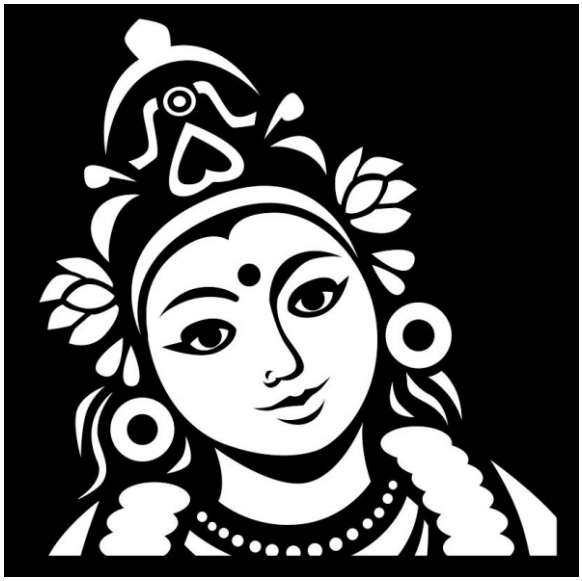


Clouds/Parasites

illustrated manual

The Story

This was put together based on what I could find online. It's only intention is to make the module clearer to me. It is not intended as a replacement fo the original material.

Mutable's own manual can be found at
http://mutable-instruments.net/modules/clouds/manual

The Parasites manual is at
https://mqtthiqs.github.io/parasites/clouds.html

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: 32Hz
Resolution: 16-bit
Channels: Stereo
Buffer time: 1s

Rate: 32Hz
Resolution: 16-bit
Channels: Mono
Buffer time: 2s

Rate: 16Hz
Resolution: 8-bit
Channels: Stereo
Buffer time: 4s

Rate: 16Hz
Resolution: 8-bit
Channels: Mono
Buffer time: 8s

Modes

Hold the Blend parameter/Audio quality button for five seconds until a LED lights up in yellow.

Then, repeatedly press the Blend parameter/Audio quality button to select between the four following audio processing engines – the current one is indicated by a glowing yellow LED.

