

VKO1

USER MANUAL

[Overview](#)

[Getting Started](#)

[Interface](#)

[Playing Clips](#)

[Trimming](#)

[Banks](#)

[Gestures](#)

[51 Effects](#)

[Visualizers](#)

[Performance Tape](#)

[Jogwheel](#)

[Memory Gauge](#)

[BPM & Sync](#)

[Ableton Link](#)

[3D Models](#)

[Keyboard](#)

[Game Controllers](#)

[MIDI](#)

[Output](#)

[Sessions](#)

[Troubleshooting](#)

What is VKO1?

VK01 is a professional visual performance app for iPad, iPhone, and Apple Silicon Mac (via Designed for iPad). It plays your video clips, GIFs, images, and 3D models in sync with music. Designed for live performance, VK01 delivers automated visual playback with precise BPM synchronization, 51 real-time effects, performance tape recording, and hardware controller support.

The Philosophy: Load your content, configure your performance, and let the app handle visual playback while you focus on your music.

8 Banks × 16 Pads

128 clips organized across banks A–H. MP4, MOV, M4V, GIF, PNG, JPG, JPEG, HEIC, USDZ, OBJ.

BPM-Synced Playback

Tap tempo, manual entry, MIDI clock, Ableton Link, or real-time beat detection. Clips and effects animate on the beat.

51 Master Effects

Metal GPU shaders for real-time processing. All BPM-synced with wet/dry control and custom color support.

Set It & Forget It

MIX auto-plays from all banks and rotates effects. MIX2 adds two-layer compositing with blend mode cycling. BLEND does the same compositing without touching your effects – fully hands-free.

Supported Devices: iPad (iOS 17+), iPhone (iOS 17+), Mac (Apple Silicon, macOS 14+)

Up and running in 4 steps

01

Load Content

Tap the folder icon > Bank Folders > + Add Folder. Choose a folder from Files. Clips auto-distribute across pads.

02

Set Your Tempo

Tap the BPM display. Use tap tempo, manual entry, MIDI clock, or enable beat detection.

03

Enable Auto-Play

Tap AUTO and cycle modes: SEQ, RND, SHF, MIX, MIX2, or BLEND. MIX for fully automated cross-bank mixing; MIX2 for layered compositing with blend mode cycling and effect automation; BLEND for the same compositing without effect changes.

04

Add Effects

Twist the Master Effect knob, pick an effect, dial in intensity. Effects animate in time with BPM.

Manual Import (Alternative)

1. Long-press an empty pad
2. Select **"Import Media"**
3. Choose a video, GIF, image, or 3D model

Adding a Visualizer

No video files needed – VK01 includes 16 GPU-rendered visualizer types that generate visuals in real time. Long-press an empty pad and tap "**Add Visualizer**" to browse types, pick a palette, and set reactivity. Visualizers respond to your audio, work with all effects and blend modes, and are included in Auto-Play rotation. [See the Visualizers section](#) for full details.

Pro Tip: Organize content into folders by theme and map each folder to a different bank (A-H). Keep 16 items per folder for easy 1:1 bank mapping. All imported content is copied locally for offline use.

Playing clips

Manual Mode

Tap any pad to play its clip. Tap another pad to switch.

Hold Mode

Tap **HOLD** to enable. Now tapping a pad toggles it on/off. Stack multiple clips as layers. Tap a playing pad again to remove it. Press **CLEAR** (or Escape) to release all.

Auto-Play Modes

Tap **AUTO** to cycle through modes:

SEQ

Sequential order within current bank (1, 2, 3, 4...)

RND

Smart random – avoids recently played clips

SHF

Pure shuffle within current bank

MIX

Auto-mix across all 8 banks with automatic effect changes. Prefers clips from different banks for maximum variety.

MIX2

Two-layer compositing mode. Keeps the previous clip as a base layer while bringing in a new clip on top. Automatically cycles blend modes on the upper layer at each trigger and rotates master effects. Prefers clips from different banks for variety. No HOLD required – the two-layer stack is managed automatically. When HOLD is active, held pads act as the fixed base and MIX2 cycles on top.

BLEND

Two-layer compositing mode – identical to MIX2 in how it stacks clips and cycles blend modes, but with one key difference: **no master effect automation**. Your effects stay exactly as you've set them. Every trigger brings a new clip on top of the previous base, and blend modes on the upper layer cycle automatically. Selects across all 8 banks. When HOLD is active, held pads act as the fixed base. Use BLEND when you want the evolving composite texture of MIX2 but need full control over your effects.

MIX2 & BLEND Settings: Open BPM Settings and scroll to AutoMix Options. Toggle **Master Effect Automation** (MIX2 only – BLEND never touches effects) and **Blend Mode Automation** independently. Blend mode automation fires at 40% probability per trigger and is skipped automatically under performance stress.

Time Division: Controls how often clips switch (1/16, 1/8, 1/4, 1/2, 1 bar, 2 bars, 3 bars, 4 bars). Adjust with **DIV**.

EDITING

Clip trimming

Set in/out points on any clip to play only the section you want.

1. Long-press a pad
2. Select **"Trim"**
3. Use the range slider to set in and out points
4. Preview the trimmed section in real-time
5. Tap **"Apply"**

Works on videos, GIFs, and any media with duration. Trim settings are saved with your session. Load the same video on multiple pads with different trim regions to chop a single source into many clips.

ORGANIZATION

Using banks

8 banks (A-H) with 16 pads each = 128 total clips.

