HIGH SCORE

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USER MANUAL REVISION HISTORY

v1.0: October 2020, Initial draft for High Score v1.0.0

SYSTEM REQUIREMENTS

High Score has the same system requirements as the current version of Native Instruments Kontakt 6 and the free Kontakt 6 player at the time of this manual publication. See the Native Instruments website for the latest minimum system requirements.

MacOS 10.12, 10.13, 10.14 or 10.15 (latest update), i5, 4 GB RAM
Windows 7, Windows 8, or Windows 10 (latest Service Pack), Intel Core i5 or equivalent CPU, 2 GB RAM
4 GB RAM recommended

INTRODUCTION

Welcome to High Score. High Score lets you recreate the music and sounds of video game and computers from the 1980s. It doesn't do any one system from the 1980s but rather a combination of systems from the 8-bit era. With High Score you won't need to know about what system used what chips and you aren't limited to a small number of voices.

GETTING STARTED

This user manual assumes that you already have Native Instruments Kontakt 6 or the free Kontakt 6 player installed. For instructions on using Kontakt, see the Native Instruments Kontakt 6 user manual. Also, it is recommended that you have a keyboard controller attached to your Mac or Windows PC for use with High Score.

After Installing High Score, it will appear in the Native Instruments Kontakt library browser tab. Double-click on the instrument "High Score.nki" and it will open as shown below:
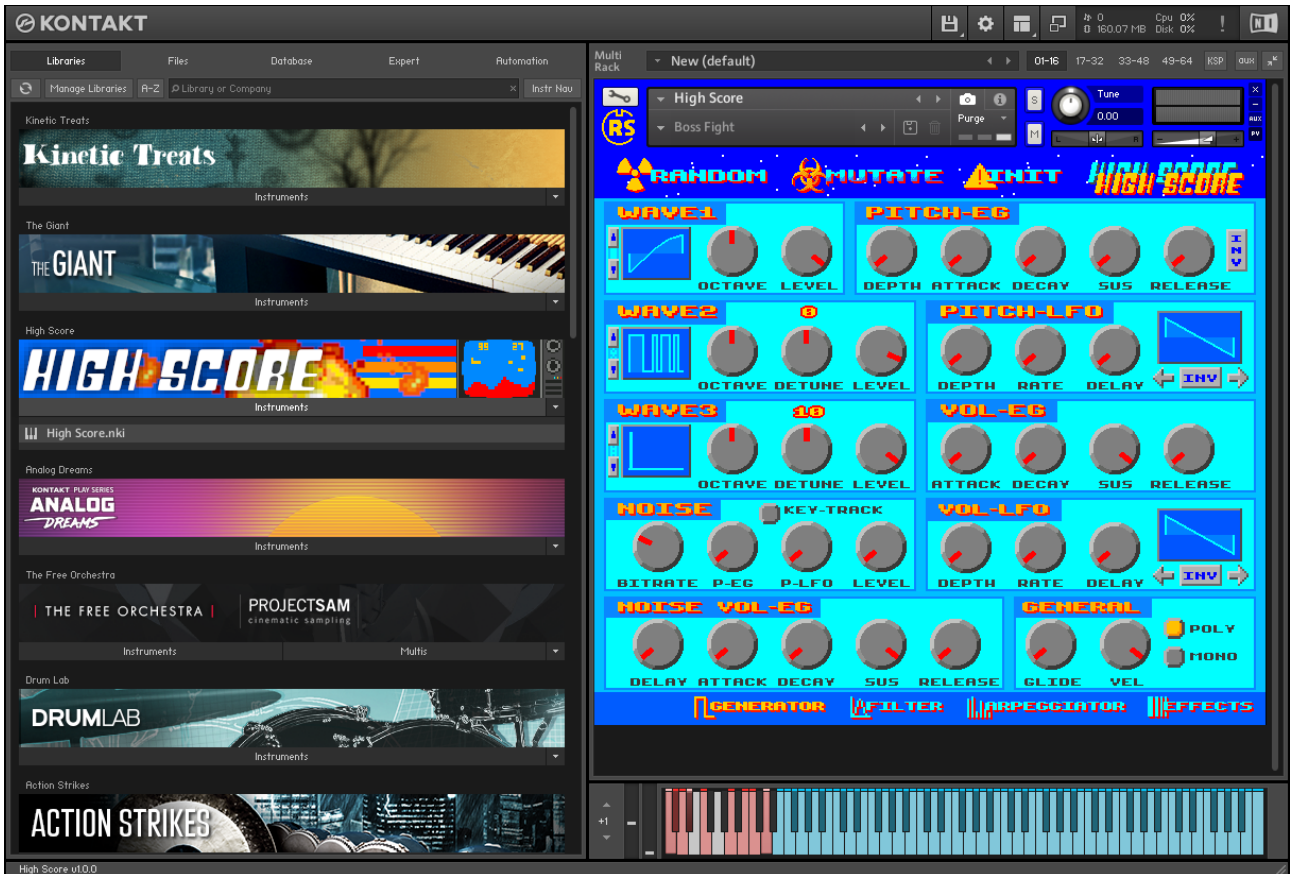

