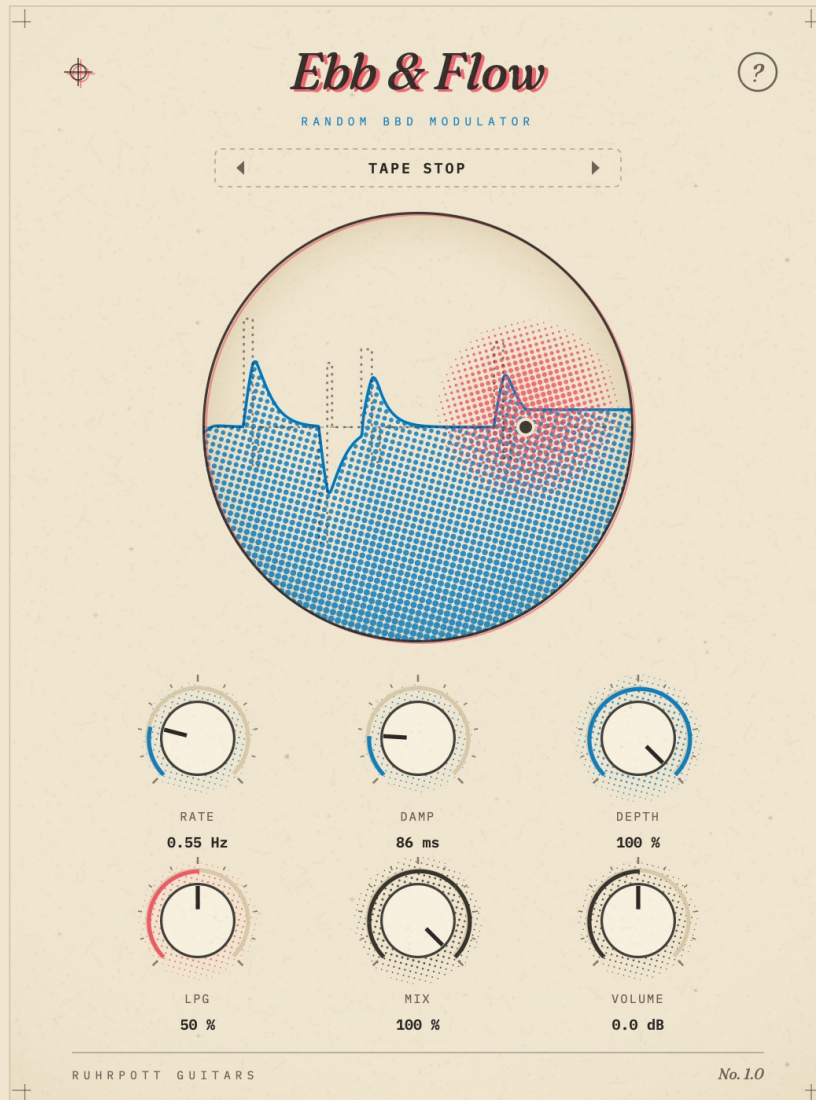


Ebb & Flow

Random tides under your notes.



A modulation effect around a bucket brigade delay: a random LFO jumps away from rest, up or down, and comes straight back, pulling the delay with it. Hard, it stutters like a tape that is grabbed and let go; soft, it sways into chorus. A low pass gate follows your playing. A classic lo-fi box.

AU / VST3 for macOS · Ruhrpott Guitars

Six knobs

One face, like a stompbox: the lens on top, six knobs below. There is no footswitch: bypass is the host's job. Ebb & Flow opens on the classic tape stop: Rate about a fifth of the way, Depth fully up, Damp just off the left, fully wet.

