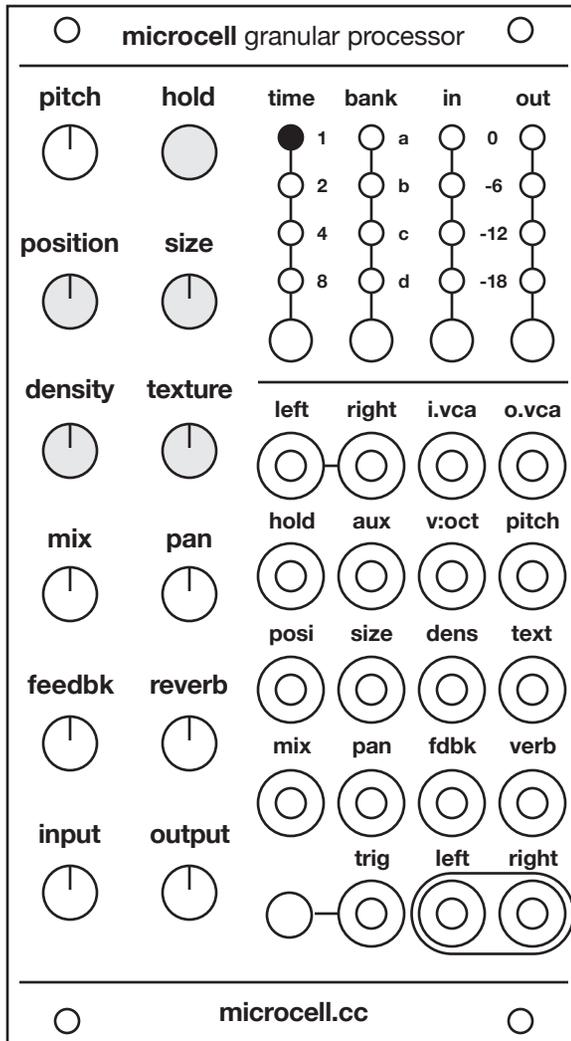


## Clouds Mode (Parasites)



The **hold** button stops the recording of incoming audio. Granularization is now performed on the last few seconds of audio kept in memory in the module.

Long-press **hold** to toggle reversed playback. When it is on, the **hold** LED will flash and each grain will play back in reverse.

Grain **position**. Selects from which part of the recording buffer the audio grains are played. Turn the knob clockwise to travel back in time.

Grain **size** and **pitch** (transposition). At 12 o'clock, the buffer is played at its original frequency.

Grain **density**. 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.

Grain **shape (texture)** morphes between: square, ramp up, ramp down, triangle, and triangle with diffuser. Fully counter-clockwise, the square shape has particularly sharp edges and may click. This is desired (more glitch!); if you want the old behaviour, turn the knob up a little bit until the click disappears.

### Notes on Input/Outputs

All CV inputs are calibrated for a range of +/- 5V. Voltages outside of this range are tolerated, but will be clamped.

1. **Hold** gate input. When the input gate signal is high, stops the recording of incoming audio, just as latching the **hold** button would do.

2. **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 thus be used to sow grains at the rate of your choice.

3. The **pitch** parameter is controlled by two separate CV inputs. The **v:oct** input is exponential and the **pitch** input is linear.

