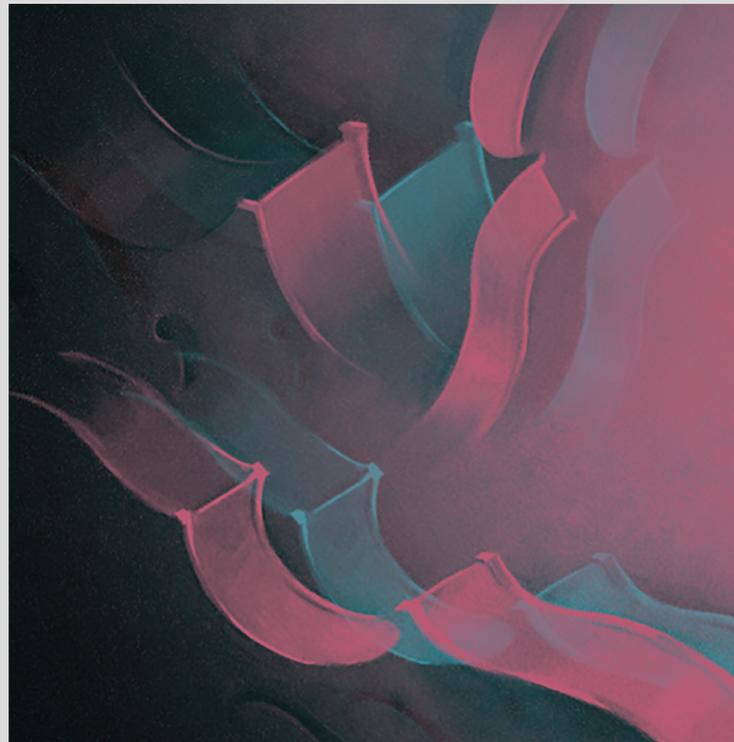




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# RAW STRINGS USER MANUAL



V. 1.0.0

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## Introduction

RAW Strings was designed to provide a unique approach to string textures. The library pairs gritty recordings with tape processing and real-time effects to yield a variety of sonic qualities not often heard from sampled strings.

RAW Strings includes 68 snapshots. Snapshots are presets that give quick access to a wide variety of pre-made sounds. These can be used to demonstrate the capabilities of the library, or you can jump right in and use them immediately in your music.

The two macro controls are assigned to a wide variety of parameters, depending on the snapshot. We recommend that you automate the controls to keep the sound always evolving, and as human as possible. The macros are assigned to CC1 (modulation), and CC11 (expression) by default.

The library engine is built around the idea of layering sounds. The engine contains four separate layers, which each have an identical suite of controls and effects. The signal flow goes from samples -> layer volume -> layer effects -> master effects -> output to DAW. Each layer can be assigned an articulation from the bank of 116 sounds.



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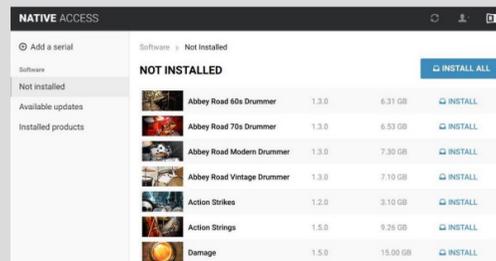
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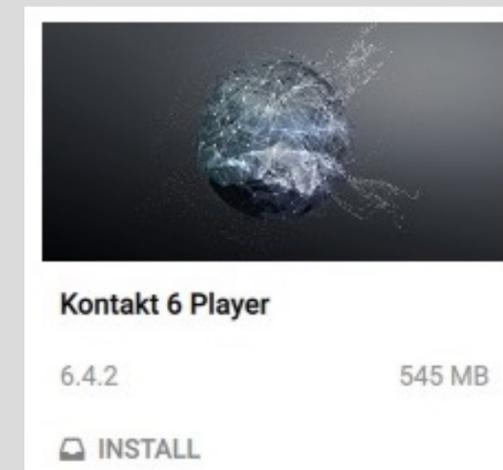


# INSTALLATION PROCESS

1. DOWNLOAD & INSTALL [NATIVE ACCESS](#)



2. INSTALL KONTAKT 6



3. ADD YOUR RAW STRINGS SERIAL NUMBER



4. OPEN KONTAKT AND LOAD RAW STRINGS





# MAIN PAGE

**Snapshot presets** →

**Volume, Panning, Filter, Tuning (steps/cents)** →

Volume and panning are before layer effects. The filter module must first be enabled in the layer effects panel. The 'c' icon determines if the tuning is by semitones or cents.