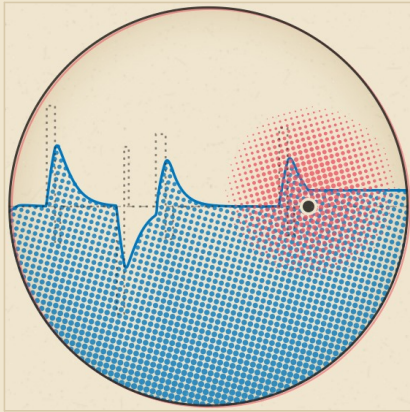
<i>Rate</i>	0.20 Hz – 20 Hz default 0.55 Hz	How often the LFO jumps, on average. The gaps between the jumps are random.
<i>Damp</i>	50 ms – 1.00 s default 86 ms	How hard or soft the jumps are. Left: hard, the pitch dives or leaps like a tape that is grabbed and let go. Right: soft, the jumps melt into a slow sway, and with some dry signal in the mix that is a chorus.
<i>Depth</i>	0 % – 100 % default 100 %	How far the LFO jumps, at random up or down: up to ten times the resting delay (100 ms, the pitch falls) or down to half of it (5 ms, the pitch rises). Every jump goes straight back to rest, swinging a little past it on the way.
<i>LPG</i>	0 % – 100 % default 50 %	The low pass gate. The knob sets how far it is open when you play quietly; loud notes open it further and it falls back after them. At a quarter, loud notes take it to about half. Fully left it stays dull however hard you play, fully right it stands open. A little hiss of the BBD comes with every note and trails after it: the more open the gate, the more of it.
<i>Mix</i>	0 % – 100 % default 100 %	Dry to wet. Fully wet you hear the jumps as pitch; with dry signal added they become chorus.
<i>Volume</i>	silent – +12.0 dB default 0.0 dB	Noon is unity, fully up is +12 dB, fully down is silence.

Drag up and down or sideways	Turn a knob
Scroll wheel	The same, in small steps
Double-click	Back to the default
Click the arrows by the preset name	Previous or next preset
Click the preset name	All presets, save your own, show the preset folder
Click the ? in the corner	This manual

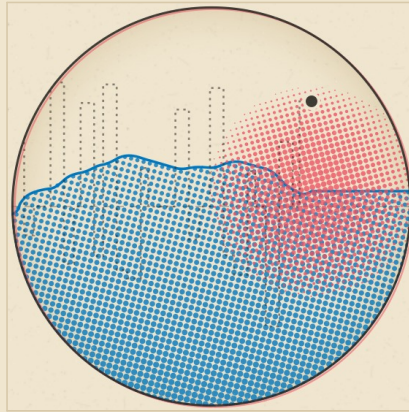
Mouse only. Ebb & Flow never takes the keyboard. Space and every other key stay with your DAW.

The lens

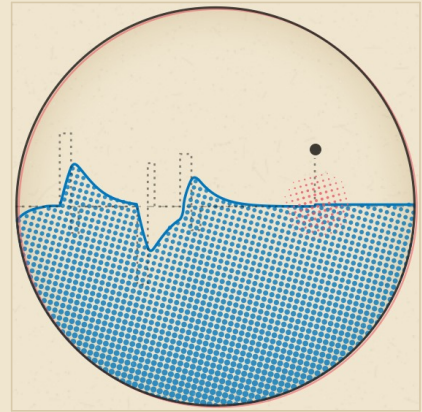
The round window shows the tide: what the LFO is doing right now and in the last four seconds. It only watches, it cannot be touched.



Tape Stop: jumps up and down, each one back to rest with a little swing past it.



Tidal Chorus: much Damp. The jumps barely lift the water, it sways.



Low Tide: LPG far left. Dull; only loud notes open the gate a little.

The dashed line	Rest. Every jump comes back here.
The water	The LFO after Damp, which pulls the BBD. Above the line the delay grows and the pitch falls; below it shrinks and the pitch rises. It comes in from the right.
The dotted pulses	The jumps themselves: how often is Rate, how far is Depth.
The little ink moon	Where the LFO is heading right now. With little Damp the water is there at once, with much Damp it barely lifts.
The red dots	The low pass gate: the more open, the larger the patch. Fully right it stays large.

Presets

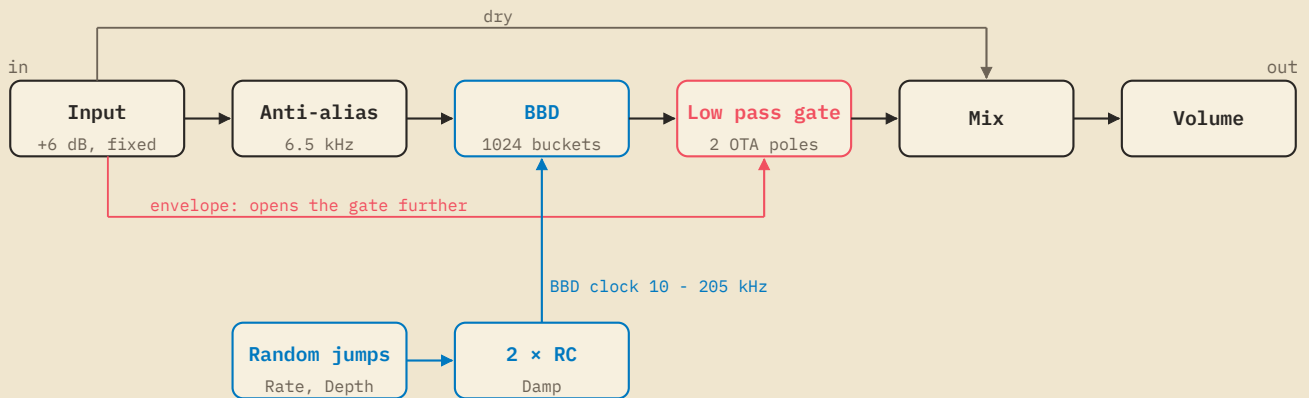
Ten factory presets, the first one is the default sound. Presets set the five sound knobs; Volume is a level and stays where it is. Value, then where the knob stands. Your own presets are saved with **Save preset** in the preset menu and show up under **My presets**; the hosts' program lists show the factory presets.

