

Desert Moon Audio

LOCOMOTION

LM - 18

3D Auto Panner · Motion You Can Hear Coming



Locomotion moves a sound through the space in front of you — or right around your head — so it sounds like something actually travelling, not a level sweep. Pick a path, set the speed, turn up DIMENSION. It lives happily on a send, locks to your song, and will move on the beat or on every hit you choose.

1	Installation, Trial and License	3
2	Quick Start	3
3	The Panel at a Glance	5
4	The Paths	6
5	The Controls	7
6	Trigger, Count and the Side Chain	9
7	What DIMENSION Does	10
8	Presets, A/B and Undo	11
9	Getting Sounds	11
10	Specifications	12

A NOTE ON THE DESIGN

Locomotion is an original Desert Moon Audio design. An auto-panner usually moves a level control. Locomotion moves a source: as it goes away it gets quieter and the air takes the top off it; as it comes close it gets louder and warmer and its own motion bends its pitch; each ear hears it a little apart from the other; behind you it sounds behind you. The face is drawn from the broadcast auto-panners of the late seventies — ruled sections, collet knobs, a count-to-trigger — because they got the controls right.

1.1 What Gets Installed

FORMAT	LOCATION
Audio Unit	/Library/Audio/Plug-Ins/Components/Locomotion.component
VST3	/Library/Audio/Plug-Ins/VST3/Locomotion.vst3
AAX	/Library/Application Support/Avid/Audio/Plug-Ins/Locomotion.aaxplugin
VST3 (Windows)	C:\Program Files\Common Files\VST3\Locomotion.vst3
AAX (Windows)	C:\Program Files\Common Files\Avid\Audio\Plug-Ins\Locomotion.aaxplugin

After installing, restart your DAW or rescan its plug-in list. Locomotion is an **effect**, mono or stereo in, stereo out: choose it from **Desert Moon Audio**. Its natural home is a **send** — an aux return with MIX all the way up — where you can feed it whatever you want moving and keep the dry track where it is. It is just as happy as an insert; pull MIX back to taste. It also offers a **side chain** input for the trigger (section 6).

2.1 Five Minutes In

Insert Locomotion and press play. It loads on **Front Panel**: a **CIRCLE**, one lap per bar, locked to your song, DIMENSION a little past half. The sound goes left, away from you, right, then comes straight past your nose and round again. Watch the **IMAGE** readout: the blob is where the sound is, and it gets wider and brighter the closer it comes.

Turn **PATH** through its six positions — the little red screen under the knob lights the route you are on. **SPEED** is a note value while the **TEMPO SYNC** lamp is lit, and a rate in hertz when it is not. **DEPTH** is how far the motion reaches; **IMAGE OFFSET** is where its middle sits. Then **DIMENSION**: at FLAT the image is an ordinary pan, and every bit you turn it up makes the space more real.

For rhythm, press **TRIGGER**. Now the image waits for a hit — a drum, a stab, anything that crosses **THRESHOLD** — and moves to the next spot on the path when it gets one. **COUNT TO MOVE** says how many hits that takes.

2.2 Resizing

Drag the window's corner. The panel keeps its shape, every control scales together, and the size is remembered with the session.

DEFAULTS

Double-click any knob to send it back to rest. POWER is the host's own bypass. POWER, FREEZE and MAN TRIG are never stored in a preset: they are performance controls, not part of a sound.

1.2 The 14-Day Trial

Locomotion runs **fully featured for fourteen days** from the first time it loads — every path, every control, every preset, nothing held back. A strip along the bottom edge of the panel — **TRIAL – 14 DAYS LEFT** — counts the days down. If the trial runs out before you activate, audio passes through dry: your track is still heard, unmoved, and a session opened later is never damaged. Licenses are sold at **desertmoonaudio.com**.

1.3 Entering Your License

Your license key is in the order email: one long line beginning DMA1-. Click the trial notice, paste the key in and press **Activate**. The first activation on a machine takes one quick internet check, which registers this computer against your key; from then on the plug-in runs fully offline, apart from its once-a-day update check. There is no account and no dongle. One key covers every format — Audio Unit, VST3 and AAX — and is kept in
~/Library/Desert Moon Audio/Locomotion/ on macOS.