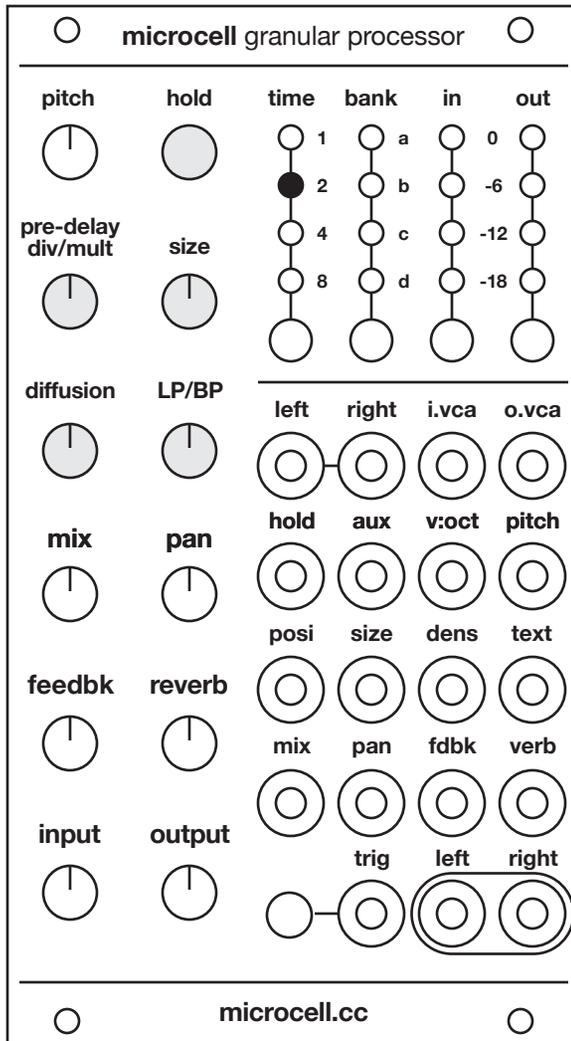
### Sources

[https://www.infinesimal.eu/modules/images/6/62/Clouds\\_Illustrated\\_Manual.pdf/](https://www.infinesimal.eu/modules/images/6/62/Clouds_Illustrated_Manual.pdf/)

<https://mutable-instruments.net/modules/clouds/manual/>

<https://mqthiqs.github.io/parasites/clouds.html>

## Pitch-Shifter (Parasites)



**Hold** button. This latching button stops the recording of incoming audio. Pitch-shifting/-Time-stretching is now performed on the last few seconds of audio kept in memory in the module.

When a clock is sent to the **Trig** input, the **Position (pre-delay div/mult)** 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.

**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.

**Density (diffusion)** creates a granular diffusion effect based on all-pass filters.

**Shape (LP/BP)** acts as a low-pass/high-pass filter.

In the **Mono quality** modes, **Stereo** spread crossfades between the left and the right input.

In the **Stereo quality** modes, **Stereo** spread gradually swaps both output channels. Fully CW, it allows to do ping-pong delay effects.

Sending a trigger to the **Trig** input creates a clock-synchronized loop (when **Freeze (hold)** is enabled) or stuttering effect.

### Notes on Input/Outputs

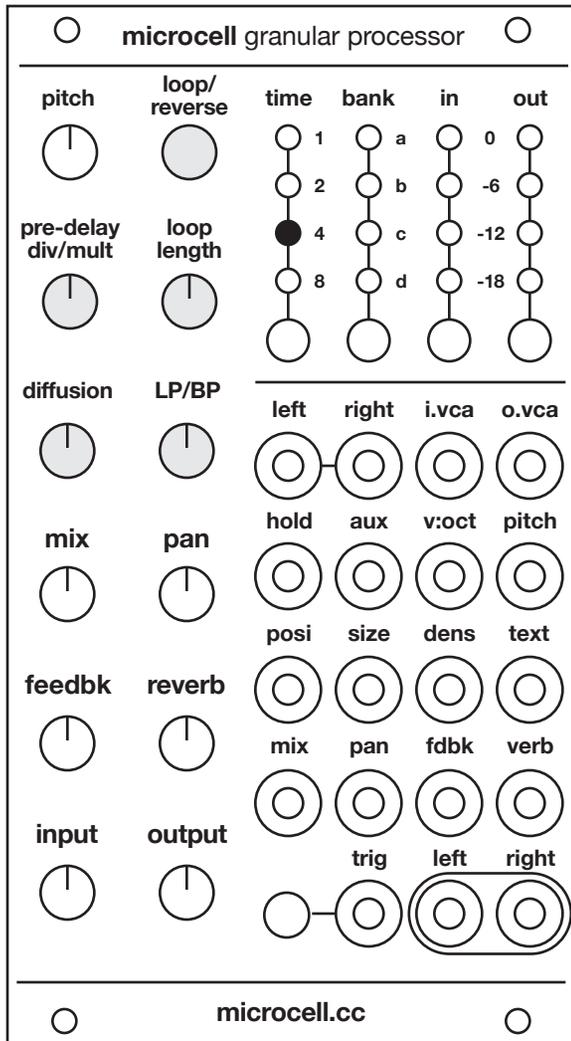
*All CV inputs are calibrated for a range of +/- 5V. Voltages outside of this range are tolerated, but will be clamped.*

1. **Hold** gate input. When the input gate signal is high, stops the recording of incoming audio, just as latching the **hold** button would do.
2. Sending a trigger on the **trig** input creates a clock-synchronized loop when **hold** is enabled or a stuttering effect—equivalent to applying a tempo-synchronized decaying envelope on the **Position (pre-delay div/mult)** parameter.
3. The **pitch** parameter is controlled by two separate CV inputs. The **v/oct** input is exponential and the **pitch** input is linear.