	RATE	DAMP	DEPTH	LPG	MIX
<i>Tape Stop</i>	0.55 Hz 22 %	86 ms 18 %	100 %	50 %	100 %
<i>Dropout</i>	0.73 Hz 28 %	50 ms 0 %	100 %	30 %	100 %
<i>Broken Cassette</i>	1.6 Hz 45 %	72 ms 12 %	85 %	60 %	80 %
<i>Nervous Tape</i>	5.0 Hz 70 %	60 ms 6 %	55 %	60 %	100 %
<i>Warped Record</i>	0.38 Hz 14 %	193 ms 45 %	75 %	65 %	100 %
<i>Seasick</i>	1.0 Hz 35 %	302 ms 60 %	90 %	70 %	100 %
<i>Tidal Chorus</i>	2.5 Hz 55 %	638 ms 85 %	100 %	80 %	50 %
<i>Subtle Drift</i>	0.46 Hz 18 %	432 ms 72 %	45 %	75 %	40 %
<i>Low Tide</i>	0.50 Hz 20 %	123 ms 30 %	70 %	8 %	100 %
<i>Hiss and Breath</i>	0.63 Hz 25 %	143 ms 35 %	65 %	100 %	100 %

Facts

Formats	AU and VST3, macOS 11 or newer, Apple Silicon and Intel
Channels	Mono, mono in / stereo out, stereo
Latency	None
Bypass	No footswitch, use your host's bypass
Window	520 × 700
Saved with the project	All six knobs and the name of the preset
In your host	Ruhrpott Guitars › Ebb and Flow
Own presets	.ebbpreset files in Library/Audio/Presets/Ruhrpott Guitars/Ebb and Flow
Install	Ebb and Flow.component to /Library/Audio/Plug-Ins/Components, Ebb and Flow.vst3 to /Library/Audio/Plug-Ins/VST3, restart the host
Fonts	Fraunces and IBM Plex Mono, SIL Open Font License

How the sound is made



Bucket by bucket

The BBD takes a sample of your signal with every clock tick and hands out the one from 1024 ticks ago (an MN3207 type chip). At rest the clock runs at 102 kHz, a delay of 10 ms. The delay is the time of the last 1024 ticks, just as in the chip: when the clock jumps, the pitch bends for as long as the delay changes, instead of clicking. A little saturation lives in the BBD; it has no hiss of its own.

The random LFO

A random generator makes the modulation. At random moments it jumps away from rest, up or down by a random amount, and comes straight back, swinging past rest by a random part of the jump before it settles. A new jump only starts once the last one is home. Two RC stages (Damp, 50 ms to 1 s) round it all off; the softer they are, the longer a jump is held, so even a slow LFO still moves.

Low pass gate

Two OTA one-pole filters (LM13700) with a little saturation, and the level with them: closed, the wet signal is dark and about 9 dB quieter. LPG sets how far the gate is open anyway. An envelope follower on the input (2 ms attack, 120 ms release) opens it further when you play loud: nothing below -36 dBFS, the most from -12 dBFS on. How much further depends on the knob: a little more in the lower half, nothing at either end (loud notes take 10 % to 27 %, 25 % to 53 %, 50 % to 81 %). The dull end of the gate sits at 320 Hz and moves up a little when you play loud and busy. A little hiss joins the signal on its way into the BBD: it follows your playing, fades within a quarter of a second after a note, grows as the gate opens and is filtered along with it. Without a signal there is no hiss at all.

Stereo

Mono, mono to stereo and stereo. Both channels share one LFO and one gate, as if both ran through the same box.

Set by ear

The BBD is simulated bucket by bucket, but Ebb & Flow is not a model of any particular circuit: clock range, jump shape and envelope times are set by ear.