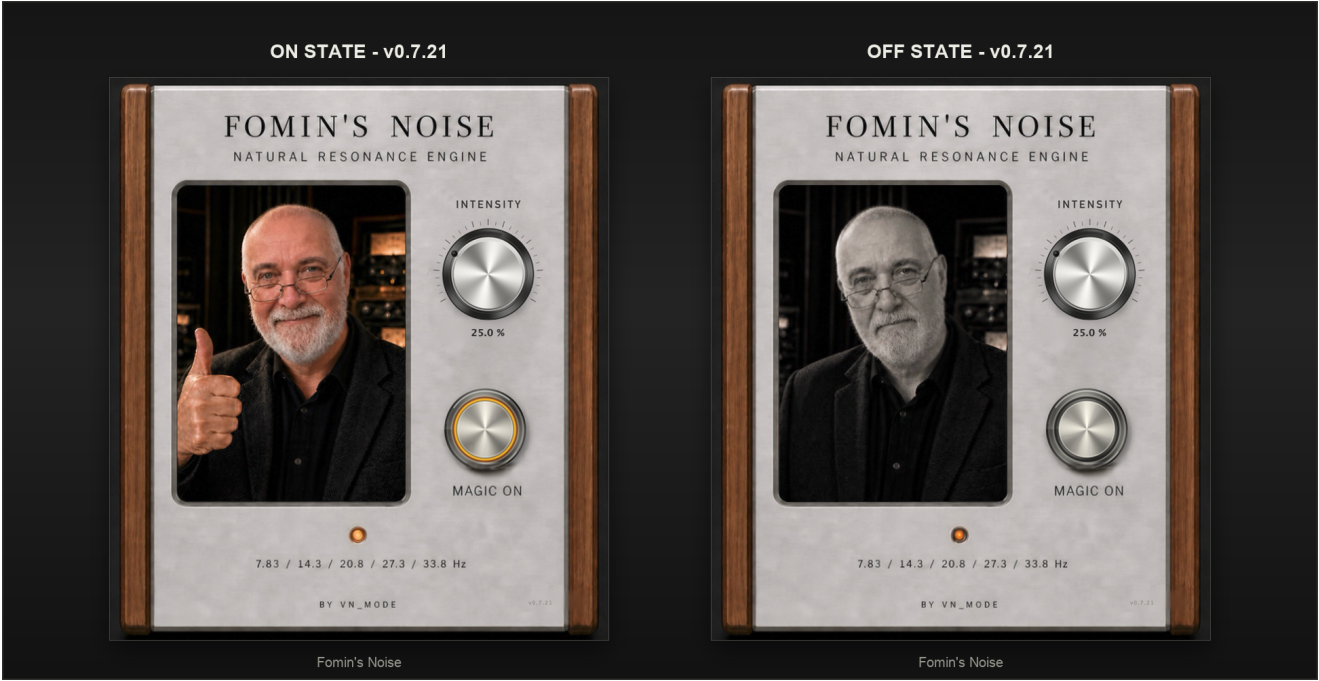


Fomin's Noise

Commercial Product Documentation



Documentation for current build 0.7.21. The illustrations show the MAGIC OFF and MAGIC ON interface states.

Fomin's Noise

User Manual and Product Guide

- Version: 0.7.21
- Developer: VN_MODE
- Product type: mastering effect with nature-inspired stochastic micro-variation
- Formats: Audio Unit, VST3
- Other language: Russian edition

Fomin's Noise - natural micro-variation for the final touch on a master.

1. Product overview

Fomin's Noise is a specialized audio plug-in for the final stages of mixing and mastering. It creates an ultra-quiet, continuously evolving field based on the frequency modes associated with Schumann resonances, then uses that field to apply microscopic changes to the musical signal.

The plug-in is not designed to produce an obvious effect like an equalizer, compressor, or conventional saturator. Its purpose is to give a master a subtle, non-repeating micro-imprint without noticeably changing the musical intent, loudness, stereo center, or transient character.

Every new pass is slightly different. All changes remain within strictly controlled limits and form part of the Natural Field concept: the music remains the same, while the digital result is no longer completely static at the individual-sample level.