**Arpeggiator/Sequencer, Settings** →

**Macros 1 & 2, Random dice** →

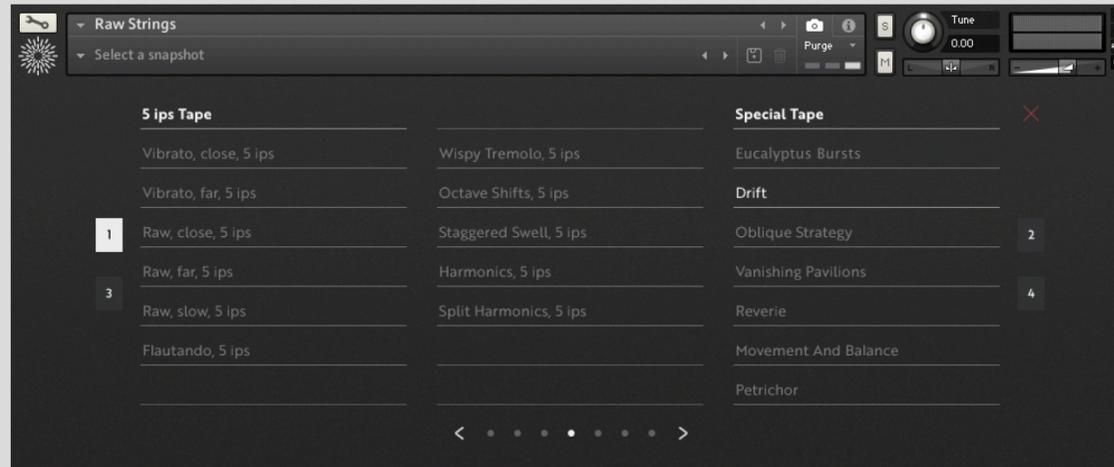
**Selected articulation, Layer effects, Routing, Layer power, Signal meter** →

Routing can bypass the master effects section, or output individual channels to your DAW (pg. 17). Signal meter displays gain post-layer effects.

**Master effects, Global volume envelope** →



# GLOBAL CONTROLS



## Sound Book

The Sound Book contains the available articulations, and their variations. Section titles are written in bold white text. Articulations that are already selected are shown in white text. You can navigate through the library with the arrows and dots at the bottom. To change an articulation, click the number for the desired layer, then select the articulation name.

### Articulations

**Standard Sounds** - These are the core set of naked string sounds.

**0.5 ips Tape** - This is the slowest, most degraded tape version running one half inch per second. It has an unstable haunting quality.

**3 ips Tape** - The medium speed tape has a nice mix of warble and consistency.

**5 ips Tape** - This set is much more consistent, while being warmer than the raw articulations.

**Special Tape** - This experimental group contains one-off articulations that utilize different combinations of sounds. Many have an exceptionally lo-fi quality. Great for effect.

**Reversed Sounds** - The core set of tape sounds, reversed.

**Reversed Tape Sounds** - One tape source per articulation was selected. We chose the most interesting sources possible.

**Extras** - Additional non-string sounds were used throughout the library. This was both to provide a built-in tool for sketching (e.g. rehearsal keyboard), as well as to blend with the string sounds for a holistic approach to texture building. Sounds include bow clicks, bow noises, tape crackles, jangle percussion, and more. Slow them down for a lo-fi flavor.



## Random Dice

The random dice control selects new articulations for each active layer from the Sound Book.

Shift + click to also randomize tuning (+/- 1 octave) and panning.



## Global Volume Envelope (ADSR)

This bi-directional volume envelope is designed to provide quick last-minute tweaks. Attack, decay, sustain, and release can be added or subtracted from the existing layer envelopes.

For example, if you would like the sound to start more quickly, you could reduce the attack time by turning the knob to the left. It is also useful for experimentation.

Hidden feature: click the ADSR window pane to reverse all values.



# SETTINGS PAGE



## Note & Velocity Splits

Note splits can be used to assign layers to different portions of the keyboard. Velocity splits work the same way, but with velocity values from 1-127. This is useful if you want to reserve specific articulations for important moments triggered by especially high or low velocity notes.



