



About Ring5

Ring5 is a resonator, the essential ingredient at the heart of several physical-modelling techniques. It turns a short, unpitched excitation – a click, a burst of noise, a drum hit, a voice – into a full-bodied pitched sound. Ring5 is the bar, the tube or the bunch of strings you set vibrating.

A native Reason port of Mutable Instruments **Rings** – same DSP, same controls – plus MIDI play, patches, an envelope, an LFO and CV outputs. Play it as an instrument, or patch audio into the back to use it as an effect.

Front panel

Controls

- A. Polyphony (POLY).** 1, 2, 3 or 4 voices. Each new note moves to the next voice and lets the previous one ring out. The LED colour echoes the setting.
- B. Resonator type (MODE).** Ten models: the three classic Rings resonators, the module's three hidden modes and four string-synth modes – see *Resonator types*.
- C. Frequency.** Coarse transpose, ± 30 semitones in semitone steps, detented at the centre. Offsets the pitch arriving by MIDI or the V/OCT (3) input.
- D. Harmonic structure.** Frequency ratio between the partials of the modal resonator, detuning of the sympathetic strings, or non-linearity/inharmonicity of the string.

- E. Brightness.** Level of the upper harmonics. The lower part of the travel opens a low-pass filter on the exciter; above that it raises the damping filter (the Q of the higher modes).
- F. Damping.** Decay time of the sound, from short taps to long rings.
- G. Excitation position.** Where on the string or surface the excitation lands. Sweeping it recalls the PWM of a square wave oscillator, or a phaser's comb filtering.
- H. CV trims** for the modulation inputs – on the back panel.
- I. Envelope (ENV) NEW.** Attack, Decay, Depth and Destination of a note-triggered AD envelope – see *Modulation*.
- J. LFO NEW.** Rate (with Hz / note-value readout), Sync, Depth, Retrig, Wave and Destination – see *Modulation*.
- K. Volume** and stereo output meter. Master level for both outputs.
- L. NOTE LED.** Lights while a MIDI note is held.
- M. Patch browser.** Patch name, previous/next, browse and save. 38 factory patches in 8 categories.
- N. Pitch bend NEW.** The BEND wheel follows your keyboard's pitch wheel and springs back to centre. **RANGE** sets the bend in semitones, 0–24 (default 2).
- O. Mod wheel NEW.** The MOD wheel follows your keyboard's mod wheel. Pick a target in **MOD DEST**, then set how far the wheel pushes it with the small bipolar knob above **VOLUME** (centre = off). Off by default.

Polyphony and “strumming”

More voices let notes overlap without cutting each other's tails. Just **play the chord**: simultaneous MIDI notes are strummed a few milliseconds apart, one per voice. Set POLY to at least the number of notes.

Resonator types

CLASSIC RINGS

- Modal** Vibrating bars, plates and strings as a set of modes: each partial is a band-pass filter whose Q sets how long it sustains. **Structure** sets the ratios between modes – the material.
- Sympathetic** Like a sitar's sympathetic strings, which are never plucked but ring along, adding over- and undertones. Comb-filter strings; **Structure** sets their tuning ratio.
- Inharmonic** An extended Karplus-Strong string: tuned comb filter and absorption filter, plus non-linearities and a dispersion all-pass filter.

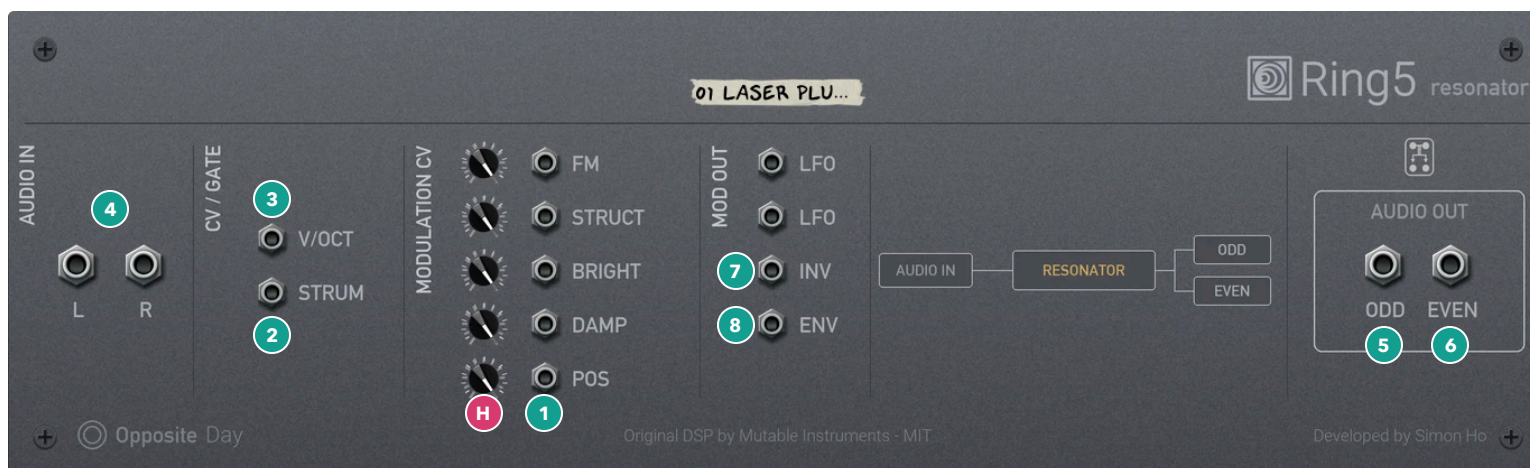
HIDDEN MODES – A MENU PICK AWAY

- FM Voice** 2-operator FM: RATIO, INDEX, DAMPING (decay), FEEDBACK (centre = none).
- Quantized** Sympathetic strings tuned to chords; **Structure** picks the chord.
- Reverb String** The string model through a reverb matched to its own decay.