In brief: what Fomin's Noise does

- creates a nature-inspired stochastic field around five modes: 7.83 / 14.3 / 20.8 / 27.3 / 33.8 Hz;
- slowly and independently varies the exact frequencies and relative energy of those modes;
- adds an ultra-quiet direct low-frequency layer;
- creates an even quieter harmonic trace above 80 Hz;
- applies micro-modulation and extremely gentle nonlinear softening to the program signal;
- produces a slightly different result with every new bounce;
- preserves mono compatibility and applies the same field to the left and right channels;
- uses no hidden limiter, clipper, look-ahead, or internal dither;
- adds no latency.

2. What are Schumann resonances?

The Earth's surface and the lower ionosphere form an electromagnetic cavity. Lightning discharges excite extremely low-frequency electromagnetic waves inside this cavity. Broad resonant peaks occur in certain frequency regions and are known as Schumann resonances or Schumann modes.

The commonly cited approximate frequencies are 7.83, 14.3, 20.8, 27.3, and 33.8 Hz. They are not perfectly fixed: their measured properties vary with ionospheric conditions, time of day, season, and global thunderstorm activity.

Schumann resonances are not an acoustic "sound of the Earth" or a mechanical vibration of the entire planet. In nature, they are an extremely weak electromagnetic phenomenon. A conventional playback system cannot reproduce them as a real planetary electromagnetic field.

Fomin's Noise uses the numerical frequencies and nature-inspired variability of this phenomenon as the foundation for an original digital sound-design process. The plug-in does not claim to reproduce the Earth's actual electromagnetic field.

3. What kind of signal does the plug-in generate?

Fomin's Noise does not generate white, pink, or brown noise. It also does not simply add five continuous pure sine waves to the master bus.

Inside the algorithm, random individual excitations and short clusters of events are created using a distribution conceptually inspired by global thunderstorm activity. These internal impulses never reach the audio output directly. Instead, they excite five smoothly decaying resonators.

The result is a living, narrow-band stochastic field:

- the amplitude and direction of each excitation vary;
- the contribution of each mode changes slightly from one event to the next;
- the exact center frequencies drift slowly by up to $\pm 1.2\%$;
- the relative balance of the modes develops continuously over time;
- every new activation creates a new field history.

For this reason, the generated layer cannot be accurately described by one conventional “color” of noise. It is a distinct type of structured random signal formed by decaying resonant modes.

4. How Natural Field affects the music

The algorithm combines four interrelated layers.

4.1. Direct stochastic field

An ultra-quiet signal containing the five resonant modes is added equally to both channels of the program. At the default 25% intensity, its absolute peak cannot exceed approximately -84.02 dBFS. This is far below the level of the main musical content.

4.2. Harmonic trace

The internal field passes through a gentle nonlinear transformation. Two high-pass stages suppress its direct infrasonic content below 80 Hz while retaining extremely quiet harmonic and intermodulation detail in the reproducible frequency range.

At 25% intensity, this layer is limited to no more than approximately -96.02 dBFS peak.

4.3. Spectral micro-imprint

The field applies minute gain movement to the existing musical signal. Evolving sidebands appear around components of the program, with spacing related to the current frequencies of the five resonators.

The modulation can only reduce the signal by a microscopic amount. It cannot inflate peaks or move the stereo image.

4.4. Micro-nonlinearity

The strength of the live field controls a very gentle cubic-softening stage. This creates an ultra-quiet nonlinear trace and slightly reduces the absolute magnitude of individual samples. At the default setting, the change is measured in hundredths and thousandths of one percent.

Together, these four layers create the characteristic Natural Field imprint.

5. Interface

The Silver Reference interface combines brushed aluminum, walnut side panels, and the visual language of classic high-end audio equipment.

MAGIC OFF / MAGIC ON

The main button enables or disables processing.

- MAGIC OFF - the effect is disabled. Once the short transition has completed, audio passes through the plug-in unchanged, sample for sample.
- MAGIC ON - Natural Field is active. A new random field history is created each time the effect is switched on.

The transition is smoothed over approximately 30 ms to prevent digital clicks.

The engineer portrait provides a clear visual indication of the current state:

- the smiling, full-color portrait with a thumbs-up means the effect is enabled;
- the more serious, nearly monochrome portrait means the effect is disabled.

