

USER MANUAL



A KONTAKT INSTRUMENT BY
soundsphat

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1. Introduction

Cassiopeia is a deep-sampled Kontakt instrument built for the free and full Kontakt Player, version 8.1.0 or above. It combines recordings of over 30 vintage and modern analog synthesizers with organic instruments, found sounds, textures, and vocal recordings, all routed through a flexible mixing, filtering, and modulation engine.

This manual covers the instrument's layout, sound library, and processing features: the main panel, the mix page, the sound categories, global settings and master effects, the ADSR and LFO modulation sections, the arpeggiator, and the XY pad.

System Requirements

- Free Kontakt Player 8.1.0 or later (or full Kontakt 8).
- Sufficient hard drive space for the sample library — the full version includes long-form samples (up to a minute in length for some categories); a light version with shorter, six-second loop points is also available for lower disk/RAM use.

Updates

Cassiopeia receives free lifetime updates once purchased. Check Native Access periodically for available updates, including planned expansions to the randomization and sound-browsing features.

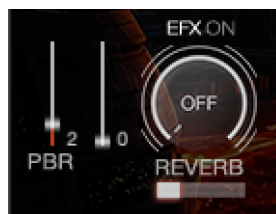
2. The Main Panel

The main panel sits along the bottom of the interface and remains visible no matter which page of the instrument you are viewing. It holds the controls used most often, so core shaping tools are always one click away.



Left Section — Pitch, Mod Wheel & Effects Send

- **Pitch Bend Range:** sets the range in semitones (up to 12) for pitch bend. The value applies symmetrically — up and down.
- **Mod Wheel Slider:** reflects the mod wheel input.
- **Effects Sends (EFX):** blend in Reverb, Convolution, Room, and Delay. Clicking "EFX" toggles the entire send bypass on/off; the slider's last value is remembered when re-enabled, making it easy to A/B a dry versus processed signal.



Filter Section

Cutoff and Resonance controls sit alongside a bank of filter-type selectors:

- 12 dB, 24 dB, and 36 dB per octave Low Pass filters.
- Acid Low Pass — a resonance-forward low pass tuned for classic acid-style squelch.
- 24 dB Band Pass and 24 dB High Pass filters.
- Notch filter.
- Formant filter — shapes sound toward vocal/talk-box and vocoder-style timbres.
- Filter Distortion — adds saturation-style distortion at the filter stage.

The filter section is linked to the ADSR, the LFO, and the XY pad, so cutoff can be modulated dynamically from any of those sections.



Layer On/Off & Master Controls

- **Layer Buttons:** each of the four layers (Oscillator 1, Oscillator 2, Aux 3, Aux 4) can be toggled on or off directly from the main panel. Inactive layers appear white; active layers appear red. Turning off unused layers is recommended, since inactive layers still consume RAM if left on.
- **Master Volume:** controls the overall output level of all layers.
- **Master Tone Shaper:** a tilt EQ centered between roughly 3–6 kHz — tilt right to add high-frequency information, tilt left to scoop it out. It sits at the very end of the signal chain, so it can be used as a final tonal correction after all other mixing and effects have been applied.
- **Velocity Volume and Velocity Cutoff:** control how strongly note velocity affects volume and cutoff (the latter linked to the main filter section).

Tip: for any bipolar slider (shown with a red center line), hold Command and click to snap the slider back to its default/neutral value.



3. The Mix Page

The Mix Page is where each of the four layers — Oscillator 1, Oscillator 2, Aux 3, and Aux 4 — is loaded, mixed, and individually shaped before further processing. Oscillators 1 and 2 share the same sound categories; Aux 3 and Aux 4 share a separate, mirrored set of categories.

