ACUSTRA / QUICKSTART

Acoustic Guitar Rack Extension - version 1.9.0

Six physically modelled steel strings, a shared bridge and a resonant body. Make fingerstyle parts, picked riffs and strums, then shape the microphones and pickup for your track.



Make your first sound

1. Create **Acustra Acoustic Guitar** in Reason and select its instrument track.
2. Load **Dreadnought Steel** and keep the automatic main L/R routing.
3. In Standard tuning, play MIDI notes **40-84**. Notes outside the guitar's current fret range are silent.
4. Try Finger, Pick and Thumb. Change Touch, Pluck Position and Mute while a phrase plays.
5. Play three or four reachable notes together under Finger; choose Pick to hear swept chords.

Factory starting point

Dreadnought, Spruce, Standard and Finger. Dreadnought Steel uses 20% Piezo Mix. The factory bank uses 2x oversampling, 10% Room, Detune off, normal piezo-blend polarity and panel Sustain off. Eight patches cover parlor fingerstyle, mahogany thumb, jumbo pick, palm mute, DADGAD, Open G and piezo stage sounds.

PLAY AND CONNECT

Touch, chords, sustain and sequenced articulations

Picking / Touch	Finger, Pick and Thumb change the contact. Touch moves between softer, darker and firmer, brighter attacks.
Pluck Position / Age	Move the pluck between bridge and neck. String Age adds high-frequency loss for worn, darker strings.
Mute / Release Noise	Mute applies palm pressure by the bridge; MIDI CC2 can press harder. Release Noise adds key-up contacts, faint wound-string brushes and subtle sliding-contact sound.
Wheels / Bend Range	The mod wheel adds tension vibrato. Pitch bend acts on the strings with a selectable 1-12 semitone range; the default is 2.
Chord response	Notes are assigned to guitar strings and reachable frets. Finger three/four-string chords pluck together. Picked chords sweep; explicit direction keyswitches can request a sweep.

Silent keyswitches - use MIDI note numbers

24 (C0): latch downstrokes. **25 (C#0):** latch upstrokes. **26 (D0):** automatic direction. **27 (D#0):** toggle a separate sustain hold. Octave labels may differ between keyboards and Reason views; the MIDI numbers are definitive.

Automatic strokes alternate within a dotted eighth at the song tempo and restart down after a longer gap. Ordinary unsustained key-ups allow a tempo-aware 1/32-note window before damping (62.5 ms at 120 BPM). A same-pitch re-pick can join its ringing string within this window.

Three independent sustain holds

The panel Sustain switch, CC64 pedal and note-27 latch hold independently. A string stays held while any source is active. Clear every hold source to let it damp. Reset Audio clears the keyswitch latch; the front status shows the combined hold state.

Hammer-ons and pull-offs from the sequencer

MIDI note **28 (E0)** is a silent one-shot cue. Its note-on velocity names the **held source MIDI note**; the next single target note supplies the destination and gesture strength. Hold G3 (MIDI 55), send note 28 at velocity 55, then A3 (57) for a hammer-on. Cue velocity 57 followed by G3 (55) makes the reverse pull-off. Release the old source key after the target arrives.

Use a separate short cue for each gesture. Invalid, stale or unreachable sources, or a target chord, use an ordinary pluck. Overlapping notes alone do not command a hammer-on. The cue is a MIDI command; Note CV set to 28 does not send it.

CAPTURE AND ROUTE

Microphones, pickup and the rear panel



Stereo mic	Main L/R hears the microphone pair. Stereo Width adjusts the spread; 0% gives mono.
Mono mic	Main L/R hears one microphone on both channels. Stereo Width does not affect this capture.
Piezo	Main L/R hears the modelled under-saddle pickup and preamp. Piezo Mix adds nothing in this capture mode.
Room / Body	Room adds early reflections and tail to microphone captures; the piezo remains dry. Body adjusts microphone body-radiation balance.
Piezo Mix / Invert	Blend pickup underneath the microphones. Rear PIEZO BLEND INVERT reverses only this blend, also shown by the selectable front readout.
L (MONO) / R	Main audio outputs, normally auto-routed. A cable on L alone carries the mono sum.
PIEZO / NOTE / GATE	PIEZO sends the independent mono pickup signal at the Output level; blend polarity does not affect it. NOTE and GATE are CV performance inputs.

Route two perspectives

For separate processing, keep the microphone capture on main L/R and cable PIEZO to another mixer channel. Set Piezo Mix to 0% when you want the pickup only on its separate channel. Adjust Output with the whole arrangement playing.

SHAPE AND FINISH

Construction, quality and version history

Guitar	Parlor, Auditorium, Dreadnought or Jumbo. These change the dimensions and resonances of one shared physical body model.
Wood	Spruce or Mahogany. Representative mass and directional stiffness change the model; these are not separate recordings.
Tuning	Standard, Drop D, DADGAD or Open G. Tuning changes string tension and the reachable pitch range.
Detune	The rear control adds optional random spread up to +/-20 cents. Small per-contact pitch variation is already part of the playing model.
Oversampling	1x, 2x or 4x, selected on the rear. New instances and factory patches use 2x. Changes apply after release and the silent-tail window, or after Reset Audio.
CPU / latency	Higher quality and session rates increase CPU use. 1x at 44.1 or 48 kHz is most economical. Every mode declares 49 host samples of latency, compensated by Reason.

Working in Reason

Save an edited sound as a Reason patch and save your song to retain the instrument state. There are 20 active automatable and Remote-mappable controls. The fretboard is an activity display: markers distinguish held, released and sympathetic strings. Only pitches reachable in the chosen tuning through fret 20 sound.

Version history

1.9.0 - Softer velocity contrast and steadier fixed-velocity strums; subtle torso/forearm damping of the body; small per-contact pitch variation; refined connected gestures, releases and microphone-room behaviour. SDK retuning calculations were optimized while preserving the approved sound. Factory patch version headers and panel assets are aligned with the accepted 1.9.0d2 build.

1.3.2 - Previous published Shop version.

About the model

Acustra synthesizes every note in real time. Published guitar measurements inform the bridge and body radiation; recordings inform calibration and playing behaviour. Body sizes, wood substitutions and player damping are authored physical variations. Microphones combine measured responses and spatial projections. The Rack Extension uses its own Reason controls and performance mapping.

Guide scope: Acustra 1.9.0, accepted Rack build 1.9.0d2. Requires Reason 14 or later. Support: protocodus@proton.me.