

Polarity I Tension

User guide

Soniccouture

TABLE OF CONTENTS

THE POLARITY ENGINE 3
- WHAT IS GRANULAR SYNTHESIS? 3
- KV TENSION 3

POLARITY | TENSION 4
- SNAPSHOTS 4
- BUILT-IN HELP 4

MAIN PAGE 5

GRAINS TAB 6
- GRAIN POSITION 9
- GRAIN LFO 10
- RANDOMISE 11
- GRAIN 12

SYNTH TAB 13
- AMP 13
- FILTER 13
- LFO 14

MODULATION 15

EFFECTS TAB 18

USING YOUR OWN WAVES 19

MICROTUNING 20

SUPPORT 22

END USER LICENSE AGREEMENT 23

THE POLARITY ENGINE

It seems like there's no shortage of granular synthesisers these days, and there have been several available for Kontakt for a few years now. Soniccouture's version has in fact been in development since 2013, but we haven't had a chance to put it to good use until now.

WHAT IS GRANULAR SYNTHESIS?

Essentially granular synthesis is a type of sampling that breaks down audio into tiny fragments called "grains". Typically these are usually very short, from 10 to 50 ms in duration, and many grains are typically played back quickly. By manipulating the content and parameters of these audio grains, unique oscillators, clouds. and evolving sounds can be created. There's a very good article on Sound and Sound and on Wikipedia if you want to read more.

KV TENSION

Ramon Kerstens and Richard Veenstra, better known as KV, have worked with us on a few projects in the past, usually making presets or sound packs for some of our instruments. This is the first time we've actually developed an instrument with them from the ground up, and they provided the sample data as well as the majority of the presets.

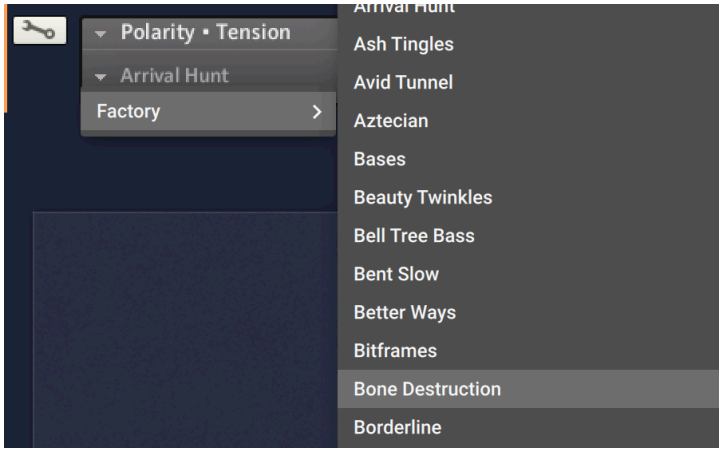
The Polarity engine is based on two simultaneous granular streams, which have independent samples, settings, modulation routings, etc.

Editing granular synthesis systems can sometimes be fairly complicated, so we've included four global MACRO CONTROLLERS that can be assigned to many different destinations. These allow a musician to explore a preset, find variations, etc. without necessarily diving under the hood and getting their hands dirty in the editor.

A fully featured editor is of course there if you have the courage.

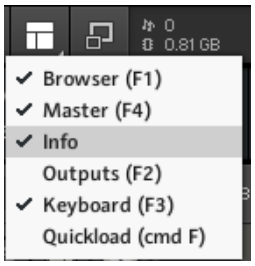
POLARITY I TENSION

SNAPSHOTS

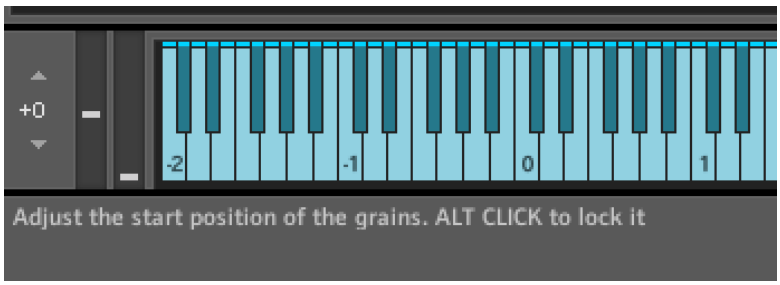


Kontakt stores presets as Snapshots, and you can use these to save your setups.
All of the presets for Polarity are provided as Snapshots like this.