- Tap **A** through **H** to switch banks
- Swipe left/right on the pad grid to navigate
- Organize by mood, theme, or energy level

Example Setup:



Touch gestures

Gesture	Action
Tap pad	Play/switch to that clip
Long-press pad	Open pad menu (import, trim, settings, effects, MIDI learn, delete)
Swipe left/right	Navigate between banks A through H
Drag up/down on knob	Adjust effect intensity (dry/wet)
Long-press knob	Open effect picker
Long-press effect in picker	Add/remove from favorites, exclude from AutoMix
Tap < > arrows	Cycle through effects
Tap bank buttons	Switch banks directly
Tap BPM display	Open BPM & Sync settings
Drag pad to another pad	Move clip to new slot
Drag pad + hold on destination	Copy clip (duplicate with all settings)
Drag from Files / Photos	Drop directly onto any pad to import
Drag pad to another app	Export clip via iOS drag & drop

Pro Tip: Long-press is your friend! Almost any button or pad can be long-pressed for additional options or MIDI Learn.

51 real-time effects

All effects run as Metal GPU shaders applied to the composited output of all active clips. Drag up/down on the MFX knob to control intensity (dry/wet). Every effect supports BPM sync – tap the metronome icon in the picker to set the division.

How to use: Long-press the MFX knob to open the picker. Tap an effect to assign it. Use < > arrows to cycle. Drag the knob vertically to adjust intensity. Long-press any effect in the picker for color settings, BPM division, favorites, and AutoMix exclusion.

COLOR & GRADING – 9 EFFECTS

- Invert** Flips every pixel to its RGB complement – blacks become white, colors rotate to their opposite on the wheel. At partial intensity, blends between original and inverted image.
- Color Shift** Rotates the hue of all pixels through the color spectrum. Intensity controls rotation speed; at BPM sync the full hue wheel cycles once per beat division.
- Saturation** Boosts or crushes color saturation. Below 50% intensity moves toward grayscale; above 50% pushes toward hyper-vivid neon. Pulses rhythmically at BPM.
- Brightness** Raises or lowers the overall luminance of the frame. Low values darken toward black; high values blow out to white. Use at low intensity for a subtle exposure pump.
- Contrast** Expands or compresses the tonal range. High contrast crushes blacks and blows out highlights for a punchy, graphic look that pulses on the beat.
- Posterize** Reduces the number of distinct color levels, creating flat poster-art bands of solid color. Intensity controls the step count from many gradients down to two harsh tones.
- Bloom** Simulates lens glow by spreading bright areas outward. Lights and highlights radiate a soft halo. Works especially well on

neon and backlit footage.

Thermal Maps pixel luminance to a false-color heat palette (blue → green → yellow → red). Converts any footage to an infrared camera aesthetic.

Gradient Map color Replaces luminance with a synthwave gradient ramp (deep purple → cyan). Dark areas map to cool colors, bright areas to warm highlights. Open the color picker in the effect menu to customize the ramp endpoints.

DISTORTION — 8 EFFECTS

Pixelate Chunks pixels into large blocks. Intensity controls block size from subtle lo-fi grain to coarse Minecraft-style squares. BPM sync pulses the block size on the beat.

Glitch Simulates digital signal corruption: random horizontal slice offsets, RGB channel smearing, and noise bands. Looks like a dying VHS or corrupted video stream. Severity follows intensity.

RGB Split Separates the red, green, and blue channels and offsets them horizontally in opposite directions. Creates the classic chromatic aberration prism-split look found in lo-fi and glitch aesthetics.

Displace Uses an animated noise field to push pixels away from their original position. Creates a watery, displacement-mapped wobble. Intensity controls the displacement radius.

Datamosh Simulates compression artifact glitches by smearing motion across the frame, as if I-frames were dropped from a video stream. Content bleeds and streaks with movement.

Wave Warp Applies a sine-wave distortion horizontally and vertically. Intensity controls wave amplitude. With BPM sync, the waves ripple rhythmically on each beat for a pumping wobble.

Pixel Sort Sorts pixel columns by brightness within a luminance threshold, producing directional streaks of organized pixels. A signature glitch art technique that creates aurora-like vertical smears.

Sharpen Amplifies high-frequency edges using an unsharp mask. Moderate intensity crisps footage; high intensity creates an over-

sharpened, artificial digital artifact look.

KALEIDOSCOPE & MIRRORS – 6 EFFECTS

Kaleidoscope 2-fold radial symmetry. Mirrors the source quadrant twice and rotates the segments around a center point. Creates a shifting mandala from any footage.

Kaleido 4 4-fold symmetry. A more intricate mandala pattern formed from four mirrored and rotated copies of the source quadrant. Ideal for symmetrical, graphic content.

Kaleido 6 6-fold symmetry. Produces a hexagonal snowflake structure. The six segments rotate in sync with BPM for a spinning kaleidoscope effect.

Kaleido 8 8-fold symmetry for maximum kaleidoscopic complexity. Works especially well on footage that already contains repeating patterns or high contrast geometry.

Mirror Flips the left half of the frame onto the right (bilateral symmetry). Simple and effective – any footage with strong asymmetry becomes suddenly surreal.

Mirror Quad Mirrors both horizontally and vertically simultaneously, creating four-way symmetry from a single source quadrant. More geometric and abstract than bilateral mirror.