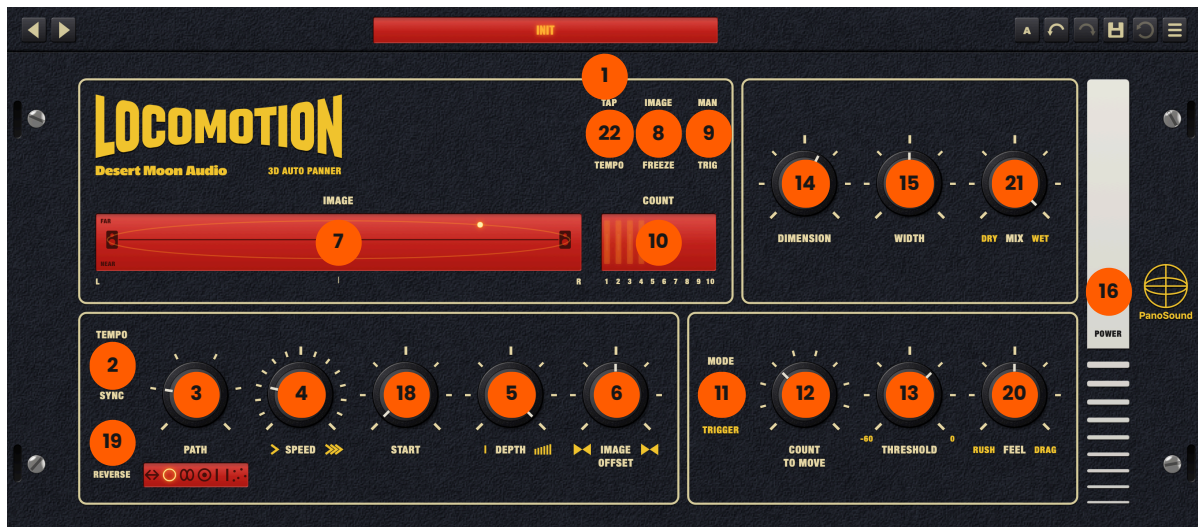
1.4 Seats and Moving Machines

One key activates **up to four computers you personally own** — a studio desktop, a laptop and a couple of spares. To move to a new machine, open the preset bar's menu on the old one and choose **Deactivate This Machine...**; that hands the seat back at once and returns that copy to trial mode. If the old machine is gone — sold, wiped or dead — write to **info@desertmoonaudio.com** with your order number and the seat is released by hand.

1.5 Updates and Support

Updates are free for as long as you own the plug-in. Locomotion checks once a day for a newer version and shows a small notice on the panel when one exists; download the current installer and run it over the top — nothing needs to be uninstalled and your presets stay where they are. Questions, problems or a lost key:

info@desertmoonaudio.com.



- 1 **Preset bar** — step, name window, A/B, undo, redo, save, revert, menu.
- 2 **TEMPO SYNC** — the motion follows the host's tempo and bar line.
- 3 **PATH** — the route the image takes; the screen under the knob shows the six routes with the chosen one lit.
- 4 **SPEED** — one lap of the path, in hertz or as a note value.
- 5 **DEPTH** — how far the path reaches.
- 6 **IMAGE OFFSET** — where the middle of the motion sits, left to right.
- 7 **IMAGE screen** — the room from above: you at the bottom, the loudspeakers across, the route, and the image as a lit dot with its trail.
- 8 **IMAGE FREEZE** — hold the image where it is.
- 9 **MAN TRIG** — move the image to the next spot now; its lamp flashes on every hit.
- 10 **COUNT readout** — hits toward the next move, the lap's progress in AUTO, the level in ENVELOPE.
- 11 **MODE** — AUTO (the motion runs on its own), TRIGGER (moves on hits) or ENVELOPE (the level pushes the image along).
- 12 **COUNT TO MOVE** — how many hits make a move.
- 13 **THRESHOLD** — the level a hit must cross.
- 14 **DIMENSION** — how real the space is.
- 15 **MIX** — the moving image against the input as it came in.
- 16 **POWER** — the host's bypass.
- 17 **Trial strip** — the days left, or your license; gone once activated.
- 18 **START** — where on the path a lap begins.
- 19 **REVERSE** — run the path the other way.
- 20 **FEEL** — swing the lap, or shuffle the hits.
- 21 **WIDTH** — the field the motion plays in; past 100, outside the loudspeakers.
- 22 **TAP TEMPO** — tap a tempo; the lap takes that long.

Picture yourself at the mix position, the loudspeakers in front of you. Every path is a route through that space, run once per lap at SPEED. The sound's distance from you — how far away, or how close — is part of the route, and DIMENSION decides how much of that you hear.