BUILT-IN HELP

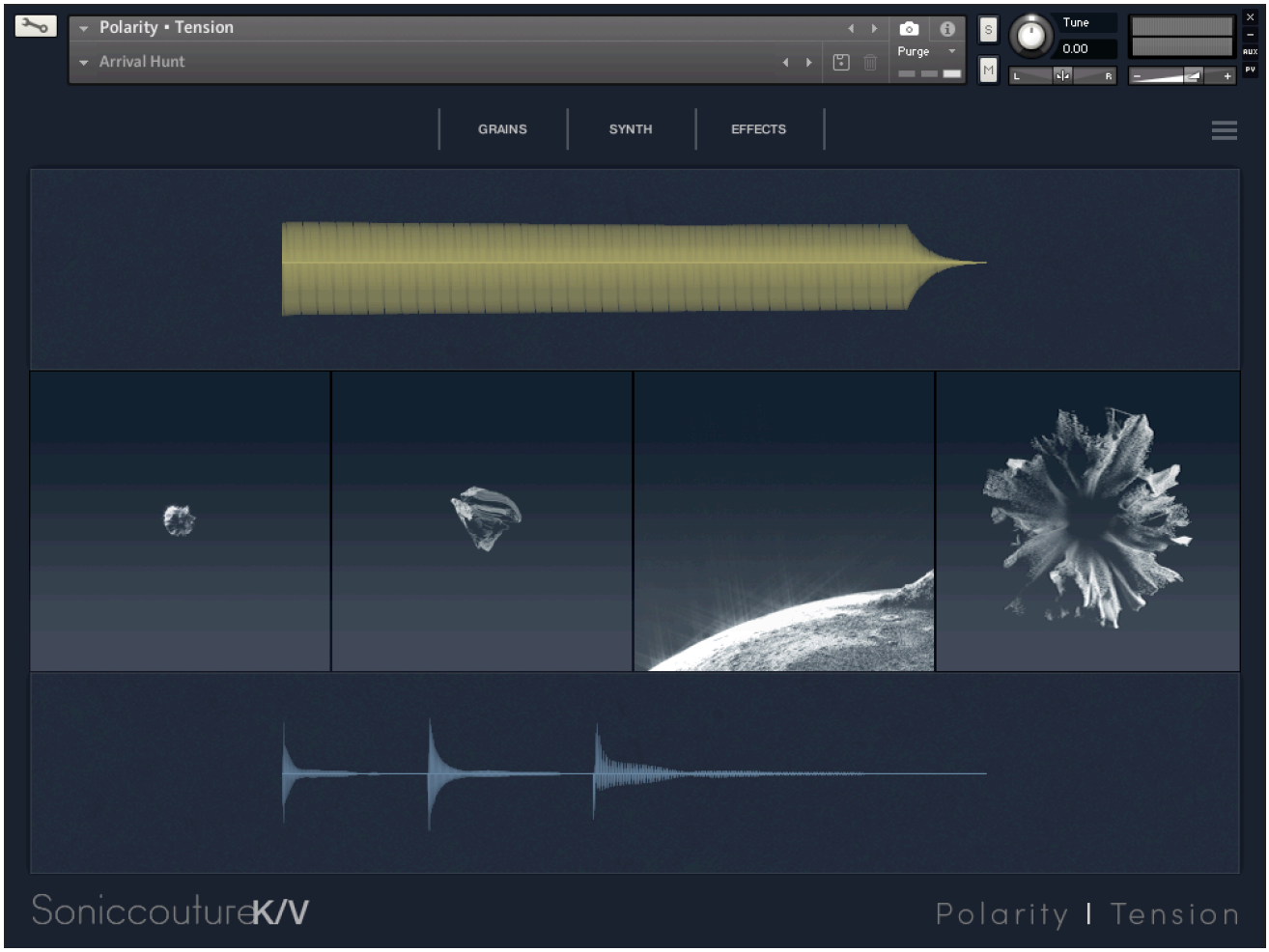


If you activate the Info pane in Kontakt, you can hover over any control in the instrument and a short note will appear in the Info pane at the bottom describing what that control does.



MAIN PAGE

The main page of Polarity | Tension displays two waveforms, at the top and the bottom, and four abstract graphics across the centre. These four graphic images are faders, and you can drag them with the mouse. They function as modulation macros and can be assigned to different parameters in each preset.



There are three tab selectors at the top and a drop down menu at the top right.



The tabs are GRAINS, SYNTH, and EFFECTS, and choose the respective edit page for those parameters.

We'll come back to the top-right menu in the section on MODULATION later.

GRAINS TAB

If you select the first tab, GRAINS, you will see the grain editor looks something like this.



In the above graphic, the top granular stream, A, is selected. The waveform is brighter and you can see a frame around the top two thirds of the interface. If you click on the lower section, either the lower waveform or the area to the left of that, you will select the B granular stream for editing.

