

Mutable instruments

Knob

Granular processing

Clouds continuously records the incoming audio into a short amount of sample memory. While recording time can reach up to 8s by reducing the audio quality setting, you ought to feel very guilty every time you think of this as "tape" – think of it as a space, a room. Using this recorded audio data, the module synthesizes a sonic texture by playing back short (overlapping) segments of audio (also known as "grains") extracted from it.

Pitch-shifter/time-stretcher

This engine is quite similar to the granular mode, except that it uses two overlapping grains synchronized with the most salient period of the sound. The grains are carefully spliced so that they mesh well with each other (a technique similar to the "deglitching" of early pitch-shifters).

Looping delay

The looping delay engine continuously plays back audio from the buffer without any kind of granularization.

Spectral madness

MP3-style bitrate reduction and corrupted file glitches. Check. Spectrum warping. Check. Paulstretch-like drones. Check. But we'll let you figure all this out .

Activation (hold the Blend button until LEDs get orange)



	<u>What</u>	<u>Description</u>	<u>What</u>	<u>Description</u>	<u>What</u>	<u>Description</u>	<u>What</u>	<u>Description</u>
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Position	Position	Selects from which part of the recording buffer the audio grains are played. Turn the knob clockwise to travel back in time.	Position	Modulating POSITION when recording is frozen will "scrub" through the audio buffer. Clouds' uses classic time-domain methods which are not suitable for polyphonic or percussive material (unless this percussive material is breakbeats and you liked Akai samplers. Then: smile).	Position	POSITION controls the distance between the playback head and the recording head (in other words, the delay time). Modulating POSITION will create effects similar to vinyl scratching or manual manipulation of tape. When FREEZE is activated, the content of the audio buffer is looped (stutter effect). POSITION controls the loop start and SIZE the loop duration.		
Size	Size	The module plays grains continuously, at a rate determined by the DENSITY and SIZE settings	Size	SIZE controls the size of the overlapping windows used for pitch-shifting and time-stretching – from an extremely grainy "drilling" sound to smooth bits of loops.	Size	When FREEZE is activated, the content of the audio buffer is looped (stutter effect). POSITION controls the loop start and SIZE the loop duration.  SIZE controls the size of the overlapping windows used for pitch-shifting – fully clockwise for a smooth result that might smear transients, fully		
Density	Density	The module plays grains continuously, at a rate determined by the DENSITY and SIZE settings. At 12 o'clock, no grains are generated. Turn clockwise and grains will be sown randomly, counter-clockwise and they will be played at a constant rate. The further you turn, the higher the overlap between grains.	Density	DENSITY creates a granular diffusion effect based on all-pass filters	Density	DENSITY creates a granular diffusion effect based on all-pass filters;		
Pitch shift	Pitch shift		Pitch shift		Pitch shift			
Texture	Texture	Morphs through various shapes of grain envelopes: square (boxcar), triangle, and then Hann window. Past 2 o'clock, activates a diffuser which smears transients	Texture	TEXTURE acts as a low-pass/high-pass filter.	Texture	TEXTURE acts as a low-pass/high-pass filter.		
Trig input	Trig input	Generates a single grain. By moving the grain DENSITY to 12 o'clock, and sending a trigger to this input, Clouds can be controlled like a micro-sample player. An LFO or clock divider (or even a pressure plate) can	Trig input	Sending a trigger on the TRIG input creates a clock-synchronized loop (when FREEZE is enabled) or stuttering effect – equivalent to applying a tempo-synchronized decaying envelope on the POSITION	Trig input	When FREEZE is enabled, sending a trigger on the TRIG input creates a clock-synchronized stuttering loop. Otherwise, the period of the trigger pulses sets the delay time – provided this delay is shorter than		
Freeze	Freeze	It is possible, at any time, to FREEZE the audio buffer from which the grains are taken – In this case, the incoming audio is no longer recorded. Somehow, Clouds is the exact opposite of a sampler: by default, the module always samples the audio it receives, except when it is in the frozen state. This latching button stops the recording of incoming audio. Granularization is now performed on the last few seconds of audio kept in memory in the module.	Freeze		Freeze	When FREEZE is activated, the content of the audio buffer is looped (stutter effect). POSITION controls the loop start and SIZE the loop duration.		
Dry/wet 1	Dry/wet balance		Dry/wet balance		Dry/wet balance			
Dry/wet 2	Stereo spread	Amount of random panning/balance applied to the grains	Stereo spread	Amount of random panning/balance applied to the grains	Stereo spread	Amount of random panning/balance applied to the grains		
Dry/wet 3	Feedback amount		Feedback amount		Feedback amount			
Dry/wet 4	Reverberation amount		Reverberation amount		Reverberation amount			