### Sources

[https://www.infinesimal.eu/modules/images/6/62/Clouds\\_illustrated\\_Manual.pdf/](https://www.infinesimal.eu/modules/images/6/62/Clouds_illustrated_Manual.pdf/)  
<https://mutable-instruments.net/modules/clouds/manual/>  
<https://mqthiqs.github.io/parasites/clouds.html>

## Looping Delay (Parasites)



**Position (pre-delay div/mult)** controls the distance between the playback head and the recording head (in other words, the delay time). Modulating **position (pre-delay div/mult)** will create effects similar to vinyl scratching or manual manipulation of tape.

When a clock is sent to the **trig** input, the **position (pre-delay div/mult)** 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.

When **hold (loop/reverse)** is activated, the content of the audio buffer is looped (stutter effect). **Position (pre-delay div/mult)** controls the loop start and **Size (loop length)** the loop duration.

**Density (diffusion)** creates a granular diffusion effect based on all-pass filters; and **shape (LP/BP)** acts as a low-pass/high-pass filter.

When **hold (loop/reverse)** is active and delay time is synced to an external clock, **size (loop length)** controls the repeat time multiplication/division.

When **hold (loop/reverse)** 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 the recording buffer size.

Long-press **hold (loop/reverse)** to toggle **reverse** mode. When in reverse mode and when a loop is frozen, it is played back reversed.

**Size (loop length)** controls the size of the overlapping windows used for pitch-shifting—fully clockwise for a smooth result that might smear transients, fully counterclockwise for a grainy, almost ring-modulated sound.

When the **pitch** is at 0, it now bypasses the pitch shifter completely. This enhances the delay quality when no pitch-shifting is done.

In the Mono quality modes, Stereo spread crossfades between the left and the right input. In the Stereo quality modes, Stereo spread gradually swaps both output channels. Fully CW, it allows to do ping-pong delay effects.

### Notes on Input/Outputs

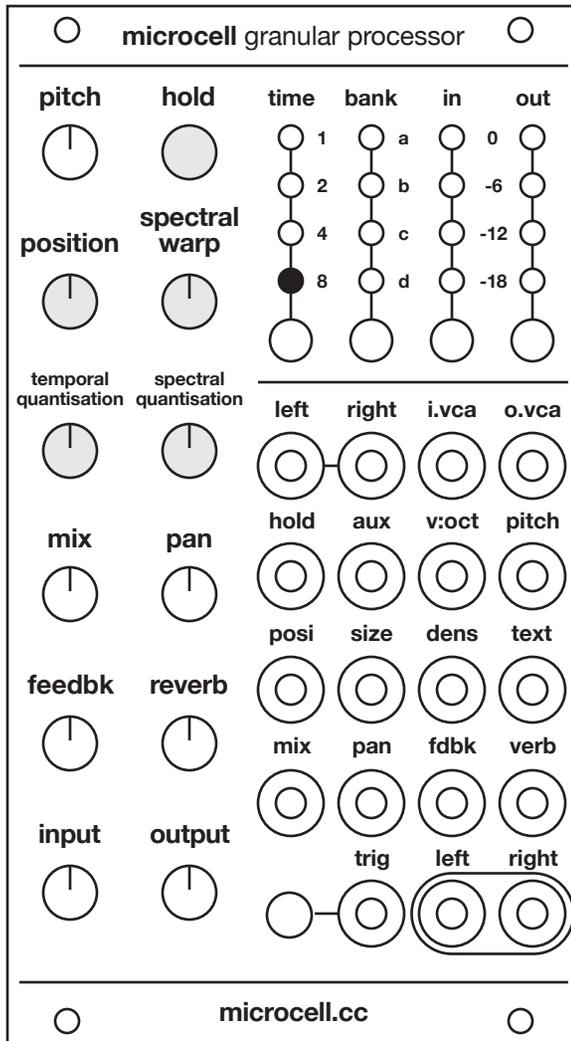
*All CV inputs are calibrated for a range of +/- 5V. Voltages outside of this range are tolerated, but will be clamped.*