## Random Splits

The random split page allows the probability that a note is heard to be defined per layer. By default, every MIDI note is sent to all four layers. When single-layer mode is enabled, each MIDI note will be sent to one layer only.

Single layer mode has some additional options:

**Draw each note** - each note will be randomly assigned a layer (default behavior).

**Latch & retrigger** - notes will be sent to one layer for as long as any note is held without a break.

**Hold 32<sup>nd</sup>, 16<sup>th</sup>, quarter, whole** - notes will be sent to one layer for the chosen duration.

Note: as a failsafe to ensure that a MIDI note always results in sound, the minimum probability value is 1%. If you would like to add the possibility of silence, reduce the volume of a layer to zero.



## Random Seed

The random seed control influences the 'random' order of events throughout the library. This includes every time the engine has to make a seemingly random decision (layer choices, random panning, random timbre/offset ranges, etc.). This control aims to strike a balance between predicability and variety. Choose a different random number if you would like to explore a new series of 'random' events. The events will reset when the transport restarts, to aid in capturing a reliable performance.

When using snapshots with a high level of random choices (e.g. random probability with layers of different octaves), it is sometimes recommended to print or render audio in place to capture a take that you like.



## Pitch Bend, Voices, Purge

The pitch bend control can be assigned to each layer individually. Options are 'off,' '1 semitone,' '4 semitones,' and '1 octave.'

Voice limits determine the maximum number of sounds heard at once. They can be set from one to eight voices, and off, per layer. The fadeout time is the amount of time it takes for notes to die out when new ones enter. This can be fun to add a smearing effect to the sound. A global voice limit can also be set. These can be useful for stylistic purposes.

By default, the engine pre-loads only the samples from the articulations that are selected. This preserves RAM, and offers virtually no downsides when being run from solid state drives.



## Velocity, Panning, ADSR

RAW Strings is equipped with velocity tools to better suit the needs of MIDI controllers of varying velocity sensitivity. The velocity curve allows dynamics to be biased towards louder or softer sounds, while the velocity depth control determines the overall dynamic range. These can also be used as a basic MIDI compression tool to reduce the dynamic range and keep volumes more consistent.

**Pan stretch** places low sounds towards the left channel, and higher sounds towards the right channel, similar to an acoustic piano.

**Random pan** finds a nice place in the stereo field for each MIDI note.

Each layer has an **attack**, **decay**, **sustain**, and **release** knob to shape the volume envelope of sounds.

## Offset & Timbre

**Offset** can move in two directions. **Positive offset** (to the right of the center line) starts the sample forward to two full seconds after the 'real' start in the audio file. This can be used to add variety, or to chop off the attack for effect. If chopping the note entrance, it can be helpful to increase the attack ever so slightly to avoid a pop sound.

**Negative offset** adds MIDI delay of up to two seconds. This can be used to stagger note entrances for a more feathered sound. (e.g. add random negative offset and play a block chord - the result will be different each time). The random switch allows for a range that can include negative and positive offset.

**Timbre** borrows neighboring notes and retunes them. When placing the control to the left, it will borrow from lower samples, which creates a warmer sound. The right side does just the opposite for a brighter sound. This control has an additional benefit of adding variety to the sound. Use a small range for almost imperceptible changes, or a large range for effect.



## Macro Controls

The two macro controls offer a way to impact several parameters at once. By utilizing the range and curve controls it is possible to create surprising sounds along the course of the faders.

Each can be assigned to their own parameter on a specific layer, which is known as the **destination**. The **range control** determines the boundaries of the controller. For example, if the bottom end is set to 50 and the top is set to 75, then no matter where the controller is set (in this case the mod wheel), the minimum value sent out is 50, and maximum is 75. The range value can be reversed.

**Curves** are offered to change the shape or sensitivity of the control. For example, if a fast curve is used, the values will quickly shoot towards the top. Linear curves are typically found by default in many other libraries and synthesizers.

Unlike a predictable linear control, these combinations of range and curve can add up to a unique and somewhat analog-sounding controller where each part of the span brings a sense of unpredictability.