BLUR – 2 EFFECTS

Blur Gaussian blur softens all detail by spreading each pixel across its neighbors. Intensity controls the blur radius. Use at low intensity for a dreamy soft look, high intensity for total abstraction.

DOF Depth of field simulation. Blurs the edges of the frame with a radial falloff while keeping the center sharp, mimicking a shallow-focus cinema lens. Intensity controls the vignette radius.

FEEDBACK & TRAILS – 5 EFFECTS

Feedback Feeds the output back into the input with each frame, creating growing geometric trails and tunnel-vision spirals. Iconic video synthesizer effect. Low intensity adds subtle trails; high intensity creates infinite recursive tunnels.

Echo Trails Blends the current frame with a decayed copy of previous frames. Fast-moving content leaves comet-tail streaks. Intensity controls trail length and decay speed.

Ghosting Overlays semi-transparent echoes of recent frames. Similar to Echo Trails but with opacity-based blending rather than additive. Great for slow panning footage and dreamy overlaps.

Strobe Alternates between the live image and a frozen black frame on the beat division. Creates a strobe-light effect locked to your BPM. **Use responsibly – avoid at high BPM in public venues.**

Freeze Locks a still frame of the current video output in place. With BPM sync enabled, creates a rhythmic freeze-release stutter: the image momentarily freezes on each beat, then snaps back to live playback.

TRANSFORM – 5 EFFECTS

Rotate Continuously spins the entire frame around its center. Rotation speed is BPM-synced – one full revolution per beat division cycle. Intensity blends between stationary and fully rotating.

Scale Rhythmically zooms in and out, creating a breathing, pumping effect. The zoom pulses on the beat. Intensity controls zoom depth from subtle push to aggressive slam-zoom.

Pinch Applies an inward pinch warp radiating from the center, as if the image is being sucked into a lens. The warp pulses with BPM for a rhythmic vortex pull effect.

Spotlight Fades the edges of the frame to black while preserving a circular center spotlight. Intensity controls spotlight radius, narrowing focus to a single bright point at full intensity.

Tile Tiles the frame into a grid of smaller identical repetitions. Intensity controls the tile count – from 2×2 to a dense matrix. Creates a hypnotic mosaic of synchronized video tiles.

PSYCHEDELIC – 7 EFFECTS

Fractal Overlays an additive fractal noise texture onto the image. The noise pattern animates and evolves in real time, synced to BPM. Creates organic, ever-changing grain that complements any footage.

Perlin Similar to Fractal but uses smooth Perlin noise, producing cloud-like wisps and fluid organic structures. Softer and more flowing than the fractal variant.

Plasma Generates classic 90s-era plasma waves in vivid neon colors blended onto the image. Multiple sine-wave interference patterns cycle through hues synchronized with BPM.

Liquid Applies complex multi-frequency warping to make the image appear to melt and flow. More extreme and chaotic than Wave Warp, with each layer of warp moving at different rates.

Vorticella Generates animated vortex and spiral patterns overlaid on the image. Named after the spiral-stalked protozoa. The spiral arms spin at a rate locked to BPM division.

Solarize Inverts pixels above a luminance threshold, creating a partially-inverted photograph effect (Sabatier effect). With BPM sync, the threshold sweeps across the tonal range rhythmically, creating pulsing inversions.

Slit Scan Samples a thin horizontal slice of the frame over time and composites the slices into a single image – the technique behind Star Trek warp tunnels and time-warp photography. Motion through the frame creates flowing smear patterns.

VINTAGE & RETRO – 3 EFFECTS

Sepia color Desaturates the image and applies a warm amber-brown tint. The color picker lets you replace the default sepia tone with any custom tint. Intensity blends from original to full toned effect.

B&W color Converts to grayscale. The color picker lets you tint the bright areas any color (cyan, magenta, amber, etc.) while dark areas remain black – creating a duotone effect at partial intensity.

VHS Simulates VHS tape degradation: horizontal scan lines, color bleed at high-contrast edges, noise bands drifting vertically, and slight desaturation. Intensity controls artifact severity from subtle Lo-Fi to completely degraded.

STYLIZE – 6 EFFECTS

Halftone color Renders the image as a grid of circles whose size is proportional to pixel brightness, like a newspaper print screen. Background color between dots is user-selectable. Intensity controls dot scale and spacing.

Edges color Edge detection shader that isolates luminance boundaries and draws them as bright lines on a dark background – a neon wireframe of your footage. Line color is user-selectable. Great with high-contrast geometric content.

ASCII Converts the image to block text characters (█ ▣ ▤ ▥) scaled to pixel brightness, creating a real-time ASCII art rendition of your footage. Character density follows intensity.

Oil Paint Applies a Kuwahara filter that groups neighboring pixels into smooth brush-stroke-like patches, giving footage the appearance of a painterly oil painting. Intensity controls brush size and abstraction level.

Rutt-Etra color Emulates the Rutt/Etra analog video synthesizer from the 1970s: displaces horizontal scan lines vertically based on pixel brightness, forming a 3D wireframe topology. Default line color is phosphor green – user-selectable.

Glass Applies a frosted glass refraction using a noise-based displacement map, making the image appear to be seen through textured or bumped glass. Works well combined with Blur at low intensity.

Per-Clip Pad FX

Long-press a pad and select **"Effects"** to apply effects to individual clips. Per-clip effects are applied before the master effect, so they stack multiplicatively.

Favorites

Long-press any effect in the picker and choose **"Add to Favorites"**. Favorites appear in a dedicated star tab for quick access during performance. Favorite status persists across sessions.

