Maremba

Player guide / 1.6.5f1

Play two wooden marimbas, a balafon and a 17-key steel-tine kalimba in the Reason rack. Maremba models each strike or pluck, the nearby keys that ring with it, and the sound that reaches the microphones and pickup. Requires Reason 14 or later.



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Start playing

1. Create Maremba and use its main stereo outputs. The default patch is **Concert Grand Rosewood**.
2. Play a short phrase at several velocities. Softer and harder strokes change the physical contact and tone as well as the level.
3. Choose an instrument, then a Striker. Adjust **Hardness** and **Position** while playing new notes to shape the attack.
4. Use **Close**, **Room** and **Piezo** to balance the sound. **Volume** is the overall level; the small **Vel** knobs beneath playing controls are velocity sensitivities.
5. Start with **16 Voices** and native **1x Quality**, the factory-bank settings. Use the native preset controls to explore and save sounds; the device-name label is editable.

All 20 factory patches start with Linear velocity response and Buzz at zero. Each patch has its own velocity depths; some bar patches keep Position fixed so a loud stroke stays near the centre. Try **Birifor Gyil Buzz** and turn up Buzz to bring out its membranes. Choose **Kalimba Thumb Lullaby** to hear the quieter steel-tine instrument.

Choose an instrument

Instrument	Character	Striker choices
Imperial Rosewood 5.0	Concert-marimba bars with a rounded attack and restrained tube/frame support	Yarn, Cord, Rubber, Wood, Shaft
Mayan Padauk 4.3	Shorter wooden bars and box resonators; Buzz adds charleo membranes	Yarn, Cord, Rubber, Wood, Shaft
Balafon Ancestral	Wooden keys and gourd resonators; Buzz adds mirliton membranes	Yarn, Cord, Rubber, Wood, Shaft
Kalimba Artisan	Plucked steel tines, a yielding bridge and shared wooden box; Buzz adds board rattles	Flesh, Thumb, Nail, Pick, Tap

These are voiced instrument families. All accept the full MIDI note range; playing far outside an acoustic instrument's register intentionally explores the model beyond that instrument's usual range.

Shape the strike

Control	What it changes
Striker	The contacting material or thumb technique. Shaft strikes with the mallet handle; Kalimba Tap uses a fingernail impact.
Hardness	Mallet stiffness, or the Kalimba thumb's release speed. Higher values generally produce a firmer attack.
Position	The contact point on a bar, or the thumb position near the tine tip. Passing a vibration node can remove particular overtones, so the change is not simply brighter or darker.
Decay	Logarithmic ring-time control from 0.1 to 8. The midpoint is 1, the instrument's natural decay rather than one second. Below halfway shortens the ring; above halfway extends it. Kalimba keeps short settings unchanged, then gradually increases from natural sustain at 1 to twice natural sustain at 8.
Variance	The spread of contact stiffness, speed, landing position and damping from stroke to stroke. Zero retains subtle natural variation; higher values make the differences more pronounced.
Artifacts	Subtle rebounds, brushes and support collisions. Their timing and shape vary continuously. Set Artifacts and its Vel to zero to disable these events; natural strike variation remains.

Repeated notes meet the bar while it is still moving. Quick repeats on a wooden key alternate mallets. On Kalimba, the thumb damps the tine before the next pluck. Listen to the attack on a single key as you repeat it softly and then firmly.

Resonance and character

Control	What it changes
Carving	At 100%, the voiced instrument geometry. Turning down approaches a plain bar on the wooden instruments and a stiffer tine/support profile on Kalimba. The fundamental remains tuned to the note.
Coupling	Interaction with the tube, box or gourd air. On Kalimba it also controls bridge loading and how strongly the tine drives the shared box.
Bloom	Frame/support resonance on the wooden instruments and shared box/soundboard radiation on Kalimba.
Sympathy	Other bars or tines ringing through their shared support or bridge.
Buzz	Tube/box/gourd membranes on the wooden instruments; loose board buzzers on Kalimba. Set both Buzz and its Vel to zero to remove this layer.
Tension	Support damping even with Buzz at zero. Higher tension damps upper modes more strongly. With Buzz raised it also changes membrane threshold and tone, or Kalimba buzzer preload. The centre is the instrument's nominal tension.