The portrait is purely visual. It does not participate in audio processing, and closing the interface does not change the DSP.

INTENSITY

The Intensity control sets the overall depth of all four Natural Field layers.

- range: 0-100%;
- automation step: 0.1%;
- default value: 25%;
- parameter changes are smoothed to prevent clicks.

The control uses a square-root response. As a result, 25% on the interface corresponds to 50% of the maximum linear DSP amplitude. This behavior provides finer practical control across the most delicate part of the range.

Practical starting points

Intensity	Suggested use
0%	No processing, even when MAGIC ON is displayed
5-15%	The most conservative micro-imprint
20-30%	Primary working range; start at 25%
35-60%	A result that is easier to identify analytically and in a null test
65-100%	Creative or diagnostic extreme settings

Even 100% remains inside the designed micro-effect range. The optimum setting will nevertheless depend on the spectrum, density, and dynamics of the source material.

6. Quick start in Logic Pro

1. Complete the main equalization, dynamics processing, and saturation of the master.
2. Leave sufficient true-peak headroom; approximately -1 dBTP is a practical starting point for testing.
3. Insert Fomin's Noise on Stereo Out: Audio FX -> Audio Units -> VN_MODE -> Fomins Noise.
4. Place it after the main processing and true-peak limiter.
5. Leave only metering and, when a 16-bit file is required, one final dither stage after it.
6. Select MAGIC ON.
7. Keep INTENSITY at 25% and listen to musical transitions as well as individual sections.
8. Compare the result with MAGIC OFF at the same playback level.
9. Create two enabled bounces. They should remain extremely close in loudness and peak level, but they are not expected to match sample for sample.

7. Recommended position in the master chain

Basic signal flow:

```
EQ / compression / saturation  
-> true-peak limiter with headroom  
-> Fomin's Noise  
-> meters  
-> one final dither stage
```

Why the plug-in belongs near the end

If an equalizer, dynamics processor, or saturator is placed after Fomin's Noise, that subsequent processing will alter the generated micro-imprint. Placing the plug-in after the main mastering chain preserves the intended Natural Field structure.

A true-peak meter should still remain after the plug-in. Fomin's Noise mathematically controls the sample peak of its processing, but every final master must still be checked for inter-sample true peaks.

It is technically possible to place another limiter after the plug-in, but that limiter may partially reshape the Natural Field. If this is necessary, compare both processing orders before committing to the master.

8. How to evaluate the effect correctly

Fomin's Noise intentionally operates at very low depth. On some material, the difference may be barely perceptible or impossible to identify during a short casual comparison. This is normal product behavior, not evidence of a malfunction.

For a reliable evaluation:

1. disable loudness normalization during bouncing and playback;
2. use high-quality headphones or a properly calibrated monitoring system;
3. compare complete musical phrases, fades, pauses, and section transitions;
4. do not make one version louder than the other;
5. perform a blind, level-matched A/B comparison;
6. run a null test if you need to prove the processing analytically;
7. monitor peak level, LUFS-I, true peak, and stereo correlation.

Rapidly clicking MAGIC ON and OFF is not always the best way to judge such a subtle effect, because attention can become focused on the switching event itself. Comparing two time-aligned exported files is often more informative.

9. Why two bounces are different

The Natural Field random sequence is not locked to the DAW timeline. Enabling the effect, reinitializing the plug-in, or starting a new processing run creates a new generator state.

Between repeated bounces, the following details change:

- the exact sequence of internal excitations;
- the slow frequency drift;
- the relative energy of the five modes;
- the microscopic pattern of sidebands and nonlinear detail.

The following properties remain controlled:

- level limits;
- stereo linking;
- stereo-center position;
- mono compatibility;
- practically unchanged peak and integrated loudness.

The DAW stores the MAGIC and INTENSITY parameters, but intentionally does not store the exact random field history. A reopened project therefore retains the same controls and operating limits, but it is not required to produce a bit-for-bit identical bounce.

If a particular approved result must be preserved for archival purposes, save the final audio file together with the project.

10. Export and dithering

The plug-in operates inside the DAW's floating-point audio buffer and does not add its own dither.