Exclude from AutoMix

Long-press any effect in the picker and select **"Exclude from AutoMix"**. MIX mode will skip excluded effects during automatic effect rotation, but they remain available for manual use.

Custom Effect Colors

Six effects support a user-chosen color, opened via the color palette icon in the effect picker:

Halftone – background fill between dots

Sepia – tint color

B&W – highlight tint

Edges – line color

Rutt-Etra – scan line color

Gradient Map – ramp color

Built-in Visualizers

Sixteen GPU-rendered visualizer types that run directly on the pad grid. No video files needed – everything is generated in real time via Metal shaders. Visualizers react to your audio, work with all master and per-pad effects, blend modes, and save with your sessions.

Adding a Visualizer

There are two ways to place a visualizer on a pad:

Empty pad

Long-press an empty pad and tap **"Add Visualizer"**. This opens the Visualizer Picker where you can browse types, choose a palette, and adjust settings with a live preview before assigning.

Replace existing clip

Long-press a pad that already has content and open the **"Replace with Visualizer"** submenu. Pick a visualizer type and it replaces the current clip immediately.

Visualizer Picker

Full configuration sheet with live preview, type grid, horizontal scrolling palette picker, and sliders for reactivity and complexity. Tap **"Assign to Pad"** when ready.

Tweaking After Assignment

Long-press any visualizer pad to open its context menu. From there you can change:

Type	Switch between all 16 visualizer types without removing the pad
Palette	Pick from 32 color palettes
Reactivity	How strongly the visualizer responds to audio (Low / Medium / High / Max)
Complexity	Detail level from minimal to maximum (affects layer count, particle density, etc.)

Visualizer Types

16 TYPES – ALL GPU-RENDERED

Plasma Classic plasma waves generated by overlapping sine functions. Produces flowing, organic color gradients that shift and morph continuously. Complexity adds more sine layers for denser interference patterns.

Voronoi Cells Animated Voronoi diagram with drifting cell centers. Creates an organic, cellular texture that resembles stained glass, reptile scales, or microscope imagery. Complexity controls the number of cell points.

Fractal Noise Multi-octave fractal Brownian motion (fBm) noise field. Produces cloud-like, terrain-like structures that evolve slowly over time. Complexity adds more octaves for finer detail. Audio energy drives the noise evolution speed.

Tunnel Warp An infinite tunnel effect using polar coordinate warping. The camera appears to fly through a textured tunnel whose walls twist and pulse. Beat strength controls tunnel speed; complexity adjusts wall distortion layers.

Starfield Multi-layer parallax starfield with twinkling, color variation, and a subtle nebula background. Deeper layers move faster for depth. Audio energy drives flight speed; beat hits flash all stars brighter. Complexity adds more parallax layers. 3 stars per grid cell for density.

Geometric Patterns Concentric rings of segmented geometric shapes that rotate in alternating directions. Beat phase modulates the rotation. Complexity adds more rings. Creates mandalas and spirograph-like structures.

Spectrum Rings Radial frequency bars arranged in a circle. Each bar reads live spectrum data and extends outward from the center, creating a radar/sonar-like display. Signal is heavily amplified for maximum visibility. Complexity controls the number of frequency bins displayed.

Particle Fountain GPU-instanced particle system with thousands of particles that spawn, drift, and fade. Beat strength boosts spawn rate, velocity, and particle size. Particles use additive blending for a glowing, firefly-like appearance. Complexity controls the maximum number of active particles.

EQ Bars Classic equalizer bar display driven by live spectrum data. Each bar represents a frequency bin and grows in real time. Aspect-ratio aware – bars grow vertically in portrait and horizontally in landscape. Complexity controls the number of bars (8–32). Defaults to maximum complexity.

Audio-reactive

Spectrum Wave Smooth flowing waveform lines that fill the entire screen. Multiple wave layers are stacked vertically, each reading from a different offset in the spectrum data for organic variety. Every layer has its own palette hue, glow, and fill. Complexity controls layer count (4–16).

Audio-reactive

Oscilloscope DAW-style oscilloscope that draws the audio waveform as a bright, glowing line across the screen. The waveform thickens and pulses with beat strength. A subtle phosphor afterglow trails behind the main trace. Complexity controls the line resolution and glow width.

Audio-reactive

Level Meter LED-segment level meters like those on a hardware mixing console. Each channel averages a region of the spectrum and displays it as a column of lit LED segments. Aspect-ratio aware – meters grow vertically in portrait and horizontally in landscape. Complexity controls channel count (2–8) and segment resolution. Defaults to maximum complexity.

Audio-reactive

Grid Pulse A sharp, animated grid of intersecting lines that drifts slowly across the canvas. Audio energy sends ripple waves outward from the center, distorting the grid in real time. Every line crossing flares brightly on beat hits, and a radial vignette keeps energy focused at the center. Complexity controls grid density.

Neon Prism Concentric regular polygons – triangles, squares, pentagons, hexagons, heptagons, and octagons – stacked concentrically and rotating in alternating directions at staggered speeds. Each ring has a sharp neon-glowing edge with layered halos. Inner rings pulse dramatically on beat; outer rings hold steadier. Complexity controls how many rings are drawn (3–10).

Laser Web Multiple ultra-thin laser lines radiate from the center of the canvas, each one rotating at a slightly different speed in alternating directions. The lines have a razor-sharp core with a narrow glow halo; where they overlap, additive blending creates naturally blazing intersections. Beat fires a central strobe flash. Complexity controls beam count (3–12).