1. **Hold** gate input. When the input gate signal is high, stops the recording of incoming audio, just as latching the **Hold (loop/reverse)** button would do.
2. Sending a trigger on the **trig** input creates a clock-synchronized loop (when **hold** is enabled) or stuttering effect.
3. **Size** input 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. Modulating the
4. **Posi** input will create effects similar to vinyl scratching or manual manipulation of tape
5. The **pitch** parameter is controlled by two separate CV inputs. The **v/oct** input is exponential and the **pitch** input is linear.

### Sources

[https://www.infinesimal.eu/modules/images/6/62/Clouds\\_Illustrated\\_Manual.pdf/](https://www.infinesimal.eu/modules/images/6/62/Clouds_Illustrated_Manual.pdf/)  
<https://mutable-instruments.net/modules/clouds/manual/>  
<https://mqthiqs.github.io/parasites/clouds.html>

## Spectral Madness (Parasites)



**Pitch:** At 12 o'clock, the buffer is played at its original frequency.

**Hold** button. 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.

**Position** selects from which part of the recording buffer the audio grains are played. Turn the knob clockwise to travel back in time.

**Size (spectral warp)**, warps through a selection Polynomial functions, shifting and wrapping frequencies. 12 o'clock is neutral. CW raises spectrum, increasing apparent pitch and CCW lowers spectrum, decreasing apparent pitch.

**Density (Temporal Quantisation)** controls the refresh rate of FFT analysis, 12 o'clock is fastest. This is fastest enough to keep up with fast moving spectral movement, such as percussion. CCW slows refresh until it's nearly static and almost freezes the spectrum. Beyond 12 o'clock it adds phase randomisation, creating a smearing, chaotic, reverb-like effect.

**Shape (spectral quantisation)** controls the resolution of the FFT through the number of frequency bands. At 12 o'clock it is at its finest and finely spaced. Turning CCW lowers the resolution and has the bands become increasingly quantised.

### Notes on Input/Outputs

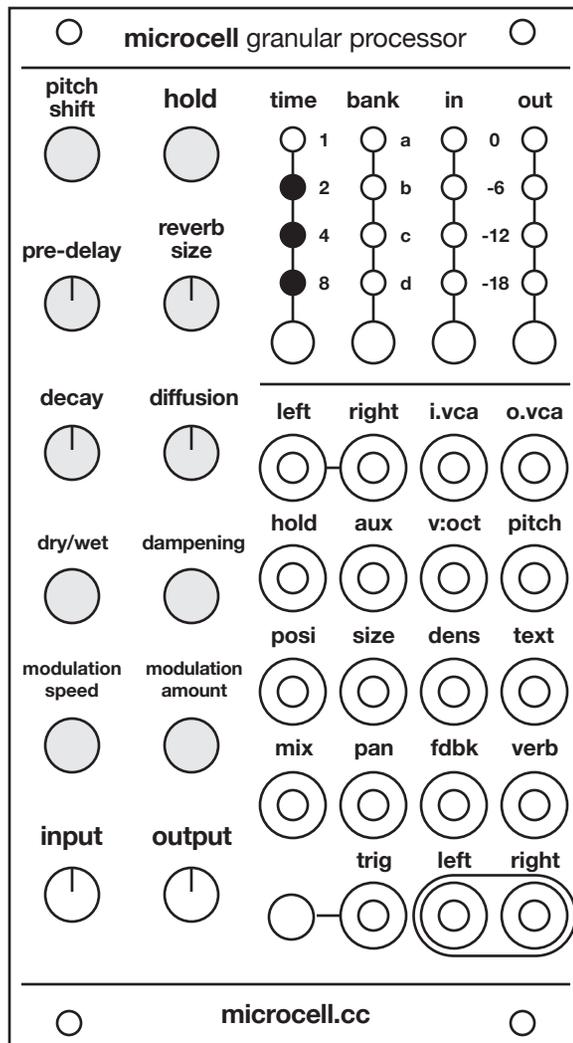
All CV inputs are calibrated for a range of +/- 5V. Voltages outside of this range are tolerated, but will be clamped.

