



OF

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# GROTTA 3D

SPATIAL GRANULAR TEXTURIZER

**GROTTA 3D** is a *Max4Live* spatial audio effect implementing a real-time granular synthesis algorithm, using a multi-voices audio scanner that creates and displace a constant stream of destructured crossfading sections of the input sound source.

Pitch, size, windowing and density of each grain can be modulated to create a deep variety of sound processing with an additional blurring effect provided on- chain to generate vast and dense immersive soundscapes.

The device implements also a module for multichannel spatial distribution to work with quadriphonic speakers set-up or Ambisonic systems.



**MIX:** control the amount of direct signal and effected signal.

**FREEZE:** push the button to freeze a portion of the incoming signal to be processed and **SCRUB** the frozen sample. Push again to release.

**TUNE:** set the grains' pitch. 0 corresponds to the original tuning. The knob operates in semitones. Adjust the tune in cents.

**RANDOM OCTAVE:** add randomness to the octave of each grain's pitch. High % means more chance of tuning far from the TUNE set.

**JIT PITCH:** add an overall jittering to the grains' pitch.

**SCALE:** compress the tune scale of the pitch shifter.

**DENSITY:** set the amount of density in the granulation process. Less density means each grain allows more time before to re-start playing.

**RANDOM AMP:** add randomness on the amplitude of each grain.

**DRIVE:** add an overall overdrive distortion.

**LENGTH:** set the envelope's duration of each grain. The longer the size, the more chunks of sound are played in reverse. Press the unit button to select the control value either in milliseconds or in NoteValue (relative to the transport's BPM).

**RANDOM SIZE:** add randomness on the size selection of each grain.

**WINDOWING:** chose from the menu the shape of the grain's amplitude envelope.

**GAIN:** control the output volume of the granular effect (dB).

**VOICES:** set the amount of active voices.

**BLUR:** balance the amount of *Blur* effect added to the granular sound.

**SIZE:** controls the vastness and density of the ambient.

**TIMEDELAY:** set the delay time of the *Blur* effect.

**COLOR:** act as a high-pass filter on positive values (0 1) or as lowpass filter with negative values (-1 0).

**FEEDBACK:** set the amount of feedback on the *Blur* effect to reduce or extend the tail of the reverberation.

**JIT FX:** add an overall jittering to multiple parameters of the *Blur* effect.

**SPREAD:** balance the signal output between mono and stereo distribution. Use it to set a narrow or wide spatial spread when in multichannel output mode.

**DOPPLER:** control the amount of doppler effect.

**PHASE:** act as an offset, shifting the grains spatial configuration.

**3RD HOA:** when the *3rdHOA* output is enable, the overall grains spatial location can be shifted through **POSITION** and **ELEVATION**.

Each grain is located and equally distributed around the soundfield in an half-dome configuration.



**QUADROPHONIC OUTPUT**

The device implements a quadraphonic output using a built in VBAP decoder, provided with a Doppler effect and the control on the speakers sensibility (Spread).

The spatial system enables the sound effect spatialisation into a 4 speaker set-up. Create a new audio track in your Ableton session and set the audio routing as shown in the following picture (the input source can be mono or stereo). Push the button QUAD and enjoy the Quadrophonic feature for multichannel spatial effects.



### 3RD HIGH ORDER AMBISONIC OUTPUT

The device is provided with a *3rd Order Ambisonic Encoded* output signal. To enable the *3rdHOA* output, use the *E4L Master Bus* device as decoder.

Download for free the *Envelope for Live* devices and find all related information:

<https://github.com/EnvelopSound/EnvelopForLive/releases/download/11.3.11/EnvelopForLive.11.3.11.zip>

Place the *E4L.MasterBus* on a new audio track of your Ableton session. Enjoy the Ambisonic feature for multichannel spatial effects.

E4L (Envelop for Live) is a collection of free, open-source spatial audio production tools that work with Ableton Live Suite. Created by the San Francisco nonprofit, Envelop, E4L creates an open and accessible path for artists and producers to create immersive music for Envelop listening spaces, DIY multichannel audio environments, as well as headphone-based VR/AR applications:

<https://envelop.us/page/software>



Version 1.0  
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In case of need (to report problems, bugs, doubts)  
or just for info and curiosity, please - contact us by email:

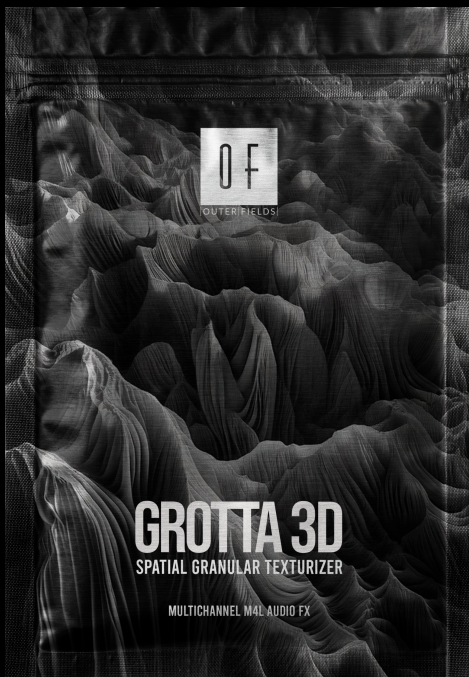


We WOULD love to know how you are using our devices!

Please visit our website to signup to our newsletter, check  
sound libraries, sound maps and other contents



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