Shard Burst Triangular shards radiate from the center, each one driven by a live spectrum bin. Shard height maps directly to frequency energy – louder frequencies produce longer, more dramatic spikes. Each shard tapers to a sharp point with glowing angular edges and a bright tip halo. The entire arrangement rotates slowly with a snap on the beat. Complexity controls shard count (8–32).

Audio-reactive

32 Color Palettes

Every visualizer type supports all 32 palettes. A random palette is assigned each time you load a new visualizer. Colors are generated procedurally using cosine-based gradient functions, so they produce smooth, continuous color ramps rather than hard steps.

Cyberpunk Neon Fire Ice Nature Synthwave Monochrome Rainbow
Toxic Blood Moon Electric Lava UV Candy Matrix Inferno Mono Red
Mono Blue Mono Green Mono Purple Mono Amber Mono Cyan Mono Pink
Sunset Ocean Vapor Copper Aurora Coral Midnight Rust Hologram

Audio Reactivity

Visualizers respond to three audio signals from the beat detection engine:

Beat Strength	Impulse on each detected beat – triggers flashes, particle bursts, speed boosts
Energy	Overall audio loudness – drives continuous animation speed, brightness, particle velocity
Beat Phase	Position within the current beat cycle (0–1) – used for smooth oscillations and rotations

The Reactivity slider scales how much these signals affect the visualizer. At zero, the visualizer animates on its own clock. At maximum, every visual parameter is driven by the audio. Reactivity defaults to maximum for all visualizer types.

Works Like Any Clip

Once assigned to a pad, a visualizer behaves exactly like a video clip:

Master Effects	All 51 effects apply to visualizers (kaleidoscope, glitch, feedback, etc.)
Per-Pad Effects	Long-press the pad to assign a per-clip effect that stacks with the master
Blend Modes	Additive, multiply, screen, difference – layer visualizers with video clips
Opacity	Adjust per-pad opacity for layering
AutoMix	Visualizer pads are included in MIX, SEQ, RND, and SHF rotation
Sessions	Full visualizer config (type, palette, reactivity, complexity) saves and restores with sessions and performance scenes

Tip: Layer a visualizer pad with a video clip using additive blend mode for an instant reactive overlay. Set the visualizer to high reactivity and the video to a loop – the visualizer pulses on top of your footage.

Performance **Tape**

Record your live performance and play it back as a loop, like a loop station for visuals. Event-based – captures actions, not video frames.

Recording

Tap **REC** to start. Perform: tap pads, change effects, twist knobs, scratch. Tap **REC** again to stop. Your performance is now a loop.

Overdub

Tap **REC** while a tape is playing. New events layer on top. First take sets the bar length, overdubs layer on top.

Playback

Tap **PLAY** to loop your recorded performance. The tape re-triggers all your actions in time. 960 PPQN precision.

Tape Editor

Visual timeline with colored blocks and automation curves. Quantize to grid. Delete individual events. Undo layers.

Tape Controls

Long-press the tape button for: **Eject** (save to library), **Clear** (delete tape), **Editor** (timeline view).

What Gets Recorded

- Pad on/off triggers
- Effect type changes

- Effect intensity (knob automation at ~15Hz)
- Bank changes
- Hold mode toggles
- Jogwheel scratch (engage, release, rate)

Tape Library

Long-press **REC** to access saved tapes. Each tape has a unique color and icon. Tapes persist across sessions.

Jogwheel mode

Toggle between the Master Effect knob and the Jogwheel by tapping the **AFX** pill button, or pressing **G** on a keyboard.

Touch Scratching

- **Touch the wheel** – instantly freezes playback (like hand on vinyl)
- **Rotate** – scrub forward/backward through the clip
- **Release** – playback resumes
- Works with video clips and GIFs (frame-level scrubbing)
- Haptic feedback every 15 degrees of rotation

Scratch Sensitivity

Open **BPM & Sync > Jogwheel** section. Slider from 0.25x (Fine) to 3.0x (Turbo). Preset pills: Fine, Slow, Normal, Fast, Turbo.

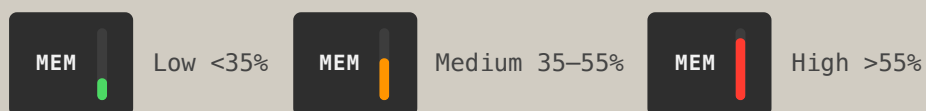
MIDI CC Scratch

1. Open **MIDI Settings > Knobs & Faders** > tap "**Learn**" next to Scratch Wheel
 2. Move a knob on your MIDI controller
 3. Center (64) = stopped, 0 = full reverse, 127 = full forward
 4. Auto-engages when you move the knob, auto-releases at center
 5. Deadzone (60–68) prevents jitter
-

Memory gauge

The **MEM** indicator in the top bar shows how much of your device's physical RAM the app is currently using. It is designed to warn you before you load so many heavy clips that the system kills the app.

Thermometer states



Reading the gauge

The vertical bar fills from the bottom. Color changes automatically as usage climbs:

Color	Usage	Meaning
Green	Below 35%	Plenty of headroom. Load freely.
Orange	35–55%	Getting full. Avoid adding many more heavy clips.
Red	Above 55%	High pressure. iOS may terminate the app if usage keeps climbing.

