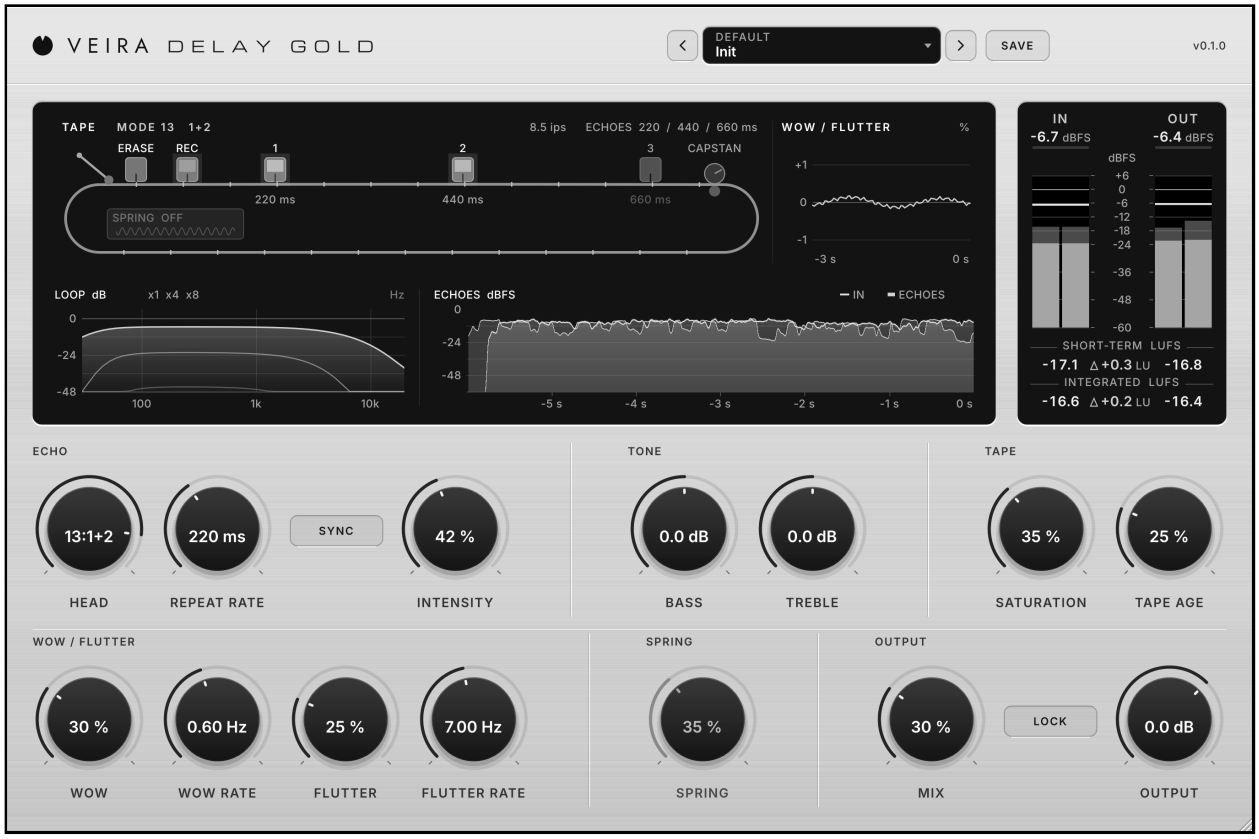
VEIRA

TAPE ECHO

VEIRA Delay Gold

User Manual

The warm one of the four VEIRA colour delays: a multi-head tape echo in the tradition of the classic 1970s machines. A loop of tape past a record head and three playback heads, a spring tank, and a record amplifier you can push.



Contents

Welcome 3
Getting started 4
What you need 4
Install with VEIRA Manager 4
Activation and the licence 5
Formats and where the files go 5
The panel at a glance 6
Quick start: a tape echo in four moves 7
Using the controls 7
How a tape echo works 9
The tape machine 9
Intensity: how many repeats 11
What happens inside VEIRA Delay Gold 11
Controls 13
ECHO: HEAD, REPEAT RATE, SYNC and INTENSITY 13
TONE: BASS and TREBLE 16
TAPE: SATURATION and TAPE AGE 17
WOW / FLUTTER: WOW, WOW RATE, FLUTTER and FLUTTER RATE 17
SPRING 18
OUTPUT: MIX, LOCK and OUTPUT 19
Displays 21
TAPE and WOW / FLUTTER 21
LOOP and ECHOES 21
Meter bridge (IN | OUT) 23
Inserts and aux sends 25
Which colour delay to choose 26
Presets 28
The preset browser 28
The preset menu 28
Saving your own presets 28
Presets in your DAW 29
The factory folders 29
Recipes 30
A 1950s slap on a vocal or a guitar 30
A rhythmic tape echo 30
Dub throws on a vocal or a snare 30
Surf and spring 30
A worn machine, wow and dropouts 30
The runaway swoop 30
Specifications 31
Troubleshooting and questions 32

Welcome

Thank you for choosing **VEIRA Delay Gold**. It is a multi-head tape echo in the tradition of the classic 1970s machines: a loop of tape runs past an erase head, a record head and three playback heads, a spring tank adds its metallic bloom, and a record amplifier saturates the tape as hard as you push it. The repeats waver, saturate and darken as they go round, the heads play rhythmic patterns, and the loop runs away into the tape when you turn INTENSITY up. It is the warm one of the four VEIRA colour delays (White, Red, Gold and Blue), painted brushed champagne gold like the gold compressors, limiters, EQs, gates and reverbs.

What makes it different

- **Three heads, fifteen modes.** HEAD follows the order of the classic 12-position selector (single heads, pairs, all three, with and without the spring tank, the tank alone) and adds three reverb-free combinations. Heads 2 and 3 sit twice and three times as far down the tape as head 1, so each mode is a rhythm.
- **The tape's speed, not a delay time.** REPEAT RATE is the capstan motor: turn it while the echoes play and they glide in pitch like a real motor slowing down or speeding up, every head keeping its spacing. Or SYNC head 1 to a note value.
- **Every repeat recorded again.** Each pass goes through BASS and TREBLE, the record amplifier and the tape (oversampled 8×), and the playback head: the repeats darken and thicken as they go, and past INTENSITY 80 % the loop runs away into warm, bounded self-oscillation that never passes −1 dBFS.
- **A machine with a history.** TAPE AGE adds a worn machine's lost top, distortion, hiss that follows the echoes and dropouts that come round with the loop; WOW and FLUTTER, each with its own rate, make the pitch sway and shimmer.
- **A two-spring tank.** In modes 5 to 12, every echo blooms into the spring's chirp; mode 12 is the tank alone.
- **Clean at the edges.** No latency: every echo lands on its time (measured: within 0.03 ms). At MIX 0 % the output is the input, bit for bit, and a silent machine goes to sleep, so 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 a tape echo 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.

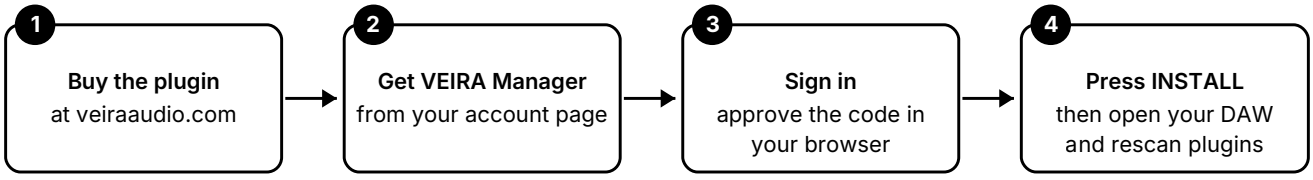
Getting started

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:



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

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 Gold 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.

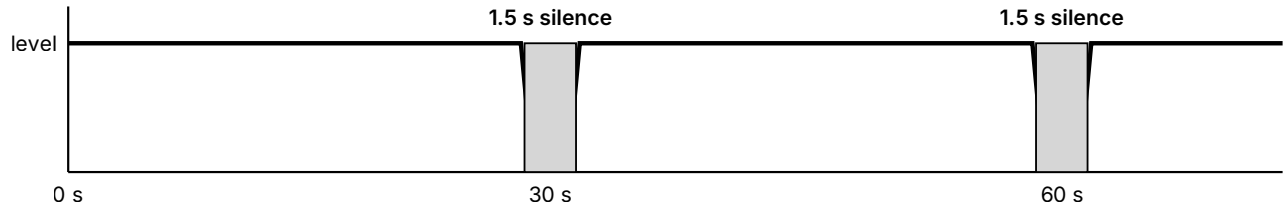


FIGURE 2 What an unlicensed copy does. With a valid licence the audio is never touched.

