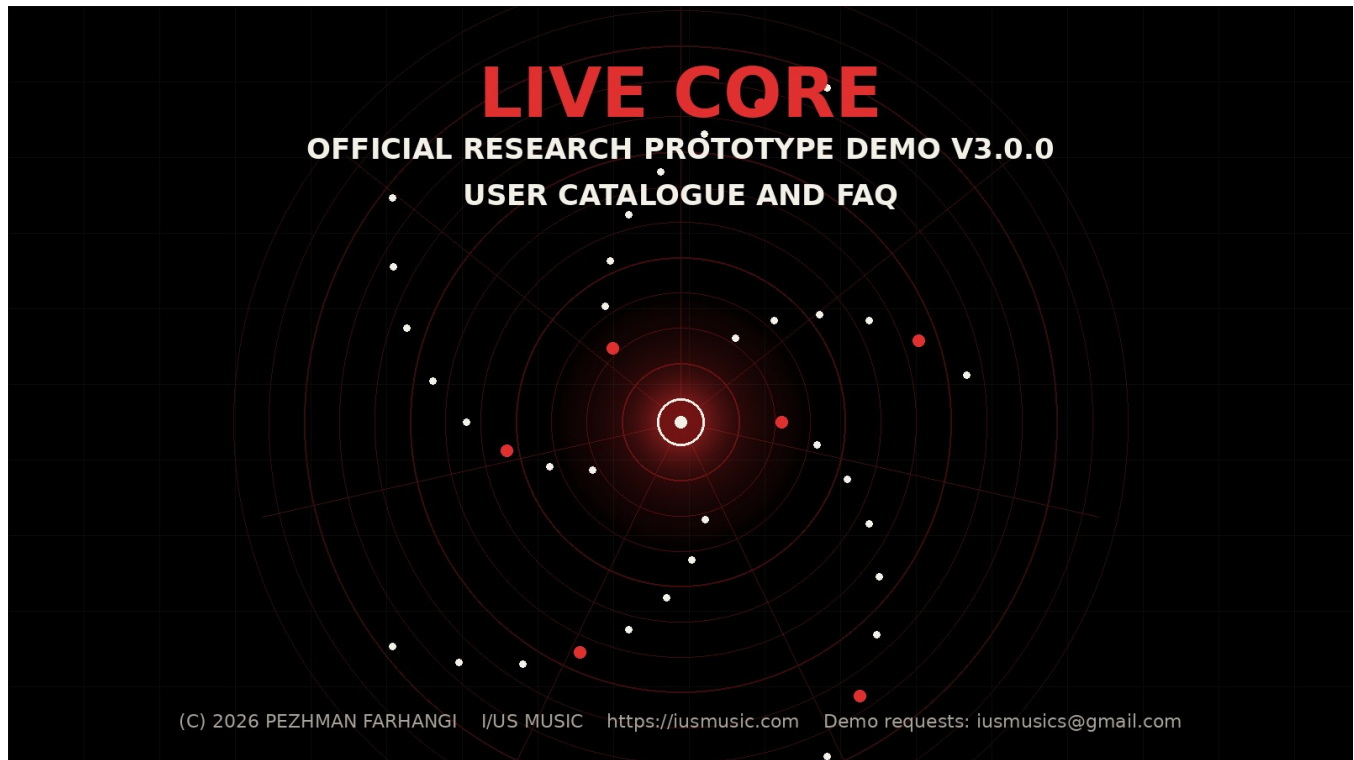


LIVE CORE

OFFICIAL RESEARCH PROTOTYPE DEMO V3.0.0 - USER CATALOGUE AND FAQ



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LIVE CORE V3 USER CATALOGUE AND FAQ

Detailed submission version

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Research reference: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=6102586

Purpose of this catalogue

This document is a full user catalogue for Live Core. It explains the work as a genuine research application and sound device. It is not a short sales sheet and it is not a code specification. It explains how the application is meant to be used, how the pages affect the sound, how the model reaches different outcomes, and how a user can demonstrate the system in a clear and responsible way.

The earlier short catalogue did not explain enough about the logic of the app. This version treats Live Core as a complete system: input source, phase-core model, field and matter state, plasma-proxy behaviour, projection and FX, output guard, monitor export, and the planned Electrical Coupling Lab and Virtual Instrument extension.