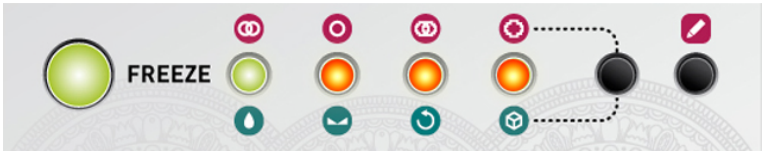
Granular Processing

Pitch-shifter/time-stretcher

Looping delay

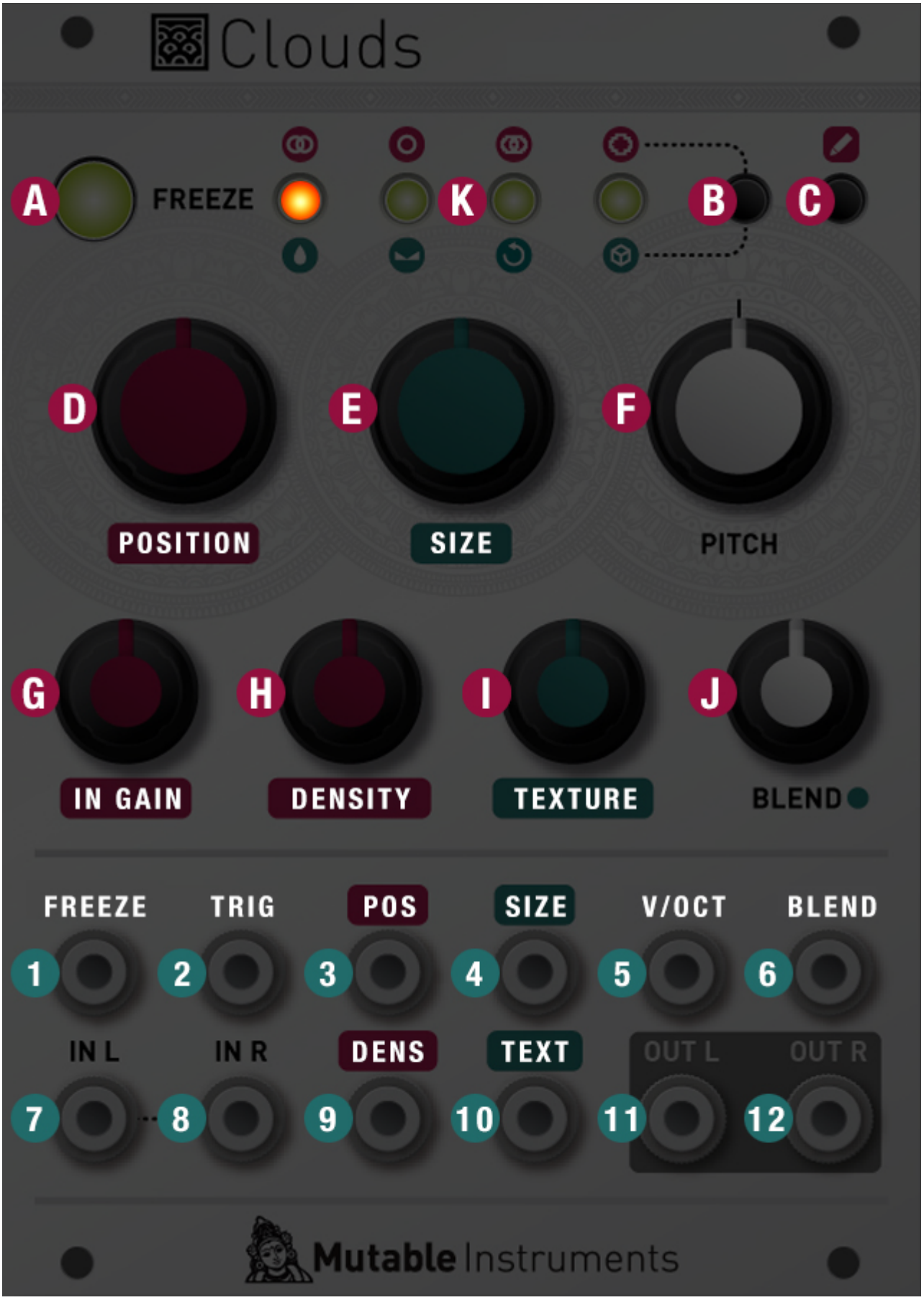
Spectral madness

Oliverb



Resonestor

Mode: Granular Processing



Granular Processing: Controls

A. FREEZE 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.

B. Blending parameter/Audio quality button. Selects which of the blending parameters is controlled by the BLEND knob and CV input, or selects one of the four audio quality settings.

C. Load/Save button. See the “Advanced topics” section in the original manual.

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

E. F. Grain SIZE and PITCH (transposition). At 12 o’clock, the buffer is played at its original frequency. The range of the Size knob has been adjusted to produce much smaller grains. Fully counter-clockwise, grains are barely hearable spikes; fully clockwise, the maximum size is as before.

G. Audio INPUT GAIN, from -18dB to +6dB.

H. 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.

I. Grain TEXTURE. The Texture knob now has asymetric shapes of grain envelopes. It 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.

J. BLEND knob. This multi-function knob is described in the Blending parameters section.

K. Indicator LEDs. They work as an input vu-meter. When FREEZE is active, they monitor the output level. Soft-clipping occurs when the last LED is on. They can also indicate the quality setting (red), the function assigned to the BLEND knob (green), or the value of the four blending parameters (multicolor).

NOTE: To cope with the additional computation, Grain polyphony has been reduced a bit. This should not be noticeable.

Granular Processing: Inputs and outputs

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

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

2. TRIGGER 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. 4. Grain POSITION and SIZE CV inputs.

5. Grain transposition (PITCH) CV input, with V/Oct response.

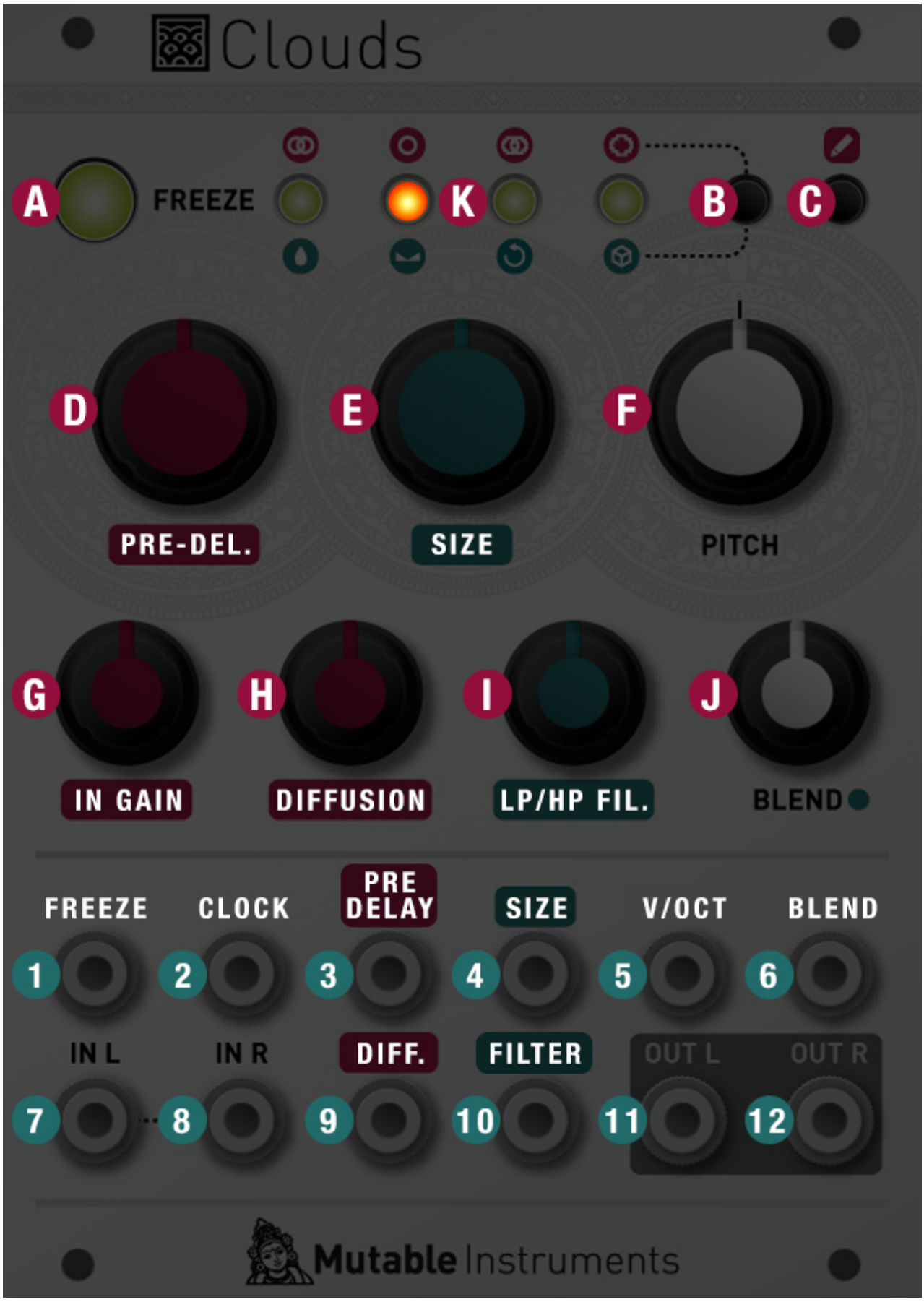
6. BLEND CV input. This CV input can control one of the following functions depending on the active blending parameter: dry/wet balance, grain stereo spread, feedback amount and reverb amount.