You should first click on the snapshot-preset drop down menu and try out any number of the built-in presets. High Score comes with 300 built-in presets.

Snapshot
Presets
Menu

USING HIGH SCORE

High Score is designed to work like a typical synthesizer. The main sections are detailed below:

Initializer
Controls

Control
Panel

Control Panel
Selection Tabs

Keyswitching
Keys
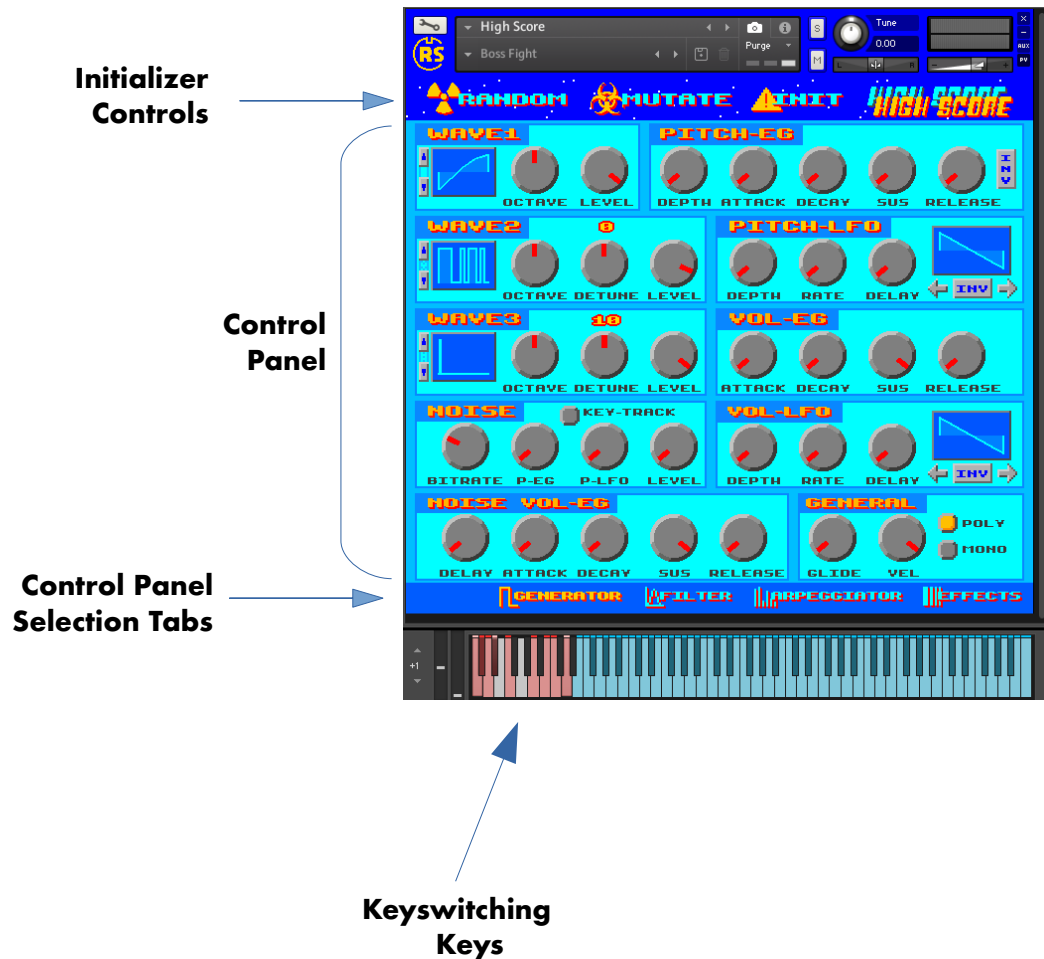
INITIALIZER CONTROLS

There are three initializer controls: Random, Mutate, and Init. All three will overwrite your current sound so make sure you save your current sound to a snapshot before using these.