Per-Layer Controls (Page 1)

- **Sound Menu Access:** clicking the oscillator/aux name at the top of a layer, or its "Sound Menu" button, opens that layer's sound browser.
- **Panning:** Command+click to reset to center.
- **Stereo Modeler:** widens the stereo image or collapses it back toward mono.
- **Layer Volume.**
- **Solo / Mute:** per-layer.
- **Layer Settings Page:** includes key range (splits the keyboard into up to four regions), Poly/Mono mode, tracking on/off, phase invert / left-right channel swap, and Random Sample Start (randomizes each note's sample start point — useful for avoiding phasing when playing fast repeated patterns).
- **Mod Wheel Assignment:** each layer can be assigned to the upper or lower half of the mod wheel range, allowing one physical mod wheel to morph or crossfade between two different layers/sounds.
- **Low Cut, High Cut:** per-layer frequency trimming.
- **Body EQ and Silk:** Body adds or scoops low-mid frequency information; Silk does the same for high-mid frequencies. Both are commonly used to add warmth or presence to an individual layer.
- **Tuning:** semitone tuning (± 12), octave transpose (± 2 octaves), and fine tuning in cents (± 50 cents).
- **Sample Offset:** moves the sample's start point further into the recording — useful for skipping a sample's attack transient or for creating variation when combined with Random Sample Start.



Per-Layer Controls (Page 2)

- **Bit Crusher:** adjustable bit depth and sample rate reduction.
- **Glue Compressor:** threshold control plus a wet/dry mix knob for parallel compression.
- **Stutter Effect:** rhythmic retriggering at selectable note values (from whole notes down to 32nd notes), with a mix control.
- **Saturation and Transient Attack:** saturation adds harmonic drive; Transient Attack can turn a soft pad-like waveform into a snappy pluck, or (used in the other direction) soften a plucky sound into a pad. These two controls are available on all four layers, on every sound in the library.



Wavetable Layer Controls

When a wavetable is loaded into a layer, an additional page of wavetable-specific controls appears alongside the standard per-layer options:

- **Wavetable Position:** scans through the wavetable's frames.
- **In-Harmonics:** adjustable up to ± 12 semitones.
- **Form 1 and Form 2:** two modulation slots, each with phase, shape, modulation depth, and tune parameters.

These wavetable parameters, like the standard modulation targets, can be assigned to the LFO or the XY Pad for continuous motion.



4. The Sound Library

Cassiopeia's sound categories are shared between Oscillator 1/Oscillator 2 (one set of categories) and Aux 3/Aux 4 (a separate, mirrored set of categories). Categories can be sorted alphabetically or functionally and can be filtered down to specific instrument types (e.g. vintage analog only, FM only, modular only).



Oscillator 1 & 2 Categories

- **Vintage Analog:** one of the two dedicated analog synthesizer categories in the library (the other being Modern Analog), drawn from the 30+ hardware synthesizers deep-sampled for Cassiopeia. These were recorded through actual hardware with light EQ and, at times, a touch of compression coloration, rather than aiming for a clinically “clean” capture. Patches progress from basic waveforms through detuned/unison and chorus variations — many captured directly from a synth’s own onboard unison/chorus circuitry, since the developer felt these hardware-native versions often sound better than a purely digital recreation — through cross-modulation and pulse-width options, finishing with heavily processed “creative” patches toward the end of each category. Where a synth’s VCO1 and VCO2 signals were sampled separately, both can be layered into Oscillator 1 and 2 without triggering identical samples, then detuned against each other for a fuller sound.
- **Modern Analog:** the modern counterpart to the Vintage Analog category, following the same deep-sampling approach and basic-to-creative patch progression described above, covering the more contemporary analog hardware among the 30+ synthesizers recorded for the library.
- **Modular:** modular synthesizer recordings, offered as their own filterable category. Modular performances often carry natural pitch variation that is itself part of their character; these were tuned afterward as closely as possible without stripping that character out, so a small amount of fine-tuning may still be needed on some patches.
- **FM & Pseudo FM:** FM-based synthesizer patches, described as holding the more crystalline, harmonically rich sounds in the library.
- **Pre-Made Patches:** ready-mixed patches built by blending multiple recorded synthesizers together, rather than raw single-source waveforms. Includes bass (long & short), legacy EDM/house chords (each labeled minor or major), pads (some slower to load given roughly 40-second to 1-minute sample lengths — opening the Attack or moving Sample Offset further in skips ahead of the initial harmonic build-up), techno steps (the sounds that, according to the developer, directly inspired the creation of the separate Landlord Steps instrument), leads, organs, and plucks. Because these patches are already mixed and processed to some degree, pushing the Filter Station’s cutoff further is more limited than on raw waveform patches.
- **Acoustic Instruments:** real recorded instruments, most captured across multiple dynamic layers — pianos (including one captured via a mobile phone recording for a distinct lo-fi character), electric pianos and keyboards, steel drums, xylophones, church organ, string sections (cellos, violins, violin quartets with pizzicato), accordion, hurdy-gurdy, a range of flutes, a recreated shakuhachi performance, trumpet, war horn, foghorn, air horn and ship horn, train and referee whistles, a sustained singing bowl, kalimba (4 dynamic layers), steel pan (5 dynamic layers), nylon guitar (4 dynamic layers), banjo (4 dynamic layers), ukulele, electric guitar (dry and pedal-processed), and e-bow textures.
- **Wavetables:** a dedicated wavetable library, loading noticeably faster than the sample-based categories since the files are much shorter. Sorted by type across pages — sine/triangle-based sounds, saw/square-based sounds, and more digital, creative sounds. Loading a wavetable into a layer opens the extra Wavetable Layer Controls on the Mix Page (Wavetable Position, In-Harmonics, and Form 1 & 2 with phase, shape, depth and tune — see Section 3), and wavetable parameters can also be modulated via the LFO or the XY Pad.
- **Tape & Found Sounds:** recordings run through tape or VCR-style processing for lo-fi and vintage character, plus a variety of found/design sounds (compressors, air pumps, drills, electromagnetic buzz, etc.).