## Destinations

- gain
- pan (layers only)
- Crossfade layer X and target layer
- Tremolo depth (layers only)
- Tremolo speed (layers only)
- Vibrato depth (layers only)
- Vibrato speed (layers only)
- Convolution dry/wet
- Delay dry/wet
- Delay feedback
- Delay time (free mode)
- Delay time numerator (sync mode)
- Delay time denominator (sync mode)
- Delay parameter 1
- Delay parameter 2
- Phasis amount (layers only)
- Phasis rate (layers only)
- Phasis center (layers only)
- Filter cutoff
- Filter resonance
- Reverb damping
- Reverb diffusion
- Reverb dry/wet
- Stereo width (layer sonly)
- Transient master attack (master only)
- Transient master sustain (master only)
- Volume envelope attack
- Volume envelope decay
- Volume envelope sustain
- Volume envelope release
- Random pan

## Curves

Linear	
Fast curve	
Slow curve	
Slow s-curve	
Linear peak	
Broad peak	
Narrow peak	
Low shelf	
High shelf	
Left spike	
Center spike	
Right spike	



# EFFECTS



Each layer has a suite of eight effects, including delay, reverb, convolution, stereo width, phaser, compressor, filter, and EQ. After this point, the signal progresses to the master effects, unless bypassed on the main page routing panel.

The master effects panel swaps stereo width, EQ, and phaser for chorus, transient master, and a limiter.



The order of effects can be changed by clicking and dragging the grab handle at the bottom of each unit.

Do you put delay before reverb, or vice versa?



## Effects (continued)

**Delay** - the delay effect consists of six unique delay units. Wet/dry, feedback, and time controls are offered on each unit. The time control can be set to free (ms), or synced with your DAW tempo. The synced delay is unique in that it offers a wide array of odd values. The possible numerators are 1-12, while the possible denominators are 1, 2, 3, 4, 6, 8, 12, 16, 24, 32, 48, 64, 96, 256. Odd delay times such as 5/12 are possible.

Analogue - modeled after old Bucket Brigade delays, this unit offers 4 separate emulations, accessed from the options menu (clean, warm, dark, grunge).

Diffusion - this unit models a diffusion reverb sound.

Digital - a standard digital delay. This unit produces copies of the original sound while leaving the timbre completely untouched.

Modern - this unit offers a clean approach, with options to add warmth via saturation.

Tape - the tape unit mimics classic tape delays. The age control introduces artifacts and noise into the signal. Flutter adds a warbly flutter effect. The longer the delay time, the more degraded the signal.

Vintage - this unit models 4 early digital delays (high quality, medium quality, low quality, crunch). Despite the generic names, each have their own unique sonic character.

**Reverb** - two algorithmic reverbs are offered: room, and hall. Room emulates an intimate acoustic space. Hall emulates a large, rich music hall.

**Convolution** - the convolution uses impulse response sound files to combine the space, volume envelope, and sonic characteristics with the input signal. The size control recalculates the virtual space created to lengthen or shorten it. Included are a variety of impulse responses from tape delays units, to found sounds, to percussion sounds.

Available convolutions: feedback, medium feedback, big feedback, big feedback long, big stereo a, big stereo b, big stereo reversed, tail mono, tail stereo a, tail stereo b, crystal resonator, granular, cassette, short swell, medium swell, long swell, dark swell, drums reversed, cymbals, red bells, low shaker, Centa water, machine heart, machine heart big.

**Width** (layers only) - increases the stereo width, or changes stereo sounds to mono.

**Phaser** (layers only) - the phaser uses complex filtering to enrich the sound

**Compressor** - the compressor was modeled after a classic analog bus compressor. It is useful for unifying the dynamics of a sound, or for artistic volume effects.

**Filter** - included are a wide variety of filters, useful for shaping the color of sounds by attenuating or boosting frequencies in characteristic ways. One can be selected per layer, plus the master. Care should be taken in setting the resonance control.

Included filters

High pass:

State variable 1-pole, 2-pole, 4-pole

Adaptive resonance 2-pole, 4-pole, 2/4-pole

Low pass:

State variable 1-pole, 2-pole, 4-pole

Adaptive resonance 2-pole, 4-pole, 2/4-pole

Pro-53

Band pass:

State variable 2-pole, 4-pole

Adaptive resonance 2-pole, 4-pole

State variable notch

Phaser

Vowel A, Vowel B

**EQ** (layers only) - the analog-modeled 4 band EQ offers controls to transparently cut or boost selected frequencies.

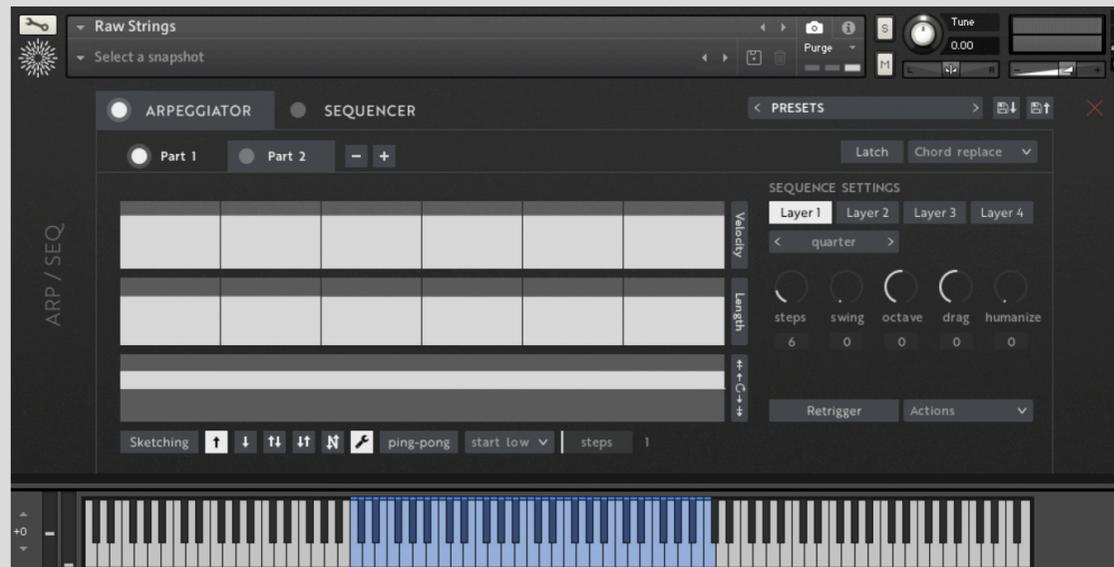
**Chorus** (master only) - the chorus uses short delays to enrich the sound and create an ensemble-like effect.

**Transient Master** (master only) - the transient master controls the attack and sustain of a sound. It is more useful on fast sounds like percussion and piano. Use with caution when applying it to string articulations.

**Limiter** (master only) - the limiter is a type of compressor that can be used to tame the overall dynamics of a snapshot, to add or subtract gain. It imparts crunchy movement when pushed, so use with caution to preserve the character of your sounds.



# ARPEGGIATOR & SEQUENCER



## Arpeggiator

It may seem like an odd choice for strings, but we found that the arpeggiator proved to be effective at creating intricate string textures as well as mangled string sounds. Up to six independent parts can be used simultaneously.

The basis of the arpeggiator is the algorithmic direction control (below velocity and length). This allows a set of instructions to be sent to the arpeggiator to allow for evolving patterns.

Options include:

- 0 (repeat the previous note)
- +1 (play the next note)
- +2 (skip ahead 2 notes)
- 1 (play the previous note)
- 2 (skip back 2 notes)

**Wrench** - opens the algorithmic control

**Ping Pong** - notes will hit the boundary and bounce back (e.g. input chord CDE, input: +1, Ping Pong on: C, D, E, D, C..., with Ping Pong off: C, D, E, C, D, E...)

**Start** - determines if the pattern starts with the low or high note

**Steps** - number of steps in the algorithmic control

### Sequence Settings

**Layer selection** - determines which layer(s) a part is sent to

**Note value** - rhythmic value of the part

**Steps** - number of velocity & length steps

**Swing** - adds a dotted feel

**Octave** - option to transpose the pattern +/- 2 octave

**Drag** - adds rhythmic drag. Note: drag does not occur on the first beat due to technical limitations

**Humanize** - varies the timing and velocity for a less 'perfect' performance

**Actions** - options to reset the pattern, create a random pattern, and randomize an exiting pattern.

**Latch** - holds the pattern without requiring sustained MIDI input

**Chord Replace** - new input will replace the old input completely

**Sticky Keys** - keys become on/off toggle switches

**Kill switch** - when latch is active, note B1 becomes the kill switch. Useful for turning all of the toggles off in Sticky mode.

**Presets** - a variety of factory presets are included. Keep in mind these save all values in the arpeggiator and sequencer combined. It is also possible to save your own user presets.