1. **Hold** gate input. When the input gate signal is high, stops the recording of incoming audio, just as latching the **hold** button would do.
2. **Trig** input. When the input is high, 1 of 4 glitch algorithms are applied to the spectrum. Each time the gate goes high, another is randomly selected. These algorithms are: Spectral hold and blow, Spectral shift up and aliasing, Kill largest harmonic and boost second largest, Nasty high-pass
3. The **pitch** parameter is controlled by two separate CV inputs. The **v/oct** input is exponential and the **pitch** input is linear.

### Sources

[https://www.infinesimal.eu/modules/images/6/62/Clouds\\_Illustrated\\_Manual.pdf/](https://www.infinesimal.eu/modules/images/6/62/Clouds_Illustrated_Manual.pdf/)  
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## Oliverb (Parasites)



The **hold** button sets reverb to (near) infinite decay, and mutes the input. This works best with no pitch shifting and a large size.

The **position (pre-delay)** 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 **trig** 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.

Note that the clock division is limited to the largest division not exceeding the maximum delay; beyond this point, the **position (pre-delay)** knob will have no effect. Changing pre-delay in real time is smooth and does not affect pitch.

The **size (reverb size)** 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.

**Pitch (pitch shift).** Each time the sound is fed back into the reverb, it can be pitch shifted. The **pitch (pitch shift)** 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 **density (decay)**. Note that **size (reverb size)** has an impact on how well the sound is pitch-shifted: the larger the room size, the more accurate the pitch shift.

The **density (decay)** 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.

The **shape (diffusion)** 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. This creates much more synthetic, harmonic textures. CW, beyond 12, adds warping-towards higher harmonics.

The **mix (dry/wet)** knob is dry/wet crossfading, as in the other modes.

The **pan (dampening)** knob 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.

The **feedback (modulation speed)** knob controls the speed of these LFOs. It ranges from ~1/100Hz to ~100Hz. It has no effect if modulation amount is null.

Each delay in the reverb can be individually modulated by 9 smoothed random LFOs. The **reverb (modulation amount)** knob 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.

### Notes on Input/Outputs

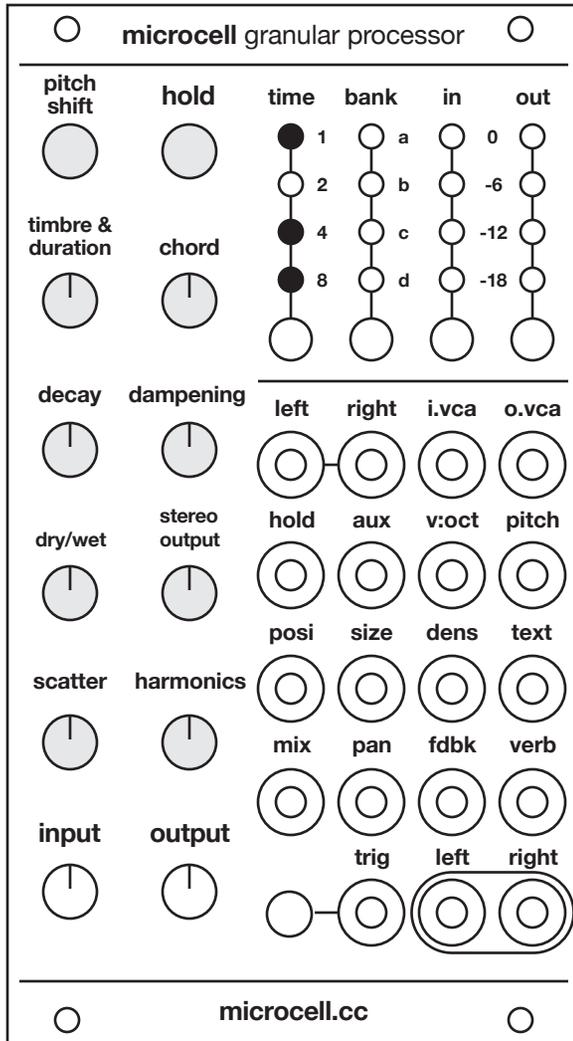
*All CV inputs are calibrated for a range of +/- 5V. Voltages outside of this range are tolerated, but will be clamped.*

