VEIRA

ANALOG DELAY

VEIRA Delay Red

User Manual

The analog one of the four VEIRA colour delays: a bold, gritty bucket-brigade delay in the tradition of the classic analog pedals and rack delays. Longer echoes are darker, turning TIME bends them in pitch, and the feedback runs away and sings.



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Welcome

Thank you for choosing **VEIRA Delay Red**. It is an analog delay of the bucket-brigade kind, in the tradition of the classic analog pedals and rack delays: the echoes are clocked through a chain of 4,096 tiny storage cells, so they come back warm, soft and a little grainy, darker the longer the time, and they bend in pitch when you turn TIME. A compander breathes around the chips, the clock whines and the chips hiss as much as you let them, AGE adds warmth and grit, MOD gives the classic chorused repeats, and FEEDBACK runs away into saturation and sings. It is the analog one of the four VEIRA colour delays (White, Red, Gold and Blue), painted like VEIRA Reverb Red, Comp Red, Limiter Red and EQ Red.

What makes it different

- **TIME is the clock.** TIME (20 ms to 1 s) sets the speed of the chips' clock: from 214 kHz at 20 ms to 4.1 kHz at 1 s. The filters around the chips follow it, so a long echo is darker and grainier than a short one, exactly as on the real circuits, and the display shows the clock and the echoes' bandwidth as you turn it.
- **The pitch bends.** Turn TIME while the echoes play and everything in the chips bends in pitch on the way, smoothly, with no click.
- **A loop that sings.** FEEDBACK goes to 120 %: past about 102 % the loop runs away into the input stage's saturation, darker on every pass, and stays under 0 dBFS.
- **The whole circuit, to taste.** AGE (bandwidth, headroom, harmonics, hiss), COMPANDER (none to the full vintage 2:1 / 1:2 action) and NOISE (the hiss and the clock's whine, 0 % for none) let you choose between a clean, warm echo and a worn-out chip.
- **Two chips, one per side.** MOD wobbles the clock for the classic chorused repeats, and SPREAD moves the right chip's wobble away from the left's for a wide stereo chorus.
- **Clean at the edges.** No latency, and TIME stays exact. At MIX 0 % the output is the input, bit for bit; the hiss fades with the echoes, and the tail ends in true digital silence.

How this manual is organised. *Getting started* covers installing and activating. *The panel at a glance* names every part of the window. *How an analog delay works* is a short primer. *Controls* and *Displays* explain every knob, button and graph with drawings. *Inserts and aux sends* covers routing, *Which colour delay to choose* compares the four, and *Presets*, *Recipes*, *Specifications* and *Troubleshooting* close the manual.

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:

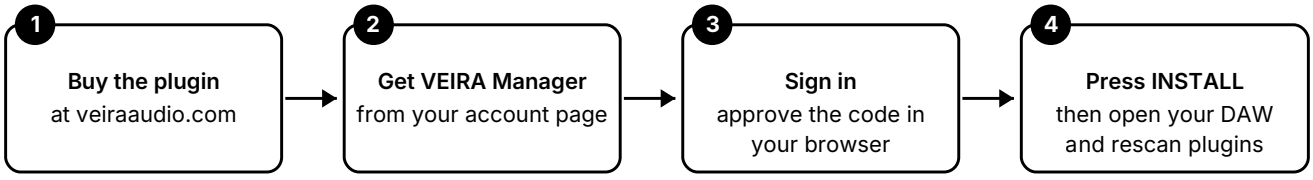


FIGURE 1 From purchase to first sound in four steps.

1. **Buy** VEIRA Delay Red 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 Delay Red 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 Delay Red appears in your DAW under the manufacturer **VEIRA** (in Logic Pro: Audio Units ▸ VEIRA ▸ VEIRA Delay Red).

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 Delay Red 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.

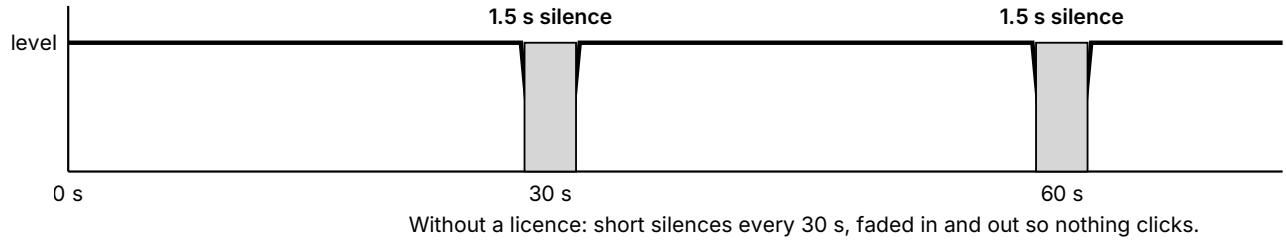


FIGURE 2 What an unlicensed copy does. With a valid licence the audio is never touched.

- **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 Delay Red. 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 Delay Red 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

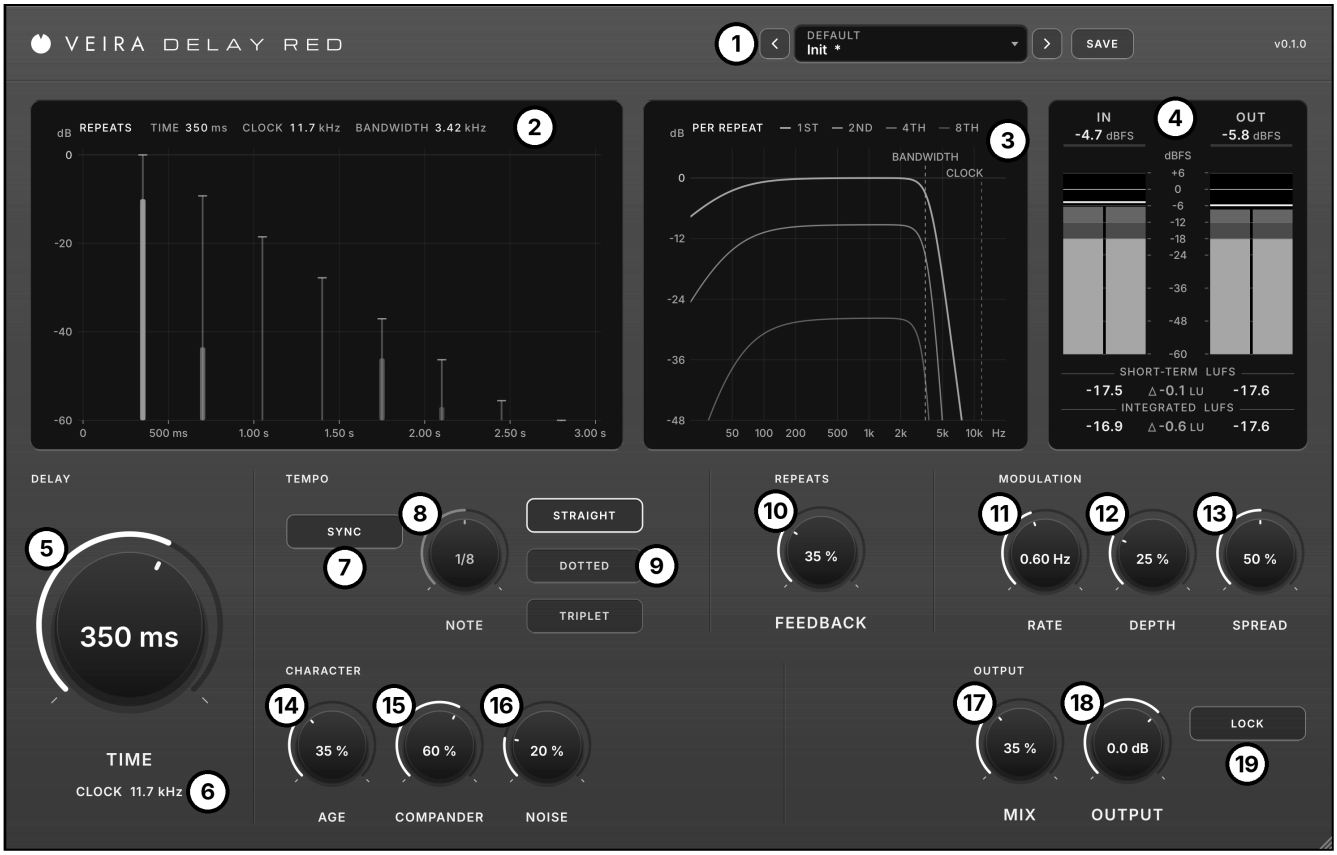


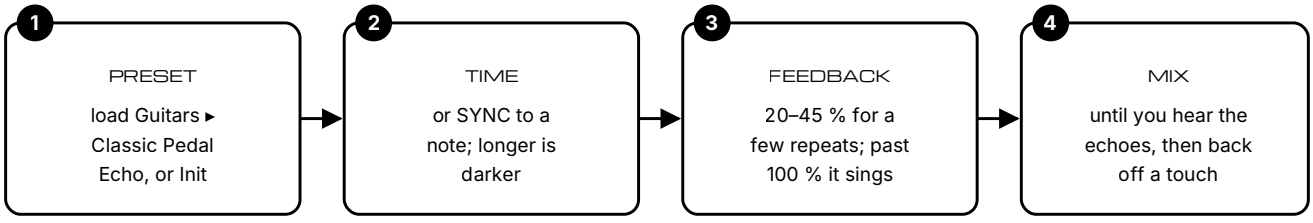
FIGURE 3 VEIRA Delay Red, the red unit, at its default 350 ms echo (MIX at 35 %) on a sung phrase and a plucked line: the clock runs at 11.7 kHz, and the echoes reach up to 3.42 kHz.