PATH	THE ROUTE
CLASSIC	Side to side along the line of the loudspeakers. The classic auto-pan, smooth at the turns.
CIRCLE	A ring in front of you: left, away from you, right, then straight past your nose. The far side is quiet and distant; the near pass is loud, warm and close. The signature move.
FIGURE 8	A lemniscate on its side, crossing at the center: out to the right and back, out to the left and back, each loop with a far side and a near side.
ORBIT	Right around your head at a constant distance: left, in front, right, behind. Behind you it sounds behind you.
BOUNCE	Hard left, hard right, nothing in between: the sound jumps. In TRIGGER this is the classic hardware move — every COUNTth hit throws it to the other side.
RANDOM	A new spot every lap, somewhere within DEPTH, reached in a quarter of a lap. In TRIGGER, a new spot on every move.

Stereo in

A stereo input is treated as an image, not as two separate channels. Its two sides are two sources that keep their natural spacing as the image moves, so a wide pad stays wide while it orbits and a stereo reverb return travels as one picture. How far apart they sit is read off the input itself: a dual-mono signal (the same thing in both channels) moves as a single source, a truly stereo one moves as a pair. There is nothing to set.

Depth and offset

DEPTH scales the whole route: at full, CLASSIC reaches hard left and hard right and CIRCLE is the whole ring; at half, CLASSIC sweeps the middle half and the ring is half the size. IMAGE OFFSET slides the middle of the route left or right. A ring around your left ear is DEPTH at half and OFFSET to the left; a sound that only ever flickers on the right edge is DEPTH low and OFFSET hard right.



The PATH selector: six positions, and the screen under it with the chosen route lit.



The MOTION section: TEMPO SYNC, PATH, SPEED, DEPTH, IMAGE OFFSET.

PATH

6 positions · rest CIRCLE

The route the image takes (section 4). Changing it mid-flight is seamless: the image glides from where it is onto the new route.

SPEED

0.02 ... 20 Hz · 8 bars ... 1/32 · rest 1 bar

One lap of the path. With TEMPO SYNC lit, a note value from eight bars to a thirty-second, with dotted and triplet steps; the lap is read straight off the host's bar position, so it is exactly in time, stays in time through loops and jumps, and two instances never drift apart. Unlit, a rate in hertz. In TRIGGER, SPEED is how fast the image travels between spots: slow for a glide, fast for a jump.

TEMPO SYNC

key · rest ON

Follow the host's tempo and bar line. When the transport is stopped the motion free-runs at the host's tempo.

START

0 ... 100 % · rest 0

Where on the path a lap begins. With SYNC on, this is where the image sits on the downbeat; give two instances different STARTs and they chase each other round the room.

REVERSE

key · rest OFF

Runs the path the other way: a CIRCLE goes right, away, left, near instead.

DEPTH

0 ... 100 % · rest 100

How far the path reaches. At zero the image stands still in the middle of its route.

IMAGE OFFSET

L ... R · rest center

Where the middle of the motion sits.

IMAGE FREEZE

key · rest OFF

Holds the image exactly where it is, mid-lap or mid-glide. Release and it carries on. Automate it to park a sound for a section.

MAN TRIG

key · momentary

Moves the image to the next spot on the path now, whatever COUNT says. Automatable. Its lamp flashes on every hit, manual or not, which makes THRESHOLD easy to set.

DIMENSION

FLAT ... DEEP · rest 60

How real the space is (section 7). At FLAT the image is a level pan.

WIDTH

0 ... 200 % · rest 100

The stereo field the motion plays in. Below 100 it is narrower, down to mono. Past 100 the image is pushed outside the loudspeakers with an out-of-phase bleed into the far side, which thins in mono rather than cancelling.

FEEL

RUSH ... DRAG · rest straight

The timing. In AUTO the lap swings: it hurries through one half and lingers through the other, still one lap per lap. In TRIGGER every other move is held back by up to 160 ms (DRAG), or the others are (RUSH): a shuffle on the hits.

TAP TEMPO

key

Tap a tempo on the key and the lap takes the tapped interval; SYNC comes off so SPEED can hold it.

MIX

DRY ... WET · rest WET

The moving image against the input as it came in, kept exactly in time with it. All the way up on a send.

POWER

switch

The host's bypass. Out, the input passes through, delayed by the unit's four milliseconds so nothing shifts when you switch.



The TRIGGER section: the TRIGGER key, COUNT TO MOVE and THRESHOLD.