Tap for details

Tapping the MEM chip opens a popover with a full breakdown:

- **App footprint** – total physical RAM used by the process, in MB and as a proportion of device total.
- **Reverse frame cache** – how much of that memory is used by pre-decoded video frames (reverse / ping-pong playback). Shows MB used and how many clips are cached.
- **Warning tip** – appears at high usage with advice to reduce clip count or switch to forward-only playback modes.

What fills memory

Regular forward playback is streamed and uses minimal RAM. Memory usage climbs when:

- **Reverse or Ping-Pong playback mode** is active on a clip – all frames must be decoded in advance and held in memory for smooth reverse scrubbing.
- **High-resolution source videos** (1080p/4K) with many frames – each frame at 1080p uses ~8 MB. VK01 caps each clip at 256 MB of decoded frames automatically.
- Many clips loaded across all banks simultaneously.

Pro Tip: If you need reverse playback on long 1080p clips, trim them to the essential section first (long-press pad > Trim). Shorter clips decode fewer frames. Or switch to 720p exports for the same visual result at a quarter of the memory cost.

BPM & Sync

Set Your BPM

Tap Tempo: Tap the BPM display, then tap the tempo button in rhythm (at least 4 taps).

Manual Entry: Tap BPM display > Manual Input > type BPM (20–300) > Set.

Sync Sources

Internal Clock

Manual BPM via tap tempo or direct entry. The default for standalone use.

MIDI Clock

Receive 24 PPQN clock from your DAW, drum machine, or hardware. Transport follows external play/stop.

Ableton Link

Sync tempo, beat, and phase over the local network with Ableton Live, Traktor, Serato, and other Link-enabled apps.

Audio Beat Detection

Real-time analysis detects tempo from audio. Genre presets constrain BPM range to prevent drift.

Beat Detection

Tap BPM display > enable **"Audio Beat Detection"**. The app listens to your music and detects tempo in real-time. Auto-starts/stops playback when audio is present/absent.

Genre Presets

Constrain beat detection to the correct BPM range:

Genre	BPM Range
Any	60–200
Hip Hop	70–105
Reggaeton	88–104
House	118–135
Techno	125–155
D&B	160–190
Dubstep	135–150
Pop	95–135
Rock	100–145

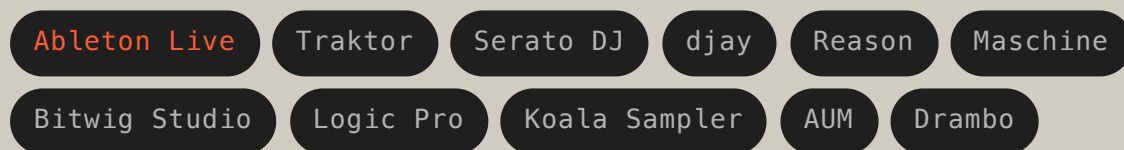
Ableton Link

Ableton Link synchronizes tempo, beat, and phase across multiple devices and apps on the same local network. Every Link-enabled app shares one unified timeline – no master/slave, no cables, no configuration.

What is Ableton Link?

Link is a protocol by Ableton that keeps apps in sync over Wi-Fi. When enabled, all Link peers on the network agree on a shared tempo and beat grid. If one app changes tempo, all others follow instantly. VK01 uses Link to sync visual playback with your music apps.

Compatible Apps



And hundreds more. Any app with Ableton Link support works with VK01.

How to Enable

1. Tap the **BPM display** to open BPM & Sync settings
2. Under **Sync Source**, select "**Ableton Link**"
3. Or toggle the **Ableton Link** switch in the dedicated section below
4. A status indicator shows connection state:
 - **Green circle** – Connected to peers
 - **Orange circle** – Searching for peers on the network
5. Enable Link in your other apps (Ableton Live: Link button in top bar, Traktor: Preferences > Link)

How It Works

Shared Tempo

All peers agree on one BPM. Change tempo in VK01 or any other Link app – everyone follows. No master device needed.

Beat & Phase Sync

VK01 reads beat position and phase from the Link session. Clip switches and effect animations lock precisely to the shared beat grid.

Zero Config

No IP addresses, no pairing. All devices on the same Wi-Fi network discover each other automatically via multicast UDP.

Peer Count

The BPM settings screen shows how many Link peers are currently connected. The Link tempo display shows the shared session BPM.

Network Requirements

- All devices must be on the **same Wi-Fi network**
- The network must allow **multicast/broadcast UDP** traffic (most home and studio networks do)
- Corporate or venue networks sometimes block multicast – use a portable router or hotspot if Link can't find peers
- No internet connection required, just local network connectivity

Pro Tip: For rock-solid sync at a gig, bring a dedicated portable router. Connect your laptop and iOS devices to the same network. Link works over any local network – even a phone hotspot.

Typical Setup

1. **Laptop** running Ableton Live / Traktor / Serato with Link enabled
2. **iPad / iPhone** running VK01 with Link enabled, outputting visuals via HDMI or AirPlay
3. Both on the same Wi-Fi – visuals automatically sync to the DJ's tempo and beat grid

The DJ changes BPM in their software – VK01 follows instantly. Clips switch and effects animate precisely on beat. No MIDI cables, no manual BPM entry, no drift.

3D CONTENT

3D model **support**

Supported Formats: USDZ (primary), OBJ

Animation Presets (per-clip)

Static

Built-in

Turntable

Orbit

Bounce

Spin

Rock

3D models respond to master effects, speed control, and the Depth of Field (DOF) effect. Models are pre-cached on assignment for instant activation.