	Part	What it does
1	Preset browser	Steps through and saves presets. See *Presets*.
2	REPEATS	Every echo at its time and level, with the clock and the bandwidth.
3	PER REPEAT	The 1st, 2nd, 4th and 8th echo across frequency.
4	Meter bridge	IN and OUT meters with short-term and integrated loudness.
5	TIME	The delay, and the chips' clock.
6	CLOCK	The clock's rate for this time.
7	SYNC	The time follows the song's tempo, as a note value.
8	NOTE	The note value (with SYNC on).
9	Rhythm	STRAIGHT, DOTTED or TRIPLET note values.
10	FEEDBACK	How much of each echo goes round again.

	Part	What it does
11	RATE	The speed of the clock's wobble.
12	DEPTH	How far the echoes' pitch swings.
13	SPREAD	The right chip's wobble against the left's.
14	AGE	Warmth and grit: a worn chip.
15	COMPANDER	The chips' compressor and expander.
16	NOISE	The chips' hiss and the clock's whine.
17	MIX	The dry sound against the echoes.
18	OUTPUT	The final level.
19	LOCK	Presets leave MIX where it is.

The window has the two displays at the top left and the meter bridge at the right. The big TIME knob stands on its own at the left under DELAY; the other controls sit under the captions TEMPO, REPEATS and MODULATION (top) and CHARACTER and OUTPUT (bottom).

Quick start: a warm echo in four moves



On an aux instead: set MIX to 100 % and switch on LOCK (see Inserts and aux sends).

FIGURE 4 The quickest way to a warm echo. *Default ▸ Init* is a neutral start: 350 ms, FEEDBACK 35 %, a slow MOD (0.60 Hz, 25 %), AGE 35 %, COMPANDER 60 %, NOISE 20 % and MIX 30 %.

Using the controls

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

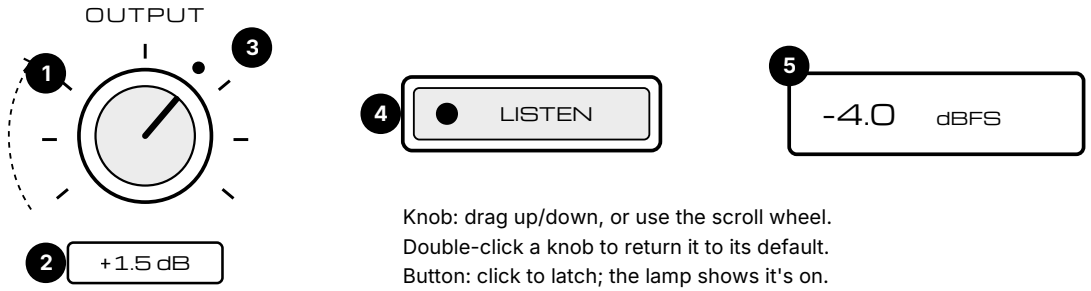


FIGURE 5 The parts you'll find on every VEIRA panel (the labels are examples).

- 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).

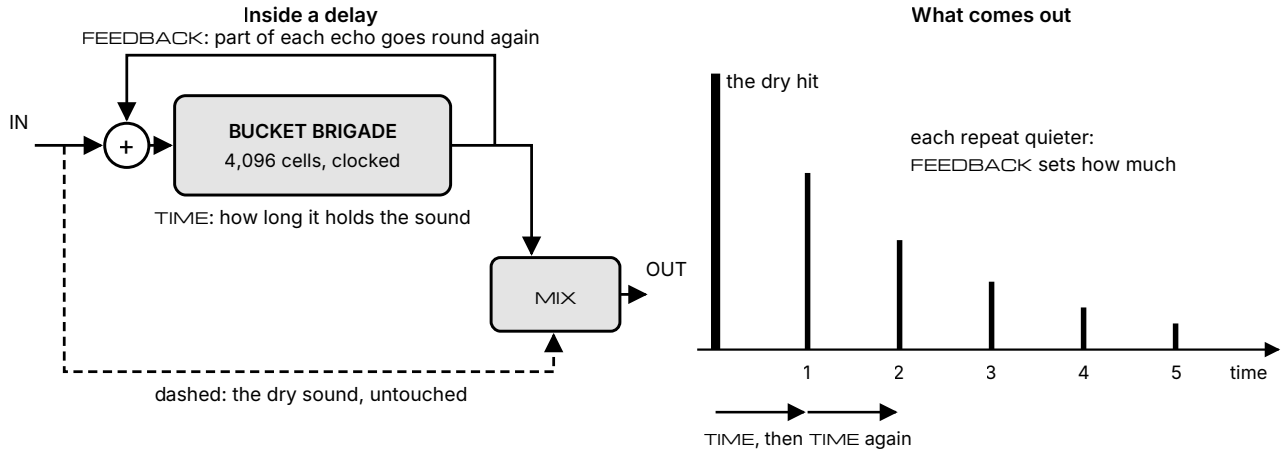
On VEIRA Delay Red's panel the parts look a little different from the drawing above:

- **Knobs show their value in the middle** (350 ms, 35 %, 0.60 Hz, 0.0 dB): the knobs are black on the red lacquer, and a ring printed in cream around each one (in print, the light arc on the dark paint) shows how far it is turned. The control's name is printed under the knob. TIME is the big knob at the left; FEEDBACK, MIX and OUTPUT have the larger labels.
- **Type a value:** right-click a knob (Control-click on a Mac). A field opens over it with the current value; type the new one and press Return: **480** for 480 ms, **0.5 s** for half a second, **0.8** for a 0.80 Hz RATE. Press Escape or click elsewhere to leave it unchanged.
- **Buttons have no lamps:** SYNC and LOCK, when they are on, fill with cream with dark lettering (in print, a light button on the dark paint); off, they are shallow wells in the paint. The selected rhythm keeps a firm cream outline.
- **Dimmed controls** are the ones that have no effect at the moment: NOTE and the rhythm buttons while SYNC is off, TIME while SYNC is on. You can still set them.
- **Resize the window:** drag its bottom-right corner. It scales from 75 % to 200 % of its normal size (1480 × 940 points) and keeps its proportions. Your DAW saves the size with the session.

How an analog delay works

If you already know analog delays, skip to *What happens inside VEIRA Delay Red*. If not, these pages make every control obvious.

A delay is a memory: it records what you play and plays it back a moment later. Feed part of that echo back into the memory and it comes round again, a little quieter each time: one echo becomes a train of repeats.

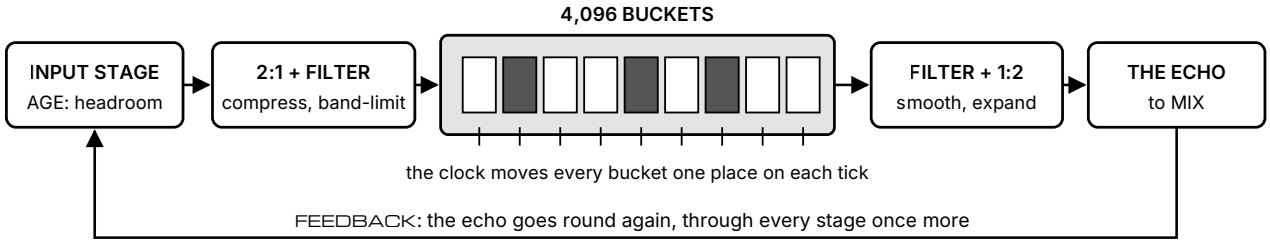


A delay records what you play and plays it back a moment later. Fed back into itself, one echo becomes a train of repeats.

FIGURE 6 A delay in one picture. Left: the delay line with its feedback loop. Right: a hit and its repeats.

