

Atomism

Glitch granular shredder.

Atomism chops incoming audio into tiny grains (2.5 ms by default) and scatters them with heavy pitch randomization. Grain starts come from a trigger source or a chaos generator, and every random draw in the device comes from one Entropy source that you choose.

Sixteen gen~ grain voices read a continuously written 4 s stereo buffer. Reading inside gen~ keeps grain starts sample-accurate, which matters when a grain is only a few milliseconds long.

SIGNAL PATH

```
in -> 4 s stereo buffer (Hold stops writing)
-> scheduler (Source, Burst, Jitter, Spray)
-> 16 grain voices (window, rate, direction, pan)
-> DC block -> tanh -> Dry/Wet -> Output (ceiling -0.3 dBFS)
```

Feedback writes the shredded output back into the buffer.

QUICK START

- 1 Put Atomism on an audio track with something playing. The defaults (Free source, 120 grains/s, 2.5 ms, Logistic entropy) shred immediately.
- 2 Move **Random** to widen or collapse the pitch scatter. Set it to 0 for a pure stutter.
- 3 With Entropy on Logistic, sweep **Chaos**. Low values repeat in short patterns; around 66 % the pattern snaps back into a periodic window; near 100 % it stops sounding periodic.
- 4 Set **Source** to Onset. Each input transient now fires a Burst of grains.
- 5 Map an LFO, envelope follower or clip automation to **Trig** to fire bursts from outside.

CONTROLS

TRIGGER

CONTROL	RANGE	WHAT IT DOES
Source	Free / Sync / Onset / Chaos	Free runs a grain clock at Density. Sync fires one event per host Division tick (a free clock of the same length while the transport is stopped). Onset fires on input transients. Chaos fires from the Entropy source.
Density	1-4000 grains/s	Grain clock rate in Free; grain spacing inside a Burst otherwise. Default 120.
Division	1/64 ... 1/4, incl. triplets	Sync tick length. Default 1/16.
Burst	1-64 grains	Grains per event outside Free. Ignored in Free. Default 8.

CONTROL	RANGE	WHAT IT DOES
Sens	0-100 %	Onset threshold; in Chaos source it sets how readily events fire. Default 50.
Jitter	0-100 %	Moves each grain start by up to one grain spacing. Default 40.
Trig	momentary	Rising edge fires a Burst in any Source. Mappable.
GRAIN		
Size	0.3-50 ms	Grain length. Default 2.5 ms.
Vary	0-100 %	Random length variation, up to x^2 either way at 100 %. Default 30.
Window	Rect / Tri / Hann / Click	Grain envelope. Rect is unwindowed and Click has no attack; the clicks are intentional.
Reverse	0-100 %	Probability that a grain plays backwards. Default 25.
Spray	0-1000 ms	How far back into the buffer a grain may reach. Default 60.
PITCH		
Pitch	-24 to +24 st	Base transposition.
Random	0-24 st	Random pitch spread per grain. Default 12.
Quantize	Off / Semi / Fifth / Oct	Snaps the random pitch draw to a grid.
ENTROPY		
Entropy	Noise / Logistic / Lorenz	The single source behind every random draw. See below.
Chaos	0-100 %	Logistic: $r = 3.5 + 0.5 \times \text{Chaos}$. Lorenz: $\rho = 18 + 32 \times \text{Chaos}$. Default 85.
Speed	0.02-50 units/s	Lorenz integration speed.
BUFFER AND OUTPUT		
Hold	on / off	Stops writing to the buffer; grains keep chewing the last 4 s.
Feedback	0-100 %	Writes the shredded output back into the buffer.
Width	0-100 %	Random pan spread. Default 50.
Dry/Wet	0-100 %	Default 100.
Output	-24 to +12 dB	Output trim. A hard ceiling sits at -0.3 dBFS.

NOTES

Entropy sources

- **Noise:** uncorrelated.
- **Logistic:** one step of $x \rightarrow r \times (1 - x)$ per grain. When the map is periodic (low Chaos, or the windows near $r = 3.83$) the whole grain stream repeats with it. At high r the pitch draw piles up at both extremes, so expect a lot of the maximum Random.
- **Lorenz:** the attractor runs continuously at Speed, so draws drift and flip between lobes. Below Chaos of about 21 % it settles to a fixed point and every grain becomes identical.

Display

Grain map (x = distance back into the buffer, y = pitch; orange is reverse, blue is forward), window preview, pitch histogram, an Entropy view (return map for Noise and Logistic, x-z trail for Lorenz), and meters.

Deliberate roughness

- Upward pitch is not band-limited. Aliasing is part of the sound.
- A stolen voice is cut, not faded (oldest of 16 is stolen).
- Grain rate is clamped to +/-4 octaves in total.

STATUS

Checked offline with the DSP harness and patch tests. Loading in Live and listening are still yours to confirm.