Hardware keyboard shortcuts

Connect a Bluetooth or USB keyboard for hands-on control.

Pad Triggers

Q 1	W 2	E 3	R 4
A 5	S 6	D 7	F 8
Z 9	X 10	C 11	V 12
1 13	2 14	3 15	4 16

Controls

Key	Action
Space	Play / Stop
Escape	Clear all (pads + effects)
H	Toggle Hold mode
G	Toggle MFX / Jogwheel
N	Toggle Random mode
B	Toggle Beat Detection
P	Toggle Fullscreen
M	Clear Master Effect
T	Tape Record (toggle)
Y	Tape Play (toggle)
U	Open Tape Editor
< >	Previous / Next Master Effect
Up / Down	BPM +1 / -1
Tab / Shift+Tab	Next / Previous Bank

Xbox. PlayStation. MFi.

Connect any Bluetooth game controller for hands-free visual performance.

Xbox Wireless

DualSense (PS5)

DualShock 4 (PS4)

MFi Controllers

Default Mapping

Button	Action
A / Cross	Play/Stop pad at cursor
B / Circle	Cycle Auto-Play Division
X / Square	Toggle Hold
Y / Triangle	Cycle Auto-Play Mode
D-pad	Navigate pad grid cursor
L1 / R1	Previous / Next Bank
L2 / R2	MFX intensity (analog)
Right Stick	Jogwheel scratch
Menu / Start	Play / Pause
Options	Cycle Master Effect

Custom Mapping

Long-press any button in the app to access **Game Controller Learn** alongside MIDI Learn. Full analog threshold support for triggers and thumbsticks.

Connect your controller

Setup

1. Plug in your MIDI controller (USB or Bluetooth)
2. Tap the **MIDI icon** (top bar)
3. Select your device under "**MIDI Controller**"
4. Choose a preset or map pads manually

MIDI Learn

Long-press any pad or button > select "**MIDI Learn**" > play a note on your controller. Done.

Pre-configured Controllers

TE EP-133 K.0. II

Akai MPK Mini

Akai APC40

Novation Launchpad

Ableton Push

Roland SP-404SX

QWERTY Keyboard

EP-133 K.0. II Setup

The EP-133 has a dedicated preset with full integration:

Pad Mappings

EP-133 Group	Notes	VK0 Bank	Pads
Group A	36–47	Bank A	1–12
Group B	48–59	Bank B	1–12
Group C	60–71	Bank C	1–12
Group D	72–83	Bank D	1–12

Button & Fader Mappings

EP-133 Control

VK0 Action

Record button	Tape Record
Minus (-)	Previous Effect
Plus (+)	Next Effect
Fader	MFX Dry/Wet (CC)

Transport sync: Set MIDI Clock to "out" on the EP-133 (System > code 102). Enable MIDI Clock Sync in VKO for BPM lock. Button/fader MIDI values are defaults – use MIDI Learn to remap if needed.

Knobs & Faders (CC Mapping)

1. Open **MIDI Settings > Knobs & Faders**
2. Tap **"Learn"** next to **MFX Dry/Wet** or **Scratch Wheel**
3. Move a knob or fader on your controller
4. The CC is now mapped

MIDI Action Mappings (35+ actions)

Open **MIDI Settings > Advanced > Button Action Mappings** to map MIDI notes to any app action:



MIDI Clock Sync

Enable in **MIDI Settings > Sync** to synchronize playback to an external MIDI clock (24 PPQN). Start/Stop messages control VKO transport.

Main layout



Top bar icons

Icon	Function
BPM display	Tap to open BPM & Sync settings (tap tempo, MIDI clock, Ableton Link, beat detection)
MIDI plug	Open MIDI settings, device selection, and action mappings
Folder	Open media importer, bank folder mapping, and session manager
MEM	Memory gauge – thermometer bar shows RAM usage. Tap for full breakdown.
TV / monitor	External display output: HDMI start/stop, AirPlay, dual-device mode
?	Quick reference card

MFX / JOG toggle

The bottom-right control switches between two modes via the pill button:

- **MFX mode** – shows the Master Effect knob. Drag up/down to adjust intensity. Long-press to open the effect picker. Tap < > arrows to cycle effects.
- **JOG mode** – replaces the knob with a touch jogwheel for scratching. Tap the wheel to freeze playback; rotate to scrub.

Fullscreen Mode

Tap the fullscreen icon in the video preview. Video fills the entire screen with audio EQ visualizers. Tap anywhere to show/hide controls. Tap **X** or press **P** on keyboard to exit.

Mac: Detached Video Window MAC ONLY

On Apple Silicon Mac, the video output window can be **detached** from the main app and moved to a second monitor or run side-by-side with your DAW. Drag the video preview out of the main window to float it independently. Resize it freely, send it fullscreen on an external display, or keep it as a floating window while the controls stay on your primary screen – no HDMI adapter or AirPlay required.

This is the cleanest Mac workflow: VK01 controls on your laptop screen, video output fullscreen on a connected monitor or projector via USB-C/HDMI.

Send visuals **anywhere**

HDMI / USB-C

Connect via adapter. Tap **TV icon > Start Output**. Your device shows controls; external display shows clean video.

Dual-Device

Two iOS devices on the same Wi-Fi. One controls, one displays. ~50ms latency. Multipeer Connectivity.