On the wooden instruments, unplayed bars share a sympathetic sound source for each octave. Raise Sympathy on a balafon or padauk patch to hear the surrounding notes ring.

Membranes and buzzers need enough excitation to sound. Firm nail/pick plucks bring out Kalimba board rattles; the Balafon's top keys from MIDI 84 have no membranes. These are physical response differences rather than inactive controls.

Velocity response

Velocity changes physical excitation even with every Vel at zero: mallet speed and contact force on wooden bars, or thumb force and tine deflection on Kalimba. Softer Kalimba strokes also release the tine more slowly.

The four switches **Vel1-Vel4** select Soft, Linear, Hard and Sigmoid from left to right. **Linear (Vel2)** is the device default and the starting curve for all 20 factory patches.

Response	Playing feel
Soft	Light strokes reach stronger dynamics sooner.
Linear	The direct reference response.
Hard	Strong dynamics require a firmer touch.
Sigmoid	An S-shaped curve with gentler response near its ends and stronger contrast through its middle.

Each of the eleven small **Vel** knobs adds velocity sensitivity to its control: Hardness, Position, Decay, Carving, Coupling, Bloom, Sympathetic, Buzz, Tension, Artifacts or Variance. These are not audio volume controls. The main knob sets the starting value, and Vel adds a fraction of that control's full range:

Vel	MIDI velocity 1	MIDI velocity 127
0%	No change	No change
50%	No change	Adds half the knob range
100%	No change	Adds the full knob range

The result stops at the main knob's maximum. The selected Velocity Response shapes the progression between these endpoints. For example, Hardness at 20% with Vel at 50% reaches 70% at velocity 127. Decay sensitivity adds knob travel before its logarithmic conversion: from the natural midpoint, 10% Vel reaches about 1.52 at maximum velocity. Kalimba applies its shorter range afterwards, so even full Decay Vel cannot exceed twice natural sustain. Buzz Vel can add buzz even when the main Buzz knob is zero; the factory presets keep both at zero. Bloom and Sympathetic use each strike's sensitivity to drive shared resonances. Buzz and Tension retain that strike's sensitivity while their main knobs move. Other strike controls take effect on new strokes, including repeated notes. Hardness has a 20% velocity depth on an initialized device. Factory patches have individually chosen depths. Load a patch to restore its response, or change its Vel knobs to suit your keyboard.

Playing techniques

On the wooden instruments, raise the **mod wheel** to roll held notes with alternating mallets. More wheel increases the roll rate. Release the notes or lower the wheel to end the roll; the sound can ring on. On Kalimba, the wheel covers the box's sound hole and changes its resonance. **Pitch bend** spans ±2 semitones and also bends ringing notes.

Front-panel **Note Off** offers **Ring**, **Damp** and **Dead**. Ring leaves the instrument sounding after key release. Damp brings a hand or thumb onto the released key. Dead keeps the mallet against the bar from the stroke, or brings the Kalimba thumb back shortly after its pluck. Stopping Reason's transport damps sounding keys and sympathetic ringing.

Capture and room

Close captures sound travelling through air from the vibrating instrument and its resonators through a modelled head and ears. **Room** blends the far microphones and room return. **Piezo** senses local bending through a bonded contact pickup: on each wooden bar, or on the shared Kalimba soundboard. Its electrical response gives it a different attack and overtone balance, without a room return. It need not be brighter on every note.

Main aligns the pickup's arrival with the airborne sound to reduce thinning when Close and Piezo are combined. The two captures remain distinct, so some notes and settings can still interfere. Start with Close, then raise Piezo for more of the instrument's local vibration. To compare their tone, lower Room and alternate Close and Piezo at similar loudness.