The bucket brigade

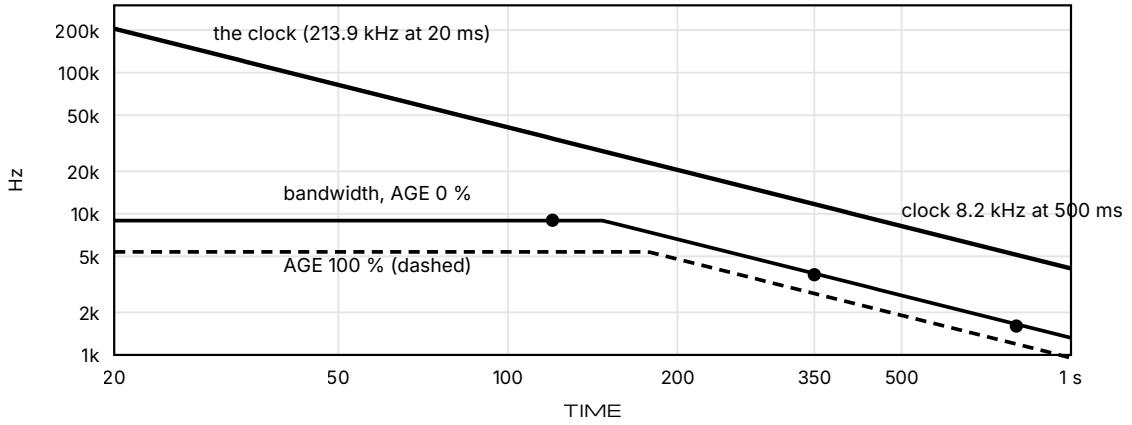
Before digital memory was cheap, an analog delay passed the sound down a chain of tiny capacitors, the “buckets”, like a line of people passing buckets of water. A clock tells every bucket to hand its charge to the next one; the sound comes out at the end. The delay is the number of buckets divided by the clock’s speed, so to get a longer delay you slow the clock down.



The delay is the buckets over the clock: 4,096 buckets at 11.7 kHz is 350 ms. A slower clock means a longer time and, because the filters follow it, a darker echo. The compander (2:1 in, 1:2 out) keeps the chips' hiss down, and its breathing is part of the sound; COMPANDER sets how much of it you hear.

FIGURE 7 One chip of VEIRA Delay Red. The filters before and after the buckets keep the clock out of the sound; the compressor and expander around them keep the chip’s hiss down.

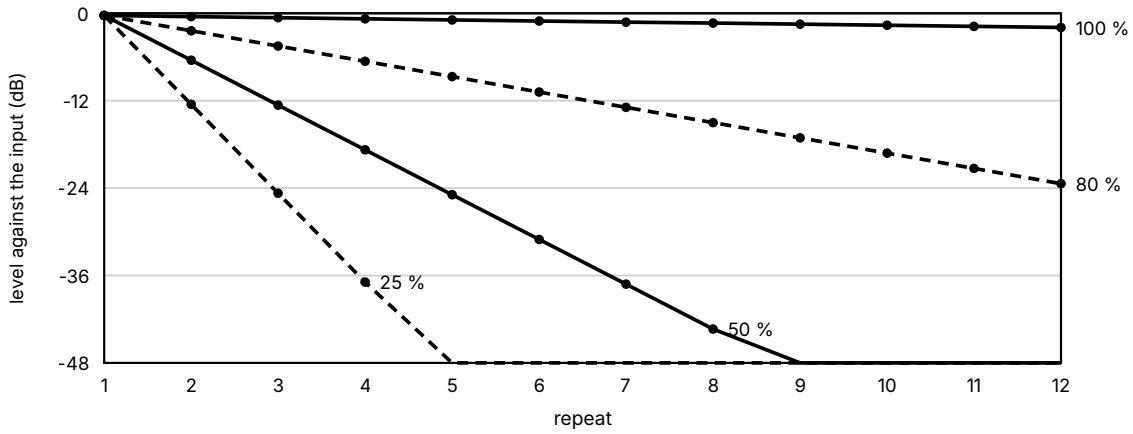
A slow clock has a price: it can only carry lower frequencies. So the filters around the chips are set to a fraction of the clock, and a long echo is darker than a short one. That darkening, the soft grain of the chips, the compander's breathing, and the pitch bend when the clock changes speed are the analog delay's sound.



The longer the time, the slower the clock and the darker the echo. Dots: the first echo's bandwidth measured at 120, 350 and 800 ms (9.0, 3.7 and 1.6 kHz). Under 200 ms or so the chips stop at their own 10 kHz top.

FIGURE 8 The clock and the first echo's bandwidth against [TIME], on log scales. The [REPEATS] display reads both out live.

Feedback: how many repeats



Each repeat at 1 kHz, against the input: at 100 % the echoes fade only 0.15 dB a pass, as on the real circuits.

FIGURE 9 Each repeat's level at 1 kHz for four [FEEDBACK] settings ([AGE], [COMPANDER] and [NOISE] at 0). The highs fall faster than this, because every pass goes through the chips' filters again.

What happens inside VEIRA Delay Red

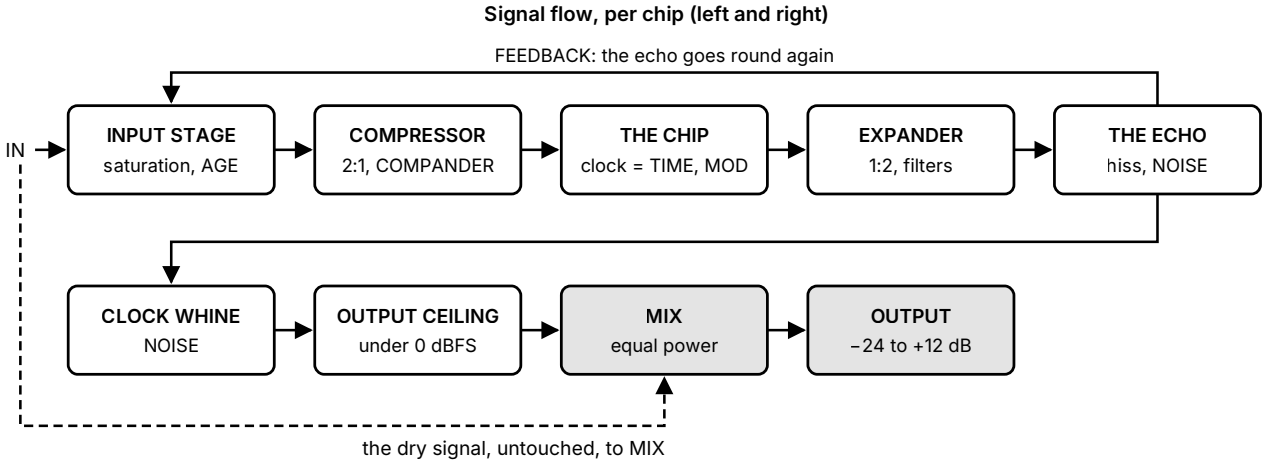


FIGURE 10 Signal flow. Each side has its own chip. The input and the repeats share the input stage, so a high FEEDBACK drives it into saturation.

Step by step:

1. **The input stage** takes the input plus the repeats. It is the only curve in the loop: a soft saturation whose headroom falls from +3 to −9 dBFS as AGE goes up, a little asymmetric for even harmonics, oversampled 4× so its harmonics are filtered off before they can fold back.
2. **The compressor** (2:1) and the anti-alias filter (4th order, at a third of the clock) prepare the sound for the chip.
3. **The chip:** 4,096 buckets moved on at each tick of the clock that TIME sets; MOD wobbles the clock.
4. **The reconstruction filter** (4th order) and **the expander** (1:2) bring the echo back; the chip's hiss enters here, so the expander shapes it as on the real circuits. A coupling high-pass (30–70 Hz with AGE) follows.
5. **The echo** goes to MIX, and FEEDBACK of it goes round again. The clock's whine is added at the output, and a ceiling (a level control, no curve) keeps even a singing loop under 0 dBFS.

Controls

DELAY: TIME and CLOCK

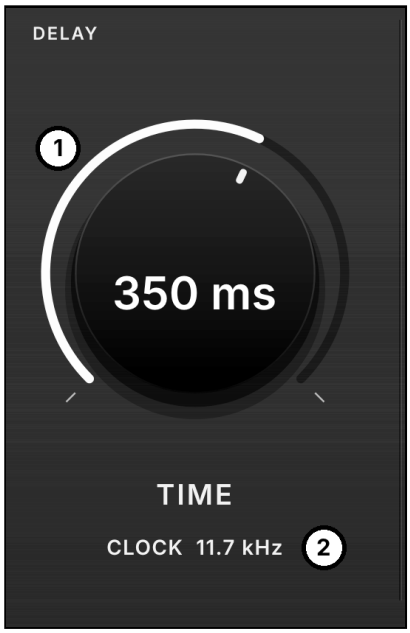


FIGURE 11 1 TIME, the big knob, and 2 CLOCK, the clock's rate for this time.

Control	Range	Default	What it does
TIME	20 ms to 1 s	350 ms	The delay, and so the chips' clock. Dimmed while SYNC sets it.