RANDOM: This control opens a pop-up menu with a list of randomizer categories. Selecting a category will randomly create a sound of that category type.

Random Category List: Total Random, Lead, Bass, Drum / Perc, Jump, Coin / Take, Hit, Explosion, Power Up, and Laser

MUTATE: This control takes the current sound and changes only one aspect of it, or mutating it. Most of the time your sound is still recognizable as being from your original

sound but sometimes it will not be. The outcome is unpredictable and can yield interesting results.

INIT: This control initializes High Score to a simple state. Only one wave generator is used and it is set to the basic square wave. The volume envelope generator is set to simple on/off. All LFOs are off. The filter is off. The Step Arpeggiator is off. All Effects are disabled.

CONTROL PANEL SELECTION

There are four different control panels in High Score:

GENERATOR: This panel is the main panel for shaping the sound.

FILTER: This panel is used to control High Score's state-variable filter. This panel along with the generator panel is used to shape the sound.

ARPEGGIATOR: You will find High Score's dual 16-step arpeggiator here.

EFFECTS: High Score's Note Delay and Speaker Simulator are here.

GENERATOR PANEL

This is the main panel for shaping the sound. It's sections are detailed below:
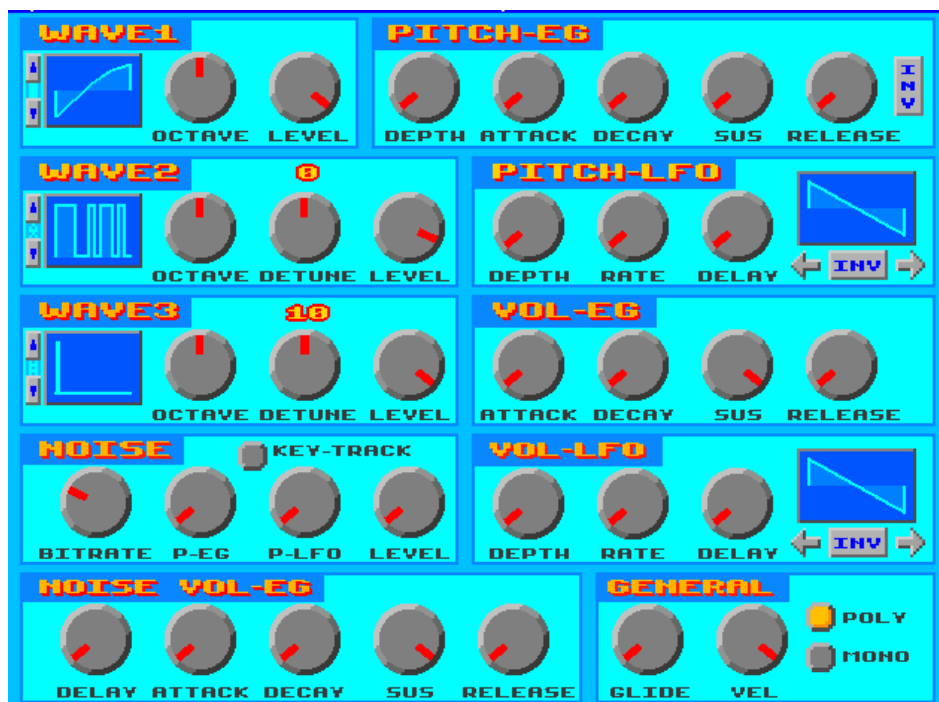

WAVE 1: This is the first of three wave generators. It doesn't have a detune control. You can use the up / down arrows to step through the wave selections. Alternatively, you can grab the waveform image with your mouse to drag it up and down to change waveforms.