1. When the **hold** input gate signal is high, stops the recording of incoming audio, just as latching the **hold** button would do.
2. When the **trig** input is high, 1 of 4 glitch algorithms are applied to the spectrum. Each time the gate goes high, another is randomly selected. These algorithms are: Spectral hold and blow, Spectral shift up and aliasing, Kill largest harmonic and boost second largest, Nasty high-pass

### Sources

[https://www.infinitesimal.eu/modules/images/6/62/Clouds\\_illustrated\\_Manual.pdf](https://www.infinitesimal.eu/modules/images/6/62/Clouds_illustrated_Manual.pdf)  
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<https://mqthiqs.github.io/parasites/clouds.html>

# Resonator (Parasites)



If you are satisfied with the sound of the current voice and want to keep it running (maybe as a drone, using the other voice for melody), press **hold**: it will instantly switch voice, and prevent **trig** from automatically switching voice.

**Position (timbre & duration)** 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. Roughly models the position on which the string is struck.

**Size (chord)** selects the chord 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.

In fact, each voice consists of four "parts" (four resonators), which can be set to different pitches to form chords. The **Size (chord)** knob sets the chord, borrowed from Braids: unison, detuned, fifth etc. At any time, the knob control only the parameters of the resonators of the active voice

**Pitch (pitch shift)** sets the base pitch of the current voice. At 12 o'clock, the pitch is A3 (220Hz). The knob controls only the parameters of the resonators of the active voice

The **density (decay)** knob controls the decay.

The **shape (dampening)** knob 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 a increasingly low cutoff frequency; CW, a band-pass filter at the frequency of the resonator is applied with an increasingly high resonance. The resonators can sound very metallic; the Texture knob helps attenuating the high/low frequencies each time sound passes through the resonator. At 12 o'clock, no filtering is applied; CCW is a low-pass filter; CW is a band-pass filter. This way, a short sound impulse passing through the resonator will have a long decay with less and less high (and possibly low) frequency.

The **mix (dry/wet)** knob crossfades between the dry and the wet signal.

The **pan (stereo output)** knob assigns each part and voice to an output (Out L or Out R). 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.

The **feedback (scatter)** knob 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. The delay times are randomized at each voice switch.

The **reverb (harmonics)** knob 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.

### Notes on Input/Outputs

All CV inputs are calibrated for a range of +/- 5V. Voltages outside of this range are tolerated, but will be clamped.

1. **Hold** gate input. When the input gate signal is high, stops the recording of incoming audio, just as latching the **hold** button would do.

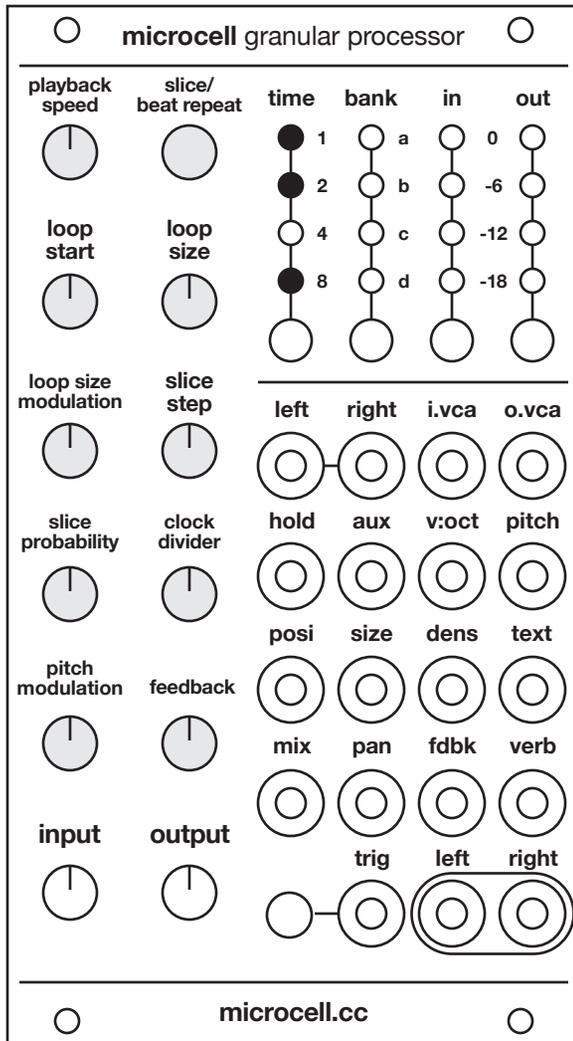
2. **Trig (burst)** input. Sending a trigger to the **trig** input will send a short burst of noise to one of the voices. each time a Trig is received, the module switches the active voice; therefore, you can get duophony. A trigger in this input will switch the current voice (if Freeze is not active) and send a short burst of noise in its resonator. These algorithms are: Spectral hold and blow, Spectral shift up and aliasing, Kill largest harmonic and boost second largest, Nasty high-pass