Clouds		Parasites	
<b>Knob</b>	<p><b>Oliverb mode</b></p> <p>The Oliverb is a full-featured and CV-controllable modeless reverb with some twists. This mode is mono-in, stereo-out. The reverb parameter can be controlled by the knobs and CV inputs</p>	<p><b>Resonator mode</b></p> <p>It is a dual-voice, four-parts resonator (or comb filter) effect with built-in capability for polyphonic Karplus-Strong plucked string synthesis, and more.</p>	
<b>Activation</b> (hold the Blend button until LEDs get orange)			
<b>Position</b>	<p><b>What</b></p> <p>Pre-delay</p> <p><b>Description</b></p> <p>The <b>Position</b> knob controls the time it takes for the reverb to kick in after a sound has gone in (from 0 to about half a second). When a clock is fed to the <b>Trig</b> input, this knob becomes a clock divider/multiplier for the pre-delay: at 12 o'clock, the pre-delay takes the value of the clock length; clockwise, this clock is divided, and counter-clockwise it is multiplied following the rates: 1/16, 3/32, 1/8, 3/16, 1/4, 3/8, 1/2, 3/4, 1, 3/2, 2/1, 3/1, 4/1, 6/1, 8/1, 12/1 (borrowed from the Echophon). Note that the clock division is limited to the largest division not exceeding the maximum delay based on the clock rate.</p>	<p><b>What</b></p> <p>Position</p> <p><b>Description</b></p> <p>Controls the timbre and duration of the noise burst. CCW, it will be longer and more dampened; CW, it will be shorter and more high pitched. At both ends of the knob, the burst will be inaudible (too damped or too short), which you can use to "mute" a voice.</p>	
<b>Size</b>	<p><b>Reverb Size</b></p> <p>The <b>Size</b> knob controls the lengths of all the delays internal to the reverb, i.e. the size of the emulated room. It varies from a small resonator to a huge hall.</p>	<p><b>Chord</b></p> <p>Chord selection for the current voice. Morphs gradually between Unison, Fat, Superfat, Fat power, Fat octave, Octaves, Power, Major, Major7, Minor7, Minor, Sus2, Sus4, Minor9, Major9, Minor11, Major11, and Major11.</p>	
<b>Density</b>	<p><b>Decay</b></p> <p>The <b>Density</b> knob controls the amount of sound fed back into the reverb loop, i.e. the decay time of the reverb tail. Beyond 3 o'clock, this signal is actually amplified and the reverb enters self-oscillation.</p>	<p><b>Decay</b></p> <p>Decay time of the current voice. Beyond approx. 3 o'clock, decay is infinite and the sound sustains forever (you can use it as a traditional oscillator).</p>	
<b>Pitch shift</b>	<p><b>Pitch shift</b></p> <p>Each time the sound is fed back into the reverb, it can be pitch shifted. The Pitch knob controls, from -1 to +1 octaves how it is pitch shifted. At 12 o'clock, no pitch shifting is applied; fully clockwise, we get the classic shimmer effect; lots of oddities can be found in between. To hear the effect of the pitch shifter, some sound has to be fed back by increasing Decay. Note that Size has an impact on how well the sound is pitch-shifted: the larger the room size, the more accurate the pitch shift.</p>	<p><b>Pitch</b></p> <p>Base pitch of the current voice. At 12 o'clock, the pitch is A3 (220Hz).</p>	
<b>Texture</b>	<p><b>Diffusion</b></p> <p>The <b>Texture</b> knob controls how much the sound is "smoothened" by the diffusers each time it goes through the loop. Fully clockwise, you get the more dense, continuous sound; fully counter-clockwise, you clearly hear the sound being repeated like in a multi-tap delay.</p>	<p><b>Dampening</b></p> <p>Controls filtering in the feedback loop of the resonator. At 12 o'clock, no filtering is applied; CCW, a low-pass filter is applied with an increasingly low cutoff frequency; CW, a band-pass filter at the frequency of the resonator is applied with an increasingly high resonance.</p>	