24-bit and 32-bit float

For archival masters, save a 24-bit PCM or 32-bit floating-point version. This provides the greatest flexibility for future conversion and delivery-format creation.

16-bit

16-bit export is supported. Apply dither exactly once, at the very end of the chain after Fomin's Noise:

Fomin's Noise -> meters -> dither -> 16-bit PCM

A correct TPDF or noise-shaped dither from the final exporter or a dedicated plug-in may be used. Do not enable dither in more than one processor at the same time.

Some instantaneous values of the micro-signal may fall below a single 16-bit step. This is expected. Correct dithering prevents deterministic removal of these small components and statistically preserves the intended imprint.

11. Automation and project recall

Both parameters are available for DAW automation:

- Magic;
- Intensity.

Their values are saved with the project. Automation is smoothed, so valid parameter changes should not create clicks.

Every OFF-to-ON Magic transition starts a new field. Automating the switch can be used creatively, but each pass will remain non-repeating.

For conventional mastering, choose one intensity setting and leave the effect enabled throughout the entire track.

12. Master-bus level safety

The algorithm is designed to avoid overloading the master with the generated signal:

- the direct field is limited to -78 dBFS peak at 100%;
- the harmonic trace is limited to -90 dBFS peak at 100%;
- the theoretical combined limit of the added layers remains below approximately -76.05 dBFS peak;
- the program signal is reduced by a mathematically calculated micro-reserve before addition;
- modulation and nonlinearity only reduce absolute magnitude;
- no hidden limiter or clipper is used.

For input samples between -1 and +1, the algorithm keeps the processed sample peak inside that range. This does not replace standard true-peak, delivery-codec, and platform-compliance checks.

13. Technical specifications

Parameter	Specification
Version	0.7.21
Developer	VN_MODE
Type	Audio effect, master insert
macOS release formats	Audio Unit, VST3
Windows build format	VST3
Logic Pro format	Audio Unit
Channel layouts	Mono, stereo
Verified sample rates	44.1 / 48 / 88.2 / 96 / 192 kHz
Verified buffer sizes	16-4096 samples
Reported latency	0 samples
Primary modes	7.83 / 14.3 / 20.8 / 27.3 / 33.8 Hz
Frequency drift	Up to $\pm 1.2\%$ independently per mode
Parameters	Magic, Intensity
Default Intensity	25%
Default Magic state	OFF
Internal dither	None
MIDI	Not required
Network access	Not required
Minimum macOS	11.0
Mac architectures	Universal2: arm64 and x86_64 in one installer

VST2 is not included in the current product. AAX support for Pro Tools is planned as a separate future development stage.

A standalone application is built as an internal technical target for quick testing outside a DAW, but it is not included in the version 0.7.21 macOS end-user installer.

14. Installation on macOS

Quit Logic Pro, open the universal DMG, and run the PKG inside. One installer supports Apple Silicon and Intel Mac; macOS chooses the matching native slice automatically. The Audio Unit component is installed for Logic Pro; VST3 can also be installed for compatible DAWs.

The components are installed in the system locations below:

```
/Library/Audio/Plug-Ins/Components/Fomins Noise.component  
/Library/Audio/Plug-Ins/VST3/Fomins Noise.vst3
```

For detailed instructions, including the current Gatekeeper procedure, see the macOS installation guide.

15. Uninstallation

Open the original DMG and double-click `Uninstall Fomins Noise.command`. The bilingual uninstaller requests confirmation and an administrator password, removes only the Fomin's Noise components, and verifies that the operation completed successfully.

Restart Logic Pro after uninstallation. If the plug-in still appears in an old project or Plug-in Manager, restart the Mac to refresh the Audio Unit cache.

16. Troubleshooting

The plug-in does not appear in Logic Pro

1. Confirm that the Audio Unit for the correct processor architecture is installed.
2. Open Logic Pro -> Settings -> Plug-in Manager.
3. Find Fomins Noise or the manufacturer VN_MODE.
4. Select the component and click Reset & Rescan Selection.
5. Quit and restart Logic Pro completely.