The knobs and faders in the middle stay the same, but depending on which stream is selected (A or B), the values may be different. In this way you can quickly change from editing the A or B stream settings.

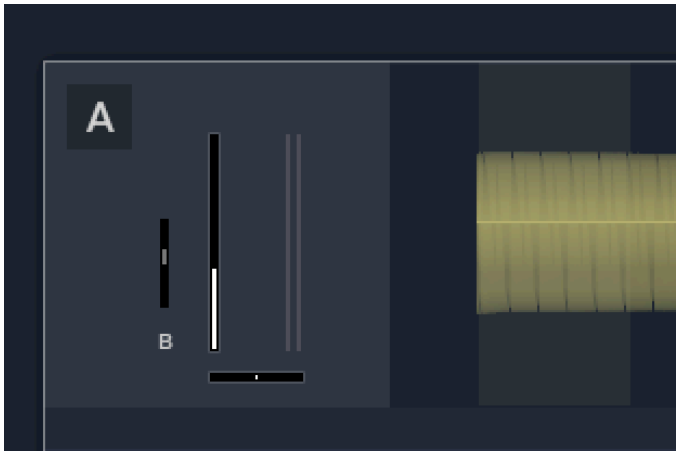
To the left of each waveform you can find level meters, a volume fader, and pan fader.

To the right of each waveform you can find the sample NAME, and a few other controls including the pitch settings for that sample. More on this in a moment.

Here is the same preset with the B granular stream selected. Note the bottom waveform is brighter and the selection box wraps the centre controls with the lower section of the panel. Now those controls edit the B granular stream.



Volume and Pan controls are at the left of each waveform, beside the level meters. The large letter A or B here is also a switch to engage or disengage the granular stream.



To the left of the Volume slider is a tiny fader with a letter below it. This is a modulation amount fader, and appears to the left of many of the other parameters in Polarity. We'll come back to this in the MODULATION section.

Sample selection and pitch settings are to the right of each waveform.



If you click on the waveform NAME, you'll find that it's a drop down menu. Here you can choose from any of the factory waveforms included with the instrument.

The left and right arrows step through the factory waveforms.

The DICE icon chooses a random factory waveform.

The little KEYBOARD icon turns on or off pitch tracking for the waveform. Sometimes it's interesting to have one granular stream that tracks pitch while the other doesn't.

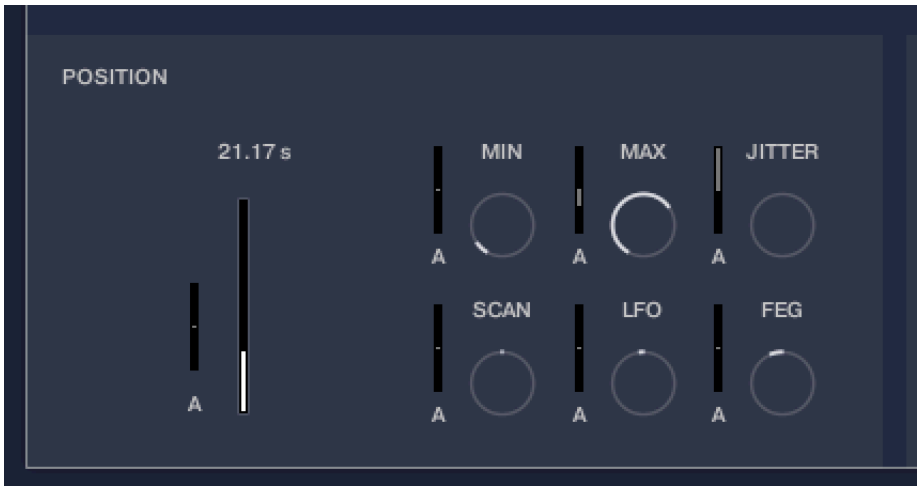
The last little speaker icon is an AUDITION button, this just plays the original sample if you want to hear what it sounds like before granular evisceration.

You can set the original pitch of the sample here, or rather the pitch at which Polarity will play your sample at the original pitch if pitch tracking is enabled. Beside that is a cents fine tune control.

The last TUNING FORK button will attempt to find the pitch of the currently loaded sample for you… this feature has varying success, but is often handy.

GRAIN POSITION

Perhaps the most interesting GRAIN control is the first one on the left, the GRAIN POSITION. This is controlling where in the sample your grain is chosen from… since grains are typically very small (short), moving this around within a sample creates timbral variation and is one of main characteristics of granular synthesis.