3. **Pitch** CV input, with V/Oct response. The pitch of the resonator is controlled by the Pitch knob and the V/Oct input, so you can "play" the resonator like an oscillator. Note: The **pitch** parameter is controlled by two separate CV inputs. The **v/oct** input is exponential and the **pitch** input is linear [this needs clarification for this mode].

### Sources

[https://www.infinitesimal.eu/modules/images/6/62/Clouds\\_Illustrated\\_Manual.pdf](https://www.infinitesimal.eu/modules/images/6/62/Clouds_Illustrated_Manual.pdf)  
<https://mutable-instruments.net/modules/clouds/manual/>  
<https://mqthtiqs.github.io/parasites/clouds.html>

# Kammerl Beat-Repeat (Kammerl)



Kammerl Beat-Repeat mode requires a clock signal plugged into the **trig** input.

**Hold (slice/beat repeat):** Enables slice processing / beat-repeating. If not enabled, slice processing is randomly enabled based on the **Slice Probability [mix]**.

**Position (loop start):** Defines the beginning of the loop interval relative to the total slice duration. To support in-sync beat repetitions, it is quantized as follows: [0-1/64] free/unquantized, 1/64, 1/32, 1/16, 1/8, 1/4, 1/3, 1/2, 1.

**Size (loop size):** Defines the size of the loop interval relative to the total slice duration as well as the loop mode (regular/alternating). To support in-sync beat repetitions, it is quantized as follows:

Regular from the left to 12 o'clock: [0-1/64] free/unquantized, 1/64, 1/32, 1/16, 1/8, 1/4, 1/3, 1/2

Alternating from 12 o'clock to the right: 1/2, 1/3, 1/4, 1/8, 1/16, 1/32, 1/64, [1/64-0] free/unquantized

**Pitch:** Defines the playback speed. The Kammerl Beat-Repeat mode does not time-correct the pitch changes (like a tape or record running at different speeds). This allows for interesting groove effects, since audio is delayed towards the end of the slice but reset at the slice beginning. To the very left, the knob defines a zero pitch, to the very right, the original playback speed. The pitch modulation type is determined by the **Pitch Mode [feedback]** knob.

**Density (Loop Size Modulation):** Enables a decreasing loop size towards the slice end. This enables a ping-pong bouncing ball effect.

**Shape (slice step):** Selects one of the eight most recently recorded slices. 0V corresponds to the most recent slice (real-time / no delay!). Note that slices are continuously created from audio input, independent from **Hold (slice/beat repeat)** or slice probability mode.

**Shape (slice step):** The **shape CV** input and the **shape (slice step)** knob control different slice selection parameters. The **shape CV** input directly selects one of the most recently recorded slices. The **shape (slice step)** knob selects individual iteration patterns to jump between slices during playback (which also incorporates the **shape CV** input by using it as an offset)

Disabled	Only <b>shape CV</b> selects slices
Slice step 1	Repeats current slice due to synced playback index
Slice step 2	Skips every second slice
Slice step 3	Skips two slices
Slice step 5	Skips four slices
Slice step 6	Skips five slices
Slice step 7	Skips six slices
Random	Randomly selects slices

**Slice Probability [mix]:** Defines the probability of disabling bypass and processing an incoming slice. *Note that activating the **hold (slice/beat repeat)** button overwrites this setting.*

**Clock Divider [pan]:** Selects a clock divider: 1, 1/2, 1/4, 1/8 which changes the slice lengths accordingly.

**Pitch Mode [feedback]:** Selects one of four pitch modulation modes (from left to right):

(left position)  
Fixed pitch—no modulation.  
Fixed pitch—reverse playback.