7. 8. Stereo audio input. When no patch cable is inserted in the right channel input, this input will receive the signal from the left channel.

9. 10. Grain DENSITY and TEXTURE CV inputs.

11. 12. Stereo audio output.

Mode: Pitch-shifter/Time-strecher



Pitch-shifter/Time-strecher: Controls

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

B. Blending parameter/Audio quality button. Selects which of the blending parameters is controlled by the BLEND knob and CV input, or selects one of the four audio quality settings. 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 “de-glitching” of early pitch-shifters).

C. Load/Save button. See the “Advanced topics” section.

D. PRE-DELAY DIV/MULT (POSITION). When a clock is sent to the Trig input, the Position 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; beyond this point, the Position knob will have no effect. Note also that clock synchronization will be more accurate with the Size knob fully counter-clockwise.

E. F. Grain SIZE and PITCH (transposition). At 12 o’clock, the buffer is played at its original frequency.

G. Audio INPUT GAIN, from -18dB to +6dB.

H. DIFFUSION (DENSITY) creates a granular diffusion effect based on all-pass filters.

I. LOW PASS/HIGH PASS FILTER (TEXTURE) acts as a low-pass/high-pass filter.

J. BLEND knob. This multi-function knob is described in the Blending parameters section.

K. Indicator LEDs. They work as an input vu-meter. When FREEZE is active, they monitor the output level. Soft-clipping occurs when the last LED is on. They can also indicate the quality setting (red), the function assigned to the BLEND knob (green), or the value of the four blending parameters (multicolor).

Pitch-shifter/Time-strecher: Inputs and outputs

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

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

2. CLOCK (TRIGGER). 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 parameter.

3. 4. Pre-Delay (POSITION) and SIZE CV inputs. 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

5. Grain transposition (PITCH) CV input, with V/Oct response.

6. BLEND CV input. This CV input can control one of the following functions depending on the active blending parameter: dry/wet balance, grain stereo spread, feedback amount and reverb amount.

7. 8. Stereo audio input. When no patch cable is inserted in the right channel input, this input will receive the signal from the left channel.

9. 10. Diffusion (DENSITY) and Filter (TEXTURE) CV inputs.

Pitch-shifter/Time-strecher: Audio outputs

In the Mono quality modes, Stereo spread crossfades between the left and the right input. Remember that the left input is normalized into the right input, so with nothing patched in In L, this will have no effect.