TIME is the chips' clock: the longer the time, the slower the clock, and the darker and grainier the echoes. Under it, CLOCK reads the clock's rate: 213.9 kHz at 20 ms, 34.4 kHz at 120 ms, 11.7 kHz at 350 ms, 4.1 kHz at 1 s. Typical settings:

- **20–60 ms:** no echo is heard: doubling, chorus and vibrato (*Synth Bucket Chorus* 25 ms, *Chorused Doubler* 45 ms, *Vibrato Only* 20 ms).
- **80–150 ms:** a slap, at the bright end of the chips (*Analog Slapback* 110 ms, *Rockabilly Analog* 105 ms).
- **250–500 ms:** the classic analog pedal echo (*Classic Pedal Echo* 380 ms).
- **600 ms to 1 s:** long, dark repeats that sit far behind the part (*Dark Expanse* 900 ms).

The pitch bends. When TIME changes, the clock glides to its new rate smoothly (in about 110 ms), and everything in the chips bends in pitch on the way, down while the time grows and up while it shrinks, as on the real units. Sweep it while the echoes play for the classic pitch effects (*Creative* ▸ *Pitch Sweep Toy*). Nothing clicks.

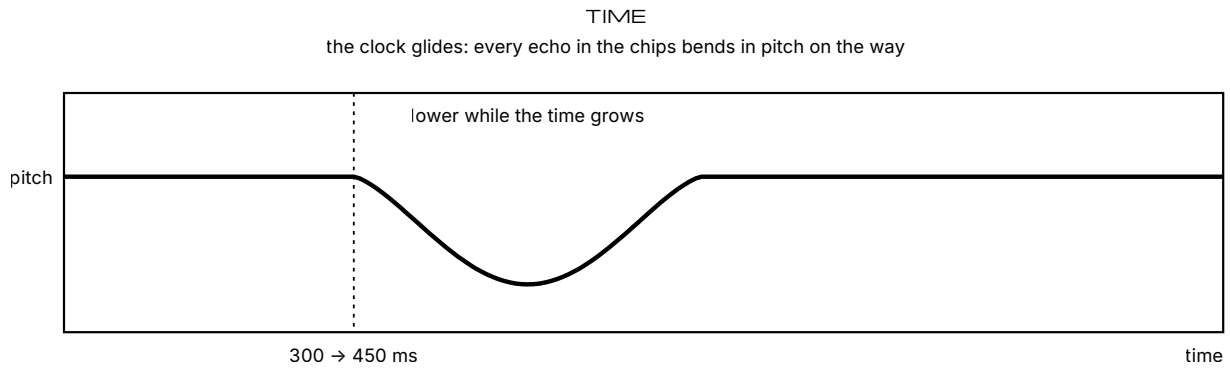


FIGURE 12 The echoes' pitch while [TIME] moves from 300 to 450 ms: lower while the clock slows, back to pitch when it settles.

Type a time in milliseconds or seconds ("0.5 s"). [TIME] stays exact: the delays of the input stage and of the chips' filters are taken off the buckets' own delay, so the echo lands on [TIME] (measured: within 0.010 ms from 20 ms to 1 s).

TEMPO: SYNC, NOTE and the rhythm

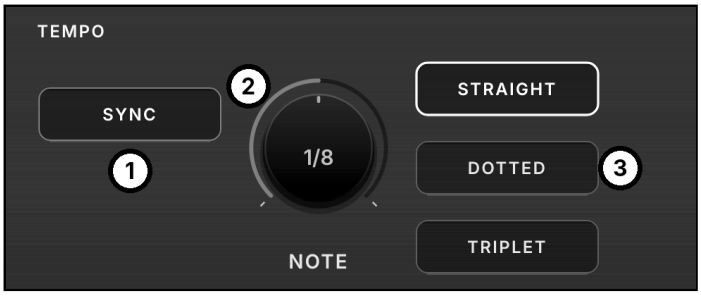
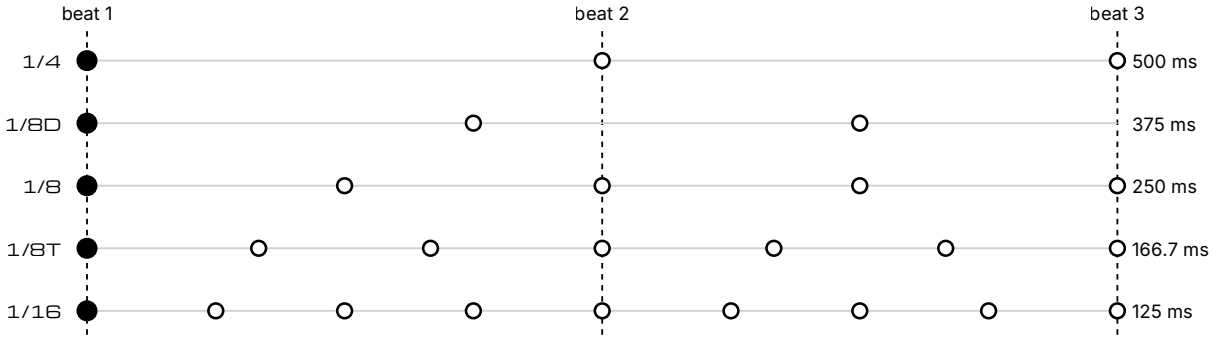


FIGURE 13 1 [SYNC], 2 [NOTE] (dimmed while [SYNC] is off) and 3 [STRAIGHT], [DOTTED] and [TRIPLET].

Control	Range	Default	What it does
[SYNC]	on / off	off	The time as a note value at the song's tempo.
[NOTE]	1/64, 1/32, 1/16, 1/8, 1/4, 1/2, 1/1	1/8	The note value, kept within 20 ms to 1 s.
Rhythm	[STRAIGHT], [DOTTED], [TRIPLET]	[STRAIGHT]	The note value as it is, × 1.5, or × 2/3.

With [SYNC] on, the delay is [NOTE] at the tempo your DAW plays, made dotted or triplet by the three buttons; [TIME] is dimmed. Because the chips' clock can only go from 20 ms to 1 s, a note value that would be longer or shorter is held at the nearest end: at 120 BPM a half note (1 s) is the longest that fits.



With SYNC on, the delay is a note value at the song's tempo: here 120 BPM. The black dot is the sound; each white dot an echo.

FIGURE 14 Note values at 120 BPM. A dotted value (D) is half as long again; a triplet (T) two thirds as long.

The **dotted eighth** fills in the sixteenths between straight eighths (*Rhythmic ▸ Analog Dotted Eighths*); **triplets** give a galloping, swung echo (*Triplet Trot*); a **quarter** sits behind a part as a pulse (*Quarter Note Bloom*). A synced time still bends in pitch when the tempo or the note changes.

REPEATS: FEEDBACK

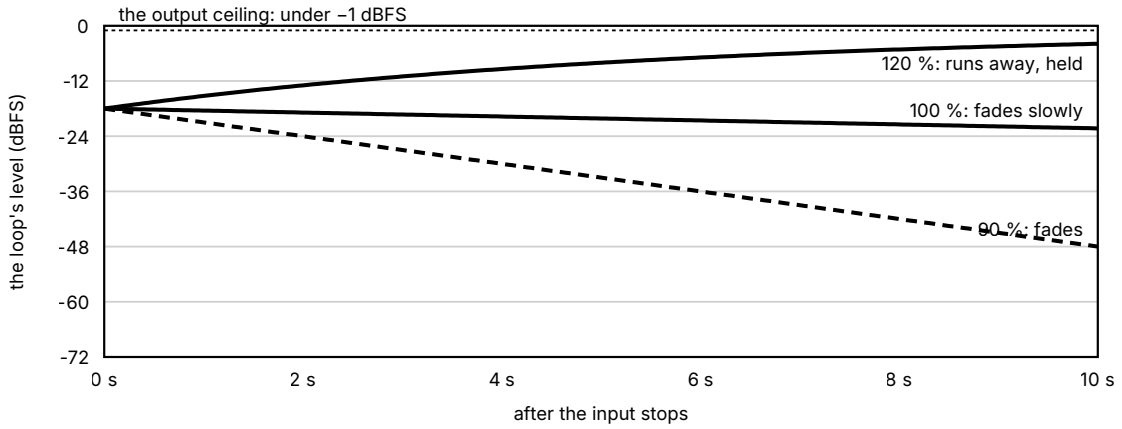


FIGURE 15 1 FEEDBACK.

Control	Range	Default	What it does
FEEDBACK	0 to 120 %	35 %	How much of each echo goes round again.

FEEDBACK sets how many repeats you hear. Each pass goes through the chips' filters, the compander and the input stage again, so the repeats get softer and darker as they go, the analog way: at 350 ms and FEEDBACK 80 % the first echo reaches 3.7 kHz, the third 3.2 kHz.

- **0–20 %:** one echo, or a slap.
- **25–50 %:** a few repeats, the usual echo.
- **55–75 %:** long trails for ambient parts and dub.
- **Past about 102 %:** the loop runs away. Each pass is louder than the one before until it reaches the input stage's saturation, and there it holds and sings, darker on every pass, with the MOD and the noise moving it.