- **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 Gold. 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 Gold 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

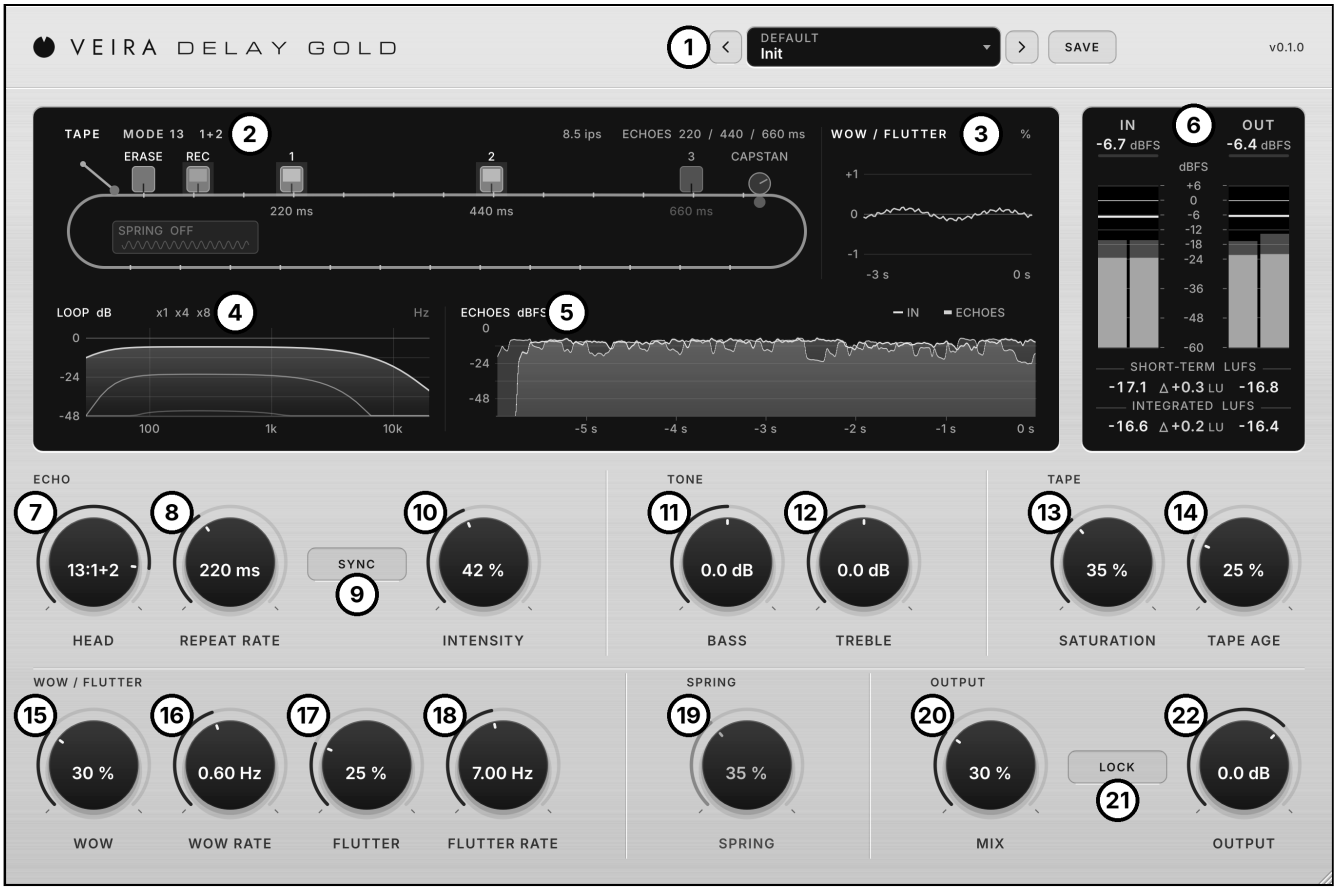


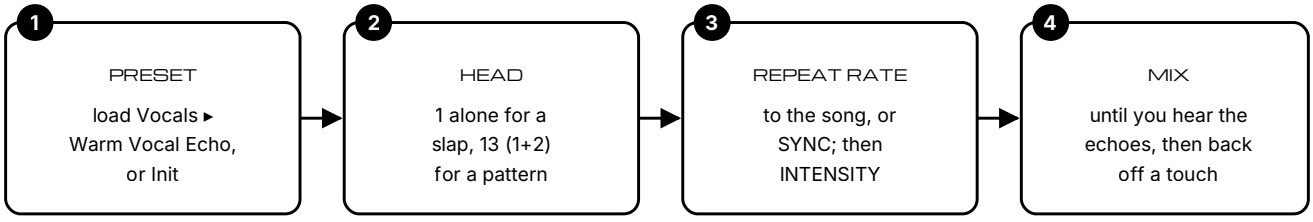
FIGURE 3 VEIRA Delay Gold, the champagne-gold unit, with its default heads 1 and 2 at 220 ms on a sung phrase and a plucked line: on the [TAPE] display, the record head and the two playing heads glow, head 3 is dark, and the spring is off.

	Part	What it does
1	Preset browser	Steps through and saves presets. See *Presets*.
2	[TAPE]	The machine's tape path: the heads, the tape's speed and the echo times.
3	[WOW / FLUTTER]	The tape's speed change over the last 3 s.
4	[LOOP]	What one trip round the loop does to each frequency, and 4 and 8 trips.
5	[ECHOES]	The last 6 s of the input and of the echoes.
6	Meter bridge	IN and OUT meters with short-term and integrated loudness.
7	[HEAD]	Which heads play, and the spring: 15 modes.
8	[REPEAT RATE]	The tape's speed, shown as head 1's echo. [NOTE] with [SYNC] on.
9	[SYNC]	Head 1 on a note value at the song's tempo.
10	[INTENSITY]	The feedback: how much goes round again.

	Part	What it does
11	BASS	Lows in the loop.
12	TREBLE	Highs in the loop.
13	SATURATION	The record level into the amplifier and the tape.
14	TAPE AGE	A worn machine.
15	WOW	Slow wavering of the tape's speed.
16	WOW RATE	How fast it sways.
17	FLUTTER	Fast wavering from the capstan.
18	FLUTTER RATE	How fast it shimmers.
19	SPRING	The spring tank's level (modes 5–12).
20	MIX	The dry sound against the echoes.
21	LOCK	Presets leave MIX where it is.
22	OUTPUT	The final level.

The window has one wide display at the top (TAPE and WOW / FLUTTER above, LOOP and ECHOES below) and the meter bridge at the right. The controls sit in two rows under the captions ECHO, TONE and TAPE (top), and WOW / FLUTTER, SPRING and OUTPUT (bottom).

Quick start: a tape 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 tape echo. *Default* ▸ *Init* is a neutral start: heads 1 and 2 (HEAD 13) at 220 ms, INTENSITY 42 %, SATURATION 35 %, TAPE AGE 25 %, WOW 30 %, FLUTTER 25 % and MIX 30 %.

Using the controls

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

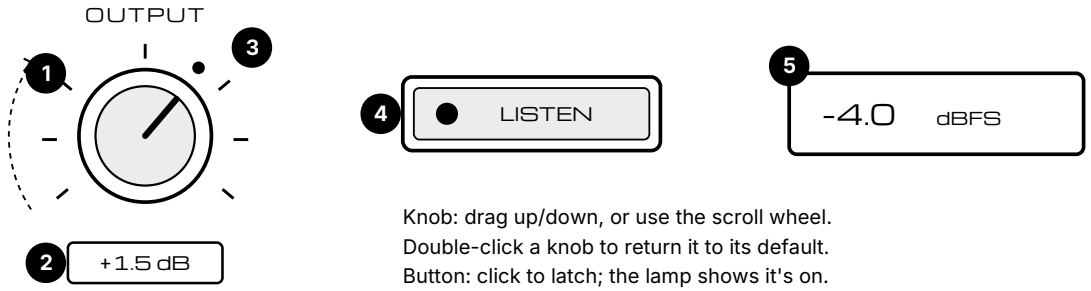


FIGURE 5 The parts you'll find on every VEIRA panel (the labels are examples).

- 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).

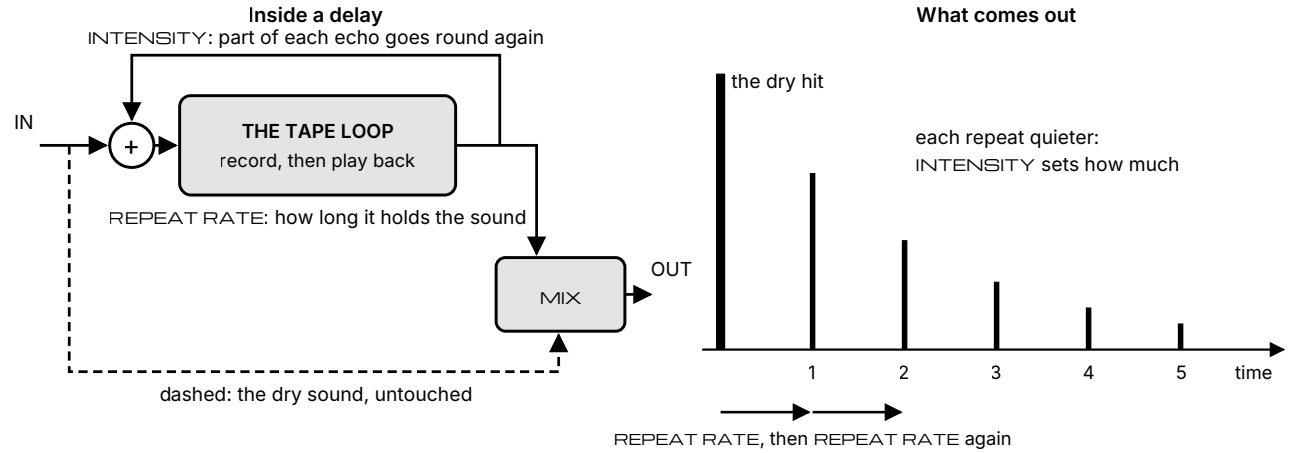
On VEIRA Delay Gold's panel the parts look a little different from the drawing above:

- **Knobs show their value in the middle** (13:1+2, 220 ms, 42 %, 0.0 dB): the knobs are black, and a ring printed in dark bronze on the paint around each one (in print, the dark arc) shows how far it is turned. The control's name is printed under the knob. HEAD shows the mode's number and its heads (11:123S is mode 11, heads 1, 2 and 3 with the spring).
- **Type a value:** right-click a knob (Control-click on a Mac), type the new value and press Return: **300** for a 300 ms REPEAT RATE, **-3** for −3 dB of TREBLE. Press Escape to leave it unchanged.
- **Buttons have no lamps:** SYNC and LOCK, when they are on, fill with dark bronze with pale lettering (in print, a dark button); off, they are shallow wells in the paint.
- SYNC **swaps a knob:** with SYNC on, REPEAT RATE gives way to NOTE in the same place. SPRING is dimmed in the modes without the tank.
- **Resize the window:** drag its bottom-right corner. It scales from 75 % to 200 % of its normal size (1360 × 900 points) and keeps its proportions. Your DAW saves the size with the session.