- **Synthesized Vocals:** vocoder textures, spoken phrase/word chants, and recreations of classic 90s EDM vocal stabs.
- **Organic Vocals & Choirs:** five female and three male solo singers plus separate female and male choir recordings (soft and operatic variants), and 48 whispered “gibberish” recordings spread across the keyboard for complex, evolving textures.

Aux 3 & 4 Categories

- **ASMR:** close-mic'd object and material recordings.
- **Bells:** synthesized, pre-made, and recorded bells, plus cowbells and metal spiels.
- **Nature / Birds:** field recordings from multiple regions (suffixes indicate origin, e.g. recordings tagged for Colombia, South Africa, Switzerland, and the USA), denoised for clarity; some sourced from hunting call instruments and playable chromatically.
- **Braams:** pre-made synth braams plus organic French horn, tuba, trombone, bass trombone, and trumpet recordings for layering with synth braams..
- **Design Subs:** low-end layering sources, including some of the same synth waveforms available in Oscillator 1/2.
- **Metals:** anvils, metal bells, xylophones, pots with rubber hammers, wok/frying pans, cans, and gongs (including a 5-dynamic-layer gong).
- **Nature:** a broader library of field recordings.
- **Noises:** synthesizer and designed noise sources.
- **Textures:** several sub-categories:
 - **Chaos Textures:** swarming, intentionally loosely-tuned textures (e.g. multi-violin swarms), complex even on a single held note.
 - **Chimes and Seeds:** naturalistic wind-chime and seed-instrument performances, many with dynamic round robins.
 - **Chord Textures:** roughly 100 pre-made chord textures spread across the keyboard, usable as pads or, with sample offset, as snappy plucks.
 - **Licks:** acoustic piano performances — chromatically recorded phrases plus one-shot licks that can double as sustain-style textures when the sample offset is moved past the initial performance.
 - **Single Textures:** chord-playable textures (cello, guitar, evolving sitar, etc.) designed to sit under basic waveforms. Full-length versions are included in the full library; the light version loops at six seconds.
- **Transients:** one-shot percussive layers — synthesized kicks, tonal percussion, and claps on the first page; organic recordings (wood, log, glass, stone, drumsticks, frame/ritual drums) on later pages, many with multiple dynamic layers.
- **Walla:** group/crowd recordings — chants, singing, playgrounds, sports crowds, church settings, markets, restaurants, transit hubs, and airports, recorded across multiple countries.
- **User Slots:** 20 user-loadable slots for dragging and dropping your own one-shot samples, with editable name and parameters.
- Aux 4 mirrors the same categories and sounds as Aux 3.

