SPECTRA GRAN 1.0 - MANUAL

Welcome to Spectra Gran

Thank you for purchasing **Spectra Gran**.

Spectra Gran is a creative granular and spectral processing instrument designed for transforming audio into evolving textures, rhythmic grain patterns, atmospheric soundscapes and experimental tonal material.

This manual covers the core functions of Version 1.0.0 and is intended to help you get started quickly while also explaining the deeper creative controls available throughout the plugin.

Spectra Gran will continue to evolve over time. Future updates are planned to introduce additional features, improvements and new creative possibilities.

We hope you enjoy exploring Spectra Gran and making it part of your own sound design and music production workflow.

X-Audio

LFO
The LFO control sets the overall modulation amount applied by the LFO system. Higher values increase the depth and intensity of the movement.

Rate
The Rate control determines how fast the LFO modulation moves. When Tempo Sync is enabled, the rate follows the selected rhythmic Sync Division.

Save
Save your Preset

RND
Randomize Modes
Right-click the Random button to choose between two different randomization modes:
Ambient Random
Creates broader, more atmospheric parameter variations. This mode is designed for evolving textures, rich tonal movement and more experimental spectral results.
Harmonic Random randomizes the plugin parameters within musically useful ranges to keep the result tonal and harmonically coherent.
Pitch-related parameters are not randomized freely across arbitrary values. Instead, they are constrained to selected musical interval steps such as -3, -5, -7, -9 semitones and related harmonic values.This helps prevent random pitch settings from becoming overly dissonant or unusable, while still creating noticeable variation and movement.
Harmonic Random is especially useful for generating new variations quickly while preserving a more musical and controlled character.

MIDI

Click MIDI to open the integrated MIDI keyboard and enable MIDI control of the loaded sample material. Spectra Gran can be played from the on-screen keyboard, from an external MIDI controller, or from MIDI clips and tracks inside your DAW. This allows the sample content inside the granular engine to be played and performed melodically instead of being used only as a static audio source.

MPE Support

Spectra Gran supports full MPE (MIDI Polyphonic Expression), allowing compatible controllers and DAWs to send expressive per-note performance data such as pitch movement, pressure and additional expression independently for individual notes. This makes Spectra Gran suitable for expressive, playable granular textures, evolving pads, leads and experimental sound design.

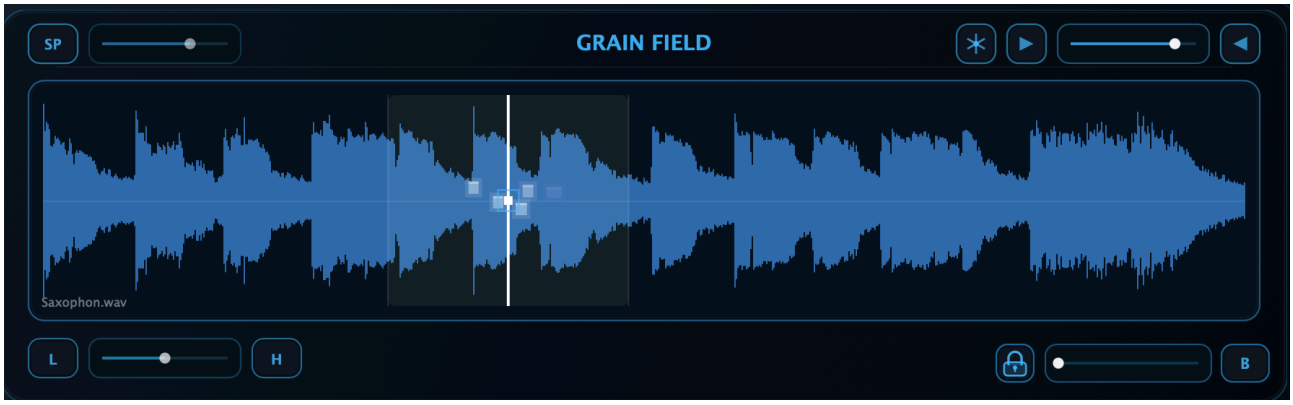
Sync

Enable Sync to lock the grain timing to your DAW tempo. This keeps the granular movement rhythmically aligned with the host transport and makes it easier to create tempo-based textures, pulses and repeating grain patterns.