STRING SYNTH (“DISASTROUS PEACE”)

- Syn Formant** Rings' hidden string machine with four effects:
- Syn Chorus** CHORD type, HARMONICS (octave mix of square
- Syn Ensemble** and saw), ENVELOPE (decay, then attack; fully right
- Syn Reverb** = drone), FX amount.

Hidden on the module behind button holds; here they are plain **MODE (B)** entries. **Knob captions change with the model** (the names in capitals above); tooltips and Remote keep the standard names.



Inputs and outputs

1. Modulation CV inputs – FM, STRUCT, BRIGHT, DAMP, POS. Each adds to its front-panel knob; FM offsets the pitch (up to ± 12 semitones). Unlike the module, FM is not normalised to a fine-tune voltage.

H. CV trims. Reason's standard trim knobs: they set how much of each incoming CV is applied.

2. Strum (gate) input. Each rising edge freezes the playing voice, lets it decay and starts the next voice at the current pitch. Works alongside MIDI notes.

3. V/Oct (note CV) input. Takes Reason note CV – from a Matrix, a Player or another device's note CV out. When patched, it overrides MIDI pitch. Pitch changes alone don't strum: pair it with a gate into STRUM (2).

4. Audio input, L / R, for the excitation signal. L and R are summed to mono. Patching either jack switches the internal exciter off, and sharp transients in the audio strum new voices.

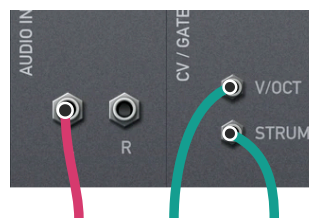
5, 6. Odd and even audio outputs (left / right). With one voice they carry two complementary parts of the sound: odd and even partials (modal), or components dephased by excitation position and pickup placement (strings). With more voices they split odd- and even-numbered voices. There is no auto-mix into ODD, so cable both (Reason does this when the device is created).

7. LFO outputs – LFO $\times 2$ and INV (inverted) **NEW**. The raw bipolar LFO, unaffected by the front DEPTH and DEST.

8. Envelope output (ENV) **NEW**. The raw 0-1 envelope, unaffected by DEPTH and DEST.

Making the right connections

Ideally, Rings needs three signals: a **trigger** (when to start a new note), a **pitch**, and **audio** that hits, strikes or caresses the resonator.



audio → AUDIO IN: the excitation (optional).

note CV → V/OCT: the pitch.

gate → STRUM: when to start a new note.

In Reason, a MIDI note covers pitch + strum on its own.

Because you may not have all three, Ring5 assumes:

- (1) If nothing is patched into **AUDIO IN**, the internal exciter fires on every strum – a low-pass filtered pulse or a noise burst, depending on the model.
- (2) A new voice is strummed by each MIDI note-on, a gate into **STRUM**, or – with audio patched in – sharp transients in that audio.
- (3) Pitch comes from MIDI notes, unless **V/OCT** is patched.

As a result...

Play Ring5 straight from a MIDI keyboard or sequencer track – no cables needed. For an **effect**, patch a drum loop or vocal into **AUDIO IN** and play notes to tune it to your song.

In Reason

- **Notes ring out** on release, as on the module – Damping (**F**) sets the length. Velocity is ignored.
- **Wheels:** bend is ± 2 semitones by default; pick a MOD DEST (**O**) to use the mod wheel.
- **Patches:** 38 factory patches in the browser (**M**).

Modulation

Three sources the module doesn't have – envelope, LFO and mod wheel – each with one destination: **Off, Freq, Structure, Brightness, Damping, Position or FM**. DEPTH and the mod-wheel amount are bipolar (centre = off); Freq and FM swing up to ± 12 semitones.

I. Envelope. One AD envelope, retriggered by every note-on and shared by all voices. ATTACK 1 ms-2 s, DECAY 2 ms-8 s.

J. LFO. WAVE: Sine, Triangle, Saw, Square, Random. RATE 0.02-20 Hz, shown in the readout. **SYNC** locks the LFO to Reason's transport, and RATE then picks a note value from 16/4 to 1/32 (including 1/8T). **RETRIG** restarts the cycle on each note (free-running mode).

O. Mod wheel. Wheel down = no effect, wheel up = the full amount into MOD DEST.

More destinations: patch the outputs (7, 8) into any modulation input (1), using its trim (**H**) as the amount – or into other devices.

Try: ENV → Brightness for a plucky snap · slow Sine → Position for phaser motion · MOD → Freq for wheel vibrato.

MIDI CC chart

RESONATOR	LFO	ENV · WHEELS
71 Structure	80 Rate	86 Attack
72 Brightness	81 Depth	87 Decay
73 Damping	82 Wave	88 Depth
74 Position	83 Dest	89 Dest
75 Volume	84 Retrig	90 Bend Range
76 Frequency	85 Sync	91 MW Amount
		92 MW Dest

Every control can also be automated and Remote-mapped (incl. Edit Remote Override Mapping). Mode and Poly: Remote only.