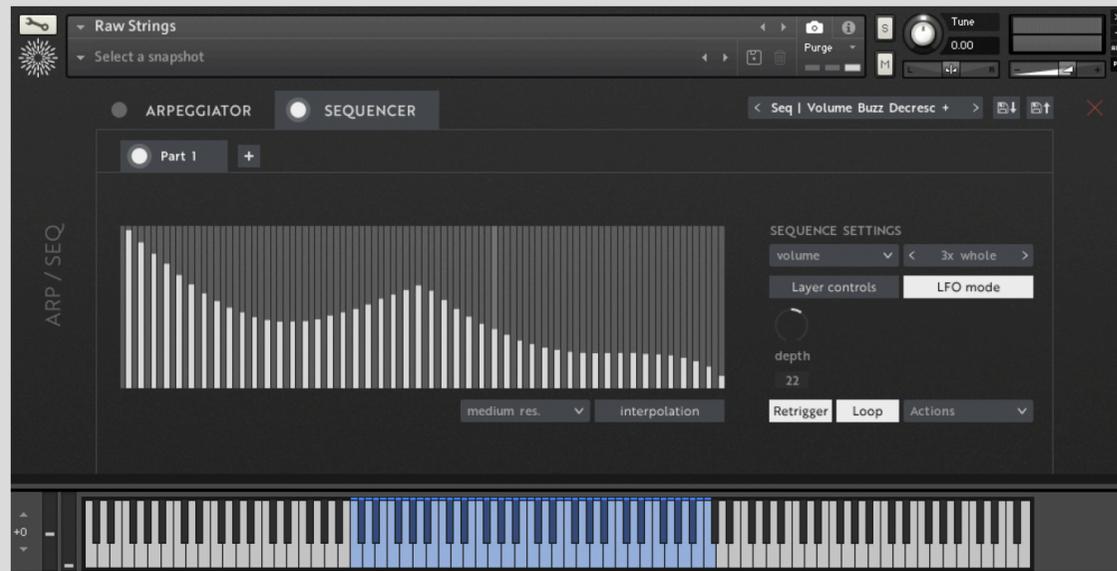
## Sketching Mode

Sketching mode is an experimental feature aimed at pianists that is designed for quick sketching of cues. The engine interprets the left and right hands automatically. The left hand is arpeggiated, while the right hand is free to play melody notes.

When enabled, another set of layer controls appear next to the 'Sketching Mode' button. These layers are the 'melody layers.'

In Sketching Mode the arpeggiated notes are absolute, whereas in the normal mode the algorithmic control instructs the notes which direction to go.

Note: to play the melody layer without hearing the arpeggiated pattern, hold the sustain pedal down prior to playing.



## Sequencer

The sequencer allows for automated control over many parameters in the RAW Strings engine. As with the arpeggiator it allows for multiple independent parts.

### Destinations:

- Pitch (semitones)
- Volume
- Panning
- Detune (cents)
- Macro 1
- Macro 2
- MIDI CC#

Additional parameters - many parameters in the library can be accessed by assigning the macros, or by using the MIDI CC# destination. MIDI #21-28 are the default outputs. You can assign most library parameters directly by using Kontakt's 'learn MIDI CC' function (right click/control+click).

**Layer controls** - by default the sequence is sent to all 4 layers. Depth can scale the values, which is another useful control when sculpting a sound. When enabling 'layer controls' the part can be sent to individual layers at varying amounts. Keep in mind the depth control is bi-directional, providing many additional possibilities for sound shaping.

**LFO mode** - increases the number of steps. Useful for drawing LFO shapes (triangle, sine, saw, etc.)

**Retrigger** - when enabled the pattern will start from the beginning with each new MIDI input

**Loop** - when enabled the pattern loops for as long as MIDI is held. When disabled the pattern will reach the last value and hold.

**Interpolation** - smoothes the distance between values with a gliding effect. 4 resolutions are provided for stylistic as well as processing concerns. Note that higher resolutions can add significant CPU usage.