Rate Division
Rate Division sets the rhythmic subdivision used while Sync is active. Choose values such as 1/16, 1/8, 1/4 and other musical divisions to control how frequently the grains are triggered in relation to the DAW tempo.

Menu
The menu in the upper-right corner provides a few visual display options for Spectra Gran.
Dark Mode
Uses the default dark interface of Spectra Gran.
Light Mode
Switches the interface to a brighter color theme for users who prefer a lighter appearance.

Clean Waveform
Simplifies the waveform display and removes additional visual elements, creating a cleaner and less distracting waveform view.



SP – Spectral Mode
Click **SP** to activate Spectral Mode. When enabled, Spectra Gran applies additional spectral processing to the material inside the Grainfield.

Spectral Amount
The slider next to the **SP** button controls the intensity of the spectral processing. Lower values create a more subtle effect, while higher values make the spectral transformation more pronounced.

Freeze
Click **Freeze** to stop the Grainfield position at its current point. This holds the current section of the sample in place, allowing you to create sustained textures, drones and static granular sounds.

Direction
Use the **Direction** control to choose whether the Grainfield marker moves forward or backward through the sample.

Speed
The **Speed** slider controls how fast the marker moves through the Grainfield. Lower values create slower movement, while higher values make the marker travel through the sample more quickly.

Low / High Focus
Use the **L–H slider** to shift the Grainfield toward lower or higher-frequency content. Moving the slider toward **L (Low)** emphasizes deeper, lower tonal material, while moving it toward **H (High)** focuses more on brighter, higher-frequency content. Click **L** to instantly move the slider to the low end, or **H** to jump directly to the high end.

Parameter Locks

Click the **Lock** icon in the lower-right corner of the Grainfield to show the individual Parameter Locks.
A small lock icon will appear above each control in the lower parameter panels, from **Volume** through **Shimmer**. Click the lock above any parameter to protect it from randomization.
Locked parameters are visually highlighted and will keep their current value when you press **Random**, while all unlocked parameters can still be changed.

Transient Focus
Use the **Transient Focus** slider to control which parts of the audio are favored when generating grains.
Move the slider to the **right** to focus more on short, transient-rich sounds such as percussion, clicks and attacks.
Move it to the **left** to favor longer, more sustained parts of the audio, creating grains from smoother and more continuous material.

B – Show Spectral Bands

Click **B** to switch the Grainfield display from the sample waveform to the **Spectral Bands** view. This replaces the waveform with a visual representation of the frequency bands, making it easier to see and work with the spectral content of the loaded audio.

Spectral Bands View
The Spectral Bands view displays the frequency content of the loaded material across multiple bands, with frequency references such as **100 Hz, 250 Hz** and higher ranges shown across the display.

All
Click **All** to raise all spectral bands to their maximum state.

Zero
Click **Zero** to lower all spectral bands to their minimum state.

INV – Invert
Click **INV** to invert the current band pattern.
Bands that are currently raised will be lowered, while bands that are lowered will be raised. This creates the exact opposite spectral selection.

RBND – Random Bands

Click **RBND** to generate a new randomized pattern across the spectral bands. Some bands will be raised while others will be lowered, creating a new spectral balance each time.

Band Locks

Individual spectral bands can be protected from randomization.

Right-click a band to lock it. Locked bands are visually outlined so you can immediately see which bands are protected.

When you press **RBD**, all unlocked bands are randomized while the locked bands remain unchanged.
Right-click the band again to unlock it.

W – Waveform

Click **W** to leave the Spectral Bands view and return to the standard **Grainfield waveform** display.

Spectral Character Modes

Right-click the W button to open the Spectral Character menu.
You can choose between three processing modes:

Smooth
Creates a softer and less resonant spectral response.
This mode is useful when you want a more natural and controlled sound.
Resonant
The default mode. It provides a balanced spectral character with a noticeable resonant quality without becoming too extreme.
Focus Gate
Applies a much stronger and more selective spectral effect. This mode creates the most pronounced and extreme result of the three options.

Grain Controls

Volume
Controls the output level of the granular engine. Turn it down for a more subtle result or increase it for a stronger grain signal.

Position

Moves the playback position through the loaded sample. Turning the control shifts the Grainfield marker to the left or right, allowing you to target different parts of the audio.

Size (ms)
Controls the length of each individual grain in milliseconds.
Shorter values create smaller, more detailed grains, while longer values produce broader and smoother grain textures.