After the input stops, at 350 ms. Measured at 120 %: peak −0.01 dBFS (AGE 0 %); with AGE 100 % its own saturation holds it at −4.9 dBFS.

FIGURE 16 What the loop does after you stop playing, at three [FEEDBACK] settings. A runaway loop saturates in the input stage, as a real analog delay does, and the output ceiling keeps it under 0 dBFS.

> **Tip:** For a dub "siren", push [FEEDBACK] past 100 % for a bar and sweep [TIME] while it sings; pull [FEEDBACK] back under 100 % and it fades away (*Creative* ▸ *Runaway Oscillation*, 112 %).

MODULATION: RATE, DEPTH and SPREAD

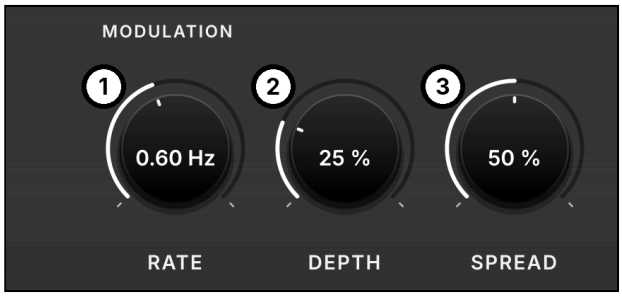


FIGURE 17 1 [RATE], 2 [DEPTH] and 3 [SPREAD].

Control	Range	Default	What it does
[RATE]	0.05 to 10 Hz	0.60 Hz	The speed of the clock's wobble.
[DEPTH]	0 to 100 %	25 %	How far the echoes' pitch swings: up to ±2.5 %.
[SPREAD]	0 to 100 %	50 %	The right chip's wobble, up to half a cycle from the left's.

[MOD] wobbles the chips' clock with a sine, so the echoes swing in pitch: the classic chorused repeats of an analog delay. [DEPTH] is set as the echoes' pitch swing, so it sounds the same at any [TIME] (a short delay needs a larger swing of the clock for the same pitch change).

- **A touch** ([DEPTH] 10–25 %, [RATE] 0.5–0.8 Hz): warm, gently moving repeats; every preset has some.
- **Chorus** ([DEPTH] 40–60 %, [TIME] 20–45 ms): the bucket brigade as a chorus (*Synth Bucket Chorus*, *Chorus Echo Lead*).

- **Warble and vibrato** (RATE 4–6 Hz): seasick repeats (*Surf Warble*), a spinning-speaker feel (*Rotary Wobble Keys*), or, at MIX 100 % and 20 ms, a pure vibrato (*Vibrato Only*).

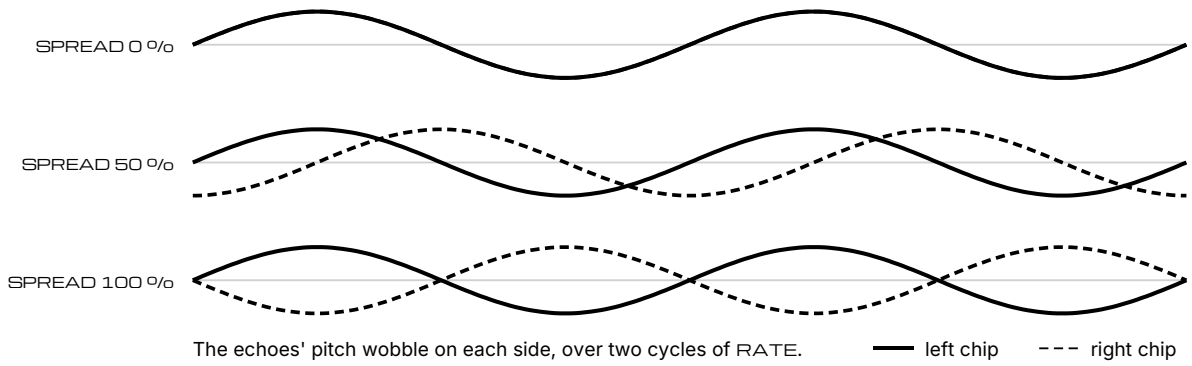


FIGURE 18 SPREAD: how far apart the two chips wobble. The wider apart, the wider the chorus.

SPREAD moves the right chip's wobble away from the left's: at **0 %** they move together and the chorus stays in the centre; at **100 %** they swing in opposite directions and the echoes spread wide across the stereo field (*Chorused Doubler*, *Bus Thickener*).

CHARACTER: AGE, COMPANDER and NOISE

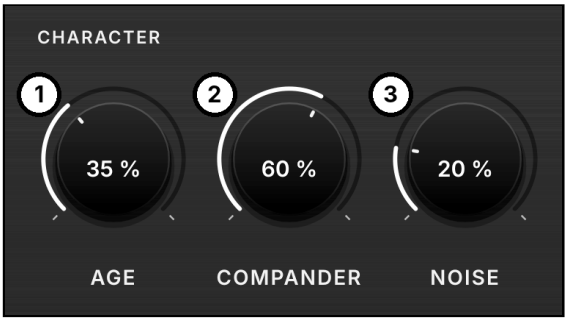
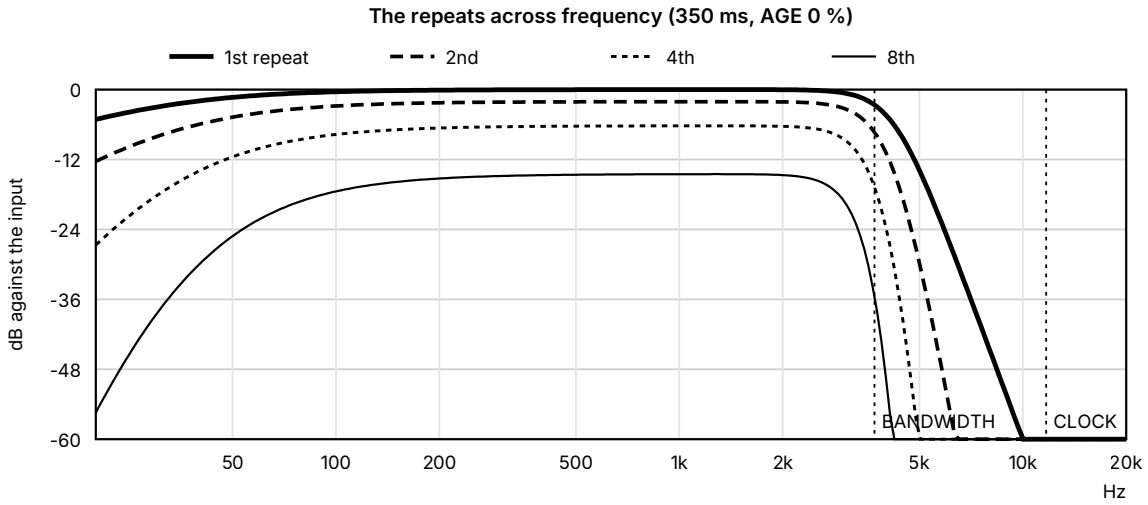


FIGURE 19 1 AGE, 2 COMPANDER and 3 NOISE.

Control	Range	Default	What it does
AGE	0 to 100 %	35 %	Less bandwidth, less headroom, more even harmonics, more hiss.
COMPANDER	0 to 100 %	60 %	From none to the full 2:1 / 1:2 vintage action.
NOISE	0 to 100 %	20 %	The chips' hiss and the clock's whine; 0 % none.

AGE wears the circuit: the chips' filters move from 0.36 to 0.26 of the clock and their top from 10 to 6 kHz, the input stage's headroom falls from +3 to −9 dBFS (it saturates sooner, with more even harmonics), the coupling high-pass rises from 30 to 70 Hz, and the chips hiss more. Low (0–25 %): a clean, well-kept unit; 35–60 %: the warm, rounded sound of most presets; 75–100 %: a gritty, dark, worn-out chip (*Underwater Echoes*, *Broken Chip*).



FEEDBACK 80 %, as the PER REPEAT display draws it: filters at a third of the 11.7 kHz clock darken every pass.

FIGURE 20 Every pass goes through the chips' filters again, so the repeats darken as they go. A longer [TIME] (a slower clock) or more [AGE] moves the whole picture to the left.

COMPANDER sets how much of the vintage noise reduction around the chips you hear. The compressor before the chip (2:1) and the expander after it (1:2) keep the chip's hiss down; but the expander listens to the chip's output, as on the real circuits, so it mistracks a little on bright transients and the echoes "breathe" and pump slightly. At 0 % there is none; at 100 % the full action with a slower detector (*Gritty Kit Eighths* at 90 %: the compander pumps with the groove).