Official identity

The official name is LIVE CORE - OFFICIAL RESEARCH PROTOTYPE DEMO V3.0.0. The work is authored by Pezhman Farhangi and published under the I/US Music identity. Demo access, collaboration, review, and research enquiries can be sent to iusmusics@gmail.com. The public site is iusmusic.com. The Live Core research reference is available at the SSRN link shown in this document.

Field	Information
Official name	LIVE CORE - OFFICIAL RESEARCH PROTOTYPE DEMO V3.0.0
Author	Pezhman Farhangi
Copyright	(C) 2026 PEZHMEN FARHANGI
Publisher identity	I/US MUSIC
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Research reference	https://papers.ssrn.com/sol3/papers.cfm?abstract_id=6102586
Formats	Standalone research app and VST3 FX processor

What Live Core is

Live Core is an official research prototype and experimental audio FX system built around a seven-layer phase-core model. It is designed for controlled test signals, electric guitar, vocals, acoustic instruments, live processing, scientific walkthrough presets, monitor export, and future structured electrical-coupling research.

The main idea is that sound should not only pass through a conventional effect chain. Sound should interact with a model. The model has stages. It can be quiet, excited, searching, stable, compressed, confined, plasma-proxy active, hypothesis-candidate active, unstable, or recovering. Each state should have a reason and should change the sound in a way that can be explained.

This means Live Core should be demonstrated as both an instrument and a research interface. A musician can use it as an FX processor. A reviewer can use it to inspect a scientific walkthrough. A researcher can use the monitor and export system to document how a state was reached. A future user of Electrical Coupling Lab can define a structured electrical state and test how it changes the core model and sound generation.

The core model in plain language

The core model is the logic that connects the app pages. Field excitation starts movement and energy. Phase seeking tries to align the seven phase lanes. Stable phase lock gives the model a controlled foundation. Ionization readiness and density compression prepare the matter-state side of the model. Sheath and confinement decide whether the core remains bounded. Plasma-proxy formation appears when the model reaches the right density, pressure, current-channel, and confinement conditions. Hypothesis Candidate appears only when the required gates align and instability is low.

This is why the app should not be judged by one knob or one graph element. The final sound is the result of page interactions. Field and Phase may create motion, but without Matter and Plasma the model should not claim a plasma-proxy state. Projection and FX may create a large sound, but without Monitor and Export the user cannot explain why the state happened. Output and Safety may not be a creative page, but it decides whether the result remains usable in performance.

Main signal flow

The practical signal flow is input source, phase-core model, field and matter state, projection and FX, output guard, and monitor export. If the future Electrical Coupling Lab is enabled, the signal flow extends to structured electrical state, core transfer, core response, plasma-proxy response, generated sound and FX projection, and experiment export.

Stage	What happens	What the user hears
Input source	The source may be test signal, guitar, vocal, acoustic source, DAW track, or future structured electrical state	The input determines whether the result is controlled, musical, noisy, transient, or sustained
Phase-core model	The seven-layer model responds through field movement, phase lock, density, confinement, and instability	The sound gains motion, focus, pressure, smear, compression, turbulence, or release
Projection and FX	The model is converted into audible delay, chamber, discharge, chaos, reverse motion, and wet return	The listener hears the research state as musical processing
Output guard	The final output is watched and constrained	The sound remains safer for live performance and recording
Monitor export	The active state and gate reason are recorded	The result can be explained and reproduced

How each page affects sound and outcome

Operate page

The Operate page is the main performance and demonstration page. It shows whether the app is active, whether the research function is running, how the core is behaving, and how strong the overall projection should be. This page is where a user confirms that Live Core is alive and ready, but it should not pretend that deeper states are active when the model has not reached them.

The sound outcome from this page is global. It affects perceived energy, movement, wet relationship, and whether the result feels quiet, active, stable, or intense. In a public demo, this page should make the system understandable before the user moves into deeper pages.

Core page

The Core page is the center of the model. It represents core pressure, charge proxy, energy condition, and the transition from idle to excited or compressed behaviour. The user should treat this page as the physical center of the software model, not as a decorative display.