**Actions** - a large number of preset actions for creating and manipulating patterns. Available actions are as follows:

- |                    |                   |
|--------------------|-------------------|
| reset sequence     | push sequence     |
| random sequence    | maximize sequence |
| random bipolar     | attenuate         |
| generate ramp up   | expand            |
| generate ramp down | compress          |
| generate triangle  | fade-in           |
| generate sine      | comb              |
| invert sequence    | weight 3 steps    |
| mirror sequence    | weight 5 steps    |
| symmetry           | copy sequence     |
| reverse sequence   | mix paste         |

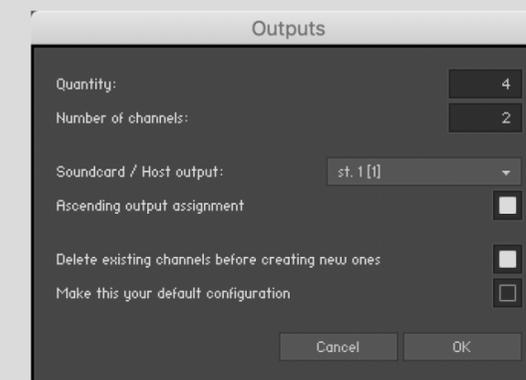


## Routing

**Routing** controls for each layer can be accessed from the main page. By default each layer is sent to the master FX, but this can also be bypassed for more variety.

### Output layers to DAW

Each individual layer can be sent to your DAW or audio interface for external processing. This allows for even more variety should you want to utilize third-party plugins or even hardware processing.



1. Open the Outputs pane in Kontakt
2. Click the '+' icon to add new outputs
3. Change the quantity to '4,' and the number of channels to '2' (since RAW Strings has 4 stereo layers)
4. Change the host output to st. 1, ascending output assignment, delete existing channels
5. Open the routing panels and set outputs as desired.



# NKS Integration

RAW Strings is fully compatible with Komplete Kontrol software and hardware keyboards from Native Instruments.



Macro 1	Macro 2	Pan Stretch	Random Pan	Attack	Decay	Sustain	Release
Filter Cutoff	Filter Resonance	Convolution Mix		Reverb Mix	Reverb Size	Reverb Diffusion	Reverb Dampening
Delay Mix	Delay Feedback	Delay Time		Delay Lo-Cut	Delay Hi-Cut		



## Snapshots

Snapshots (AKA presets) are pre-made sounds that utilize the library's capabilities to provide immediate results. RAW Strings has six categories of snapshots.

**Accompaniment** - contain the 'rehearsal keyboard' articulation to make for quick sketching of cues. The piano sound plays 100% of the time, while the string sounds have a lower playback probability.

**Arpeggiated** - something between a synth string machine and mangled recordings of a live string orchestra.

**Movement** - patches with pulses, motor rhythms, and slow evolving oscillations.

**Simple** - these patches have a minimal, but effective sound.

**Sketching** - designed for pianists, the left hand will be arpeggiated leaving the right hand free to play melody notes.

**Sound Bed** - expansive washes of sound, useful as a backdrop for compositions.

### Accompaniment

- Campfire Discourse
- Petrichor
- Repeat

### Arpeggiated

- Beat Origin A
- Beat Origin B
- Floating in Space var
- Floating in Space
- Garden in the Rain
- Gentle Threat
- Pavane
- Sequencers, Inc
- Time Is Gone
- Traveler
- Unstuck
- Winter Calm

### Movement

- Alternating Current
- Blackwood
- Celestial Mechanics
- Daydreaming
- Desperately Modern
- Foreshadows
- Halfway There
- Hallucinate
- Interference
- Night Life of Aquatic Insects
- Night Life of Trees
- Organ Of Tomorrow
- Peace Atom
- Recurring Dream
- Solitary Life
- The Sea
- Valley of the Night
- Vinyl Pulse 8ths
- Vinyl Train Pulse
- Whale Call

### Simple

- 1979
- Darkness Is
- Memento Mori
- Opposing Octaves
- Paper Moon
- Stained Glass Windows
- Stalactites and Stalagmites
- Winter Hymnal

### Sketching

- Blackwood Sketching
- Little Machine
- Peace Atom Sketching
- Seabed
- Tremolando
- Vanishing Pavilions

### Sound Bed

- Air Chrysalis
- Alaska
- Apollo
- Cloaked Stranger
- Cloudburst
- Disappearance
- Infinite Potential
- Metamorphosis
- Moonlight
- Mother
- Ocean Loop
- Overshadow
- Redwoods
- Sea Chrysalis
- Soft Meadow
- Sunken Cathedral
- The Pain Of Childhood
- The Universe Is Before Us
- Three-Phase



## Articulations

### **Standard Sounds**

Vibrato, close  
 Vibrato, far  
 Raw, close  
 Raw, far  
 Raw, slow  
 Flautando  
 Tremolo Pizzicato, tuned  
 Tremolo Pizzicato, natural  
 Finger Tremolo  
 Wispy Tremolo  
 Octave Shifts  
 Staggered Swell  
 Harmonics  
 Split Harmonics