How a tape echo works

If you already know tape echoes, skip to *What happens inside VEIRA Delay Gold*. 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 tape machine

Before digital memory, the echo machines of the 1970s used a short loop of tape. A record head writes what you play onto the tape; a little further along, a playback head reads it back: the time between them is the echo. Put three playback heads in a row and you get three echoes at once, at one, two and three times the first; choose which heads play and you choose a rhythm. An erase head wipes the tape before it comes round to the record head again.

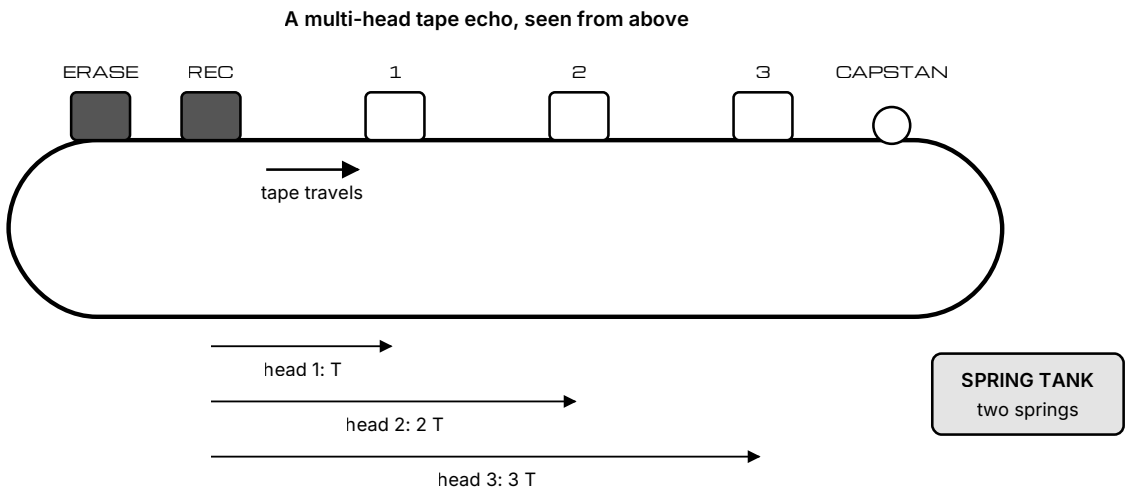
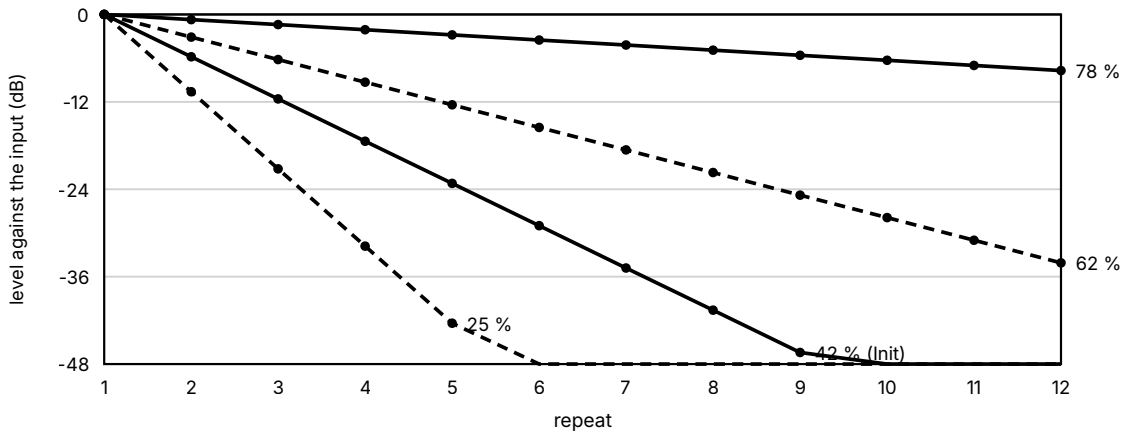


FIGURE 7 The loop of tape in VEIRA Delay Gold. Heads 2 and 3 are twice and three times as far from the record head as head 1, so their echoes come at 2 T and 3 T.

Three things give tape its sound:

- **The speed sets the time.** A faster tape reaches the heads sooner: shorter echoes. Change the speed while the echoes play and the pitch of what is already on the tape glides, as a motor speeding up or slowing down.
- **The tape is never perfectly steady.** The motor, the capstan and the pinch roller make its speed sway slowly (**wow**) and shimmer quickly (**flutter**), so the echoes waver in pitch.
- **Every repeat is recorded again.** The feedback goes back through the record amplifier onto the tape, so every pass picks up a little more saturation and loses a little more top. The repeats darken and thicken as they go, and, pushed far enough, the loop runs away and sings.

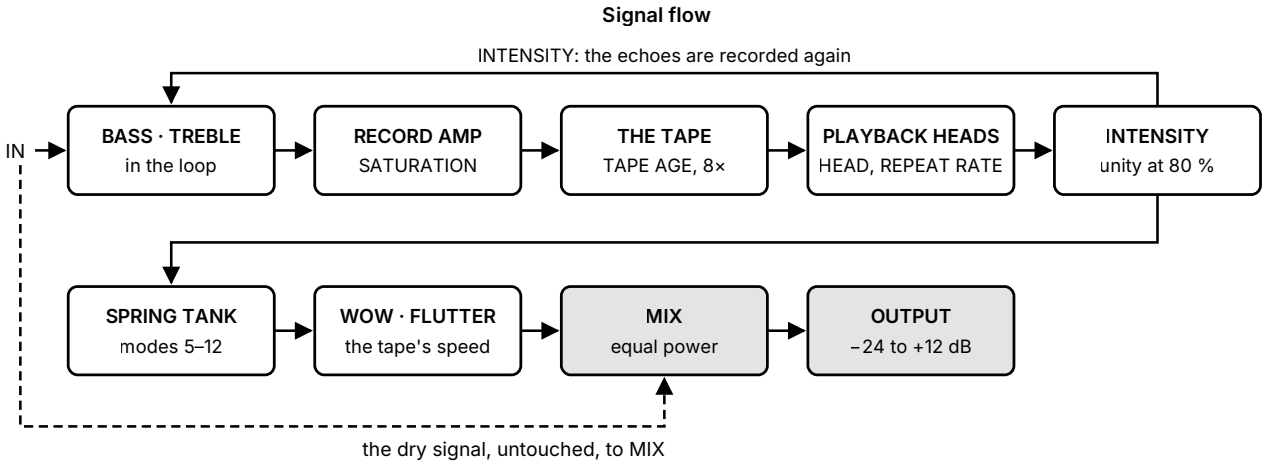
Intensity: how many repeats



One trip round the loop at 1 kHz, as the presets measure it: Init falls 5.8 dB a pass; at 80 % the loop gives back what it gets.

FIGURE 8 Each repeat's level at 1 kHz for four INTENSITY settings. The highs fall faster, because each pass loses a little more top on the tape.

What happens inside VEIRA Delay Gold



The dry path is never processed: at MIX 0 % the output is the input, bit for bit. There is no latency.

FIGURE 9 Signal flow. The input and the repeats are recorded together, so every repeat passes the tone controls, the record amplifier and the tape again. WOW and FLUTTER move the tape's speed itself, and so every echo's pitch.

Step by step:

1. **BASS and TREBLE** (shelves at 120 Hz and 3.2 kHz) shape what is about to be recorded: the input and the repeats together, so the change builds up repeat by repeat.
2. **The record amplifier** (a soft, slightly asymmetric stage: 2nd and 3rd harmonics) and **the tape** (magnetic hysteresis, with the record and playback equalisation of a real machine) run at 8× the sample rate (4× at 88.2 and 96 kHz), so nothing audible aliases. SATURATION sets the record level, and takes it back after the tape: the colour changes, the echoes' level doesn't.