Its sound effect is weight and center. A stable core produces a controlled response. A highly excited core produces stronger movement and more internal pressure. If the core is unstable, the user should correct that before increasing extreme projection or discharge behaviour.

Field and Phase page

This page controls phase steering, field energy, magnetic activity, phase coherence, and phase error. It explains whether the core is searching, rotating, drifting, locking, or becoming unstable. It is the main page for proving that the seven-layer model has structure.

The sound effect is motion, phase modulation, stereo movement, harmonic smear, and focus. High magnetic activity makes the sound more animated. High phase coherence makes the output more controlled. Large phase error can create instability or unstable modulation.

Carriers page

The Carriers page handles internal carrier motion and modulation sources. It can drive the core with controlled movement before the final projection stage. It should be used when the user wants more movement or layer interaction without losing the logic of the model.

The sound effect is rhythmic motion, spectral travel, carrier texture, and internal energy. It can make the source feel transported through the core instead of simply delayed or reverberated.

Matter and Plasma page

This page controls ionization readiness, electron-like density, ion-like density, neutral behaviour, density compression, sheath strength, confinement quality, current-channel strength, and plasma-proxy progress. It is central to the research demonstration because it decides whether the model moves beyond phase behaviour into density and plasma-proxy behaviour.

The sound effect is pressure, grit, internal activity, transient density, compression-like behaviour, controlled noise, and concentrated energy. When density compression and confinement rise together, the output can become more focused and internally active. Plasma-proxy behaviour must come from these model relationships, not from colour alone.

FX Matrix and Projection page

This page converts the research state into practical sound. Delay, reverse delay, reverb, chamber, discharge, chaos, turbulence, return bus, wet balance, and projection level live here. This is the page that makes Live Core useful for music and live sound.

The sound effect is space, echo, chamber depth, reverse motion, tail length, discharge events, instability bursts, wet return, and final musical character. This page decides how much of the model becomes audible and how the final track or live input is transformed.

Output and Safety page

This page manages output guard, bypass, panic behaviour, level, and performance safety. It is not a creative model page, but it is essential for real use with guitar, vocals, and full songs.

The sound effect is control. It prevents the output from becoming too loud, too unstable, or unsafe for live monitoring. It lets strong research states remain usable in performance.

Monitor and Export page

This page is the evidence page. It explains the current model state, active gates, lockout reasons, timeline, frozen monitor state, JSON export, Markdown export, and experiment record. It should not be treated as a tone page.

It does not directly change the sound. It changes the trust level. It tells the user and reviewer why the system reached or rejected a state. This is necessary for serious research demonstration.

Settings and Validation page

This page controls environment and reliability. Theme, white mode, language, resize behaviour, demo override, keyboard shortcuts, validation tools, timing, research guards, and safety boundaries belong here.

Its effect on sound is indirect. It determines whether presets run consistently, whether the public demo is clean, and whether shortcuts or validation settings support live use.

Electrical Coupling Lab page

This planned page allows the user to define a structured electrical state with waveform, frequency, phase, pulse width, duty, polarity, amplitude, burst, and coupling mode. The user can then arm, inject, hold, sustain, release, discharge, or damp the state into the core.

Its sound effect is direct experimental control. Electrical state can drive core pressure, magnetic activity, phase motion, plasma-proxy response, current-channel behaviour, and generated sound.

Virtual Instrument page

This planned page allows the core itself to generate sound rather than only processing external audio. It turns the model into a playable and controllable instrument.

The sound effect includes core oscillator, seven phase-lane oscillator bank, plasma noise, current-channel impulses, sheath resonance, instability modulation, and discharge layers. Every layer should map to a model state.

How to work with the app

Standalone research use

Standalone mode is the best mode for controlled demonstration. The user should start with the official preset bank, use controlled test signals, and keep Monitor and Export available. The purpose is to show the model in sequence and explain what each state means.

- Open the standalone app.
- Choose Signature Black or white theme.
- Load LIVE CORE RESEARCH DEMO - SCIENTIFIC WALKTHROUGH.
- Start with Preset 00 - Monitor Calibration and Null Core.
- Move through the presets in order.
- Use Monitor and Export to freeze and export important states.
- Keep Output and Safety visible when sound becomes strong.