Rate: 32Hz
Resolution: 16-bit
Channels: Mono
Buffer time: 2s

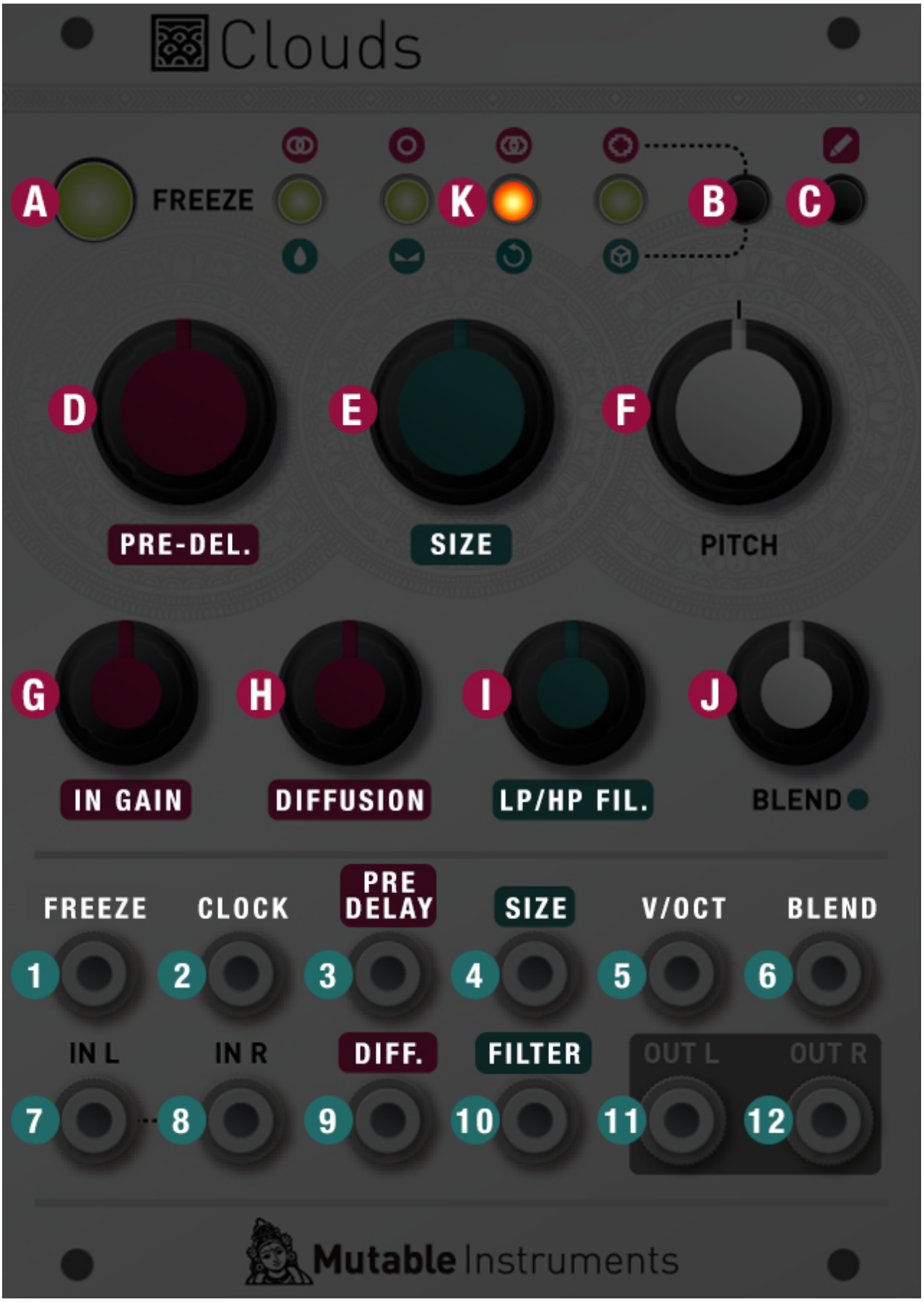
Rate: 16Hz
Resolution: 8-bit
Channels: Mono
Buffer time: 8s

In the Stereo quality modes, Stereo spread gradually swaps both output channels. Fully CW, it allows to do ping-pong delay effects: each time the sound is fed back, the two channels are reversed.

Rate: 32Hz
Resolution: 16-bit
Channels: Stereo
Buffer time: 1s

Rate: 16Hz
Resolution: 8-bit
Channels: Stereo
Buffer time: 4s

Mode: Looping Delay



Looping Delay: Controls

A. FREEZE button. This latching button stops the recording of incoming audio. When FREEZE is activated, the content of the audio buffer is looped (stutter effect). Size controls the repeat time multiplication/division.

B. Blending parameter/Audio quality button. Selects which of the blending parameters is controlled by the BLEND knob and CV input, or selects one of the four audio quality settings. 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).

C. Load/Save button. See the “Advanced topics” section in the original manual.

D. PRE-DELAY DIV/MULT (POSITION). When a clock is sent to the Trig input, the Position 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; beyond this point, the Position knob will have no effect. Note also that clock synchronization will be more accurate with the Size knob fully counter-clockwise.

The Position knob response has been tweaked to allow easier dialing of very short delays.

E. F. Grain SIZE and PITCH (transposition). SIZE 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 Freeze is active and delay time is synced to an external clock, Size controls the repeat time multiplication/division.

When the pitch is at 0, it now bypasses the pitch shifter completely. This drastically enhances the delay quality when no pitch-shifting is done, avoiding the flanging effect when the delay was used with feedback.

G. Audio INPUT GAIN, from -18dB to +6dB.

H. DIFFUSION (DENSITY) creates a granular diffusion effect based on all-pass filters.

Looping Delay: Controls (Cont.)

I. LOW PASS/HIGH PASS FILTER (TEXTURE) acts as a low-pass/high-pass filter.

J. BLEND knob. This multi-function knob is described in the Blending parameters section.

K. Indicator LEDs. They work as an input vu-meter. When FREEZE is active, they monitor the output level. Soft-clipping occurs when the last LED is on. They can also indicate the quality setting (red), the function assigned to the BLEND knob (green), or the value of the four blending parameters (multicolor).