### **.5 ips Tape**

Vibrato, close, .5ips  
 Vibrato, far, .5ips  
 Raw, close, .5ips  
 Raw, far, .5ips  
 Raw, slow, .5ips  
 Flautando, .5ips  
 Tremolo Pizz, tuned, .5ips  
 Tremolo Pizz, natural, .5ips  
 Finger Tremolo, .5ips  
 Wispy Tremolo, .5ips  
 Octave Shifts, .5ips  
 Staggered Swell, .5ips  
 Harmonics, .5ips  
 Split Harmonics, .5ips  
 Alt Harmonics, .5ips

### **3 ips Tape**

Vibrato, close, 3 ips  
 Vibrato, far, 3 ips  
 Raw, close, 3 ips  
 Raw, far, 3 ips  
 Raw, slow, 3 ips  
 Flautando, 3 ips  
 Tremolo Pizz, tuned, 3 ips  
 Tremolo Pizz, natural, 3 ips  
 Finger Tremolo, 3 ips  
 Wispy Tremolo, 3 ips  
 Octave Shifts, 3 ips  
 Staggered Swell, 3 ips  
 Harmonics, 3 ips  
 Split Harmonics, 3 ips  
 Alt Harmonics, 3 ips

### **5 ips Tape**

Vibrato, close, 5 ips  
 Vibrato, far, 5 ips  
 Raw, close, 5 ips  
 Raw, far, 5 ips  
 Raw, slow, 5 ips  
 Flautando, 5 ips  
 Wispy Tremolo, 5 ips  
 Octave Shifts, 5 ips  
 Staggered Swell, 5 ips  
 Harmonics, 5 ips  
 Split Harmonics, 5 ips

### **Special Tape**

Euxalyptus Bursts  
 Drift  
 Oblique Strategy  
 Vanishing Pavilions  
 Reverie  
 Movement And Balance  
 Petrichor

### **Reversed Sounds**

Vibrato, close, rev  
 Vibrato, far, rev  
 Raw, close, rev  
 Raw, far, rev  
 Raw, slow, rev  
 Flautando, rev  
 Tremolo Pizz, tuned, rev  
 Tremolo Pizz, natural, rev  
 Finger Tremolo, rev  
 Wispy Tremolo, rev  
 Octave Shifts, rev  
 Staggered Swell, rev  
 Harmonics, rev  
 Split Harmonics, rev

### **Reversed Tape Sounds**

Vibrato, close, 3 ips, rev  
 Vibrato, far, 5 ips, rev  
 Raw, close, .5 ips, rev  
 Raw, far, 5 ips, rev  
 Raw, slow, 3 ips, rev  
 Flautando, 5 ips, rev  
 Trem Pizz, tuned, .5 ips rev  
 Trem Pizz, nat, 3 ips, rev  
 Finger Tremolo, 3 ips, rev  
 Wispy Tremolo, .5 ips, rev  
 Octave Shifts, 3 ips, rev  
 Staggered Swell, 3 ips, rev  
 Harmonics, 5 ips, rev  
 Split Harmonics, .5 ips, rev  
 Alt Harmonics, 3 ips, rev

### **Extras**

Rehearsal Keyboard  
 Vinyl and Tape Noises  
 Jangles  
 Centa Water  
 Singing Bowl 1  
 Singing Bowl 2  
 Foliage  
 Bow Clicks  
 Bow Noises  
 Ambiences

### **Reversed**

Rehearsal Keyboard, rev  
 Vinyl and Tape Noises, rev  
 Jangles, rev  
 Centa Water, rev  
 Singing Bowl 1, rev  
 Singing Bowl 2, rev  
 Foliage, rev  
 Bow Clicks, rev  
 Bow Noises, rev  
 Ambiences, rev



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## Credits

**Producer**

BJ Derganc

**Strings**

Joni Amelia Fuller

**Design**

Hannes Pasqualini / Papernoise

**Scripting**

Marcin Gruszczyński / SzcZ

**Engineering**

Brad Nyght

**Sample editing**

Elan Hickler / Soundemote

Jackson Harris

Ben Rosen

**Beta testing**

Ariyo Shahry

Kyle Peter Rotolo

Paul Mills

Rob Neubauer

**Special thanks** (for their encouragement and support)

Ava Lane

Greg Schlaepfer



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