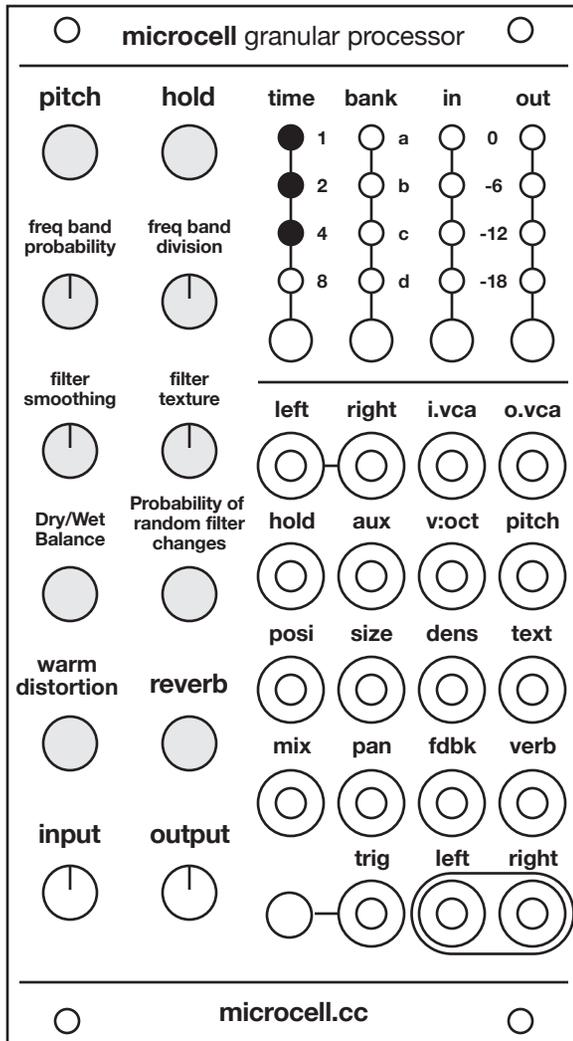
Linearly decreasing pitch starting from the original pitch to the selected target pitch (**Pitch Knob**).

Linearly increasing pitch starting from the the selected target pitch (**Pitch Knob**) to the original pitch.

(right position)  
Simulated vinyl scratching—sinusoidal pitch modulation. The **Pitch Knob** defines the intensity.

**Feedback [Reverb]:** Controls the contribution to Cloud's feedback path. Combined with lower pitch playback.

## Spectral Clouds (Kammerl)



The Spectral Clouds mode creates cloud-like frequency spectras. It is a high-resolution multiband filter with randomly modulated frequency bands. The logarithmic divisions of the frequency spectrum result in a continuously morphing but musical sounding filter. This mode is inspired by this FFT Randomizer project.

### Trigger (trig) input

Randomizes the set of active frequency bands and defines their random attenuation intensity. Note that these trigger events can also be simulated with the second blend mode ("Probability of random filter changes").

### Pitch

Pitch shifting applied to the Spectral Clouds output.

### Position (Frequency band probability)

Defines the probability of a frequency band to become enabled. To the left all frequency bands are disabled. Check out the sweet spot where only a few frequency bands are active.

### Size (Frequency band division)

Controls the number of filter bands and their corresponding frequency width. To the left, the frequency spectrum is split into 4 filter bands and to the right into 128 filter bands. All frequency band divisions are applied in logarithmic scale to sound musical.

### Density (Filter Smoothing)

Defines the smoothing intensity on the frequency band division as well as the filter band attenuation changes during "trigger input" events. To the left, filter changes are applied immediately; to the right, the current filter configurations is hold.

### Shape (Filter texture)

Defines the degree of phase randomization in the frequency domain. This affects mostly waveforms with transients.

### Mix (Dry/wet balance):

Balance between input signal and Spectral Clouds output. Note that the warm distortion effect as well as Cloud's reverb is applied post dry/wet.

### Pan (Probability of random filter changes)

Defines the chance of simulated "Trigger input" events. To the left, simulated trigger events are disabled and random filter reconfigurations only happen during high trigger input gates.

### Feedback (Warm distortion)

It's back :) Adds a warm sounding distortion effect (applied post dry/wet).

### Reverb

Controls the contribution to Cloud's reverb (applied post dry/wet).