NOISE sets the chips' hiss and the clock's whine. The whine is heard at longer times (over about 200 ms), when the clock falls low enough to be audible. Both follow the playing: they fade as the repeats die away, so a quiet passage stays quiet. At 100 % and 600 ms they reach about −65 dBFS RMS; at 0 % there is none.

OUTPUT: MIX, LOCK and OUTPUT

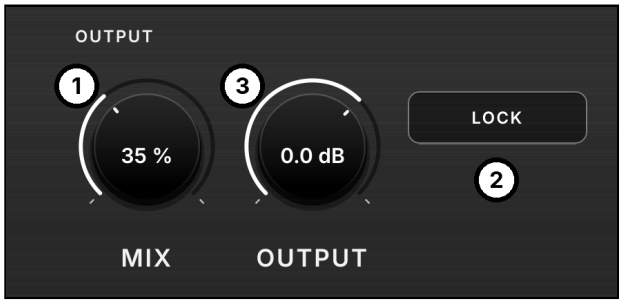


FIGURE 21 1 [MIX], 2 [LOCK] and 3 [OUTPUT].

Control	Range	Default	What it does
[MIX]	0 to 100 %	30 %	The dry sound against the echoes, equal power.
[LOCK]	on / off	off	Presets leave [MIX] where it is.
[OUTPUT]	−24 to +12 dB	0.0 dB	The final level, after [MIX].

MIX is an equal-power blend: the level stays steady as you turn it. At **0 %** the output is the input, bit for bit; at **100 %** it is the echoes only, for an aux. On an insert, 15–35 % is the usual range.

LOCK keeps MIX where it is when you load a preset. Switch it on on an aux at 100 %, or when you have balanced an insert by ear and want to try other presets at the same blend. See *Inserts and aux sends*.

OUTPUT sets the final level. Every insert preset comes out within −0.46 to +0.72 dB of the dry track; check the meter bridge's Δ reading before you compare with bypass.

Displays

REPEATS

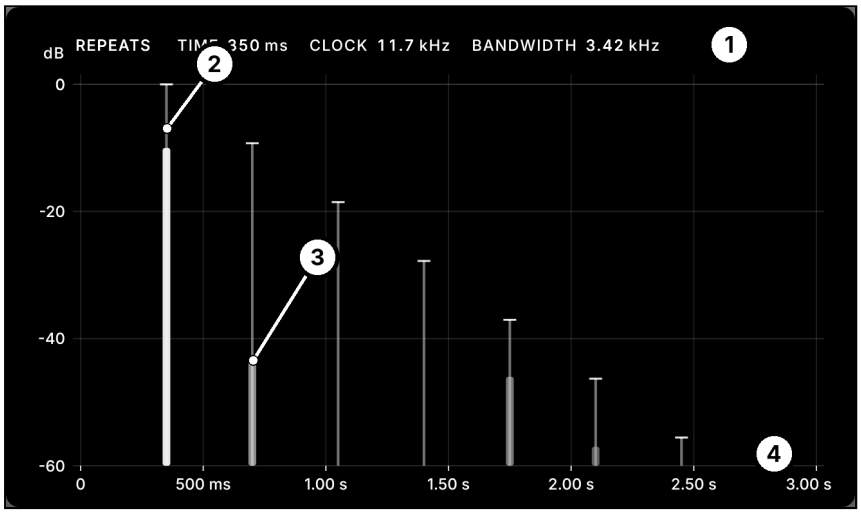


FIGURE 22 The REPEATS display: 1 TIME, CLOCK and BANDWIDTH, 2 an echo's level, 3 its live level, 4 the time scale.

The REPEATS display draws the echoes as a timeline of taps: each repeat a stem at its time, as tall as its level against the input at 1 kHz, each one a darker red than the last.

- 2 Each stem's thin line and cap show the echo's level; 3 the brighter part shows the level the echo has *now*, what you played that long ago. Watch the echoes of a phrase go by.
- 1 The legend reads TIME, the CLOCK and the first echo's BANDWIDTH (its −3 dB point): turn TIME and watch both fall. RUNAWAY appears when FEEDBACK is past the point where the loop runs away.
- Hover a stem for its number, time and level.

PER REPEAT

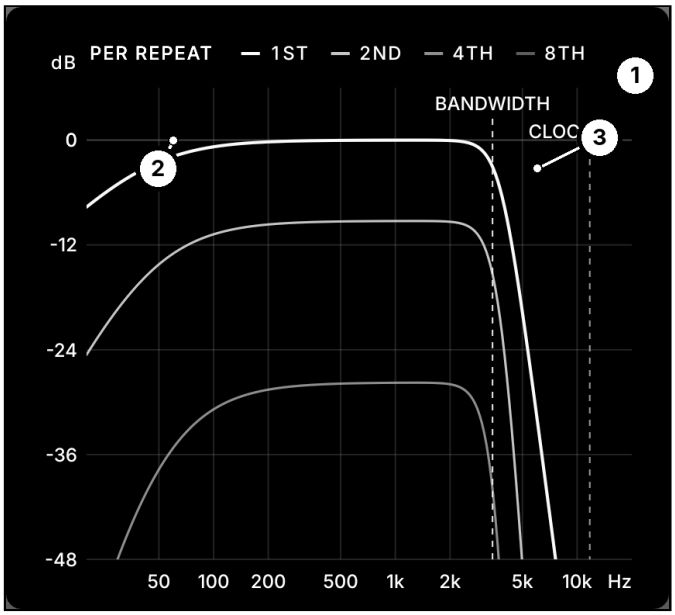


FIGURE 23 The PER REPEAT display: 1 the legend, 2 the repeats across frequency, 3 the BANDWIDTH and CLOCK marks.

PER REPEAT draws the 1st, 2nd, 4th and 8th echo across frequency against the input, in dB: the brightest the first, darker the later ones (in print, the top line is the 1st, the lowest the 8th). Dotted lines mark the first echo's **bandwidth** and, when it is in the audible band, the **clock**. Turn TIME up and watch the curves darken and move left; turn AGE up and they narrow further.



FIGURE 24 A longer, older echo: 480 ms with FEEDBACK 62 %, AGE 60 %, DEPTH 45 % at 0.80 Hz, COMPANDER 80 %, NOISE 35 % and LOCK on: the clock falls to 8.5 kHz, and PER REPEAT shows the repeats darkening sooner than at the default 350 ms.

Meter bridge (IN | OUT)

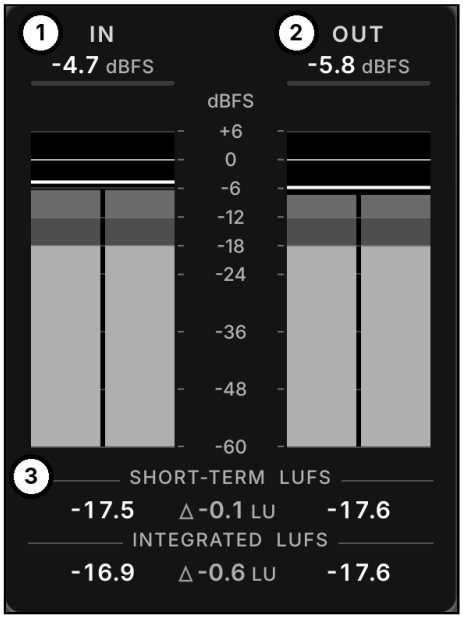


FIGURE 25 The meter bridge: 1 input and 2 output, 3 short-term and integrated loudness with the OUT − IN difference.

VEIRA Delay Red uses the standard VEIRA meter bridge.

Reading the IN and OUT meters

The meter bridge measures what goes into VEIRA Delay Red 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.

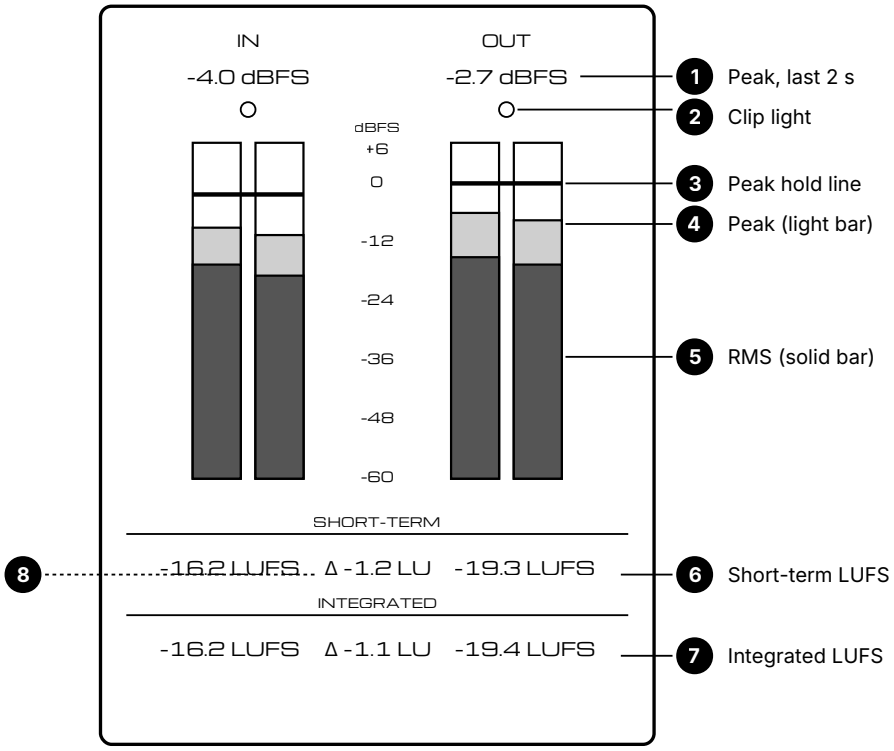


FIGURE 26 The meter bridge, left and right channel bars for input and output, with loudness below.