The **MODE** key steps through AUTO, TRIGGER and ENVELOPE; the name under it says which. In AUTO the motion runs on its own. In TRIGGER the image waits. A **hit** is the input crossing **THRESHOLD** on its way up — a drum, a plucked note, a stab — and once it has fired the detector re-arms when the level drops six decibels under the threshold, so a sustained note is one hit, not a stream of them. Every **COUNT TO MOVE** hits, the image goes to the next station on its path: hard left and hard right for CLASSIC and BOUNCE; left, far, right and near for CIRCLE and ORBIT; the four lobes of the FIGURE 8; anywhere for RANDOM. CLASSIC glides there at SPEED; BOUNCE snaps.

The **COUNT** readout shows the hits so far toward the next move, with the setting itself glowing faintly; it flashes when the move fires. In AUTO the same readout shows the lap going round. The **MAN TRIG** lamp flashes on every hit, so turn THRESHOLD until it flashes on the hits you want and stays dark between them.

Envelope

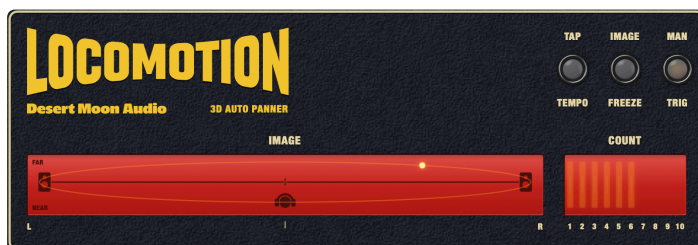
In ENVELOPE the input's own level is the hand on the knob. As the signal rises past THRESHOLD the image travels from START to half a lap on; as it falls back the image returns, at a pace set by SPEED. A sustained note walks out and back; a strummed part breathes. On the RANDOM path each crossing of THRESHOLD picks a new spot instead. The COUNT readout shows the level while this mode is on, and the MODE lamp breathes with it.

MIDI

A MIDI note on does what the MAN TRIG key does: it moves the image to the next spot at once. Route a drum pad or a keyboard to the plug-in (VST3 and AAX take MIDI; an Audio Unit effect takes it in hosts that pass MIDI to effects) and play the moves.

The side chain

Locomotion has a side chain input. Wire one up in your host — the kick, a hi-hat, a rhythm guitar — and the trigger listens to it instead of the input, so one track's rhythm can throw another around the room. The side chain takes over the moment it carries signal; when it is silent or unconnected, the trigger listens to the input again. Nothing to switch.



The display: the IMAGE and COUNT readouts, with IMAGE FREEZE and MAN TRIG.

COUNT TO MOVE

COUNT is the old hardware trick worth keeping. Set it to four with a snare on the side chain and the sound changes sides every bar; set it to one on a hi-hat and it chatters across the stereo field; set it to three on a four-on-the-floor kick and it moves against the beat.

A pan pot moves a level. A source moving through a room does much more than that, and every one of those things is a cue your ears use to place it. DIMENSION is all of them in one hand.

Distance

As the sound goes away from you it gets quieter; as it comes close it gets louder — six decibels down at twice the loudspeakers' distance and five up right at your nose, at full DIMENSION. The air takes the top off a far source, gently, the way a distant instrument is always a little dull. A source right by you gets the proximity warmth a close microphone hears. And a far source wakes up the room: a touch of early reflection appears around it, where a close one is all direct sound. That contrast is a large part of what "far" and "near" mean.

Doppler

A source coming toward you is pitched a little up; one going away, a little down. Locomotion's distance is a real delay, so a lap at the chosen SPEED bends the pitch exactly as a real lap of a metre's radius would — gently at slow speeds, more at fast ones, capped near a semitone so a quick BOUNCE never turns into a siren. The near pass on a CIRCLE is where you hear it: the sound swoops.

The ears

Beyond the constant-power level difference of an ordinary pan, the far ear hears a source a fraction of a millisecond later, and a little duller, because your head is in the way. Locomotion gives each channel its own timing and its own shadow, and that is what makes a hard-left sound sit *out there* rather than merely in the left speaker.

Behind you

On the ORBIT path the sound passes behind your head. Behind, it is duller again and the two channels pull a little apart, which is how "behind" reads on a pair of loudspeakers — without the crude polarity flip that makes a mix fall apart in mono.

HOW MUCH

The rest position, a little past half, is right for most things. Turn it down toward FLAT for a plain pan that never changes tone; turn it all the way up for the full ride. Nothing in DIMENSION changes the level of a sound sitting still at the loudspeakers, so switching it is never a volume change.