Wave Selector - Choose from one of 25 waveforms:

1	Square	2	Pulse 25%	3	Pulse 12.5%	4	Pulse 2%
5	Triangle	6	4-Bit Triangle	7	2600 Saw Pulsetrain	8	2600 P-Fall Pulsetrain
9	Saw	10	SID Saw	11	SID Triangle	12	SID Square
13	SID 30% Pulse	14	SID 10% Pulse	15	SID Saw + Triangle	16	SID Square + Triangle
17	SID 30% + Triangle	18	SID Tri ring Tri	19	SID Tri ring+sync Tri	20	Custom Wave
21	Speech Ahh Vowel	22	Speech Eee Vowel	23	Speech Ohh Vowel	24	Speech 1 Words Bank
25	Speech 2 Words Bank						

High Score v1.0.0 waveform list

WAVEFORM #20 – CUSTOM WAVE: Selects the user-definable custom waveform. When you select this wave, a small EDIT button will appear below the waveform image. Pressing this button opens the custom waveform editor. The waveform that you draw is saved when you save a snapshot preset even if you are not using the custom waveform with your snapshot preset. Press the small x icon in the upper-right corner to close the custom wave editor.
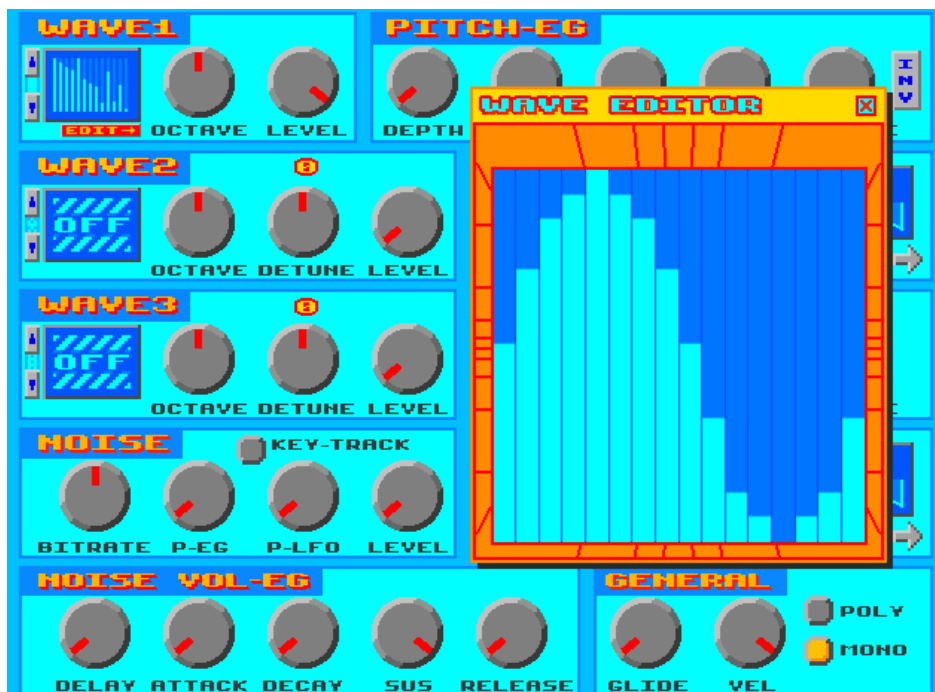
OCTAVE: Adjust the wave generator octave -2...+2

LEVEL: Wave generator volume 0...100%

WAVE 2 & WAVE 3: These two wave generators work the same was Wave 1 except for the addition of the detune control.

    DETUNE: Adjust Wave 2 & Wave 3 tuning offset -1190...+1190 in 10 cent increments.

NOISE: High Score has a separate noise generator.

    BITRATE: Adjust the "pitch" of the noise generator 0...100%

    P-EG: Pitch envelope generator assignment depth.

    P-LFO: Pitch LFO assignment depth.

    LEVEL: Noise generator volume 0...100%

    KEY TRACK: When ON, Noise generator bitrate tracks with each key, otherwise the noise generator is the same bitrate for each key.

NOISE VOL-EG: The noise generator has it's own volume envelope generator. Unlike the other envelope generators, this one features a delay control. Some examples are using the envelope generator to create a short noise burst at the start of a tone or using the delay control to delay the onset of the sound to simulate the explosion after a bomb falls.

    DELAY: Delay time before the noise envelope generator triggers 0...6 seconds.

    ATTACK: Attack slope 0...15 seconds

    DECAY: Decay slope to the sustain level 0...2 seconds.

    SUSTAIN: Sustain level 0...100%

    RELEASE: Release time 0...5.03 seconds

PITCH EG: This envelope generator is multi-purpose. First, it can change the pitch of the generated sound (using the Depth control here). Second, it can be assigned to the Noise generator or the Filter to control either of them.