Looping Delay: Inputs and outputs

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

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

2. CLOCK (TRIGGER). 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 parameter.

3. 4. Pre-Delay (POSITION) and SIZE CV inputs. 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. Delay time changes are now much faster (there is less slew on the knob and CV value). Modulating POSITION will create effects similar to vinyl scratching or manual manipulation of tape

5. Grain transposition (PITCH) CV input, with V/Oct response.

6. BLEND CV input. This CV input can control one of the following functions depending on the active blending parameter: dry/wet balance, grain stereo spread, feedback amount and reverb amount.

7. 8. Stereo audio input. When no patch cable is inserted in the right channel input, this input will receive the signal from the left channel.

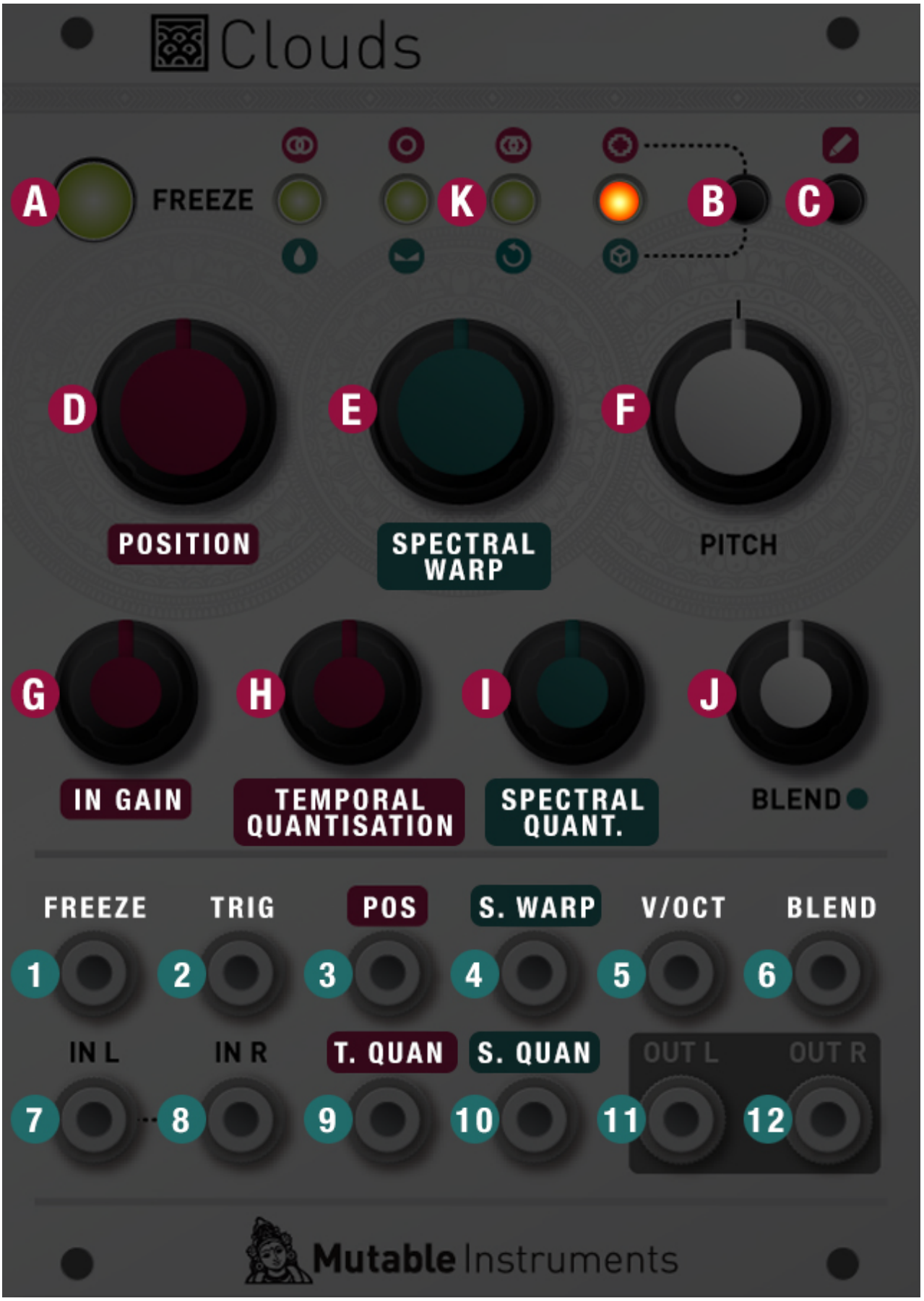
9. 10. Diffision (DENSITY) and Filter (TEXTURE) CV inputs.

Looping Delay: Audio outputs

In the Mono quality modes, Stereo spread crossfades between the left and the right input. Remember that the left input is normalized into the right input, so with nothing patched in In L, this will have no effect.

In the Stereo quality modes, Stereo spread gradually swaps both output channels. Fully CW, it allows to do ping-pong delay effects: each time the sound is fed back, the two channels are reversed.