<b>Trig input</b>	<p><b>clock</b></p> <p><i>Check Pre-delay section</i></p>	<p><b>Burst</b></p> <p>A trigger in this input will switch the current voice (if <b>Freeze</b> is not active) and send a short burst of noise in its resonator.</p>	
<b>Freeze</b>	<p><b>Freeze</b></p> <p>The <b>Freeze</b> button sets reverb to (near) infinite decay, and mutes the input. This works best with no pitch shifting and a large size.</p>	<p><b>Freeze</b></p> <p>Switch the current voice, and inhibits further voice switch by the <b>Trig</b> CV.</p>	
<b>Dry/wet 1</b>	<p><b>Dry/Wet</b></p> <p>The first function of the <b>Blend</b> knob is dry/wet crossfading, as in the other modes.</p>	<p><b>Dry/Wet</b></p> <p>Crossfades between the dry and the wet signal.</p>	
<b>Dry/wet 2</b>	<p><b>Dampening</b></p> <p>The second function of the <b>Blend</b> knob (called "stereo spread") controls the dampening of the reverb. From fully CCW to 12 o'clock, a low-pass filter is applied, simulating the absorption of the room. From 12 o'clock to fully CW, a high-pass filter is applied for unusual, crystalline effects.</p>	<p><b>Stereo output</b></p> <p>Assigns each part and voice to an output (<b>Out L</b> or <b>Out R</b>). Fully CCW, each voice goes to a different output. At 12 o'clock, both voices are equally mixed in both output. Fully CW, parts of both voices are distributed on both output for a wide stereo effect.</p>	
<b>Dry/wet 3</b>	<p><b>Modulation speed</b></p> <p>The third function of the <b>Blend</b> knob (called "feedback") controls the speed of these LFOs. It ranges from ~1/100Hz to ~100Hz. It has no effect if modulation amount is null.</p>	<p><b>Scatter</b></p> <p>Controls the random delay times before the sound (input or burst) hits each resonator of the current voice. Used for K-S synthesis with a chord, this will give the impression that strings are struck sloppily.</p>	
<b>Dry/wet 4</b>	<p><b>Modulation amount</b></p> <p>Each delay in the reverb can be individually modulated by 9 smoothed random LFOs. The fourth function of the <b>Blend</b> knob (called "reverb") controls the amount of modulation applied by the LFOs to the delay time. Small modulations result in subtle chorus and ghost tones, large modulations in random pitch shifts.</p>	<p><b>Harmonics</b></p> <p>Simulates striking the harmonics on a string. Fully CCW, it has no effect. Fully CW, the second harmonic will ring; at 12 o'clock, the third, at 10 the fourth etc.</p>	

**SYSTEM**

**Saving and Up** to 4 frozen audio buffers can be saved and reloaded. Along with the audio data itself, the quality settings and the processing mode are saved with it.




- To save the recording buffer in permanent memory:
1. Hold the Load/Save button for one second.
  2. Press the Blend parameter/Audio quality button repeatedly to select one of the 4 memory slots. The selected slot is indicated by a blinking green LED.
  3. Press the Load/Save button to confirm.

- To load a recording buffer from permanent memory:
1. Press the Load/Save button.
  2. Press the Blend parameter/Audio quality button repeatedly to select one of the 4 memory slots. The selected slot is indicated by a blinking green LED.
  3. Press the Load/Save button to confirm.

If you press the Load/Save button by mistake, do not press any button for a few seconds and the module will return to its normal state.

**Audio quality**

Hold the Blend parameter/Audio quality button for one second, then press it repeatedly to choose a recording quality. The current quality setting is indicated by a red LED.

	Rate	Resolution	Channels	Buffer time
	32kHz	16-bit	stereo	1s
	32kHz	16-bit	mono	2s
	16kHz	8-bit μ-law	stereo	4s
	16kHz	8-bit μ-law	mono	8s