    DEPTH: Pitch envelope generator depth for wave generators' pitch

    ATTACK: Attack slope 0...15 seconds

    DECAY: Decay slope to the sustain level 0...2 seconds.

    SUSTAIN: Sustain level 0...100%

    RELEASE: Release time 0...2 seconds

PITCH LFO: This Low Frequency Oscillator is multi-purpose. First it can modulate the pitch of the generated sound (using the Depth control here). Second, it can be assigned to the Noise generator or the Filter to modulate either of them.

    DEPTH: Pitch LFO depth for wave generators' pitch.

           HIGH SCORE

RATE: Pitch LFO speed 0.1...24 Hz.

DELAY: Pitch LFO delay before the depth amount is reached: 0...10 seconds.

INVERT: Normal or inverted LFO waveshape.

SHAPE: High Score has standard LFO shapes like Saw, Sine, Triangle, and Square. It also has a number of special shapes that are great for video game sound effects.

1	Saw	2	Sine
3	Triangle	4	Square
5	Split Saw	6	Mirrored Saw
7	Half Saw	8	Asymmetrical Saw
9	Random		

VOL EG: The volume envelope generator controls the volume of the three wave generators. It does not control the volume of the Noise generator.

ATTACK: Attack slope 0...15 seconds.

DECAY: Decay slope to the sustain level 0...2 seconds.

SUSTAIN: Sustain level 0...100%.

RELEASE: Release time 0...2 seconds.

VOL LFO: This Low Frequency Oscillator is multi-purpose. First, it can be used to modulate the volume of the sound. Second, it can be assigned to the Filter.

DEPTH: Pitch LFO depth for wave generators' volume.

RATE: Pitch LFO speed 0.1...24 Hz.

DELAY: Pitch LFO delay before the depth amount is reached: 0...10 seconds.

INVERT: Normal or inverted LFO waveshape

SHAPE: High Score has standard LFO shapes like Saw, Sine, Triangle, and Square. It also has a number of special shapes that are great for video game sound effects.

1	Saw	2	Sine
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7	Half Saw	8	Asymmetrical Saw

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9	Random		

**GENERAL:** This section contains two controls, pitch Glide and Velocity Depth.

GLIDE: note to note pitch transition 0...100% where 0 is immediate transition (no glide) and 100% is the maximum or slowest glide transition.

VELOCITY: MIDI note velocity to volume assignment 0...100%

POLY/ MONO: When Mono is selected, only one note will sound. High Score's monophonic mode is last-note priority. The last note you press will sound. If you have multiple keys pressed, the lowest key still pressed will sound as you release the last note pressed key. Monophonic mode is great for lead type sounds.

HIGH SCORE

FILTER PANEL

The controls on this panel also shape the sound. The controls for High Score's state-variable filter are found here.
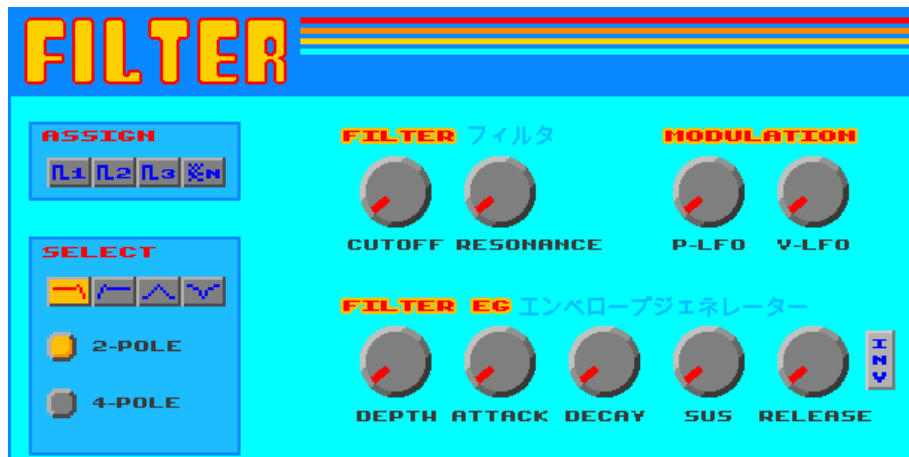
ASSIGN: Use these buttons to assign the filter to any of the three wave generators and/or the noise generator.