System validation from Terminal:

```
auval -v aufx FmN1 Fomn
```

A successful result ends with `AU VALIDATION SUCCEEDED`.

macOS blocks the installer

The current private version 0.7.21 installer is not yet signed with an Apple Developer ID Installer certificate or notarized by Apple. Download it only from the official private project repository, verify its SHA-256 checksum, and follow the instructions included in the DMG.

The public commercial version should be distributed with Developer ID signing and Apple notarization.

I cannot hear the effect

This may be completely normal: the plug-in intentionally operates below the level of obvious processing. Confirm that MAGIC ON is displayed, temporarily raise INTENSITY for diagnosis, create two bounces, and perform a null test. Return to a working setting around 25% afterward.

A repeated bounce does not match the previous one

This is expected Natural Field behavior. If the parameter values, level range, and stereo position remain consistent, differences between individual samples are part of the design.

I hear a short transition after switching the effect

Enabling and disabling are smoothed over approximately 30 ms. This prevents clicks and does not represent plug-in latency.

The true-peak value changed

Fomin's Noise controls the sample peak of its own processing, but inter-sample true peak depends on the waveform and subsequent conversion. Always keep a true-peak meter after the plug-in and follow the requirements of the intended delivery format.

17. Frequently asked questions

Is this a conventional noise generator?

No. It creates a structured stochastic field from five decaying, slowly drifting resonant modes.

Does the plug-in reproduce the Earth's actual resonance?

No. It creates a digital audio model inspired by the frequencies and variability of the natural phenomenon.

Must the effect always be audible?

No. The concept is based on micro-level change. Depending on the source material and playback system, the effect may be barely perceptible while remaining measurable in a null test.

Can I use it somewhere other than the master bus?

Technically, yes. It can process a mono or stereo bus, but the algorithm and level limits are designed primarily for final master-bus use.

Can it be placed after the limiter?

Yes. This is the recommended position when sufficient true-peak headroom is available. Only metering and one final dither stage should remain after Fomin's Noise.

Is it suitable for 16-bit export?

Yes. Apply dither once after the plug-in during the final conversion to 16-bit.

Is the same random pattern recalled with the project?

No. Magic and Intensity are stored, but the exact Natural Field history is intentionally regenerated.

Why are there no separate controls for each frequency?

Version 0.7.21 is designed as a simple musical tool with one macro control. The balance between the modes evolves automatically as part of the original algorithm.

Does the plug-in add latency?

No. It uses no look-ahead or delay buffer.

Does the plug-in treat medical conditions, promote relaxation, or synchronize brain activity?

No such properties are claimed. Fomin's Noise is a creative digital audio-processing tool, not a medical or therapeutic device.

18. Quality verification

Release builds pass an automated quality-control suite that covers:

- bit-exact bypass once MAGIC OFF has reached its steady state;
- absence of NaN, Inf, clicks, and output beyond the designed sample-peak limit;
- peak, integrated LUFS, and estimated true-peak comparison;
- mono, stereo, and stereo-linked dual-mono operation;
- 35 combinations of sample rate and buffer size;
- a stress test equivalent to 30 minutes of processing;
- two independent stochastic bounces;
- preservation of modal information after 16-bit TPDF dithering;
- `pluginval` at strictness level 10 for VST3;
- Apple's system `auval` validation for Audio Unit;
- test installation and automated uninstaller validation for both Mac architectures.

Automated verification confirms technical correctness. The final artistic decision must always be made with the actual program material and critical listening.

19. Scientific and legal notice

Fomin's Noise uses Schumann resonances as an artistic and algorithmic source of inspiration. It does not measure the surrounding electromagnetic environment, reproduce the Earth's physical electromagnetic field, or claim medical, therapeutic, neurological, or other health-related benefits.

The terms `Magic` and `Natural Field` are elements of the product's creative interface concept. They do not constitute claims of supernatural or scientifically proven effects on human listeners.

20. Version information

Fomin's Noise 0.7.21

- Silver Reference V6 interface;
- MAGIC ON / MAGIC OFF states;
- full-color and nearly monochrome engineer portraits;
- five-mode Natural Field engine;
- single Apple Silicon / Intel universal2 installer;
- Audio Unit and VST3;
- bilingual macOS uninstaller;
- complete automated DSP and host validation.

Developed by VN_MODE.