The main fader at the left is the primary starting POSITION of the grain, the position from which all the position modulators work from. This will read out a time in the original sample (21.17 s in the above graphic), and can also be edited by dragging on the waveform itself. There is a small modulation fader to the left of it.

Then there are six knobs that all affect the grain POSITION in some way, and all of them have a small modulation slider to the left. These are: MIN, MAX, JITTER, SCAN, LFO, and FEG.

MIN and MAX are limits. Since the grain position can be moving around a lot, sometimes you might find it useful to stop it playing earlier or later than a certain point.

JITTER is a random variation in the position, the is updated for every grain, and has a maximum width of 10 seconds. Usually the useful area is much, much smaller though, in the region of a few thousands of a second. This helps the grains sound less static, since each grain is slightly different from the previous one.

SCAN moves grain position through the waveform in an orderly fashion, either forward or backward. At 100% this should read through your sample at a very similar speed to playing the sample normally.

LFO modulates the grain position with an LFO.

FEG modulates the grain position with the filter envelope, which is not on this page but in the SYNTH section, coming up later.

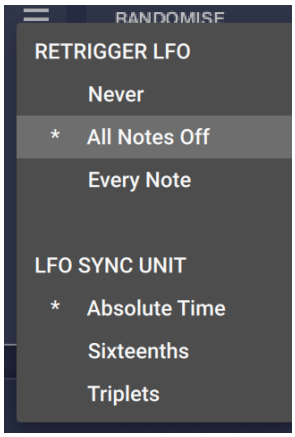
GRAIN LFO

The GRAIN LFO is a dedicated LFO to modulate grain position, mentioned in the last section. Here you have control over its RATE, which has a modulation mini fader beside it.



The little WAVEFORM and burger menus here drop down to let you change the LFO WAVEFORM, the LFO SYNC UNIT, and the LFO RETRIGGER CONDITION.

The LFO can retrigger on EVERY NOTE, only on a new note after ALL NOTES OFF, or NEVER.



The LFO WAVEFORMS have a choice of Sine, Triangle, Forward, Backward, Square, Sample & Hold, Random, and Binary. Most of these are obvious, but a few may require explanation. Forward and Backward are sawtooth waves, but Forward adds while Backward subtracts from the position. Sample & Hold creates a random wave shape, but it keeps repeating that S&H wave shape, and in fact a Snapshot will store that random wave shape. Both A and B grain streams use the SAME S&H wave shape, since that can be an interesting synchronous effect.

Random is truly random choice chosen at the RATE. Binary is a random oscillation between two values only, also chosen at RATE.

RANDOMISE



This section offers a few more RANDOMISE values for the grain, but these are unrelated to its position. Here you can randomise the grain VELOCITY, its PITCH, and its PAN.

There is a little musical note to the right of PITCH, which changes the random pitch to a semitone mode. If this is off, the pitch randomisation can be very small, similar to a typical detune effect.

In semitone mode however, the random pitch is quantised to semitones, and the knob chooses a QMODE 1 through 12. For each of these, two other pitches are added to the original pitch as a potential choice (ie. random choice of three pitches in total, including the played pitch).

QMODE 1 semitone up, tone down (+1, 0, -2)
QMODE 2 tone up, semitone down (+2, 0, -1)
QMODE 3 minor third up, major third down (major triad) (+3, 0, -4)
QMODE 4 major third up, minor third down (minor triad) (+4, 0, -3)
QMODE 5 fourth up, fifth down (+5, 0, -7)
QMODE 6 tritone up, tritone down (+6, 0, -6)
QMODE 7 fifth up, fourth down (+7, 0, -5)
QMODE 8 minor sixth up, major sixth down (+8, 0, -9)
QMODE 9 major sixth up, minor sixth down (+9, 0, -8)
QMODE 10 dominant seventh up, major seventh down (+10, 0, -11)
QMODE 11 major seventh up, dominant seventh down (+11, 0, -10)
QMODE 12 octave up, octave down (+12, 0, -12)

The RANDOMISE PITCH parameter has a modulation slider to the left of it.

GRAIN

This section describes the parameters of the grain itself. You can adjust the LENGTH of the grain, from 10 ms to 500 ms. The RATE of the grains, also from 10 ms to 500 ms. The RATE can also be set to be tempo sync using the small musical note switch. If this is on, the RATE goes from a 128th note to a quarter note.

The ATTACK and DECAY of the grain is also set here. The GRAIN LENGTH and RATE can be modulated.