SELECT: Choose the filter type: Low Pass, High Pass, Band Pass, and Notch (4-pole only)

FILTER: Main filter controls for filter cutoff and resonance.

MODULATION: Choose the amount of modulation from either the Pitch LFO and/or the Volume LFO to control the filter cutoff.

FILTER EG: The filter has its own envelope generator that is used to control the filter cutoff.

> DEPTH: Filter envelope generator depth amount.

> ATTACK: Filter attack slope 0...15 seconds.

> DECAY: Filter decay slope to the sustain level 0...2 seconds.

> SUSTAIN: Filter sustain level 0...100%.

> RELEASE: Filter release time 0...2 seconds.

STEP ARPEGGIATOR PANEL

High Score features a dual 16-step arpeggiator. When enabled, the selected patterns will play when you press a key instead of a single note.

GLOBAL CONTROLS

ARP ON/OFF: enable / disable the step arpeggiator

REPEAT: When enabled, the step arpeggiator plays continuously repeating the patterns infinitely until the key press is released.

SYNC TO HOST: When enabled, the tempo is synced to the host tempo and not the tempo knob.

TEMPO: Step arpeggiator base speed in Beats Per Minute.

MULTIPLIER: Multiplier for the step arpeggiator speed. (x1/8, x1/4, x1/2, 1, x2, x4, x8)

NOTES: The number of notes played by each pattern during one beat (quarter note) time.

RANDOM: When selected, the step arpeggiator plays the steps out of sequence in a random order. It still plays the number of steps as selected from the Notes knob.

INIT: This button initializes the entire pattern for all 16 steps. The pitch pattern is set to 0. The Level pattern is set to 100 (out of 127). The three wave generator patterns are set to the wave generator waveform that is selected on the

Generator panel. The Noise bitrate is set to the bitrate that is set on the Generator panel. The filter cutoff is set to the filter cutoff amount on the filter panel.

PATTERN CONTROLS

A, B BUTTONS: These buttons enable or disable the two patterns. When both patterns A and B are enabled at the same time, the two patterns are daisy chained and play back to back.

STEP BUTTONS: There are 16 step buttons per pattern. You can enable or disable any of the 16 steps in each pattern. When a step is disabled, it doesn't play back but it's time is elapsed. Note that the total number of steps played in a pattern comes from the Notes knob.

SEQUENCE-ABLE ITEMS: Note Pitch (in half steps), Master Level, Wave 1, Wave 2, Wave 3, Noise Bitrate, and Filter cutoff

Select the item you want to control (like pitch for example) and use your mouse over the pattern to adjust the individual amount for each item for each step.

TIPS ON USAGE

The Step Arpeggiator is great for fast chiptune chord arpeggios as popularized in the Commodore 64 and NES.

The Step Arpeggiator wave patterns override the wave generator selections and noise bitrate in the Generator Panel. Pressing the Init button will copy the wave generator patterns and noise generator bitrate to their respective pattern for all 16 steps even if you are not using all 16 steps. This means that changing the waveforms on the generator panel will have no effect when the Step Arpeggiator is running.

The Step Arpeggiator can use a lot of CPU power. It is best to only play one note at a time when using the step arpeggiator, but, check your CPU usage.

You can use the key-switching keys down at octave C0 to select which pattern is playing (A, B, or A+B) and also enable or disable the Step Arpeggiator. An example of usage here is to have two different chord types, one per pattern, and switch between them in a song.

Warning! The Note Delay is disabled when the Step Arpeggiator is enabled.

EFFECTS PANEL

Here you will find High Score's two effects processors: The Note Delay and the Speaker Simulator.

NOTE DELAY

WARNING! The Note Delay is disabled when the Step Arpeggiator is enabled.

SYNC TO HOST:

TIME: The delay time 5...300 msec

DECAY: Delay repeat decay amount 1...100%. This sets the loudness of each successive repeats as a percentage of the previous original note or repeat.

