Click it to open the preset menu. Hover over it to read the preset's note: what it's for and what to adjust first.
- 3 **An asterisk (*)** after the name means you've changed something since the preset loaded.
- 4 SAVE stores your current settings as a user preset.

The preset menu

Clicking the display opens a menu with:

- one submenu per **factory folder**, in the order shown below;
- **User Presets**, with your own presets in their folders;
- **Save...**, **Delete** (only for user presets: factory presets can't be deleted), **Rescan** (re-reads the user folder, if you copied presets in by hand) and **Show User Preset Folder** (opens it in Finder or Explorer).

Saving your own presets

1. Set VEIRA Squasher the way you like it.
2. Press SAVE. A dialog opens inside the plugin window.
3. Type a name, choose a folder or type a new folder name, and confirm.

Each user preset is one small .veirapreset file:

	Folder
macOS	~/Library/Audio/Presets/VEIRA/VEIRA Squasher/<Folder>/
Windows	%APPDATA%\VEIRA\VEIRA Squasher\Presets\<Folder>\

Copy these files to move your presets to another computer, or to back them up. Presets keep loading in future versions: any control added later simply starts at its default.

Presets in your DAW

The factory presets also appear in your DAW's own preset or program menu, named *Folder: Name* (for example *Vocals: Lead Vocal*). Whatever preset is selected is saved with your session and comes back when you reopen it, including the asterisk if you'd changed it.

The **Default ▸ Init** preset equals a fresh instance of the plugin: every control at its default.

The factory folders

Folder	Presets
Default	Init
Rock	Rock Parallel, Arena Drums, Garage Smash, Room Breather, Indie Glue
Pop	Pop Punch, Pop Dense, Ballad Weight, Radio Bus
Hip-Hop & R&B	Boom Bap Smash, Trap Knock, R&B Smooth Glue, Lo-Fi Crush
Funk & Soul	Funk Ghost Notes, Soul Room, Tight Pocket, Vintage Squash
Metal	Metal Density, Blast Control, Doom Weight, Modern Metal Bus
Electronic	Pump It, Breakbeat Smash, House Groove, Loop Glue
Room & Ambience	Room Mics Up, Big Room Pump, Overhead Squash, Ambient Wash
Mix Fix	Thin Drums Fix, Uneven Drummer, Quiet Details Up, Subtle Parallel, Glue The Kit
Creative FX	All Buttons In, Full Pump, Destroyed, Punch Only

> **Levels.** The presets were measured on a stereo drum kit peaking at −6 dBFS, in rock, half-time and funk grooves. Every preset kept the input's loudness within 1 dB (the *Creative FX* presets within 0.3 dB), and the output's peaks within about 1.5 dB of the input's. Because the threshold follows the drums' own level, the presets do the same on your drum bus whatever level it runs at; what differs from kit to kit is how much room and spill there is for the squashed path to bring up.

Each preset is a [STYLE], a [SQUASH] and a [MIX] (and in a few, a small [OUTPUT] trim), and its note in the preset menu says what it's for and what to turn first. The folders:

- **Rock** to **Electronic** are sorted by style of music: mostly [PUNCH] at 40 to 70 % for weight that still hits, [SMASH] for the gritty ones, [PUMP] for the breathing ones, with [MIX] at 25 to 50 %.
- **Room & Ambience** treats the squashed path like a room mic, steady (*Room Mics Up*, *Overhead Squash*) or ducking under the hits (*Big Room Pump*, *Ambient Wash*).
- **Mix Fix** solves common problems: thin drums, an uneven drummer, buried ghost notes, a kit that doesn't hang together, or just the lightest touch.

- **Creative FX** is the squashed path on its own, or nearly: *All Buttons In* (SMASH 100 %), *Full Pump* (PUMP 100 %) and *Punch Only* (PUNCH 90 %) at MIX 100 %, ready for an aux, and *Destroyed* (SMASH 100 %, MIX 60 %) for breakdowns and intros.

Recipes

Step-by-step starting points. In each, let the drums play for a couple of seconds before you judge (the plug-in learns their level), and compare with bypass now and then: the makeup keeps the level the same, so bypass is a fair comparison.