VST3 use in a DAW

VST3 mode is for REAPER and compatible hosts. Insert Live Core on a track as an FX processor. The source can be guitar, vocals, acoustic material, controlled test signal, or a full song. Use moderate wet levels first. Increase projection only when the source remains understandable and the model state should become audible.

- Insert Live Core as a VST3 FX.
- Begin with a stable preset.
- Set wet mix lower for vocals and live guitar than for test signals.
- Use Field and Phase to control motion and stability.
- Use Matter and Plasma to control density and plasma-proxy response.
- Use FX Matrix and Projection for the final audible shape.
- Use Output and Safety to control level and panic behaviour.

Live guitar use

Electric guitar can tolerate more movement and projection than vocals. Begin with Stable Phase Lock or Sheath and Confinement Build. Increase wet mix gradually. Use the Projection and FX page for delay, chamber, discharge, and atmosphere. Use instability presets only when the goal is an experimental or aggressive sound.

Live vocal use

Vocals require more care because intelligibility matters. Start with lower wet mix. Avoid heavy instability while using lead vocals. Use chamber, delay, and controlled phase motion. Keep the output guard visible. If the vocal becomes unclear, reduce wet mix before changing the core model.

Scientific walkthrough use

Use controlled test signals for the official preset sequence. A song is too complex for the first research walkthrough because rhythm, pitch, transients, and dynamics change at once. After the scientific walkthrough, play the final song or live source through Live Core as the musical proof of use.

Official Scientific Walkthrough Presets

The official bank is LIVE CORE RESEARCH DEMO - SCIENTIFIC WALKTHROUGH. The names should be written as Preset 00 through Preset 11. Do not use shorthand names in public documents.

Preset 00 - Monitor Calibration and Null Core

This preset proves the baseline. Field energy, plasma-proxy progress, and hypothesis progress should remain low.

The sound should remain quiet and controlled. It proves that Live Core does not always claim a special state.

Preset 01 - Field Excitation Rising

This preset starts the research path. Field energy and magnetic activity begin to rise.

The sound begins to move and energize, but plasma-proxy formation should not be forced.

Preset 02 - Seven-Layer Phase Seeking

This preset shows the seven phase lanes moving toward coherence.

The sound may feel searching, rotating, and not fully locked.

Preset 03 - Stable Phase Lock

This preset satisfies the first major gate. Phase coherence is high and phase error is low.

The sound becomes more focused, controlled, and stable.

Preset 04 - Magnetic Activity Sweep

This preset separates changing magnetic activity from stored field energy.

The sound becomes more animated and modulated while still showing the difference between stored state and active movement.

Preset 05 - Ionization Readiness

This preset prepares the matter-state gate through electron-like, ion-like, neutral, and temperature proxies.

The sound begins to show readiness and internal pressure without claiming the final plasma-proxy state.

Preset 06 - Density Compression

This preset demonstrates compression, bunching, pressure, and density response.

The sound becomes denser, more concentrated, and more internally active.

Preset 07 - Sheath and Confinement Build

This preset shows boundary control. Sheath strength and confinement quality rise.

The sound becomes contained, shaped, and less uncontrolled.

Preset 08 - Core Plasma-Proxy Formation

This preset shows inside-core plasma-proxy behaviour.

The sound should show pressure, density, internal response, and active texture. It must not be only a colour change.

Preset 09 - Confined Plasma plus Hypothesis Candidate

This preset is the full candidate gate. Stable phase, plasma-proxy formation, confinement, current-channel strength, and low instability align.

The sound should present the most complete Live Core research state while remaining controlled by output guard.

Preset 10 - Instability and Cooling Recovery

This preset proves rejection and recovery. Instability rises and the candidate state should decay or lock out.

The sound may become turbulent, then recover. This proves that the model can fail and stabilize.

Preset 11 - Charge-Sign Inversion Proxy

This preset studies inversion of electron-like and ion-like direction behaviour.

The sound can show a reversal or symmetry change. It is a proxy state and not a physical antimatter claim.