3. **The playback heads** read the tape where they sit; the tape is modelled by its position, so the speed sets the times and every head keeps its spacing. Each head adds the head bump of its speed and its loss of top; the loop loses a little more top on every pass, and a 40 Hz high-pass keeps rumble from building.
4. **INTENSITY** sends the heads' echoes back to be recorded again. A soft safety limit keeps the loop and the echoes under −1 dBFS.
5. **The spring tank**, in modes 5 to 12, adds its bloom to the echoes and the input, as on the machines. Head 1 is panned a little left, head 2 a little right, head 3 in the centre.

Controls

ECHO: HEAD, REPEAT RATE, SYNC and INTENSITY

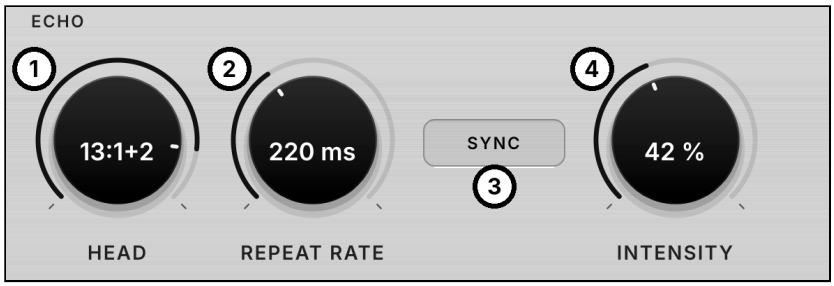


FIGURE 10 1 HEAD, 2 REPEAT RATE (NOTE with SYNC on), 3 SYNC and 4 INTENSITY.

Control	Range	Default	What it does
HEAD	15 modes (see below)	13: 1+2	Which heads play, and whether the spring tank is on.
REPEAT RATE	25 to 800 ms	220 ms	The tape's speed, shown as head 1's echo. Clockwise is faster.
SYNC	on / off	off	Head 1 on NOTE at the song's tempo.
NOTE	1/64 to 1/2, with triplets (T) and dotted (D) values	1/8	Head 1's echo as a note value (with SYNC on).
INTENSITY	0 to 100 %	42 %	The feedback. Unity at 80 %; past it the loop runs away.

HEAD

		1	2	3	SPRING
1	1	●	○	○	○
2	2	○	●	○	○
3	3	○	○	●	○
4	2+3	○	●	●	○
5	1 + Spring	●	○	○	●
6	2 + Spring	○	●	○	●
7	3 + Spring	○	○	●	●
8	2+3 + Spring	○	●	●	●

		1	2	3	SPRING
9	1+2 + Spring	●	●	○	●
10	1+3 + Spring	●	○	●	●
11	1+2+3 + Spring	●	●	●	●
12	Spring	○	○	○	●
13	1+2	●	●	○	○
14	1+3	●	○	●	○
15	1+2+3	●	●	●	○

Black: playing. 1–12 follow the classic 12-position selector; 13–15 are the pairs and all three without the tank.

FIGURE 11 The fifteen HEAD modes. The knob reads the mode's number and its heads (13:1+2, 9:12+S, 12:Spr).

Each mode is a rhythm. With head 1's echo at T, head 2 plays at 2 T and head 3 at 3 T:

- **One head** (modes 1, 2, 3): a single echo, the cleanest pattern. Head 1 for a slap (*Slapback Vocal*, *Rockabilly Slap*); head 3 for a long, distant echo at three times the rate (*Piano Ghost*).
- **Two heads**: 1+2 (mode 13, the default) answers at T and 2 T; 1+3 (mode 14) on T and 3 T, a syncopated figure (with NOTE 1/8: on the 1/8 and the 3/8, *Clave Repeats*); 2+3 (mode 4) a later, lopsided pair.
- **All three** (mode 15): a cascade at T, 2 T and 3 T, a galloping or shuffling pattern (*Triplet Gallop*, *Sixteenth Shuffle*).
- **With the spring** (modes 5–11): the same heads, each echo blooming into the tank; SPRING sets how much.
- **The spring alone** (mode 12): the tank as a small, bright, boingy room, with no echo (*Spring Vocal Room*, *Spring Cathedral*).

REPEAT RATE and SYNC

REPEAT RATE is the tape's speed, shown as the time of head 1's echo; heads 2 and 3 follow at twice and three times it. Like the machine's knob, it turns **clockwise for faster**: shorter echoes. The TAPE display prints the speed in inches per second and all three echo times (at the default 220 ms: 8.5 ips, 220 / 440 / 660 ms).

The pitch glides. Turn REPEAT RATE while the echoes play and their pitch glides like a real motor changing speed (a smooth glide of about 0.3 s): down while the tape slows, up while it speeds up, every head keeping its spacing. Measured: a 200 Hz echo glides down to 127 Hz as the rate goes from 250 to 500 ms, and back, with no click.

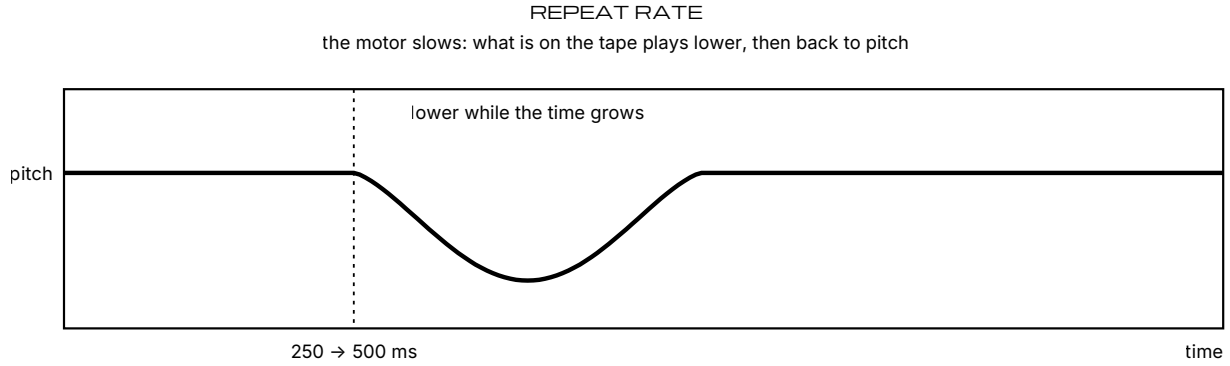
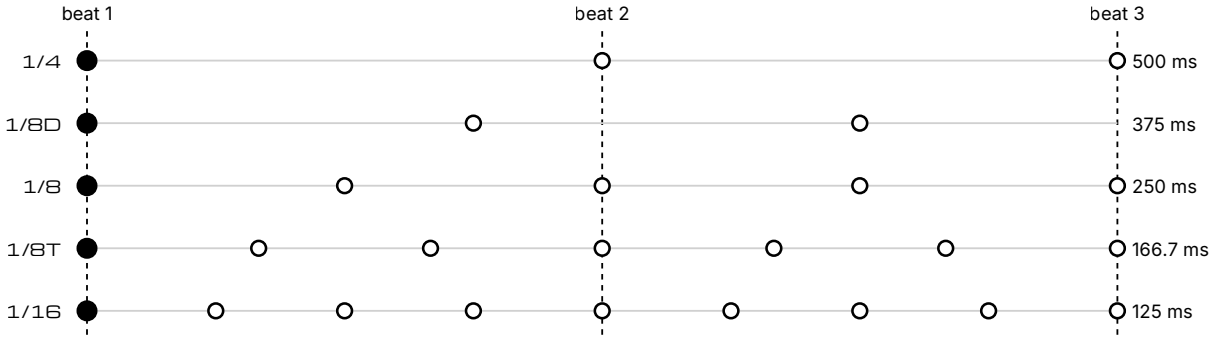


FIGURE 12 An echo's pitch while REPEAT RATE moves from 250 to 500 ms: the classic tape-machine pitch dive.

With **SYNC** on, REPEAT RATE gives way to NOTE: head 1 lands on the note value at your DAW's tempo, heads 2 and 3 on twice and three times it. The note values run from a sixty-fourth to a half note, with triplets (T) and dotted values (D), held within 25 to 800 ms. Measured at 120 BPM, an eighth lands at 250.011 ms.

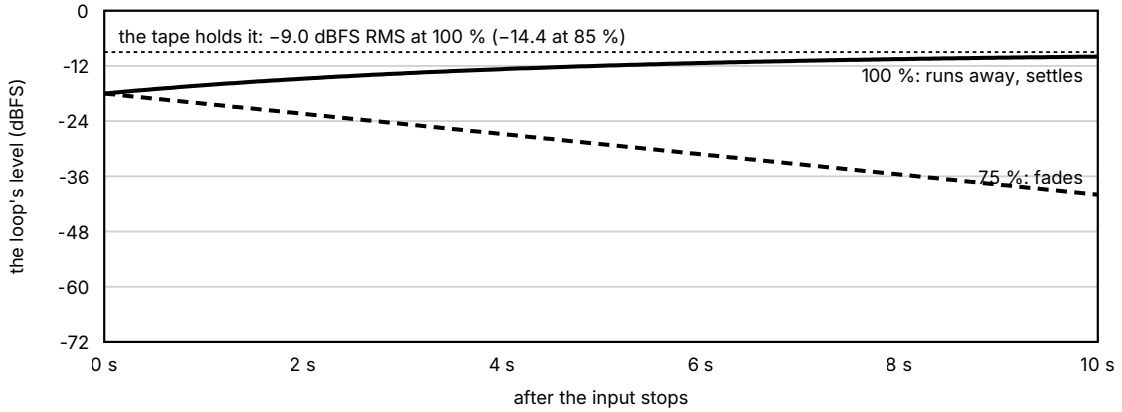


With SYNC on, the delay is a note value at the song's tempo: here 120 BPM. The black dot is the sound; each white dot an echo.