Density
Controls how many grains are generated.
Lower values create fewer and more separated grains, while higher values increase the number of grains and produce a denser, more continuous texture.

Highpass
Applies a high-pass filter to the granular signal, starting from approximately **20 Hz**. This is especially useful for removing unnecessary low-frequency energy from dense grain textures without needing an additional EQ.

Position Random
Adds random variation to the grain playback position.
Higher values allow grains to be generated from a wider range of positions around the selected point, creating more movement and variation.

Size Random
Controls the amount of variation in grain size.
Increasing the value creates a wider range of different grain lengths, while lower settings keep the grains more consistent and focused.

Stereo
Controls the stereo spread of the grains.
Higher values distribute the granular material more widely across the left and right channels, creating a broader stereo image.

Pitch
Controls the pitch of the generated grains.

Use it to shift the granular material up or down in pitch and create anything from subtle tonal variations to strongly transformed textures.

Shimmer
Adds an additional shimmering tonal layer to the granular sound.
Increasing the control creates a more pronounced bright and elevated character.
The exact behavior can be further shaped through its built-in LFO modulation.

Knob-in-Knob LFO System

Each main Grain control in Spectra Gran includes its own independent **Knob-in-Knob LFO system.**

Main Control
The outer knob controls the main parameter value, such as Position, Density, Pitch or Stereo.

LFO Depth
The smaller control located inside the center of each knob sets the individual **LFO Depth**.
Turning this control determines how strongly the LFO modulates that specific parameter. At zero, no LFO modulation is applied. Increasing the depth creates progressively stronger movement around the selected parameter value.

LFO Rate
As soon as LFO Depth is added, an additional small **LFO Rate** control becomes available next to the parameter.
This controls how fast the LFO moves for that individual parameter.

Because every parameter has its own LFO Depth and Rate, several controls can move independently at different speeds, allowing complex evolving grain textures to be created without external modulation.

Global LFO / Sync Division
The global **LFO** and **Sync Division** controls in the upper section determine the shared tempo-related behavior of the individual parameter LFOs.
When synchronized to the DAW, rhythmic divisions such as **1/16, 1/8, 1/4..** can be used to keep the modulation movement aligned with the project tempo.

Tips & Best Practices

Resampling Is Your Friend

Some of the most interesting results in Spectra Gran happen while parameters, LFOs and randomization are constantly moving.

Instead of trying to recreate every sound later, record the output to a new audio track and keep the moments you like. Resampling makes it easy to turn evolving granular textures into completely new source material.

Start Simple
Begin with moderate settings and change only a few parameters at a time. Once you find an interesting texture, gradually introduce additional modulation, randomization or spectral processing.

Use Parameter Locks
Before pressing Random, lock any parameters you already like. This allows you to explore new variations without losing the core character of your current sound.

Combine Randomization with Resampling
Use Ambient Random or Harmonic Random, record several passes and then cut out the best moments. This can quickly generate unique textures, transitions, loops and one-shots.

Explore Slow LFO Movement
Not every modulation needs to be fast. Slow LFO rates can create subtle, continuously evolving movement that works especially well for pads, drones and atmospheric material.

Use Sync for Rhythmic Material
When working with drums, percussion or rhythmic samples, enable Sync and experiment with different Rate Divisions to keep grain movement connected to the tempo of your project.

Shape the Spectrum
Use Low / High Focus, the Highpass control and the Spectral Bands view to remove unnecessary frequencies or emphasize specific areas before adding more processing.

Freeze Interesting Moments
When the Grainfield reaches an interesting position, use Freeze to hold it in place. This is useful for turning very short moments into sustained textures and playable material.

Less Can Be More
Granular processing can become dense very quickly. Lower Density, shorter modulation depths and subtle spectral settings can often produce more detailed and usable results than pushing every control to its maximum.

Final Words

Thank you for using **Spectra Gran**.

This is only the beginning. Version 1.0.0 lays the foundation, and future updates will bring new features, additional presets, workflow improvements and even more creative possibilities.

We hope Spectra Gran inspires you to experiment, resample, break things, rebuild them and discover sounds you did not expect to find.

Keep exploring, trust your ears, and remember:

Resampling is your friend. Random can be your friend too — most of the time.

Have fun creating.

X-Audio