Mode: Spectral Madness



Spectral Madness: Explanation

A phased vocoder which uses FFT (Fast Fourier Transform) to b reak sound down into spectral bands, transform the spectral information then resythesis this back into sound.

REF: https://www.youtube.com/watch?v=eF5m4yryhXU

Spectral Madness: Controls

A. FREEZE 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.

B. Blending parameter/Audio quality button. Selects which of the blending parameters is controlled by the BLEND knob and CV input, or selects one of the four audio quality settings.

C. Load/Save button. See the “Advanced topics” section in the original manual.

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

E. SPECTRAL WARP (SIZE), warps through a selection Polynomial functions, shifting and wrapping freuqencies. 12 o’clock is neutral. CW raises spectrum, increasing apparent pitch and CCW lowers spectrum, decreassing apparent pitch.

F. PITCH (transposition). At 12 o’clock, the buffer is played at its original frequency.

G. Audio INPUT GAIN, from -18dB to +6dB.

H. TEMPORAL QUANTISATION (DENSITY) controls the fresh 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.

I. SPECTRAL QUANTISATION (TEXTURE) controls the resolution of the FFT through the number of frequency bands. At 12 o’clock it is at it’s finest and finely spaced. Turning CCW lowers the resolution and has the bands become increasingly quantised.

Spectral Madness: Controls (Cont.)

This creates much more synthetic, harmonic textures. CW, beyong 12, adds warping towards higher harmonics.

J. BLEND knob. This multi-function knob is described in the Blending parameters section.

K. Indicator LEDs. They work as an input vu-meter. When FREEZE is active, they monitor the output level. Soft-clipping occurs when the last LED is on. They can also indicate the quality setting (red), the function assigned to the BLEND knob (green), or the value of the four blending parameters (multicolor).

Spectral Madness: Inputs and outputs

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

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

2. GATE (TRIGGER) input. When the input is high, 1 of 4 glitch algorythms are applied to the spectrum. Each time the gate goes high, another is randomly selected.

These algorythms are: Spectral hold and blow, Spectral shift up and aliasing, Kill largest harmonic and boost second largest, Nasty high-pass

3. 4. Grain POSITION and SPECTRAL WARP (SIZE) input.

5. Grain transposition (PITCH) CV input, with V/Oct response.

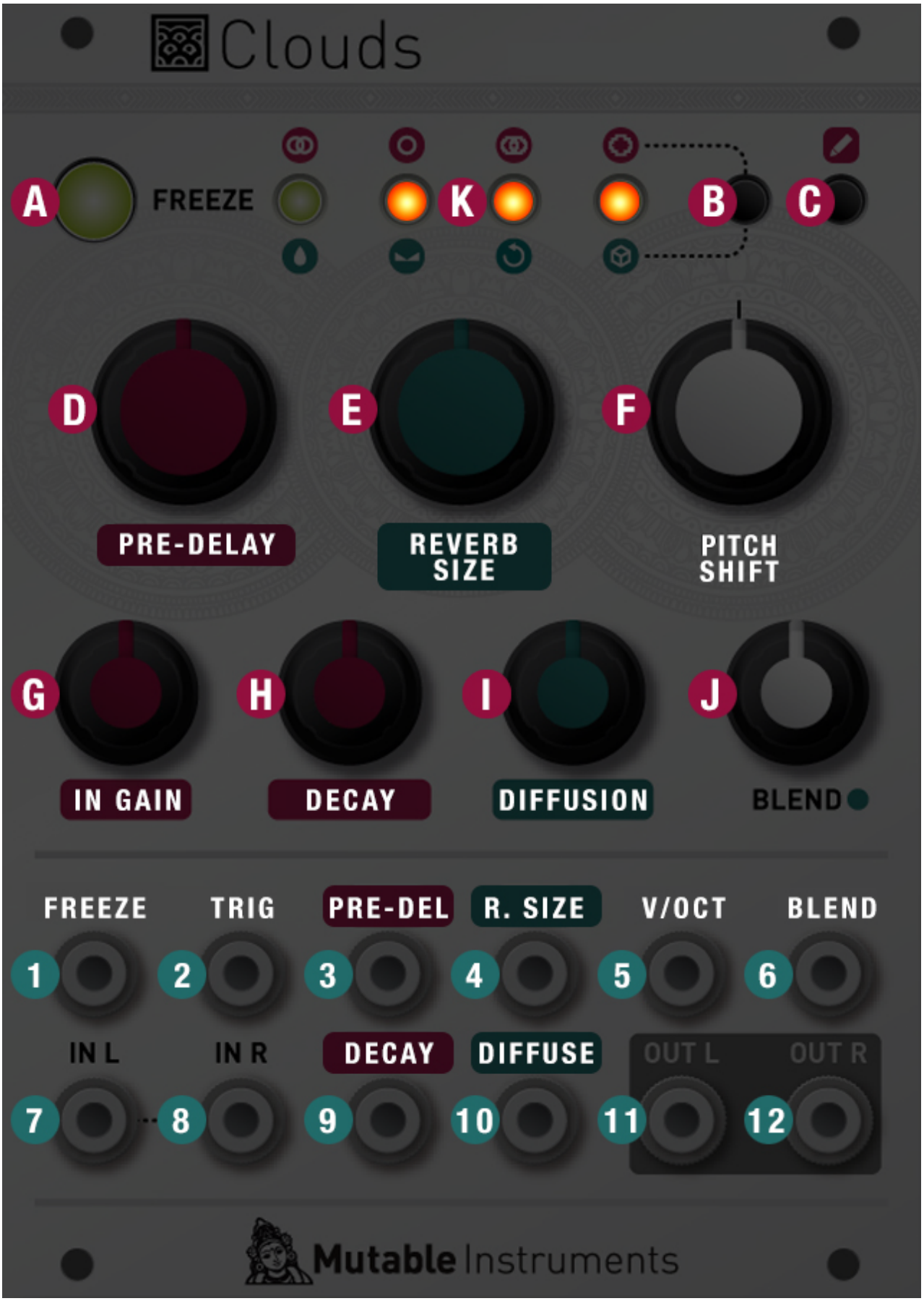
6. BLEND CV input. This CV input can control one of the following functions depending on the active blending parameter: dry/wet balance, grain stereo spread, feedback amount and reverb amount.