Invert Piezo reverses the pickup polarity in the Main mix and the direct Piezo output. Compare both positions when blending Close and Piezo: the fuller balance can depend on the note and pickup levels. Close and Room keep their polarity. The switch defaults to Off, is saved with the patch and supports automation; changes while notes are ringing smooth over 5 ms. Main retains each instrument's natural note placement and Room image. Because Piezo is centered mono, reversing it can change the balance between center and sides as well as tone and level. These effects depend on the note, instrument and capture blend; identical behavior across instruments is not expected. Factory patches start with Invert off. The **Invert** switch sits beneath the Piezo knob on the front panel.

Room Space selects Wood, Chamber or Hall and is heard when Room is raised. The rooms have light, diffuse tails, with less lingering low and midrange resonance. Two independently timed diffuse fields reduce fixed ringing peaks; short scattering clusters soften individual wall echoes while retaining each room's sense of space. Slow internal variation keeps the diffuse tail moving subtly. The response still varies with pitch, as expected for a room. The capture knobs are independent: Close and Piezo use linear levels, while Room uses a squared taper (halfway gives one quarter of full Room level). Changing one does not rescale the others. Room's fixed voiced response and tail continue running behind its level knob. Lowering all three levels silences the main mix after smoothing; the direct stems remain available.

Output and protection

Drive colors the complete Close/Room/Piezo Main mix. All direct outputs bypass it. At the **10%** default, the Drive transfer is exactly linear and adds about **0.10 dB**. Turning it above 10% progressively adds rounded, mildly asymmetric saturation. Partial output-level compensation restrains the gain increase, but Drive can still change loudness. The antialiasing treatment reduces digital aliases from saturation without removing them completely. Live Drive changes smooth over 10 ms; settings apply immediately while idle.

The main mix passes through stereo **Width**, **Drive**, **Warmth**, smoothed **Volume**, the recording gain, **Limit**, then final headroom control. Width runs from mono at zero through the natural capture image at 1 to increased Close spread at 2. Room spread caps at its natural width; Piezo remains centered. Zero Width gives mono. Warmth tilts the Main mix's low/high balance.

Lowering **Volume** gives the main mix more headroom before limiting. **85% is the unity gain reference.** Below it, the squared response provides fine adjustment; above it, a smooth boost region reaches **+7.04 dB** at full Volume relative to 85%. At 50%, the level is about 9.2 dB below the reference. The direct outputs are independent of Volume. Strong attacks and dense chords can engage output protection. Set Volume for the phrase and capture blend you are using. Factory patches have individually balanced levels; Kalimba Thumb Lullaby is intentionally quieter.

Limit from 0-30% bypasses musical compression, including the 5% default: no musical gain reduction or makeup. Above 30%, the limiter fades in smoothly through 37%, then lowers its threshold further as you turn it up. Automatic makeup lifts quieter playing and ringing tails. Full Limit retains the earlier maximum effect. Rear **Attack** (1-50 ms) and **Release** (20-500 ms) shape its linked stereo gain reduction. Returning to 30% or below bypasses this stage and its envelope after a short transition; live engagement changes crossfade over 2 ms. The stage uses no instantaneous audio waveshaper.

Separate, always-active headroom control anticipates overloads by **2 ms** and changes gain smoothly. **Main stays below −1 dBFS sample peak**; Close, Room and Piezo keep their **0.94 sample-peak** ceiling. This leaves about 7 dB above the normal phrase reference for stronger expression. Main L/R, Close L/R, Room L/R and mono Piezo each have their own protection. Stereo pairs share gain to preserve their balance; an overloaded capture does not turn down the other outputs. Brief protection can act below 30% Limit too. Once overload recovery has settled, signals below its detector ceiling pass unchanged apart from the delay. All seven outputs receive the same delay, reported to Reason as `ceil(sample rate × 0.002)` samples, independently of Quality. The detector also estimates peaks between digital samples to reduce reconstruction overload. These are sample-peak limits; they are not a universal intersample/true-peak mastering guarantee. Neither stage removes saturation already produced by Main Drive or a physical buzz layer.