- 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 Delay Red 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.

Inserts and aux sends

A delay can sit on a track in two ways, and VEIRA Delay Red is ready for both.

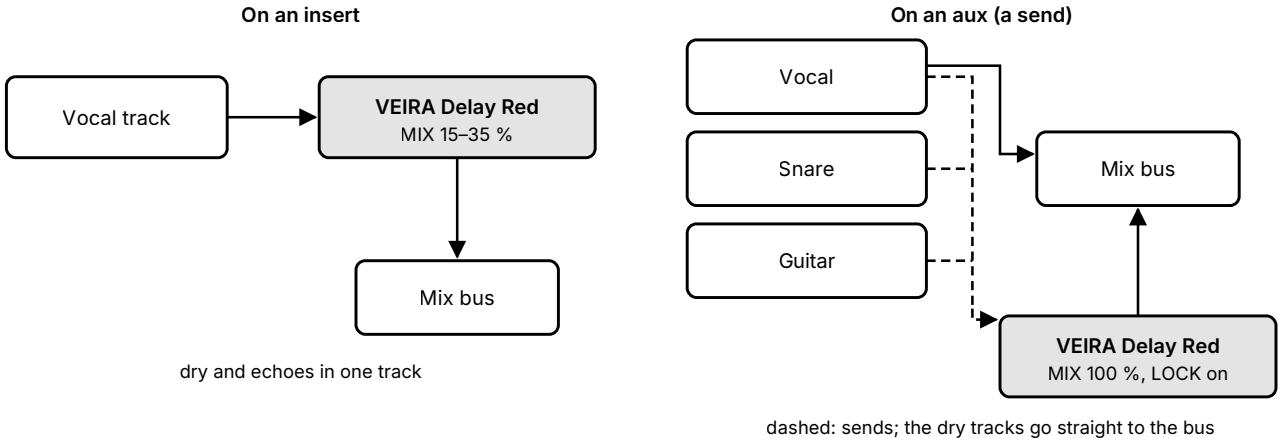


FIGURE 27 Left: on an insert, MIX blends the echoes into the track itself. Right: on an aux, several tracks send to one delay at MIX 100 %; your DAW's send levels decide how much of each track is echoed.

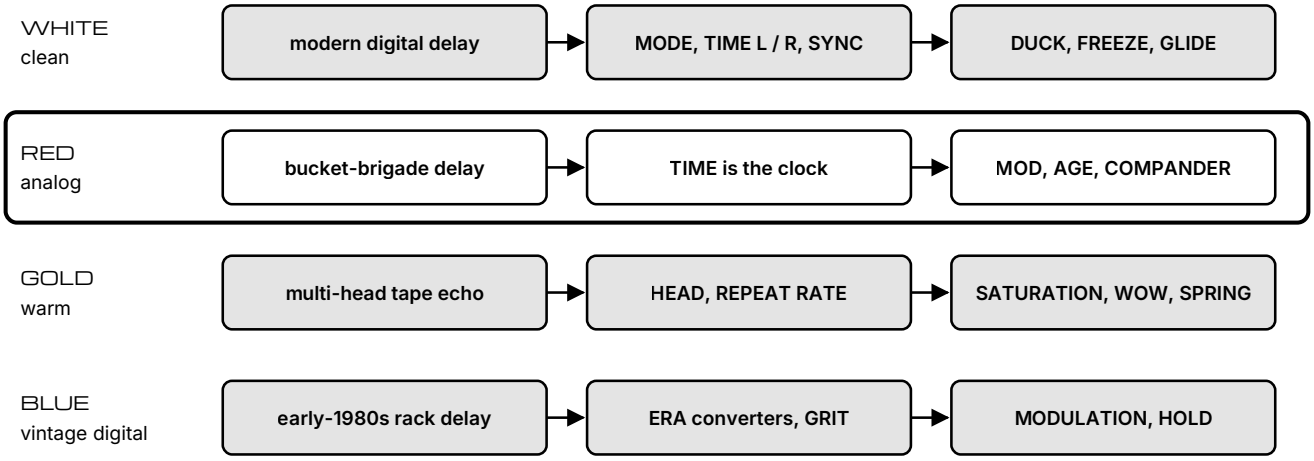
On an insert (the delay straight on the track), MIX sets the balance. The vocal, guitar, keys and drum presets are made for this, at MIX 15–35 %. MIX is an equal-power blend: at 50 % the dry sound and the echoes are each 3 dB down, so the level stays steady as you turn it.

On an aux (a return track or FX channel that several tracks send to), set MIX to **100 %**, so the return carries only the echoes, and switch on LOCK. With LOCK on, loading a preset leaves MIX where it is, so you can step through presets on the aux without the dry signal coming back. The *Mix* folder has ready-made aux returns at 100 %. A delay on an aux lets you throw single words or hits into it with automation of the send, and EQ or compress the echoes on their own.

> **Tip:** For a "throw" (one word or one snare hit echoed, the rest dry), put the delay on an aux at MIX 100 % and automate only the send. The echoes ring on naturally after the send closes.

Which colour delay to choose

VEIRA Delay Red is one of four VEIRA colour delays, each painted like the colour compressor, limiter, EQ, gate and reverb of the same name. All four sync to the song's tempo with straight, dotted and triplet values, have an equal-power MIX with LOCK for aux returns, the same meter bridge with loudness, no latency, and echoes that end in true digital silence. What differs is the sound of the repeats: exact, analog, tape or vintage digital.



The framed row, in white boxes, is the delay in your hands.

FIGURE 28 The four colour delays, side by side.

	Character	Choose it when
White	Clean. A modern digital delay whose repeats are the sound itself, landing exactly on time: MONO, STEREO (separate left and right times) or PING-PONG, FEEDBACK to 110 %, LOW CUT and HIGH CUT in the loop, DUCK with its RELEASE, FREEZE, and GLIDE or FADE for a new time.	You want precise, uncoloured echoes that sit exactly on the grid: pop vocals, rhythmic guitar parts, synths, mix throws, ping-pong.
Red	Analog. A bucket-brigade delay in the tradition of the classic analog pedals and rack delays: TIME is the chips' clock, so longer echoes are darker and turning it bends the pitch; MOD with SPREAD, AGE, COMPANDER, NOISE, and FEEDBACK that runs away and sings.	You want warm, soft, chorused repeats that melt behind the part: guitar solos, vintage vocals, synths, dub.
Gold	Warm. A multi-head tape echo in the tradition of the classic 1970s machines: three playback heads and a spring tank in 15 HEAD modes, REPEAT RATE as the tape's speed, INTENSITY into warm self-oscillation, BASS / TREBLE in the loop, SATURATION, TAPE AGE, WOW and FLUTTER.	You want the rhythmic patterns, wavering pitch and saturated, darkening repeats of tape: dub, reggae, rockabilly, surf, psychedelic guitar.
Blue	Vintage digital. An early-1980s studio rack digital delay: long, clean-to-gritty repeats through ERA's converters, GRIT, chorus and flanging from MODULATION, MONO / DUAL / PING-PONG, an infinite HOLD and the vintage PITCH bend.	You want the sound of 1980s records: rack chorus and flanging, long, slightly grainy repeats, the jet flanger on a drum bus.

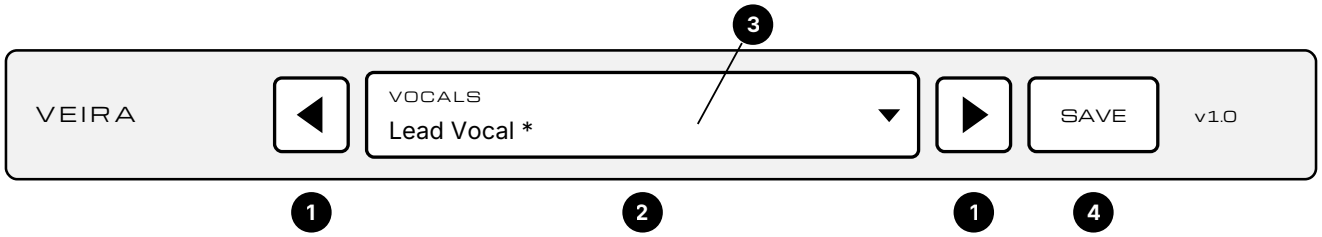
Red is the analog one. Reach for it when you want echoes that melt behind the part instead of standing next to it: warm, soft, chorused, darker the longer they are, with a loop that sings when you push it. For exact, uncoloured echoes, try White; for tape's heads, wavering and saturation, Gold; for the grainy rack echoes and flanging of the 1980s, Blue.