8.1 The Preset Bar

The arrow keys step through every preset, factory and yours. Click the name window for the whole list, **Save As...**, **Delete** and **Open Preset Folder**. The amber dot beside the name means the sound has moved since the preset was loaded; **revert** puts the preset back. **A/B** holds two scratch settings: tweak one, flip to the other, flip back. **Undo** and **redo** walk every change, grouped so a knob drag is a step or two, not a hundred. User presets live in ~/Library/Application Support/Desert Moon Audio/Locomotion/Presets.

8.2 Factory Presets

Front Panel A circle, one lap a bar, DIMENSION past half. The sound.	Slow Circle Two bars a lap, deeper, a little wide, starting a quarter in.
Fast Circle A quarter note a lap. The spinning cabinet feel.	Classic Pan Side to side every half note, nearly flat. The old move.
Slow Sweep A four-bar drift, a touch past the loudspeakers at the ends.	Figure 8 One figure a bar, out and back each side.
Around the Head ORBIT, two bars a lap, deep.	Hat Bounce TRIGGER, BOUNCE, every hit, wide. Hi-hats, shakers, chattering guitars.
Every 4th Hit A circle that moves on to its next station every fourth hit.	Random Steps / Random Hits A new spot every eighth note, or on every hit.
Shaker Life A small, quick circle, set a little right. A dead shaker comes alive.	Left Orbit / Right Orbit A half-size ring around one ear; the right one runs backwards.
Wide and Deep Four bars a lap, full DIMENSION, WIDTH out past the speakers.	Free Run 0.3 Hz Off the grid: a circle at its own pace.
Beyond the Speakers CLASSIC with WIDTH near full: the image swings outside the pair.	Breathe ENVELOPE: the louder it plays, the further the circle takes it.
Swung Circle One lap a bar with FEEL on DRAG: it lingers and hurries like a shuffle.	Shuffled Hits TRIGGER + BOUNCE with every other move held back.
Backwards Orbit ORBIT in REVERSE, started a quarter in.	Vocal Double A slow, shallow, wide drift. Nobody hears it move; the vocal just sits better.

9.1 On a Send

Make an aux return with Locomotion on it, MIX at WET, and send the vocal double, the guitar delay, the synth pad — whatever should move. The dry track stays put; the moving copy lives around it. DIMENSION above half here: on a send the near pass is what makes people turn round.

9.2 Opening a Mix Up

A CLASSIC at four bars, DEPTH thirty, DIMENSION low, on a part that is masking the vocal: it is never in the same place long enough to fight, and nobody hears it moving. The same slow circle on backing vocals clears the center for the lead.

9.3 Rhythm

Side chain the kick, TRIGGER on, BOUNCE, COUNT four, on the hi-hat bus: the hats change sides every bar. COUNT three against a straight kick moves them against the beat. RANDOM with COUNT one on a delay return scatters each repeat somewhere new.

ITEM	VALUE
Formats	Audio Unit, VST3 and AAX on macOS 10.15 and later, Apple Silicon and Intel (universal); VST3 and AAX on 64-bit Windows 10 and later
Channels	Mono or stereo in, stereo out (mono out folds to mono); stereo side chain input
Sample rates	44.1 kHz to 192 kHz; every control and path tested at each
Latency	4 ms, reported to the host; bypass and MIX are aligned to it
Paths	CLASSIC, CIRCLE, FIGURE 8, ORBIT, BOUNCE, RANDOM; START, REVERSE, FEEL
Speed	0.02 to 20 Hz free; 8 bars to 1/32 with dotted and triplet values synced, sample-accurate to the host's bar position
Modes	AUTO, TRIGGER (level detector with 6 dB re-arm, input or side chain, count to move 1 to 10, manual trigger, MIDI note), ENVELOPE
Space	Distance level and air, proximity, Doppler (capped near a semitone), interaural time and shadow, rear cues, early-reflection room, WIDTH to 200 %
Processing	32-bit float, Hermite-interpolated delays, every control smoothed
Presets	Twenty-two factory; user presets as files; A/B; undo and redo
License	14-day fully featured trial; offline key, four seats

Desert Moon Audio

Locomotion LM-18 · User Manual · Version 1.0.2

Desert Moon Audio · Los Angeles, California · info@desertmoonaudio.com

Made in the USA. Locomotion is an original Desert Moon Audio design. Its front panel is informed by the broadcast auto-panners of the late seventies; it is not affiliated with or endorsed by any hardware or software manufacturer. VST is a trademark of Steinberg Media Technologies GmbH. AAX is a trademark of Avid Technology, Inc. Audio Units is a trademark of Apple Inc. All trademarks are the property of their respective owners.