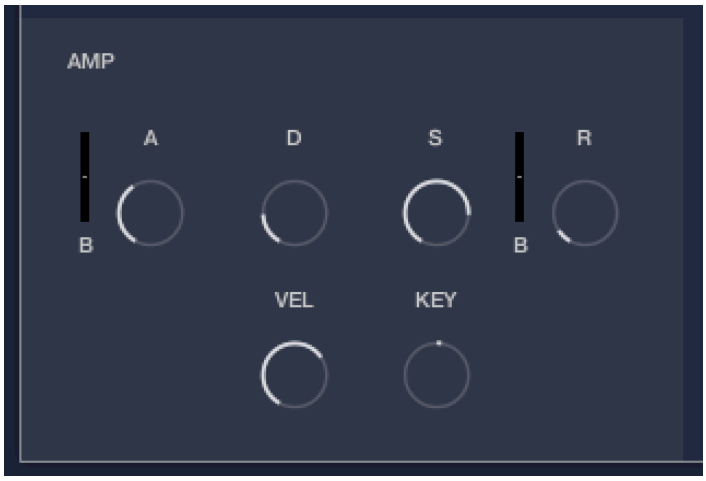


SYNTH TAB

The second tab works similarly to the GRAINS tab, in that you can choose the upper (A) or lower (B) granular stream to edit. The controls in the middle are identical, but refer to the currently selected grain stream, so their values can be different.

This tab includes more familiar synthesis parameters such as the overall amplitude envelope and filter setups. There are three sections, as follows:

AMP

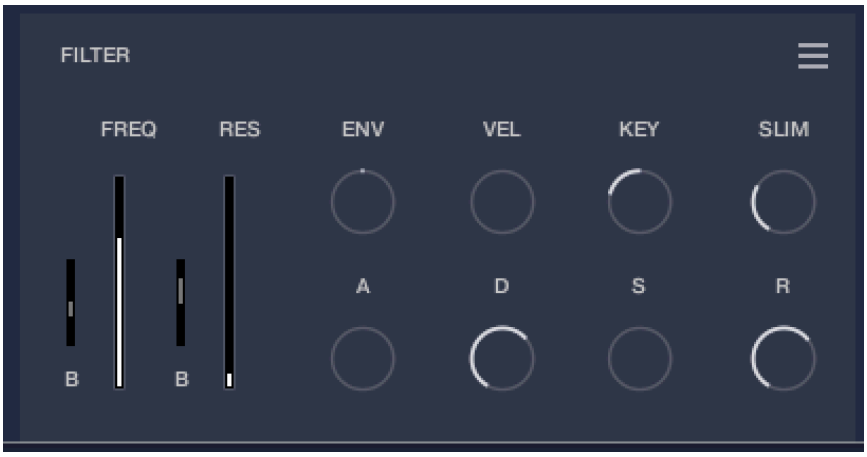


Here we have an envelope for a note itself, which might include many grains. The standard Attack, Decay, Sustain, Release EG is here, along with controls to adjust the VELOCITY to volume, and KEY follow to volume.

The Attack and Release have modulator assignments.

FILTER

The filter section has a few controls. At the top right there is a drop down menu with filter TYPES, and this includes many commonly used Kontakt filter types. On the left you have faders for cutoff FREQUENCY and RESONANCE, which both have modulators.



The other knobs are for ENVELOPE depth, VELOCITY depth, KEY tracking modulation, and SLIM. SLIM is a key-tracking filter that notch filters the frequency of the note played from the sound. Usually this removes the fundamental, and results in a "slimming" of the sound character.

Below that you have the Attack, Decay, Sustain, and Release controls for the Filter Envelope Generator. This is by default routed to the filter cutoff frequency, and the depth is controlled by the ENV knob.

This FEG, Filter Envelope Generator, is ALSO the envelope that can be routed to the grain position on the GRAIN panel. So if you need envelope behaviour on the grain position, this is the envelope to use.

LFO

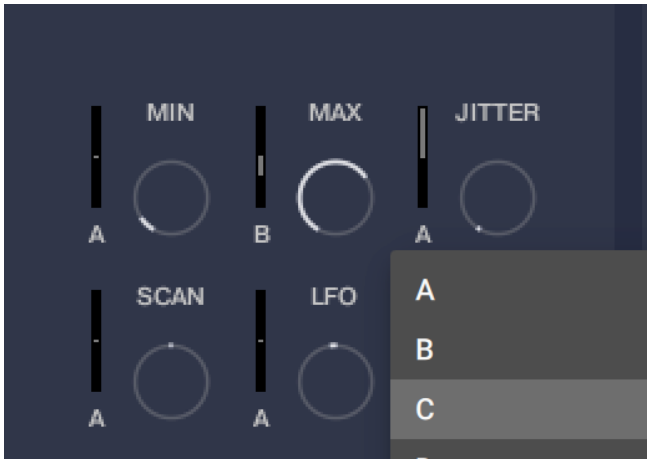


Here we have another LFO. This one can be routed to PAN, PITCH, VOLUME, or FILTER. There are drop down menus for the LFO wave SHAPE, as well as for the SYNC mode.