Classic parallel drums on a rock mix

1. Insert VEIRA Squasher on the drum bus and load **Rock ▸ Rock Parallel** (PUNCH, SQUASH 55 %, MIX 35 %).
2. Play the chorus. Set MIX to 100 % for a moment and listen to the squashed path alone: the snare's body and the room should be as loud as the hits. Raise SQUASH if they aren't.
3. Bring MIX back to 25 to 40 %. Switch bypass on and off: with the plug-in in, the kit should sound bigger and closer, with the same punch.
4. If the cymbals get too loud in the blend, lower SQUASH a little, or use an aux (see *Insert or send*) and high-pass or low-pass the squashed path there.

The "all buttons in" sound on an aux

1. Create an aux and send the drum bus to it. Insert VEIRA Squasher on the aux and load **Creative FX ▸ All Buttons In** (SMASH, SQUASH 100 %, MIX 100 %).
2. Pull the aux fader all the way down, play the song, and bring it up until the drums get exciting, then a little further down.
3. Try an EQ after the plug-in on the aux: a high-pass at 80 to 100 Hz keeps the squashed kick out of the bass's way; a gentle cut around 3 to 5 kHz tames hi-hats that the squashing brought up.
4. Automate the aux fader: up for the chorus, down for the verse.

Ghost notes and hi-hat detail on funk drums

1. Load **Funk & Soul ▸ Funk Ghost Notes** (PUNCH, SQUASH 65 %, MIX 35 %).
2. Watch the display: between the backbeats, the blue squashed trace should sit well above the grey input. That's the ghost notes coming up.
3. If the groove starts to feel busy, go to **Tight Pocket** (45 %, MIX 25 %): the quiet notes come up less and the hits stay untouched.

A pumping electronic loop

1. Load **Electronic ▸ Pump It** (PUMP, SQUASH 75 %, MIX 50 %) on the drum loop or the drum bus.
2. Every kick should push the hats and the room down, and they should swell back before the next. Raise MIX for more pump, lower it for a gentle **House Groove** (55 %, MIX 35 %).
3. The faster the tempo, the less time the 280 ms release has to recover, and the more it pumps. At slow tempos, raise SQUASH for the same effect.

Bigger room from the overheads and room mics

1. Insert VEIRA Squasher on the room-mic or overhead bus (or on the drum bus) and load **Room & Ambience ▸ Room Mics Up** (PUNCH, SQUASH 70 %, MIX 50 %).
2. The decays and the room come right up between the hits. For cymbals that shimmer and sustain, try **Overhead Squash** (SMASH 60 %, MIX 30 %).
3. For a room that ducks under the hits and blooms in the gaps, **Big Room Pump** (PUMP 80 %, MIX 45 %).

Thin or lifeless drums

1. Load **Mix Fix ▸ Thin Drums Fix** (PUNCH, SQUASH 60 %, MIX 40 %).
2. The body and the sustain come up without touching the hits. If the snare still sounds small, raise SQUASH before MIX: more squash brings up more body; more MIX brings up everything.
3. For a drummer whose hits jump in level, **Uneven Drummer** (SMASH 73 %, MIX 35 %) evens them out while the dry drums keep the feel.

Specifications

Type	Drum bus squasher for parallel compression: a compressor at 10:1 to 100:1 with automatic makeup and a soft clip, blended with the dry drums
Channels	Mono and stereo. Stereo is compressed linked (the same gain on both sides, from the louder of the two)
Latency	64 samples at 44.1 to 96 kHz (1.3 ms at 48 kHz); none at 176.4 and 192 kHz. Constant, reported to the host for delay compensation
Transparency	SQUASH 0 %, MIX 0 %, and bypass: the output is the input delayed by the latency, bit for bit
SQUASH	0 to 100 % in 1 % steps (default 50 %). The threshold from 4 dB over the drums' own peak level to −28 / −34 / −30 dB under it (PUNCH / SMASH / PUMP); the ratio 10:1 → 20:1, 20:1 → 100:1, 12:1 → 30:1. Glides over about 60 ms
STYLE	PUNCH (1 ms attack, 90 ms release, 6 dB knee, sidechain high-pass 40 Hz), SMASH (0.05 ms, 50 ms, 3 dB, 30 Hz), PUMP (0.3 ms, 280 ms, 4 dB, 20 Hz); default PUNCH. Changes crossfade over 40 ms
Reference	The drums' peak level: a peak follower (300 ms fall) averaged over about 2.5 s while they play; learnt in the first 60 ms, settled within about 1.5 s; held through pauses
Makeup	Automatic: the squashed path to the dry path's K-weighted loudness (about 1.5 s), 0 to +40 dB, plus up to 6 dB for what the clip takes off. Within 1 dB of the dry drums at every setting
Clip	Soft (linear to 60 % of the ceiling, then a tanh); ceiling at the dry drums' held peak (falling 3 dB/s): 0, −3, −1 dB by STYLE. Computed at 4x (2x at 88.2 and 96 kHz)
MIX	0 to 100 % in 1 % steps (default 50 %): a linear blend with the dry drums, sample-aligned. Glides over 20 ms
OUTPUT	−24 to +12 dB in 0.1 dB steps (default 0.0 dB). Glides over 20 ms
SQUASH display	The last 5 s: input and squashed path (0 to −48 dBFS), gain reduction from the top (0 to 36 dB); REDUCTION (dB), MAKEUP (dB) and RATIO read-outs; CLIP lamp
Metering	IN and OUT meters (sample peak, RMS); short-term and integrated loudness per ITU-R BS.1770-4 / EBU R 128
Presets	39 factory presets in 10 folders, plus your own
Window	1040 × 640 points; resizable from 75 % to 200 %, saved with the session
Formats	VST3, Audio Units, standalone; AAX once signed
Plugin ID	Manufacturer Veir, plugin Vsqs