Wet mix and final outcome

Wet mix controls how much Live Core projection reaches the final output. It should be used carefully. For scientific tests, start near 50 percent so the source remains clear while the model becomes audible. For live guitar and vocals, start lower. For the final acoustic song, use enough wet signal to show Live Core clearly but not so much that the song disappears.

Use case	Start	Target	Reason
Controlled scientific test	Around 50 percent	65 to 85 percent	Clear source with audible model
Core plasma-proxy demo	Around 50 percent	Up to 85 percent	Shows the inside-core response
Instability and recovery demo	Around 50 percent	Rise then decay	Shows rejection and recovery
Electric guitar live	30 to 45 percent	50 to 70 percent	Keeps articulation
Vocals live	20 to 40 percent	45 to 60 percent	Keeps words clear
Final acoustic song	30 to 40 percent	50 to 65 percent	Shows musical use without hiding the song

FAQ

What is Live Core?

Live Core is an official research prototype and audio FX system built around a seven-layer phase-core model and monitorable research states.

Is it standalone or VST3?

Both. It is designed as a standalone research app and a VST3 FX processor.

What does the app actually do to sound?

It uses the model state to control movement, density, phase behaviour, projection, chamber, delay, discharge, turbulence, wet return, and output control.

What is plasma-proxy?

Plasma-proxy is a software model state used to describe density, confinement, field activity, current-channel behaviour, and core pressure response.

What is Hypothesis Candidate?

Hypothesis Candidate is a software observation state reached when stable phase, plasma-proxy formation, confinement, current-channel strength, and low instability align.

How can someone request a demo?

Demo requests and research enquiries can be sent to iusmusics@gmail.com.

Correct terminology

Use plasma-proxy, charge-sign inversion proxy, hypothesis candidate, structured electrical state, research prototype, standalone research app, and VST3 FX processor. Avoid wording that implies physical plasma generation, physical antimatter generation, medical treatment, clinical regeneration, validated propulsion, or physical proof.

What to listen for during operation

A user should listen for model changes, not only effect volume. When Field and Phase is active, the sound should move, rotate, smear, or lock. When Matter and Plasma is active, the sound should become denser, more pressurized, more textured, or more contained. When Projection and FX is active, the sound should gain space, delay, chamber, reverse motion, discharge, or tail. When instability rises, the sound may become more scattered or turbulent. When recovery begins, the sound should reduce that turbulence and return toward control.

This listening method is important for a public demonstration. The user should not say that a state is important only because the graph looks active. The sound should reveal the state. If the graph shows strong activity but the sound does not change, the wet mix, projection level, routing, or output guard should be checked before continuing.

Example working sessions

Clean research demonstration

For a clean research demonstration, use controlled test signals and move through the Scientific Walkthrough Presets in order. Keep the app in a stable visual theme, keep the graph visible, and show Monitor and Export after the major states. The goal is not to make the most dramatic sound first. The goal is to prove the sequence: baseline, excitation, phase seeking, stable lock, matter readiness, density compression, confinement, plasma-proxy formation, hypothesis candidate, failure, recovery, and inversion proxy.

Live guitar session

For live electric guitar, start from a stable preset and keep wet mix lower than the scientific demo. Use Projection and FX for delay and chamber first, then add density and confinement if the sound needs more force. Core Plasma-Proxy Formation can be used as a dramatic state, but Output and Safety should stay visible. If the guitar loses articulation, reduce wet mix before reducing the model state.

Vocal session

For vocals, the best result usually comes from using Live Core as an intelligent space and motion processor rather than an extreme transformation. Stable phase, sheath and confinement, and careful projection can create movement and depth while preserving words. Instability and discharge should be used only when the vocal is part of sound design rather than a lead vocal.

Final song demonstration

For the final acoustic song, the recommended approach is to play the song after the scientific walkthrough. This lets the audience understand the research model first. The song then proves musical use. Use Live Core as the only FX if the point is to show the processor clearly. Use Preset 09 for the full hypothesis candidate sound if the song can support it. Use Preset 07 if a lighter and more controlled result is needed.

Submission summary

Live Core is submission-ready as a research prototype when the catalogue, website, app, presets, monitor export, and demonstration agree with each other. The app should show how the model works. The catalogue should explain how to use it. The website should present it clearly. The monitor should document the state. The sound should confirm that the model is not only visual.