FIGURE 13 Note values for head 1 at 120 BPM. Heads 2 and 3 land on two and three of them.

INTENSITY

INTENSITY is the feedback: how much of the heads' echoes is recorded again. At **80 %** the loop gives back exactly what it gets; under it the repeats fade (measured, heads 1 and 2 at 200 ms: at 50 % they fall to silence, at 75 % they fall 37 dB over 17 s); **past it** the loop runs away into the record amplifier's and the tape's saturation and holds there: warm, bounded self-oscillation that follows BASS, TREBLE and REPEAT RATE, as on the machine.



After the input stops, heads 1 and 2 at 200 ms. The tape itself bounds the runaway; the peaks never pass −1 dBFS.

FIGURE 14 What the loop does after you stop playing. Past 80 % the repeats build into the tape's saturation and stay there, singing.

> **Tip:** The classic tape-echo trick: push INTENSITY past 80 % until the loop starts to sing, then sweep REPEAT RATE for pitch swoops; pull INTENSITY back to let it die away (*Creative ▸ Runaway Oscillation*, 92 %). Watch your level.

TONE: BASS and TREBLE

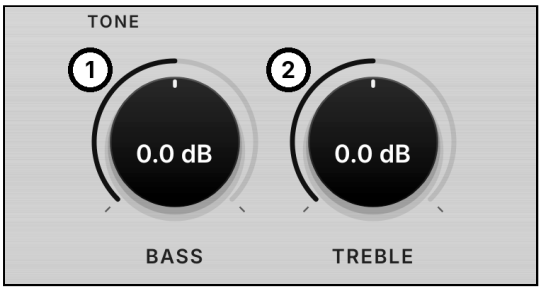


FIGURE 15 1 BASS and 2 TREBLE.

Control	Range	Default	What it does
BASS	−12 to +12 dB	0.0 dB	A 120 Hz shelf in the loop.
TREBLE	−12 to +12 dB	0.0 dB	A 3.2 kHz shelf in the loop.

BASS and TREBLE are in the loop: every repeat is shaped again, so a small cut builds up repeat by repeat. Cut TREBLE 2–5 dB for echoes that sit behind the words and darken as they go; cut BASS to keep the kick and the bass out of a drum echo (*Snare Slap*, −6 dB); boost TREBLE a little for surf and shimmer. A boost doesn't make the loop run away: the feedback comes down by the boost, so INTENSITY keeps its meaning.

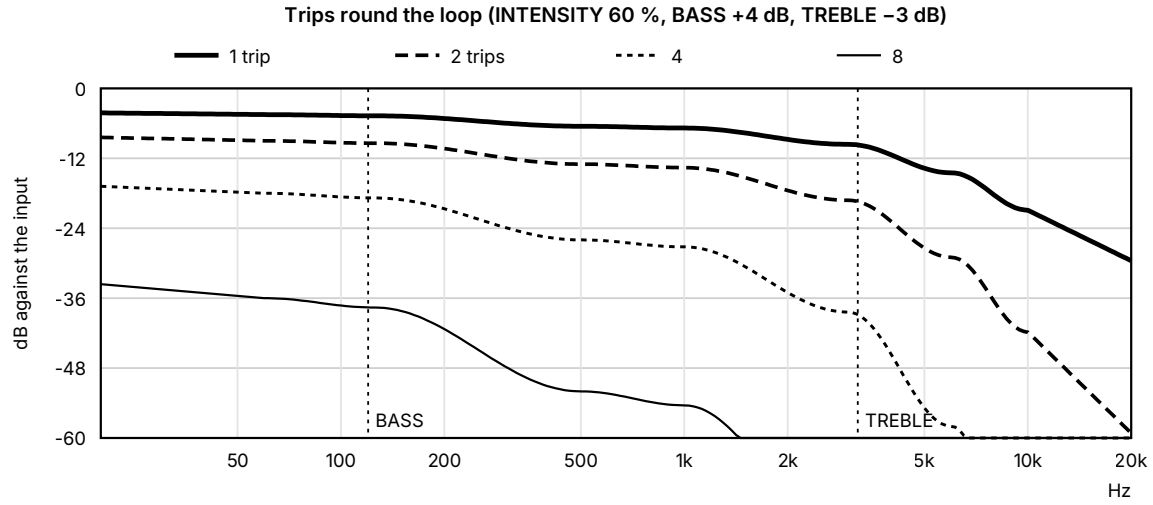


FIGURE 16 What the loop does to each frequency, after 1, 2, 4 and 8 trips, as the LOOP display draws it.

TAPE: SATURATION and TAPE AGE

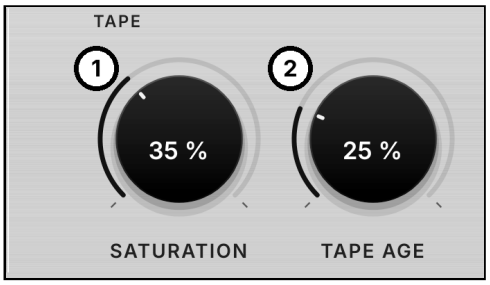


FIGURE 17 1 SATURATION and 2 TAPE AGE.

Control	Range	Default	What it does
SATURATION	0 to 100 %	35 %	The record level into the amplifier and the tape: −4 to +14 dB.
TAPE AGE	0 to 100 %	25 %	A worn machine: less top, more distortion, hiss, a wandering transport, dropouts.

SATURATION sets how hard you drive the record amplifier and the tape, from 4 dB under the tape's reference level to 14 dB over it, and takes the level back after the tape: the colour changes, the echoes' level doesn't. Low, the echoes are clean and round; 35–55 %, warm and thick (most presets); 60–90 %, gritty and compressed, a tape pushed into the red (*Dub Vocal Throw*, *Spring Crash*). Because every repeat is recorded again, each pass saturates a little more.

TAPE AGE wears the machine: the tape loses top (and loses more on every pass), it is less well biased (more distortion) and saturates sooner, it hisses (the hiss follows the echoes and fades with them), the transport wanders more, and worn spots on the loop make **dropouts**. The worn spots sit at fixed places along the tape, so each passes head 1, then 2 and 3, and comes round every loop, as on a real machine; the TAPE display flashes DROPOUT when one passes a playing head. 0–25 %: a well-kept machine; 45–60 %: an old one (*Night Tape*); 75–100 %: worn out (*Lo-Fi Bus Wobble*, *Broken Cassette*).

WOW / FLUTTER: WOW, WOW RATE, FLUTTER and FLUTTER RATE

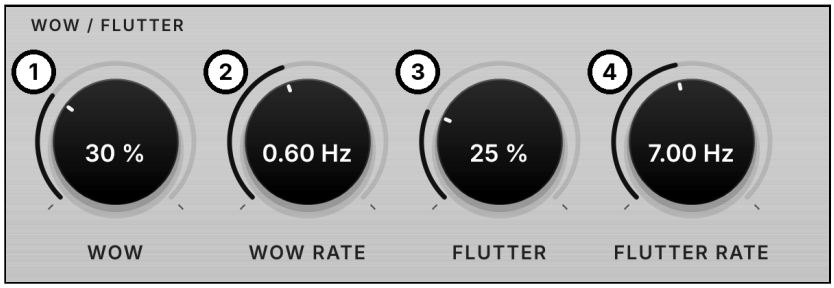
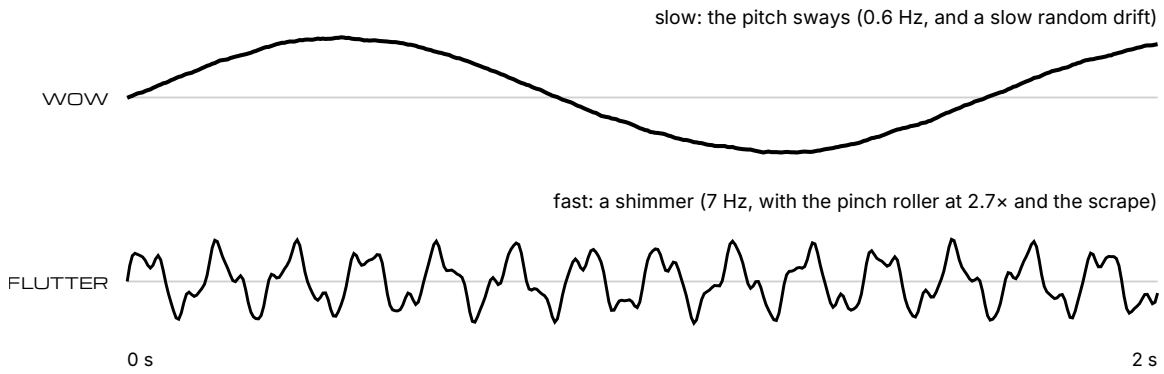


FIGURE 18 1 WOW, 2 WOW RATE, 3 FLUTTER and 4 FLUTTER RATE.