7. 8. Stereo audio input. When no patch cable is inserted in the right channel input, this input will receive the signal from the left channel.

9. 10. TEMPORAL QUANT. (DENSITY) and SPECTRAL QUANT. (TEXTURE) inputs.

11. 12. Stereo audio output.

Mode: Oliverb



Oliverb: Controls

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

B. Blending parameter/Audio quality button. Selects which of the blending parameters is controlled by the BLEND knob and CV input, or selects one of the four audio quality settings.

C. Load/Save button. See the “Advanced topics” section in the original manual.

D.PRE-DELAY (POSITION). The Position knob controls the time it take 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 (borrowed from the Echophon). Note that the clock division is limited to the largest division not exceeding the maximum delay; beyond this point, the Position knob will have no effect. Changing pre-delay in real time is smooth and does not affect pitch (it uses the internal time stretcher).

E. REVERB SIZE (SIZE), The 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.

F. Pitch shift (PITCH) (transposition). 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 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.

G. Audio INPUT GAIN, from -18dB to +6dB.

H. DECAY (DENSITY) The Density 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.

Oliverb: Controls (Cont.)

I. DIFFUSION (TEXTURE) The Texture 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, beyong 12, adds warping towards higher harmonics.

J. BLEND knob. This multi-function knob is described in the Blending parameters section.

K. Indicator LEDs. They work as an input vu-meter. When FREEZE is active, they monitor the output level. Soft-clipping occurs when the last LED is on. They can also indicate the quality setting (red), the function assigned to the BLEND knob (green), or the value of the four blending parameters (multicolor).

Oliverb: Blend Functions

Dry/Wet
The first function of the Blend knob is dry/wet crossfading, as in the other modes.

Dampening
The second function of the Blend knob (called "stereo spread") controls the dampening of the reverb. From fully CCW to 12 o'clock, a low-pass filter is applied, simultaing the absorption of the room. From 12 o'clock to fully CW, a high-pass filter is applied for unusual, crystalline effects.

Modulation speed
The third function of the Blend 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.

Modulation amount
Each delay in the reverb can be individually modulated by 9 smoothed random LFOs. The fourth function of the Blend 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.

Oliverb: Inputs and outputs

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

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

2. GATE (TRIGGER) input. When the input is high, 1 of 4 glitch algorythms are applied to the spectrum. Each time the gate goes high, another is randomly selected.

These algorythms are: Spectral hold and blow, Spectral shift up and aliasing, Kill largest harmonic and boost second largest, Nasty high-pass

3. 4. PRE-DELAY (POSITION) and SREVERB SIZE (SIZE) input.

