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General project info

Name
KTGranulator

Version
1.0

Type
VST effect plugin with custom editor (delay line granulator)

Author
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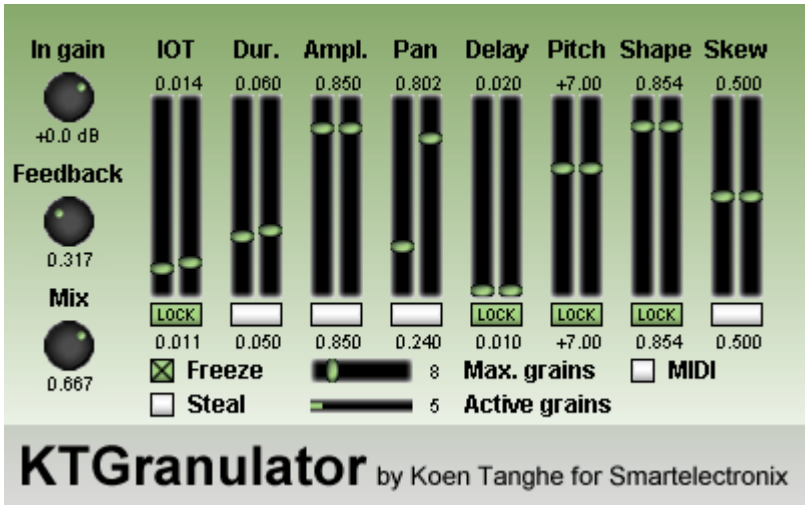
Credits
This plugin was made as an exploration in building VST plugins and using the VSTGUI library. It was inspired by the great DLGranulator effect in Ross Bencina's AudioMulch.

Description



Processing
Incoming (mono) sound is fed into a delay line from which small pieces of various durations and at different moments in the past are selected.
Each of these pieces is then amplified, transposed and enveloped to form a "grain". Each grain is also randomly panned and the whole mix is sent out to a stereo output stream.
Feedback of the grain output back into the delay line is also provided.
Freezing the delay line is possible as well, and has the effect that new input samples are ignored and grains are generated only from the sound samples that are currently stored in the delay line.

Input
- audio: mono
- MIDI: for parameter control

Output
- audio: stereo
- MIDI: none

Parameters
- In gain Gain for incoming signal (in dB)
- Feedback Feedback factor (0 is no feedback, 1 would be full feedback)
- Mix Mixing factor between original and granulated signal (0 is dry, 1 is wet)
- IOT Inter Onset Time: time between grain starts (in s)
- Dur. Grain duration (in s)
- Ampl. Grain amplitude (1 means full original amplitude)
- Pan Stereo panning (0 is left, 1 is right)
- Delay Delay time: determines start of grain position (in s)
- Pitch Transposition (in semitones)
- Shape Grain shape factor (0 means triangle, 1 means rectangle)
- Skew Skew factor (0 means no attack/full release, 1 is the other way around)
- Freeze Delay line freezing status
- Max. grains Maximum number of grains to use
- Steal Grain stealing (number of active grains is shown at the right)
- MIDI MIDI learn (left mouse button) or reset (right mouse button)

Tweaking
- Most sliders are grouped in pairs: the left one specifies the minimum, the right one the maximum.
- For each grain, a value for each parameter is taken randomly between the minimum and maximum.
- The lock buttons "lock" the minimum and maximum so that when you change one, the other changes as well.
- As usual, Control+clicking sets the parameter to the default value (for the sliders: if allowed by the lock constraints) and Shift+adjusting uses smaller steps for changing the parameters.
- The MIDI button has three states: off, learn (shows an "L") or reset (shows an "R").
- All other controls are just standard knobs, buttons or sliders. You know how to tweak these ;-)

Using MIDI input for parameter control
- All parameters can be controlled using MIDI messages (control change, pitch bend, or note ranges).
- The channel on which the message is received is taken into account (so, a CC#74 on channel 1 is not the same as a CC#74 on channel 2).
- A MIDI message can be assigned to multiple parameters at the same time.
- How to set a MIDI CC or pitch bend message for a parameter:
    1. left-click the MIDI button to enable learning mode
    2. change the parameter you want to control
    3. change the knob or slider on your MIDI device
    4. left-click the MIDI button again to disable learning mode

- How to set a MIDI note range for a parameter:
    1. left-click the MIDI button to enable learning mode
    2. change the parameter you want to control
    3. play a note on your MIDI device,
    4. play a second note on your MIDI device
    5. left-click the MIDI button again to disable learning mode
- How to reset MIDI control messages for a parameter:
    1. right-click the MIDI button to enable reset mode
    2. change the parameter you want to reset MIDI control for
    3. right-click the MIDI button again to disable reset mode

Remarks

- When grain stealing is on, the oldest active grain will be re-used (after a quick fade-out to avoid clicks) whenever a new grain is needed. This will only have effect if your IOT and duration settings require more grains than what is set by the Max. grains parameter.
- MIDI control using a note range is especially interesting for the pitch parameter: if you set it to a range of 4 octaves, you can actually "play" the pitch parameter in semitones using a keyboard.
- Clicking the info text at the bottom of the editor shows the about screen containing a header with some version and contact info, and a quick reference of the various parameters. Click somewhere in the area below the header to go back to the main screen.
- If you messed up your presets and want to revert to the "factory presets", you can load the included FactoryPresets.fxb bank to get a fresh start (of course you could also unload the plugin and then reload it). To get a default setting for only one of your presets, you can load the included Default.fxp preset.

Acknowledgements

The "factory presets" starting with "MM" were created by Matias Monteagudo.
Mac versions were built by Marc from DestroyFX.

Thanks for not skipping the "read me" file!
Koen Tanghe - 20030602