Presets

VEIRA Delay Red comes with **41 factory presets** in 9 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 29 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 Delay Red 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 Delay Red/<Folder>/
Windows	%APPDATA%\VEIRA\VEIRA Delay Red\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
Vocals	Analog Slapback, Warm Vocal Echo, Lo-Fi Vocal Throw, Chorused Doubler, Dark Ballad Echo
Guitars	Classic Pedal Echo, Rockabilly Analog, Chorus Echo Lead, Surf Warble, Acoustic Warmth, Dotted Analog Arps
Keys & Synths	Electric Piano Echo, Synth Bucket Chorus, Vintage Synth Lead, Rotary Wobble Keys, Pad Shadows
Drums	Snare Slap Analog, Gritty Kit Eighths, Tom Tails, Dub Snare Throw, Percussion Flutter
Mix	Mix Warmth Echo, Bus Thickener, Analog Aux Return, Dark Aux Return
Rhythmic	Analog Dotted Eighths, Triplet Trot, Sixteenth Grit, Quarter Note Bloom, Vocal Chop Analog
Ambient	Dark Expanse, Warm Haze, Floating Voice, Underwater Echoes, Ambient Aux Wash
Creative	Runaway Oscillation, Pitch Sweep Toy, Broken Chip, Vibrato Only, Metallic Comb

Levels and MIX. The input stage saturates sooner with more [AGE] and on louder tracks, so a hot track drives the echoes a little harder; the presets are measured on tracks peaking at −8 dBFS (vocals and instruments) and −6 dBFS (drums and mixes). What matters most is [MIX]: the presets are set for an **insert** ([MIX] 8–40 %), except the aux returns (*Analog Aux Return*, *Dark Aux Return*, *Ambient Aux Wash* at 100 %) and *Vibrato Only* (100 %, an effect). Measured at 120 BPM on matching material, every insert preset comes out within −0.46 to +0.72 dB of bypass, and every tail dies away (in 0.05 to 28 s) except *Runaway Oscillation*, which sings on by design. If you use a preset on an aux, switch on [LOCK] and set [MIX] to 100 %.

Recipes

Step-by-step starting points. In each, set MIX last, in the mix, not soloed.

The classic analog guitar echo

1. Load **Guitars ▸ Classic Pedal Echo** (380 ms, FEEDBACK 40 %, MOD 0.70 Hz / 25 %, MIX 30 %).
2. Set TIME to the song by ear, or switch on SYNC with NOTE 1/8 and DOTTED.
3. For a lush solo, try **Chorus Echo Lead** (deep DEPTH, SPREAD 80 %).

A warm vocal echo or slap

1. Load **Vocals ▸ Warm Vocal Echo** (a dotted eighth, FEEDBACK 28 %, AGE 40 %, MIX 18 %), or **Analog Slapback** (110 ms) for a single slap.
2. For a darker, more distant echo on a slow song, raise TIME or AGE (*Dark Ballad Echo*).

Chorus and doubling from the chips

1. Load **Keys & Synths ▸ Synth Bucket Chorus** (25 ms, FEEDBACK 0 %, DEPTH 60 %, SPREAD 100 %).
2. Raise MIX towards 40–50 % for a deeper chorus; lower DEPTH for a subtle double (*Vocals ▸ Chorused Doubler*).
3. For vibrato instead, try **Creative ▸ Vibrato Only** (MIX 100 %, RATE 5.5 Hz).

Dub: a snare throw and a singing loop

1. Load **Drums ▸ Dub Snare Throw** (a dotted quarter, FEEDBACK 60 %, AGE 60 %).
2. Ride FEEDBACK past 100 % for a bar, then back: the loop builds, saturates and fades.
3. Sweep TIME while it sings for the pitch swoops (*Creative ▸ Runaway Oscillation*).

A worn-out, lo-fi echo

1. Load **Creative ▸ Broken Chip** (950 ms, AGE 100 %, COMPANDER 100 %, NOISE 70 %), or **Vocals ▸ Lo-Fi Vocal Throw** for a milder grit.
2. COMPANDER sets how much the echoes pump; NOISE how much the chips hiss and the clock whines.

Dark echoes for the whole mix on an aux

1. On an aux, load **Mix ▸ Dark Aux Return** (600 ms, AGE 60 %) or **Analog Aux Return** (a dotted eighth), both at MIX 100 %, and switch on LOCK.
2. Send each track to it: the darker echoes sit behind the mix without cluttering it.

Specifications

Type	Analog delay (bucket brigade): two chips of 4,096 clocked buckets, compander, filters following the clock, saturating input stage
Channels	Mono, stereo, and mono in / stereo out (one chip per side)
Latency	None; TIME stays exact (the first echo within 0.010 ms from 20 ms to 1 s)
Transparency	MIX 0 % with OUTPUT 0 dB returns the input bit for bit
Clock	213.9 kHz at 20 ms, 11.7 kHz at 350 ms, 4.1 kHz at 1 s; the chips' filters at 0.36 to 0.26 of it, at most 10 to 6 kHz
Silence	The hiss fades with the repeats; the output ends in true digital zeros once the loop is under −140 dBFS
TIME	20 ms to 1 s (default 350 ms)
SYNC / NOTE	Off / 1/64 to 1/1 within 20 ms to 1 s (default 1/8), STRAIGHT, DOTTED (× 1.5), TRIPLET (× 2/3)
FEEDBACK	0 to 120 % (default 35 %); runs away past about 102 %, held under 0 dBFS
RATE / DEPTH	0.05 to 10 Hz (default 0.60 Hz) / 0 to 100 %, up to ±2.5 % pitch (default 25 %)
SPREAD	0 to 100 %, up to half a cycle (default 50 %)
AGE	0 to 100 % (default 35 %)
COMPANDER	0 to 100 %, up to 2:1 / 1:2 (default 60 %)
NOISE	0 to 100 % (default 20 %)
MIX / LOCK	0 to 100 %, equal power (default 30 %) / on, off (default off)
OUTPUT	−24 to +12 dB (default 0.0 dB)
Metering	REPEATS (every echo at its time and level, lit live, with the clock and the bandwidth); PER REPEAT (the 1st, 2nd, 4th and 8th echo across frequency); IN and OUT meters (peak, RMS); short-term and integrated loudness per ITU-R BS.1770-4 / EBU R 128
Presets	41 factory presets in 9 folders, plus your own
Window	1480 × 940 points; resizable from 75 % to 200 %, saved with the session
Formats	VST3, Audio Units, standalone; AAX once signed
Plugin ID	Manufacturer Veir, plugin Vdrd

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 Delay Red 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**.

I can't hear the echoes. Check MIX: at 0 % the output is the dry signal only. On an aux, check that the tracks' sends are up.

The echoes are too dark. That's the bucket brigade at a long TIME: the slower clock carries less top. Shorten TIME, lower AGE, or try VEIRA Delay White for bright echoes at any length.

I hear hiss or a high whine. That's NOISE, the chips' hiss and the clock's whine (heard at times over about 200 ms). Lower NOISE, or set it to 0 % for none. Raising COMPANDER also keeps the hiss down.

The echoes pump or breathe. That's the compander. Lower COMPANDER for steadier echoes.

The echoes keep getting louder and distort. FEEDBACK is past about 102 %: the loop runs away into saturation by design. Turn it under 100 % to let it fade.

Turning TIME bends the pitch. That's the clock gliding to its new rate, as on the real circuits. If you need to change the time without a pitch bend, automate it during a pause, or use VEIRA Delay White with FADE.

My synced echo is not the note I chose. The chips can only delay from 20 ms to 1 s. At a slow tempo a long note value is held at 1 s; at a fast one a very short value at 20 ms.

The echoes came back with the dry signal on my aux after I changed preset. The preset set MIX to its own value. Set MIX to 100 % and switch on LOCK.

Does VEIRA Delay Red add latency? No. The input stage's oversampling and the chips' filters are taken off the buckets' own delay, so the echo lands on TIME and your DAW's bypass needs no compensation.

The window is too small (or too big) on my screen. Drag its bottom-right corner. It scales from 75 % to 200 % and keeps its proportions; the size is saved with your session.

How do I type an exact value? Right-click the knob (Control-click on a Mac), type the number and press Return.

Do my sessions keep my settings? Yes. Every control, the selected preset and the window size are saved with your session.

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



VEIRA Delay Red · User Manual · Version 0.1.0

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

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