5. PITCH CV input, with V/Oct response.

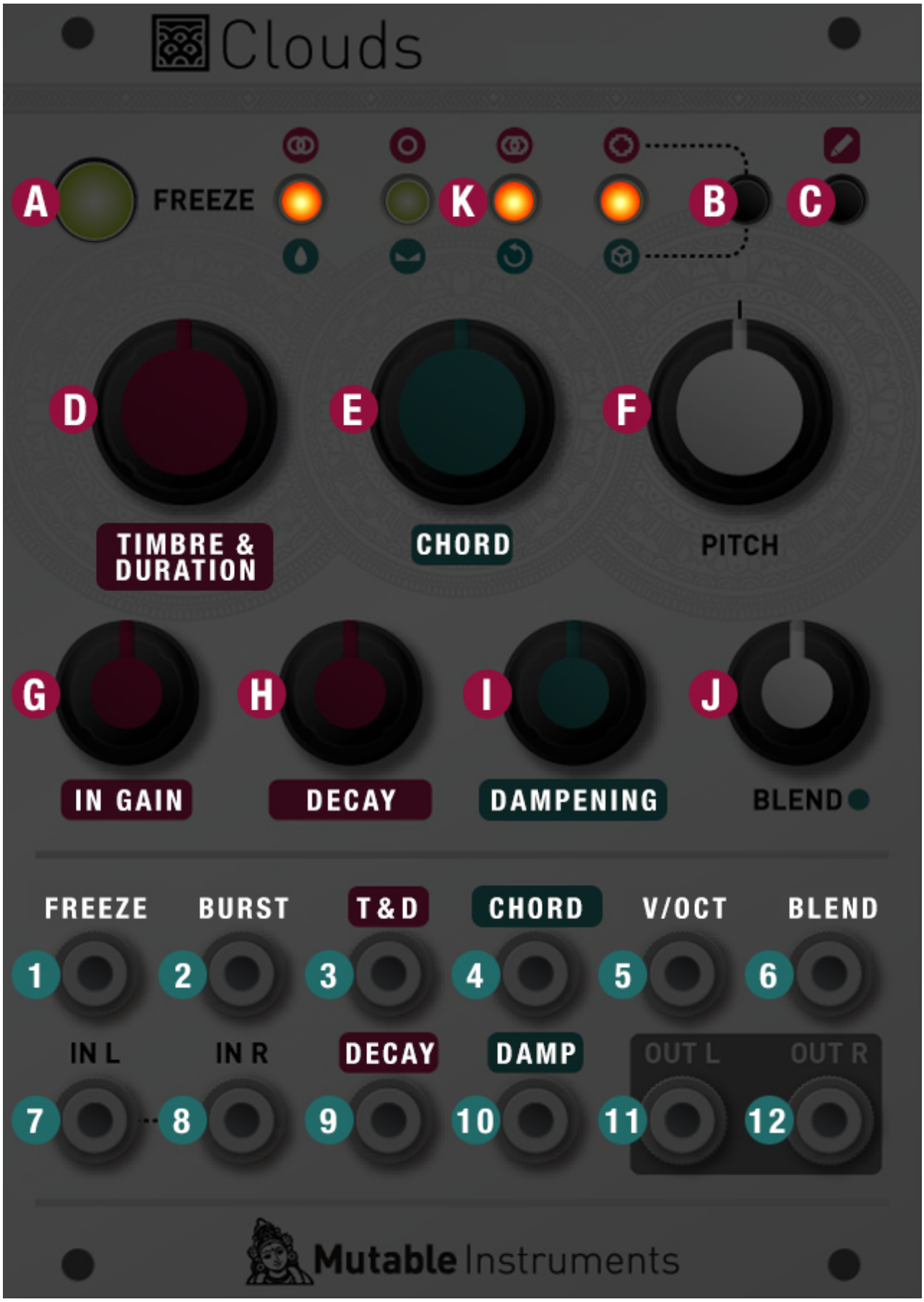
6. BLEND CV input. This CV input can control one of the following functions depending on the active blending parameter.

7. 8. Stereo audio input. When no patch cable is inserted in the right channel input, this input will receive the signal from the left channel.

9. 10. DECAY (DENSITY) and DIFFUSE (TEXTURE) inputs.

11. 12. Stereo audio output.

Mode: Resonator



Resonator: Controls

A. FREEZE button. 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 Freeze: it will instantly switch voice, and prevent Trig from automatically switching voice.

B. Blending parameter/Audio quality button. Selects which of the blending parameters is controlled by the BLEND knob and CV input, or selects one of the four audio quality settings.

C. Load/Save button. See the “Advanced topics” section in the original manual.

D.TIMBRE & DURATION (POSITION). 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.

E. CHORD (SIZE), 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.

In fact, each voice consists of four "parts" (four resonators), which can be set to different pitches to form chords. The Size 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

F. Pitch shift (PITCH) (transposition). Base pitch of the current voice. At 12 o'clock, the pitch is A3 (220Hz). At any time, the knob control only the parameters of the resonators of the active voice

G. Audio INPUT GAIN, from -18dB to +6dB.

H. DECAY (DENSITY) Decay is controlled by the Density knob

I. DAMPENING (TEXTURE) 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.

Resonator: Controls (Cont.)

J. BLEND knob. This multi-function knob is described in the Blending parameters section.

K. Indicator LEDs. They work as an input vu-meter. When FREEZE is active, they monitor the output level. Soft-clipping occurs when the last LED is on. They can also indicate the quality setting (red), the function assigned to the BLEND knob (green), or the value of the four blending parameters (multicolor).

Resonator: Blend Functions

Dry/Wet (first function of Blend knob and CV)
Crossfades between the dry and the wet signal.

Stereo output (second function of Blend knob and CV)
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.

Scatter (third function of Blend knob and CV)
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.

Harmonics (fourth function of Blend knob and CV)
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.

Resonator: Inputs and outputs

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

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

2. BURST (TRIGGER) 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 algorythms are: Spectral hold and blow, Spectral shift up and aliasing, Kill largest harmonic and boost second largest, Nasty high-pass

3. 4. TIMBRE & DURATION (POSITION) and CHORD (SIZE) input.

5. 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.

6. BLEND CV input. This CV input can control one of the following functions depending on the active blending parameter.

7. 8. Stereo audio input. Each input feeds one of the two voices/resonators. Remember that In L is normalized to In R, so with nothing patched in In R, the In L signal is fed to both voices.

9. 10. DECAY (DENSITY) and DAMPENING (TEXTURE) inputs.

11. 12. Stereo audio output.