Rear connections and setup

Connection or control	Use
Main L/R	Complete processed mix. Connect both for stereo. A single connected main jack carries the mono average.
Close L/R	Close-microphone stems before the Close level knob.
Room (Far) L/R	Far microphones and the voiced room return, both before the Room level knob.
Piezo	Mono contact-pickup stem before the Piezo level knob; bypasses Main Drive.
Note / Gate CV	Play the instrument from CV. Gate amplitude supplies velocity.
Hardness / Position / Coupling / Sympathetic / Volume CV	Add modulation to the corresponding knob, within its range.
Tune	Global instrument offset, ±100 cents, added to Reason's master tuning.
Detune	Fixed per-key pitch offsets, up to ±100 cents at maximum. This differs from the contact variation between hits.
Scale	Equal temperament or the six traditional/measured keyboard choices described below.
Voices	8, 16 or 24 simultaneous voices. Voice stealing fades old voices briefly.
Quality	Select 1x, 2x, 4x or 8x. The factory default, 1x, runs at the host sample rate. Higher settings use more CPU and can reduce aliasing. Changing Quality briefly fades and restarts the engine. See Working with existing patches for recall and automation.

All five direct stems bypass Drive, Volume, the Close/Room/Piezo levels, Width, Warmth, the main-output gain and musical Limit. Direct Piezo also bypasses Main's arrival alignment: it retains electrical timing, while Close and Room retain acoustic flight. An external blend of these sockets can therefore sound different from Main. Their physical capture character and independent overload protection remain active. The calibration is set separately for Close, Room and Piezo, with distinct bar and Kalimba trims. Dense maximum-velocity chords and increased controls can still invoke protection. Each capture has its own smooth overload protection and reports the same 2 ms latency as Main L/R. Changing a capture's front-panel level or the master Volume changes the main mix, while the direct outputs remain independent of them.

Scale's panel abbreviations are **Equal**, **Bala**, **Chopi**, **Penta**, **Sambla**, **Gyil** and **Sena**. They select equal temperament, Bala 7-equal, Chopi timbila, 5-equal pentatonic, Sambla, measured Birifor gyil and measured Sena valimba tunings. Their principal keys follow the respective keyboard layout; intervening MIDI keys are interpolated. New strikes take a changed scale, and sympathetic keys follow it immediately.

Working with existing patches

Opening a 1.5.7 song. Earlier Shop versions used an oversampling knob. Version 1.6.5 replaces it with four rear-panel **Quality** switches. A song or patch saved in an earlier Shop version opens at **1x**, whatever its previous oversampling value. Select 2x, 4x or 8x again if that is what the part needs, then save the song or patch. Quality cannot be automated or mapped with Remote. An existing oversampling automation lane has no effect on the new switches.

Comparing a saved performance. Your existing patch retains its stored sound controls. Wooden attacks are brighter, especially on loud yarn and cord strokes. Quick repeats alternate mallets. Rosewood rings longer while its bass overtones decay sooner. The modelled head gives Close a slightly narrower image with softer attacks. The sympathetic ring changes most on Padauk and Balafon. When revisiting a mix, compare the original and updated performance at the same Quality and listening level.

Factory patches. Several patches have new capture or volume levels. Reload the factory copy to hear its revised balance. A patch you have already saved retains its own settings. Maremba uses less processing than in 1.5.7, particularly as a phrase falls silent.

Earlier Shop versions. Version 1.5.7 refined the 20 factory sounds with gentler velocity depths and selected resonance adjustments. Version 1.5.0 brought softer wooden attacks, a natural midpoint for Decay, lighter rooms and rebalanced captures. For the closest match to an archived mix, keep an audio bounce alongside the Reason song.

Rear panel overview



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