5. Layering and Combining Sounds

Because all four layers can be shaped independently — including their own ADSR and LFO settings — sounds from very different categories (e.g. a whisper texture, a nature atmosphere, and a chord texture) can be layered and staggered in time to build evolving, complex patches. Per-layer ADSR delay/attack settings can be used so that one layer (e.g. a pad or chord) enters later than the others. Per-layer LFO panning can also be used to give individual layers independent stereo movement.

6. Global Settings & Master Effects

Global Settings

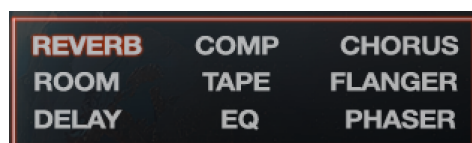
- **Mode:** Polyphonic, Mono, or Legato.
- **Portamento:** off, always-on, or Legato-only (glide is applied only when notes are played legato).
- **Chord Maker:** a set of custom chord shapes (also found in the Zerotone 6 instrument), covering chord voicings associated with early house and techno music. Chord Maker is only available in Poly mode.
- **Unisono:** two types — Classic (a phasier, snappier style associated with late-80s/early-90s PCM synths) and Modern (wider, more detuned) — selectable up to 8 voices.
- **Stereo Spread:** applies additional stereo width to the overall sound.
- **Sidechain:** a simple sidechain effect ducking on beat one, useful for four-on-the-floor styles to make room for the kick drum.



Master Effects

All master effects apply to the combined signal of all active layers. Inactive effects appear dimmed; clicking the effect's title activates it (indicated by the title lighting up), and effects can be stacked simultaneously.

- **Reverb & Convolution:** share a Reverb section; Convolution includes 71 custom-recorded impulse responses from various rooms and halls.
- **Room:** a separate room-style reverb with its own presets.
- **Delay:** five delay types with adjustable parameters.
- **Compressor and Tape Simulation.**
- **4-Band EQ and 24 dB/octave Low Pass Filter.**
- **Chorus, Flanger, and Phaser.**



Note: the send-mix sliders in the main panel (Reverb/Convolution/Room/Delay) are linked to the corresponding sliders on this Edit page — adjusting one updates the other.

7. ADSR

Three hardwired ADSR envelopes are available: Volume, Cutoff, and Pitch (cutoff and pitch each have an associated amount control). Each envelope can be activated independently by clicking its title.

Each of the four layers can be included or excluded from a given ADSR edit at any time, using the layer selector beneath the envelope. When multiple layers are selected, edits apply to all of them simultaneously; when only one layer's indicator is shown, only that layer is being displayed, but edits still apply to whichever layers remain selected.



8. LFO

LFO A — Hardwired Targets

LFO A provides three hardwired modulation destinations: Volume, Cutoff, and Pitch, each with its own intensity control. Sine and sawtooth waveforms are available, along with speed (free-running or DAW-synced), delay (how long the instrument waits after a note before the LFO begins), and a Retrigger/Flow toggle (Retrigger restarts the LFO on every new note; Flow lets it continue running across notes).

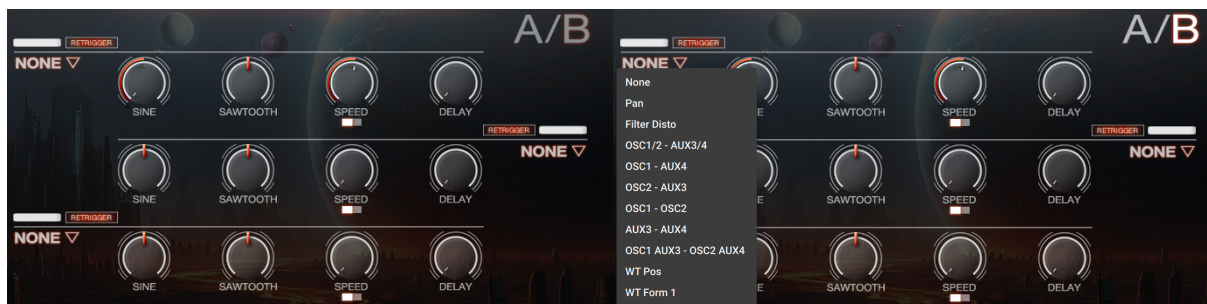


LFO B — Expanded Modulation

Switching to the B side opens a wider set of modulation destinations, including:

- *Panning and filter/distortion targets, assignable per layer.*
- *Oscillator morphing — crossfading between two chosen layers (e.g. Oscillator 1 and Oscillator 2) using a selected waveform and speed, with adjustable intensity and direction of the morph.*
- *Wavetable-specific targets — wavetable position, wavetable mode/tune, and modulation depth — available when a wavetable is loaded.*

As with other modulation-capable parameters throughout the instrument, LFO B targets can be automated via the NKS-ready parameter system in a supporting host.