Troubleshooting and questions

The sound drops out for a moment every 30 seconds. The plugin isn't activated on this computer. Open VEIRA Manager and sign in; the strip at the bottom of the plugin's window says exactly what's wrong. See *Getting started ▸ Activation and the licence*.

I don't see VEIRA Squasher in my DAW. Make sure VEIRA Manager shows SHOW (installed) for it, then rescan plugins in your DAW. In Logic Pro, open the Plug-in Manager and choose *Reset & Rescan Selection* if needed. Look under the manufacturer **VEIRA**.

The drums sound smaller, not bigger. MIX is too high for this SQUASH: the squashed drums are replacing the dry ones instead of filling in under them, and the hits lose their front. Bring MIX down to 20 to 40 %. If you want more body at that MIX, raise SQUASH instead.

The cymbals and hi-hats get too loud. Squashing brings up everything quiet, and on most kits the cymbals are the loudest of the quiet things. Lower SQUASH a little, try PUNCH instead of SMASH, or put VEIRA Squasher on an aux (see *Insert or send*) and tame the top of the squashed path with an EQ after it.

The kick swamps the low end. The makeup brings the kick's tail up with everything else. On an aux, high-pass the squashed path at 80 to 100 Hz; on the bus, lower MIX, or switch from PUMP (whose sidechain hears the kick fully) to PUNCH.

The first hit isn't squashed. The plug-in learns the drums' level from the first 60 ms after they start, and lets those through untouched. Start playback or the bounce a bar earlier.

My drum bus got louder or quieter. The makeup keeps the squashed drums at the dry drums' loudness, so at any SQUASH and MIX the level should stay within about 1 dB. Check OUTPUT (some presets trim it by up to +0.5 dB) and the Δ readings on the meter bridge. Right after the drums start, the makeup needs a second or two to settle.

The CLIP lamp is always on. That's normal on SMASH and at high SQUASH: the clip rounds off the fronts of the hits on every hit. It never clips your drum bus as a whole: it works only on the squashed path, at the dry drums' own peak level.

Noise, hum or spill comes up. At high SQUASH the makeup can reach +20 to +30 dB, and everything quiet between the hits comes up with it. Lower SQUASH or MIX, or clean the source tracks (VEIRA Gate on a noisy tom mic, VEIRA Clean Up on a hum).

Can I use it on something other than drums? Yes: anything that hits and decays (percussion, a piano, a plucked bass, a whole mix for an effect). The threshold follows the material's own peak level, so it adapts. On sustained sounds (a pad, a vocal) the squashed path has no gaps to fill, and parallel compression adds little.

Can I resize the window, or type an exact value? Yes: drag the window's bottom-right corner (75 % to 200 %), and right-click a knob (Control-click on a Mac) to type a value.

Do my sessions keep my settings? Yes. SQUASH, STYLE, MIX, OUTPUT, the selected preset and the window size are saved with your session, and every one of them can be automated.

Contact: support@veiraaudio.com. Mention your computer (Mac or Windows and its version), your DAW and version, and what you see.



VEIRA Squasher · User Manual · Version 0.2.0

Support: **support@veiraaudio.com** · Web: **veiraaudio.com**

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