Control	Range	Default	What it does
WOW	0 to 100 %	30 %	Slow wavering of the tape's speed, with a slow random drift.

Control	Range	Default	What it does
WOW RATE	0.2 to 4 Hz	0.60 Hz	How fast the wow swings.
FLUTTER	0 to 100 %	25 %	Fast wavering from the capstan and the pinch roller.
FLUTTER RATE	2 to 25 Hz	7.00 Hz	How fast the flutter runs (the roller and scrape follow it).



The tape's speed against time. An echo's pitch is the speed it is played at against the speed it was recorded at.

FIGURE 19 The two kinds of wavering, drawn as the tape's speed against time. The WOW / FLUTTER display shows the real one over the last 3 s.

WOW and FLUTTER move the tape's speed itself, so an echo's pitch is the speed it is played at against the speed it was recorded at, exactly as on tape; a little of the movement is also tape stretch at the heads, so short echoes waver too.

- **WOW** is the slow sway: a few tenths of a percent of pitch (measured, WOW 50 % at 0.6 Hz: 0.43 %). A touch makes the echoes live; a lot makes them seasick and dreamy (*Drifting Shore*, 70 %; *Pitch Dive Machine*, 100 %).
- **FLUTTER** is the fast shimmer of the capstan, with the pinch roller at 2.7 times its rate and a faint scrape above. It roughens the echoes, like an old machine.

At the default (WOW 30 %, FLUTTER 25 %) the echoes waver by 0.65 % peak to peak: alive, not seasick. Set both to 0 % with a new tape for steady echoes.

SPRING

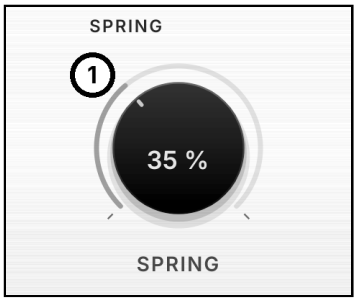


FIGURE 20 1 SPRING, dimmed here because mode 13 has no tank.

Control	Range	Default	What it does
SPRING	0 to 100 %	35 %	The spring tank's level, in HEAD modes 5 to 12.

The spring tank is two springs. A spring delays the highs more than the lows, so every echo comes back as a chirp, the "boing" of a spring reverb, and the tank rings for about 2.4 s, band-limited like a real tank. In modes 5 to 11 it blooms on the echoes and the input; in mode 12 it is on its own, a small, bright, metallic room. Kick it with drums for the classic crash (*Creative* ▸ *Spring Crash*).

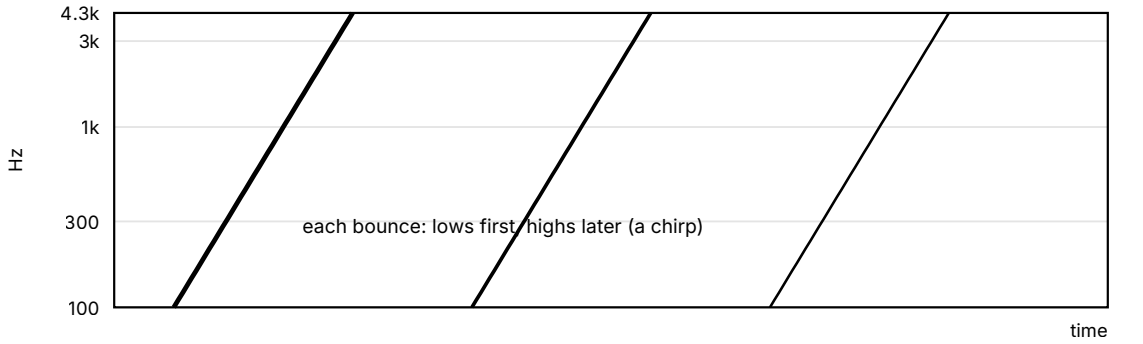


FIGURE 21 A spring's chirp: each bounce arrives lows first, highs later.

OUTPUT: MIX, LOCK and OUTPUT

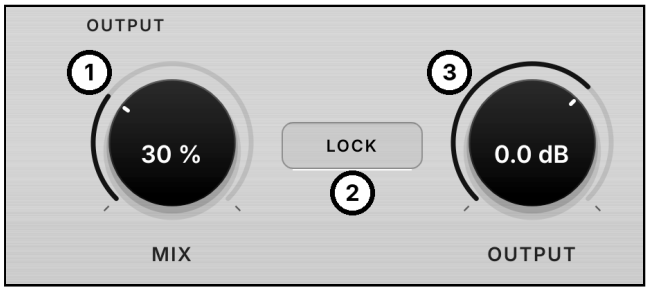


FIGURE 22 1 MIX, 2 LOCK and 3 OUTPUT.

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, 15–40 % 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.

OUTPUT sets the final level. Every insert preset comes out within 0.82 LU of the dry track; the long, near-runaway ones have a little OUTPUT trim so they stay inside it.

Displays

TAPE and WOW / FLUTTER



FIGURE 23 The TAPE display: 1 the mode, 2 the record head, 3 a playing head with its echo time, 4 a head the mode leaves out, 5 the capstan, 6 the spring tank, 7 the tape's speed and the three echo times, 8 WOW / FLUTTER.

The TAPE display draws the machine's tape path, live:

- The loop runs past ERASE, REC and the three playback heads to the CAPSTAN, and its marks travel at the tape's speed.
- 2 **The record head** glows with the record level (red on screen; in print, the brighter head on the left).
- 3 **Each playback head** lights with the echo it plays, with its time under it; 4 a head the mode leaves out stays dark, its time dimmed.
- The tape bows and the tension arm swings with the transport's wavering (exaggerated, so you can see it), and DROPOUT flashes when a worn spot passes a playing head.
- 6 **The spring tank** lights in the modes that use it, and reads SPRING OFF in the others.
- 1 7 The mode, the tape speed (ips) and the three echo times are printed at the top.
- 8 **WOW / FLUTTER** at the right draws the tape's speed change over the last 3 s, in percent: a slow wave for wow, a fine ripple for flutter.

LOOP and ECHOES

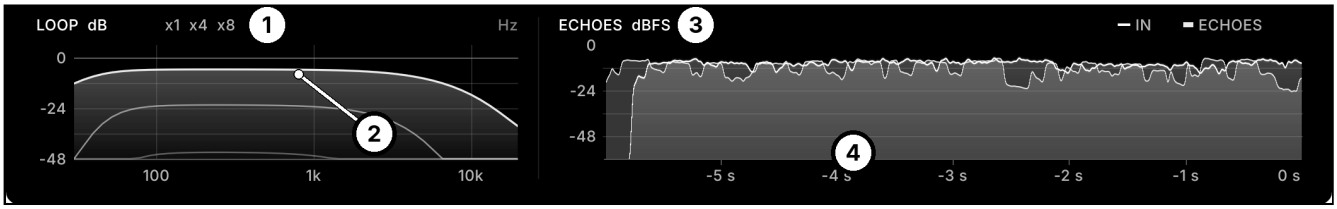


FIGURE 24 1 LOOP with 2 its curves for 1, 4 and 8 trips, and 3 ECHOES with 4 the input and the echoes over the last 6 s.

LOOP shows what one trip round the loop does to each frequency, in dB, as the settings design it (BASS, TREBLE, the tape's speed, TAPE AGE, INTENSITY), and the same after 4 and 8 trips (x1, x4, x8; in print the top curve is one trip, the lowest eight): how the repeats darken and fade. If the curve rises above 0 dB anywhere, the loop runs away at that frequency.

ECHOES scrolls the last 6 s of the input (grey on screen; in print, the thin line) and of the echoes (gold; the filled area), in dBFS. Watch the echoes fill the gaps between phrases, and how long they take to die away.