This is entirely independent of the GRAIN LFO on the GRAINS panel.

MODULATION

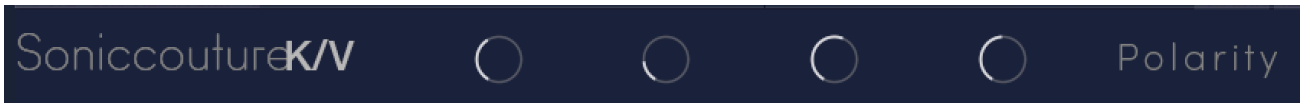
As we've noticed, there are many parameters that have a very small fader to the left of them, with a letter underneath.



All of these tiny faders are bi-directional, in other words they are at zero in the middle, and they can add or subtract the modulation depth of a given macro.

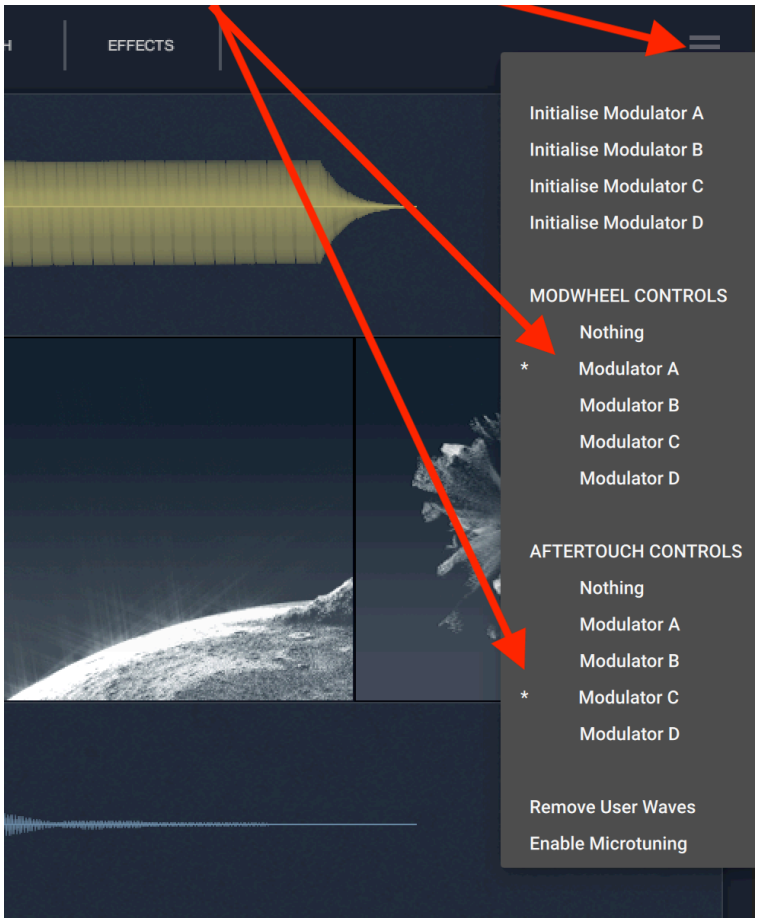
Which macro they respond to is changed by the small letter underneath. If you click on this letter you'll see that you can choose A, B, C, or D. Which are the four main macros on the home page.

These four macros are also reproduced on the edit pages at the bottom, as four small knobs.



There are a few ways to assign MIDI to these macros. You can right click on the graphic faders on the home page. You can drag in MIDI Automation CCs from the MIDI Automation tab on the left. And you can assign the MOD WHEEL or the AFTERTOUCH to one of them. The different assignments can have a slightly different behaviour however.

If you assign a controller to the macros using right click or dragging MIDI automation CCs from the left panel, these assignments will be 100% and will be saved with the instrument. ie. to save it you will need to save Polarity | Tension itself to disk, and those automations will be saved. You cannot do this individually for each snapshot, because this kind if automation is only saved with the Kontakt NKI. But it will certainly WORK, if you like that.



Using the MAIN PAGE, MODULATION MENU at the top right, you can also assign MODWHEEL and AFTERTOUCH to any of the 4 main macros.

This assignment works slightly differently.