HDMI Status Indicators

- **Dimmed** – No display connected
- **Orange dot** – Display connected, output disabled
- **Green dot** – Output active

Dual-Device Setup

1. Load the same content on both devices
2. Device 1 (Controller): Tap **Output > Controller Mode**
3. Device 2 (Display): Tap **Output > Display Mode**
4. Look for **"CONNECTED"** status
5. Optionally connect Display device to projector via HDMI

What Gets Synced

- Active clips, bank selection, BPM, effects, intensity
- Playback state, auto-play mode and division
- Clip settings (speed, render mode, blend mode, volume)
- Hold mode state

Works over Wi-Fi or Bluetooth, no internet required. Automatic reconnection.

PERSISTENCE

Saving sessions

1. Tap the **folder icon** (top bar)
2. Tap **"Session Manager"**
3. Type a session name
4. Tap **"Save Session"**

Everything is saved: clips, mappings, effects, MIDI settings, trim points, speed, render mode, blend mode, volume, 3D animation presets, and tape recordings.

Load: Folder icon > Session Manager > tap a saved session > Load

Export/Share: Sessions are saved as **.visualko** files. Share via AirDrop, iCloud, or Files.

Troubleshooting

"No clips appear after import"

- Check format: MP4, MOV, M4V, GIF, PNG, JPG, JPEG, HEIC, USDZ, OBJ
- Try importing to a specific pad (long-press > Import)

"Auto-play doesn't start"

- Make sure AUTO is enabled (shows SEQ/RND/SHF/MIX/MIX2/BLEND)
- Check that clips are loaded and BPM is set
- If using Beat Detection, make sure audio is present and transport is on Play

"MIX2 or BLEND blend modes are not changing"

- Both modes require at least two clips to be active – the second layer builds automatically after the first trigger, so blend changes begin from the second clip switch onward
- Check that Blend Mode Automation is enabled in BPM Settings > AutoMix Options
- Blend mode changes fire at 40% probability per trigger – some beats will pass without a change by design
- Changes are suppressed when the performance guard is at minimal level (thermal stress or low FPS)
- In BLEND, master effects are never automated – if your effects are changing, you are in MIX2, not BLEND

"MIDI controller not detected"

- Check USB/Bluetooth connection
- Go to MIDI Settings and tap "Scan for Devices"
- Some controllers need to be in "USB MIDI mode"

"App crashes or quits unexpectedly"

- Watch the **MEM gauge** – if it is orange or red before the crash, memory pressure is the cause

- Avoid loading very long high-resolution clips (1080p, 120+ seconds) in Reverse or Ping-Pong playback mode; trim them first
- Switch heavy clips to Forward-only playback to avoid pre-decoding all frames
- Close background apps to free system RAM before starting a performance

"Video playback is choppy"

- Try lower resolution clips (720p is usually sufficient for projected output)
- Close other apps
- Reduce simultaneous effects

"External display shows UI elements"

Disable screen mirroring in Control Center. Use the built-in output feature via the TV icon.

Dual-Device Sync Issues

- **Can't enable modes:** Check Local Network permission in iOS Settings > VK01
 - **Won't connect:** Both devices must be on the same Wi-Fi. Try Controller Mode first
 - **Keeps dropping:** Stay within 30 feet. Check Wi-Fi signal
 - **Doesn't sync:** Both must show "CONNECTED" with matching content at same pad positions
-

Common setups

DJ Set with Auto-Play

Import 8 folders (one per bank). Set BPM, enable Beat Detection, or use Ableton Link. Enable AUTO > MIX for fully automated visuals. Override manually anytime.

Hands-Free Layered Visuals (MIX2)

Load thematically grouped content into banks. Enable AUTO > MIX2. VK01 keeps two clips layered and continuously remixes the blend mode – the look evolves without any intervention. Combine with master effects automation for a fully self-generating visual set.

Compositing with Effects Control (BLEND)

Dial in the exact master effects you want, then enable AUTO > BLEND. VK01 keeps two clips layered and continuously cycles blend modes – but never changes your effects. Use this when you want evolving compositing textures while staying in control of the overall look and feel.

VJ + DJ with Ableton Link

DJ runs Traktor/Serato/Ableton with Link enabled. VJ runs VK01 on iPad with Link enabled, outputting via HDMI. Tempo and beat sync automatically – no cables, no drift.

Live Performance with MIDI

Connect controller, select preset. Tap pads on hardware. Use fader for dry/wet, +/- for effects. Record with Tape.

Dual-Device Pro Setup

Load same content on both devices. Controller Mode on primary, Display Mode on secondary. HDMI to projector from display.

Loop Station Visuals

Start tape recording (REC). Perform a sequence. Stop – it loops. Overdub to layer more. Build up complex multi-layer performances.

Best practices

Performance

Use shorter clips (5–15 sec). GIFs loop seamlessly. Images are great for overlays. Trim clips to their best section.

Content Organization

Group by visual theme or energy level. 16 items per folder for 1:1 bank mapping. Mix content types.

MIDI Tips

EP-133: use the built-in preset. Launchpad/APC: grid mode. MIDI Learn is faster than manual mapping.

Auto-Play

1/16 = fast cuts, 1 bar = slow transitions. MIX respects "Exclude from AutoMix" effect settings. For MIX2 and BLEND, organize content so each bank has a consistent visual theme – same-bank pairing produces more coherent blend results. Choose BLEND over MIX2 when you've set specific master effects and don't want them touched during the set.