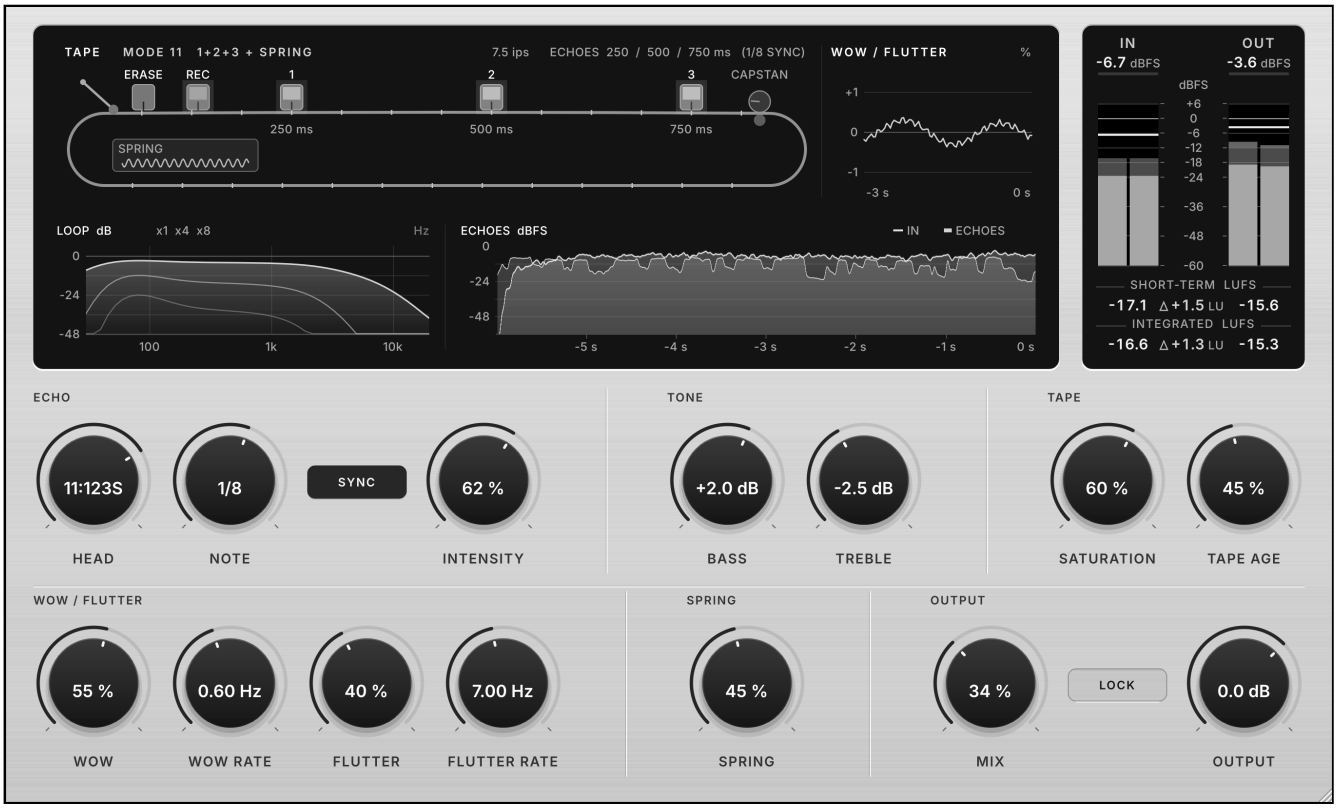


FIGURE 25 Mode 11 (all three heads with the spring) synced to an eighth note, INTENSITY 62 %, SATURATION 60 %, TAPE AGE 45 %, WOW 55 %, FLUTTER 40 %, BASS +2 dB, TREBLE −2.5 dB and SPRING 45 %: every head and the tank light, and LOOP shows the highs falling away trip by trip.

Meter bridge (IN | OUT)

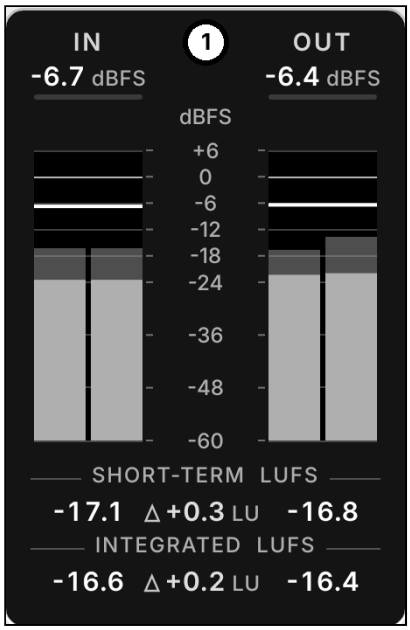


FIGURE 26 The meter bridge: 1 input (left) and output (right) meters, with short-term and integrated loudness below.

VEIRA Delay Gold uses the standard VEIRA meter bridge.

Reading the IN and OUT meters

The meter bridge measures what goes into VEIRA Delay Gold 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.

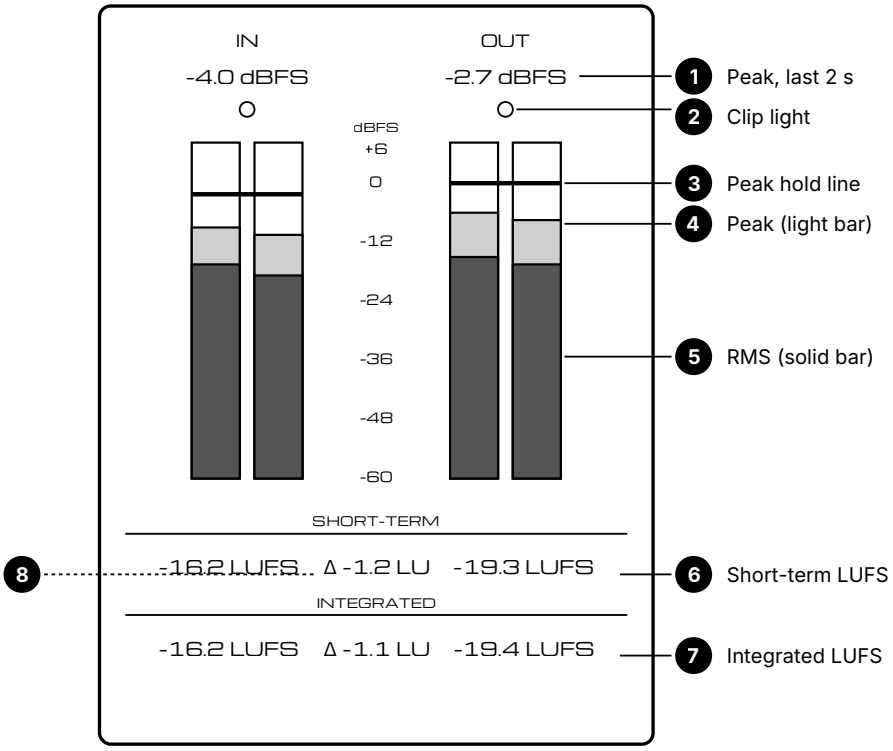


FIGURE 27 The meter bridge, left and right channel bars for input and output, with loudness below.

- 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 Gold 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 Gold is ready for both.

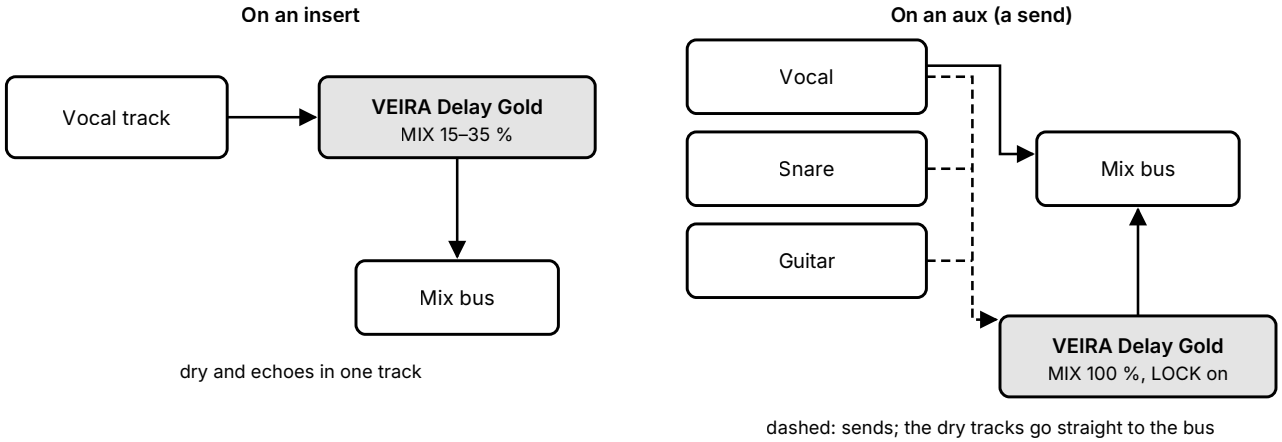


FIGURE 28 Left: on an insert, MIX blends the echoes into the track itself. Right: on an aux, several tracks send to one delay at MIX 100 %; your DAW's send levels decide how much of each track is echoed.

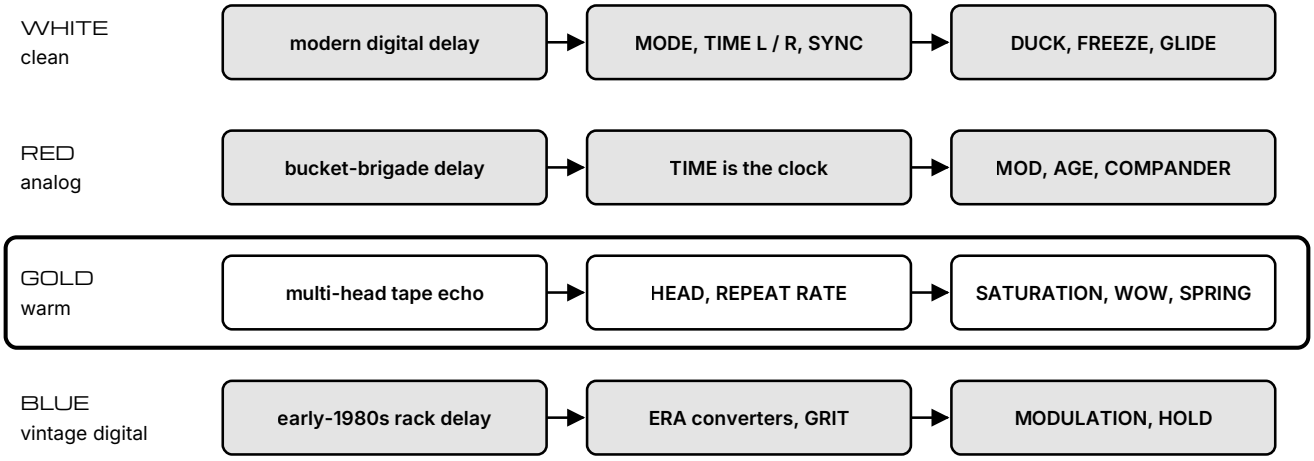
On an insert (the delay straight on the track), MIX sets the balance. The vocal, guitar, keys and drum presets are made for this, at MIX 15–35 %. MIX is an equal-power blend: at 50 % the dry sound and the echoes are each 3 dB down, so the level stays steady as you turn it.