9. Arpeggiator

The arpeggiator can be toggled on/off from its dedicated button, which is linked to the arpeggio page's own on/off control and remains accessible throughout the instrument.

- **Rate & Duration:** note rate is selectable (e.g. 16th notes); note duration can either follow the rate slider or be set independently per step using the step table.
- **Per-Step Velocity and Pan:** each step in the arpeggio table can have its own velocity and pan value; a Random button can randomize the table for quick variation.
- **Steps:** from 2 up to 64 steps (16 is a common practical starting point).
- **Swing, Octave Range (± 4 octaves), and Repeats (up to 8).**
- **Presets:** 40 built-in arpeggio presets are included, and custom settings can be saved and recalled.
- **Arpeggio Type & Order:** selectable from a dedicated menu, along with a Latch option to keep the pattern running without holding the keys.



Recommended MIDI Timing Offset

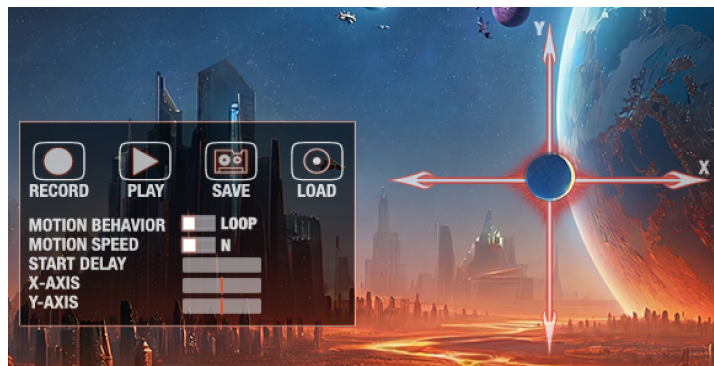
Because some sampled synthesizers have a natural pre-transient lead-in, a MIDI region offset of approximately -6 to -8.3 milliseconds is recommended when using the arpeggiator, to avoid perceived timing lag. When layering sounds from different source synthesizers with different attack characteristics, small adjustments to each layer's Sample Offset can help align their transients.

10. XY Pad

The XY Pad provides two panels: a behaviour/recording panel on the left, and an assignable-effects panel on the right.

Recording & Playback

- **Presets:** over 100 pre-made XY motion presets are included; custom motions can be recorded and saved.
- **Recording:** holding Record while dragging the cursor (the on-screen "planet" icon) captures a motion path; releasing stops the recording.
- **Playback Modes:** Loop (repeats continuously), Retrigger (restarts the motion on every new note), and One-Shot (plays the recorded motion once).
- **Motion Speed:** normal, double, or half speed.
- **Start Delay:** sets how long the instrument waits after a key press before the motion begins.
- **X/Y Axis Automation:** the X and Y axes can each be automated directly from a host's automation lanes.



Assignable Effects

Up to 24 different parameters can be assigned to the X or Y axis, including tone low, tone high, detune, bit/sample rate, drive, reverb, cutoff, resonance, and pan (with per-layer targeting available for several parameters). A dedicated page is available for wavetable-specific modulation targets when working with wavetables.

- **Resonant Grains and Super Harmonics:** two additional processing layers that can be routed into the XY Pad even though they aren't primary oscillator layers; both can add rich harmonic content, though Super Harmonics carries a slight amount of latency and is best suited to pads and sustained sounds.
- **Random Button:** loads a new random combination of sounds across all four layers.



11. Quick Reference: Command+Click

Throughout *Cassiopeia*, any bipolar slider (identified by a red center line) can be reset to its default value by holding Command and clicking on it. This applies to panning, tone shaper, and other centered controls across the instrument.

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