REPEATS: Number of repeats 1...7

NOTE LNGTH: Duration of repeat notes 5...500 msec

ClOCK DIVISIONS: Clock divisions are only used when SYNC TO HOST is active, otherwise this control reads "Freerun"

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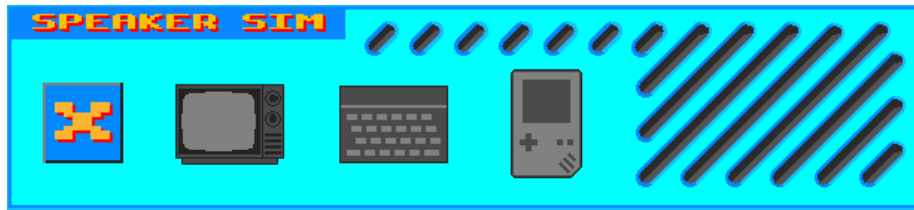
SPEAKER SIMULATOR

High Score's speaker simulator makes it sound like your tone is coming out of old vintage hardware. You have three options:

1. 1980s CRT Monitor
2. ZX Spectrum built-in speaker
3. Gameboy built-in speaker

KEYBOARD

High Score is best used with a keyboard controller. It doesn't need to be a large keyboard as long as it has a multi-octave range control.

Playable Keys: All keys from E0 through E6 are playable keys. Any keys above or below will not sound.

Key-switching Keys: High Score features key-switching keys at the octave C-1. These keys light up as a red color. These are used to control various functions as follows:

C-1	Pattern A ON (Pattern B OFF)
C#-1	Pattern A + B ON
D-1	Pattern B ON (Pattern A OFF)
F-1	Note Delay ON/OFF
A-1	Wave Generator 1 Solo
B-1	Wave Generator 2 Solo
C0	Wave Generator 3 Solo
D0	Noise Generator Mute

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NKS INTEGRATION

High Score features NKS integration. NKS stands for Native Kontrol Standard, a standard established by Native Instruments for software being used by their hardware controllers. For High Score, this means the following:

>All presets are tagged by type and character. This makes for easy finding of the kind of preset that you are looking for. For example, you can search for a type=Bass sound that that has a Character=Digital and only the "digital" bass sounds will show up for you to choose from.

>All presets come with an audio preview that is heard as you scroll through the presets list using Native Instruments keyboards or the Komplete Kontrol software. This also applies to all High Score add-on preset packs that are sold separately.

>Most of High Score's parameters are accessible on Native Instruments S-Series keyboards and Maschine user interfaces.

>All keyswitching keys light up RED and all playable keys light up blue.

IMPORTANT! In order to gain access to the NKS features, you must launch the Native Instruments Komplete Kontrol app instead of Kontakt 6 for using High Score. Komplete Kontrol will then internally use Kontakt 6 when a High Score preset is selected.
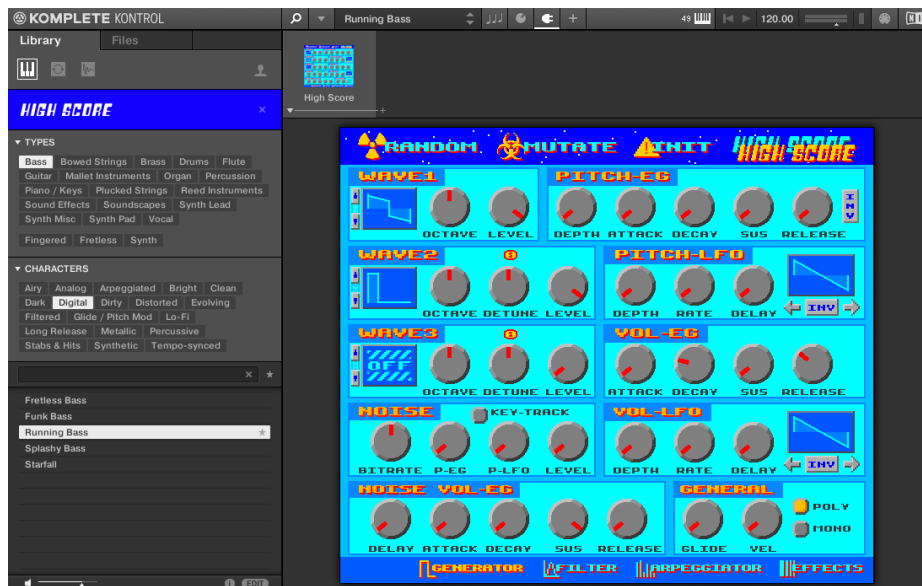
Appendix A: Speech Word Banks

High Score comes standard with two banks of speech words. They are accessible for each of the three wave generators as waveforms 24 and 25, the last two waveforms. Both speech word banks can be used on any of the three wave generators.