First of all, this MODWHEEL or AFTERTOUCH assignment only ADDS to the current state of the macro. Instead of replacing the macro with a controller, it MODULATES the macro using that MIDI information. Sometimes this is more useful as a performance behaviour, since rather than overriding the default position, it raises it.

Secondly, THIS modulation routing can be saved by Snapshot. So each Snapshot can (and often does) have a different MODWHEEL and AFTERTOUCH assignment. Which can also be useful when making your own presets.

It can be confusing if a macro is being controlled by BOTH a generally assigned CC automation, and a MODULATOR at the same time, so be aware of this.

"OMG, there are SO MANY of those little modulation faders everywhere!"

YES INDEED! That's why you'll be pleased to notice, at the top of that drop down MODULATION MENU, there are four commands:

Initialise Modulator A
Initialise Modulator B
Initialise Modulator C
Initialise Modulator D

This will quickly set all of the destination depths for any macro to zero. So you can start fresh and not have to find them all by hand.

There are also two further commands at the bottom:

REMOVE USER WAVES, which does exactly that, it removes any reference to a user wave if you had added one to a preset. You can do this to stop a preset asking for a user sample you're no longer using.

ENABLE MICROTUNING, which also does exactly that. And if you happen to be one of those tuning ninjas, please read further here.

EFFECTS TAB

The Effects Tab of Polarity looks a little different from other two tabs. Here you can see the insert effects for both the top and bottom granular streams at once. There are three inserts and a send for each stream.



You can select an insert by clicking on it's name, and then the edit parameters for that effect will appear below. You can change the effect with the drop down menu to the right of the effect name. You can enable or disable the effect with the white square switch to the left of the effect name.

On the right you have two sends to a single convolution reverb. The convolution reverb includes many of Soniccouture's favourite impulse responses. You can adjust the return REVERB level below, as well as the PRE DELAY and Impulse SIZE.

USING YOUR OWN WAVES

To load your own samples into Polarity, simply drag them onto the A or B WAVE DISPLAY in the interface. You can drag WAV, AIF (uncompressed), or NCW format samples. As of this writing you CANNOT drag in MP3 files.

If you drag onto the A waveform or the B waveform, your sample will be loaded into the respective granular stream. Feel free to load your samples and layer them with the Factory samples if that works for you.

Save your patches as SNAPSHOTS. Use the little floppy disk icon at the top in the Kontakt header window to save a Snapshot. You can then recall snapshots using the drop down snapshot menu, which will load your samples when recalled.

When using your own waves, Kontakt will save the absolute path to that sample on your computer in the Snapshot. So if that sample moves, or the preset is loaded on a different computer, the Snapshot may not be able to find your user samples.

Polarity can hold two user waves, one for each stream, at once. But you can make many snapshots using different samples.