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 Gold 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 29 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.

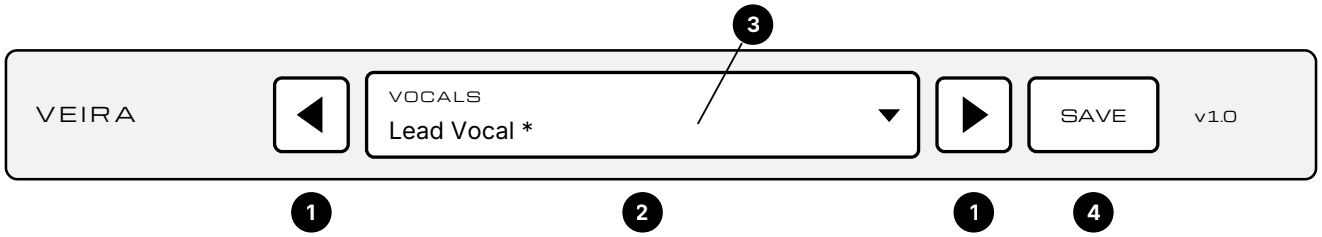
Gold is the warm one. Reach for it when you want the sound of tape: echoes in rhythmic patterns from three heads, wavering and saturating as they go, a spring tank, and a loop that runs away into the tape. For exact, uncoloured echoes, try White; for soft, chorused analog repeats, Red; for the grainy rack echoes and flanging of the 1980s, Blue.

Presets

VEIRA Delay Gold comes with **42 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 30 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 Gold 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 Gold/<Folder>/
Windows	%APPDATA%\VEIRA\VEIRA Delay Gold\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	Slapback Vocal, Warm Vocal Echo, Ballad Tape Echo, Dub Vocal Throw, Spring Vocal Room, Tape Doubler
Guitars	Rockabilly Slap, Surf Spring Echo, Lead Tape Echo, Dotted Eighth Tape, Shoegaze Wash
Keys & Synths	Rhodes Tape Echo, Organ Spring, Synth Lead Echo, Pad Smear, Piano Ghost
Drums	Snare Slap, Dub Snare, Tape Room Kit, Hat Shimmer, Tom Echo Drop
Mix	Mix Tape Glue, Bus Spring Air, Mix Throw Eighth, Lo-Fi Bus Wobble, Aux Echo Return
Rhythmic	Quarter Note Tape, Triplet Gallop, Dotted Cascade, Sixteenth Shuffle, Clave Repeats
Ambient	Endless Tape Hall, Drifting Shore, Spring Cathedral, Frozen Loop, Night Tape
Creative	Runaway Oscillation, Pitch Dive Machine, Broken Cassette, Metallic Comb, Spring Crash

Levels and MIX. SATURATION works on the record level, so a hot track drives the tape a little harder; the presets are measured on tracks peaking at −8 dBFS (vocals and instruments), −6 dBFS (drums) and −4 dBFS (mixes). What matters most is MIX: the presets are set for an **insert** (MIX 8–60 %), except *Aux Echo Return* (100 %, for an aux). Set MIX first, then INTENSITY. Measured at 120 BPM on matching material, every insert preset comes out within 0.82 LU of bypass, with no output peak over −3.5 dBFS; six long presets take more than 16 s to fall 60 dB, and *Runaway Oscillation* 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.

A 1950s slap on a vocal or a guitar

1. Load **Vocals ▸ Slapback Vocal** (head 1, 110 ms, INTENSITY 10 %) or **Guitars ▸ Rockabilly Slap** (95 ms, SATURATION 55 %).
2. Move REPEAT RATE between 80 and 130 ms: shorter is tighter.
3. Keep INTENSITY low: a slap is one repeat. SATURATION for more grit.

A rhythmic tape echo

1. Load **Rhythmic ▸ Dotted Cascade** (heads 1 and 3 on dotted eighths) or **Triplet Gallop** (all three heads on eighth triplets).
2. Try other HEAD modes at the same NOTE: each is a different pattern.
3. INTENSITY sets how long the pattern hangs on.

Dub throws on a vocal or a snare

1. Load **Vocals ▸ Dub Vocal Throw** (head 1, a dotted quarter, INTENSITY 62 %, SATURATION 55 %) or **Drums ▸ Dub Snare**.
2. Ride MIX up for the words or hits you want to throw.
3. Push INTENSITY towards 80 % for longer, darker trails; past it the loop sings.

Surf and spring

1. Load **Guitars ▸ Surf Spring Echo** (mode 9: heads 1 and 2 with the spring, SPRING 60 %).
2. SPRING first, then INTENSITY. For the tank alone, choose mode 12 (*Spring Vocal Room*, *Spring Cathedral*).

A worn machine, wow and dropouts

1. Load **Creative ▸ Broken Cassette** (TAPE AGE 100 %, WOW 80 %, FLUTTER 70 %) or **Mix ▸ Lo-Fi Bus Wobble** for a milder wear.
2. TAPE AGE sets the wear and the dropouts; WOW and WOW RATE how seasick it sounds.

The runaway swoop

1. Load **Creative ▸ Runaway Oscillation** (heads 1 and 2, 140 ms, INTENSITY 92 %).
2. Play a short note; the loop builds into the tape and sings.
3. Sweep REPEAT RATE for the classic pitch swoops; pull INTENSITY under 80 % to let it go. Watch your level.

Specifications

Type	Multi-head tape echo: record head, three playback heads at 1 : 2 : 3, record amplifier and tape (8× oversampled), two-spring tank
Channels	Mono and stereo
Latency	None; every echo lands on its time (measured: within 0.03 ms at 44.1, 48 and 96 kHz)
Transparency	MIX 0 % with OUTPUT 0 dB returns the input bit for bit
Silence	Hiss follows the loop; a silent machine sleeps, and the output is true digital zeros
HEAD	15 modes: 1–12 in the order of the classic 12-position selector, 13–15 the reverb-free pairs and all three (default 13: 1+2)
REPEAT RATE	25 to 800 ms, head 1's echo (default 220 ms)
SYNC / NOTE	Off / 1/64 to 1/2 with triplets and dotted values, within 25 to 800 ms (default 1/8)
INTENSITY	0 to 100 %, unity at 80 % (default 42 %)
BASS / TREBLE	−12 to +12 dB, shelves at 120 Hz / 3.2 kHz, in the loop (default 0.0 dB)
SATURATION	0 to 100 %, record level −4 to +14 dB (default 35 %)
TAPE AGE	0 to 100 % (default 25 %)
WOW / WOW RATE	0 to 100 % (default 30 %) / 0.2 to 4 Hz (default 0.60 Hz)
FLUTTER / FLUTTER RATE	0 to 100 % (default 25 %) / 2 to 25 Hz (default 7.00 Hz)
SPRING	0 to 100 %, in modes 5–12 (default 35 %)
MIX / LOCK	0 to 100 %, equal power (default 30 %) / on, off (default off)
OUTPUT	−24 to +12 dB (default 0.0 dB)
Metering	TAPE (the tape path, heads, speed and echo times); WOW / FLUTTER (3 s); LOOP (1, 4 and 8 trips); ECHOES (6 s); IN and OUT meters (peak, RMS); short-term and integrated loudness per ITU-R BS.1770-4 / EBU R 128
Presets	42 factory presets in 9 folders, plus your own
Window	1360 × 900 points; resizable from 75 % to 200 %, saved with the session
Formats	VST3, Audio Units, standalone; AAX once signed
Plugin ID	Manufacturer Veir, plugin Vdgd

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 Gold 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. In mode 12, there are no echoes, only the spring tank. On an aux, check that the tracks' sends are up.

The spring knob does nothing. The mode has no tank: SPRING works in modes 5 to 12 only and is dimmed in the others.

The echoes keep getting louder. INTENSITY is past 80 %: the loop runs away into the tape by design. Turn it under 80 % to let it fade.

The echoes waver in pitch. That's WOW and FLUTTER (and TAPE AGE's wandering transport). Lower them for steadier echoes.

I hear hiss or the echoes drop out. That's TAPE AGE: a worn tape hisses and has worn spots. Lower it for a newer tape.

Turning REPEAT RATE bends the pitch. That's the tape machine's motor changing speed, as on the real machines. Change the rate in a pause, or automate it quickly, if you don't want the glide.

The echoes are muddy, or the drums' echoes boom. Cut BASS (−3 to −6 dB) and TREBLE a little: in the loop, a small cut builds up repeat by repeat.

My synced echo is not the note I chose. Head 1 can only go from 25 to 800 ms. At a slow tempo a long note value is held at 800 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 Gold add latency? No. The record path's oversampling filters are taken off the heads' reads, so every echo still lands on its 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 Gold · User Manual · Version 0.1.0

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

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