Speech Bank 1:

E0	Zero	F0	One	F#0	Two
G0	Three	G#0	Four	A0	Five
A#0	Six	B0	Seven	C1	Eight
C#1	Nine	D1	Ten	D#1	Eleven
E1	Twelve	F1	Thirteen	F#1	Fourteen
G1	Fifteen	G#1	Sixteen	A1	Seventeen
A#1	Eighteen	B1	Nineteen	C2	Twenty
C#2	Thirty	D2	Forty	D#2	Fifty
E2	Sixty	F2	Seventy	F#2	Eighty
G2	Ninety	G#2	Hundred	A2	Thousand
A#2	Million	B2	Billion	C3	Kilo
C#3	Mega	D3	Giga	D#3	Tera
E3	Milli	F3	Micro	F#3	Nano
G3	Pico	G#3	Byte	A3	Bytes
A#3	Bit	B3	Bits	C4	Cycles
C#4	Hours	D4	Minutes	D#4	Seconds
E4	Points	F4	Credits	F#4	remaining
G4	Ships	G#4	Percent	A4	Fire
A#4	Missile	B4	Space	C5	Cadet
C#5	Intruder	D5	Alert	D#5	Player
E5	Ready	F5	Launch	F#5	Hello
G5	World	G#5	Good	A5	Bye
A#5	Game	B5	Over	C6	Start
C#6	Pilot	D6	Fighter	D#6	Wizard
E6	Be				

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Speech Bank 2:

E0	Dollars	F0	Pounds	F#0	Euros
G0	Yen	G#0	Black	A0	Red
A#0	Green	B0	Blue	C1	Orange
C#1	Purple	D1	Yellow	D#1	White
E1	Sun	F1	Moon	F#1	Star
G1	Destroyer	G#1	Planet	A1	Left
A#1	Right	B1	Stop	C2	Go
C#2	Insert	D2	Coin	D#2	Ring
E2	Cyberpunk	F2	Future	F#2	Vapor
G2	Retro	G#2	Synth	A2	Wave
A#2	Done	B2	Level	C3	Power
C#3	Arcade	D3	Television	D#3	Computer
E3	Video	F3	Input	F#3	Output
G3	Enter	G#3	Air	A3	Earth
A#3	Water	B3	Floppy	C4	Disk
C#4	Drive	D4	Cartridge	D#4	Cassette
E4	Software	F4	Rad	F#4	Gold
G4	Silver	G#4	Diamond	A4	You
A#4	Will	B4	A	C5	Totally
C#5	Awesome	D5	Ed	D#5	Keyboard
E5	Guitar	F5	Bad	F#5	Move
G5	Status	G#5	Delete	A5	Exterminate
A#5	The	B5	Are	C6	Program
C#6	And	D6	Greetings Earthling	D#6	Yeah
E6	Shut it Down				

Appendix B: TROUBLESHOOTING

1. The Note Delay doesn't work: The Note Delay will not work when the Step Arpeggiator is enabled.

2. When using the Step Arpeggiator, I cannot change the waveforms on the Generator panel: This is because the waveforms you hear when using the Step Arpeggiator come from the patterns in the Step Arpeggiator and not the Generator Panel. The same thing applies to Noise Bitrate and Filter Cutoff, these two items come from the patterns in the Step Arpeggiator and not the Nose Generator on the Generator panel or the Filter Cutoff knob on the Filter panel.

3. I hear no sound when the filter is on: Try adjusting the filter cutoff knob until you hear a sound. When the filter cutoff knob is set to a low value and the filter type is Low Pass, for example, it could mute the sound.

4. When I'm using the Step Arpeggiator, sometimes I don't hear all of the notes: The Step Arpeggiator can pitch the root not you are playing up or down by up to 48 half steps. If the Step Arpeggiator pitches a root note up or down outside of the keyboard range of notes (E0...E6), you will hear silence for the duration of that arpeggiator step.

5. I'm using up all of my CPU bandwidth: This could be many things. For High Score, if you are using the Step Arpeggiator, try to only play one key/note at a time. Custom waveforms will also use up CPU bandwidth so it is recommended that you only use a single custom waveform on one of the three wave generators at a given time if your CPU usage is too high. CPU bandwidth is based on your system's CPU and possibly available RAM. See if you can close all unnecessary apps running on your system while you are using High Score.

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