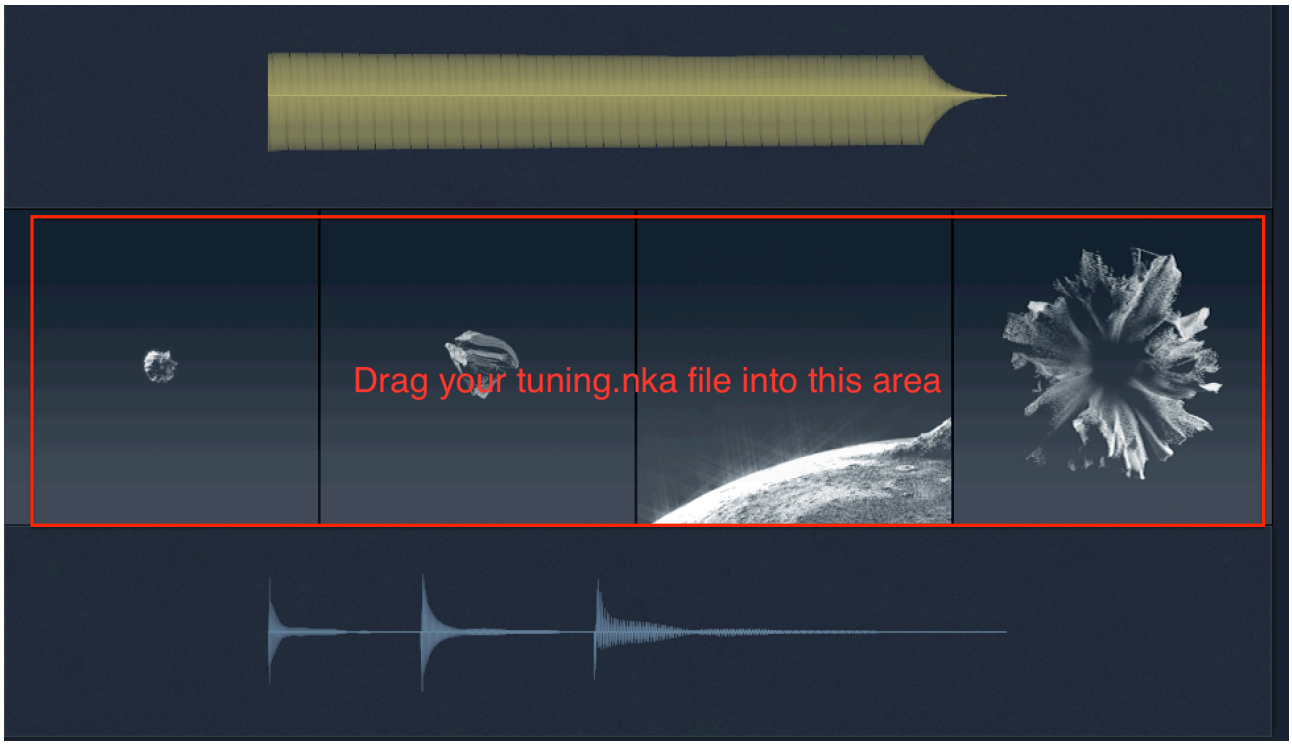
MICROTUNING

Although there is no microtuning editor in Polarity, you can retune presets if you wish. In any Soniccouture instrument that does have a microtuning editor, you can usually EXPORT a tuning file to disk, which is saved as an .nka file.

You can also create Soniccouture tuning files using the wonderful online tool called SCALE WORKSHOP from Sevish. https://sevish.com/scaleworkshop/

Once you have a tuning file you like, in Soniccouture format, you can drag the tuning.nka file into the middle of the Polarity interface. ie. BETWEEN the waveforms, but NOT onto either of the waveforms.

Then using the home page MODULATION menu, you can "Enable Microtuning", and the currently loaded tuning will be applied. Any snapshots you save will save both the currently loaded tuning and the enabled/disabled microtuning condition.



The pink stripes across this image show the three “drag areas” in Polarity. The top and bottom are for dragging your own samples, the middle one is for dragging microtuning files.



SUPPORT

If you have any problems or questions relating to the use of this product, please feel free to contact us. You can email us at :

http://www.soniccouture.com/en/support/

We will always endeavour to reply to any enquiry within 24 hours. We are based in the UK, so please bear in mind differences in time zones.

While you are waiting, you will find lots of answers to common questions in our FAQ.

END USER LICENSE AGREEMENT

PREFACE: This End-User License Agreement ("EULA") is a legal agreement between you and Soniccouture LTD for the Soniccouture product accompanying this EULA, which includes computer software and may include associated media, printed materials, and online or electronic documentation ("Software"). By installing, copying, or using the software, you agree to be bound by the terms of this EULA. If you do not agree to the terms of this EULA, you may not use the software.

The software is protected by copyright laws and international copyright treaties, as well as other intellectual property laws and treaties. The software is licensed, not sold.

Soniccouture Ltd grants the Owner of a Soniccouture product the right to create finished musical works and performances using the sounds and software that comprise the Soniccouture product.

The making of sample libraries in any form, commercial or otherwise, using Soniccouture audio or software (be they single hits, loops, fully mixed audio clips, or scripts) is STRICTLY FORBIDDEN without express written agreement of Soniccouture Ltd, and violations will be prosecuted to the full extent of international and local copyright law.

The ownership of all title and copyrights in and to the Software (including but not limited to any images, photographs, animations, video, audio, music, text, and "applets" incorporated into the Software) is fully asserted by Soniccouture Ltd.

The Owner may only install and use Soniccouture libraries and software on multiple computers strictly under the following conditions: where multiple computers comprise part of a single composition workstation for a composer; or where the Owner has two non-concurrent sites of work, for example a studio desktop and a laptop for live performance.

The Owner may not transfer, modify, rent, lease, loan, resell, distribute, network, electronically transmit or merge the Software.

DISCLAIMER OF WARRANTY: The software is provided "as is" and without warranty of any kind. The entire risk arising out of the use or performance of the software and documentation remains with user. To the maximum extent permitted by applicable law, Soniccouture further disclaims all warranties, either express or implied, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose, with regard to the software, and any accompanying hardware. To the maximum extent permitted by applicable law, in no event shall Soniccouture be liable for any consequential, incidental, direct, indirect, special, punitive, or other damages whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss) arising out of this EULA or the use of or inability to use the software, even if Soniccouture has been advised of the possibility of such damages.