

SZCZ's AUDIO ADVENTURES



Spookomatic

www.fairlyconfusing.net

Licence and technical information

Spookomatic is a virtual instrument for Native Instruments Kontakt sampler, you need full version of Kontakt 5.5.2 or newer to run it.

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Please note, that this instrument, depending on patch, may require considerable amount of CPU processing power.

Spookomatic

Spookomatic was designed to automatically generate random eerie atmospheres, melancholic pads and scary ambiences. The machine combines three types of sound layers, named *ambience*, *signal* and *noise*. *Ambience* layer is a sequence of noise snippets, *signal* layer is a continuous musical tone and *noise* layer is a looped noise fragment. For each layer a different set of filters and effects is generated. Effect parameters and sound properties, like pitch, volume or panning, can be modulated by an array of step sequencers, where each parameter can be given a dedicated control sequence. Sequences vary in speed, length and transition curve in between steps, to create a living, rich and somewhat unpredictable (yet re-playable) sound.

There are 192 noise snippets, 21 signal sources and 30 noise fragments combined in up to 10 layers (depending on configuration), with 11 modulation sequences per layer, making the number of combinations practically endless. New patch can be created simply by pressing the shuffle button.

Shuffle!

Spookomatic is a sonic exploration machine, just press shuffle and see what sound will you get. If you find it interesting, you can tweak it to your taste. There are five shuffle buttons. **Shuffle ambient** will create new ambient layers, **shuffle signal** will create new signal and noise layers, **shuffle space** will re-configure send effects (usually two convolution reverbs and two delays), **shuffle filters** will set different types of filters for each layer and white **shuffle** button will perform all the above in a single click. Ambient generator uses one of two modes, structured (more repetitive) or chaotic (less repetitive, using arbitrary, random sequencer speeds). Generator mode is picked randomly. To enforce creating structured ambient, hold control key while clicking 'shuffle ambient' button. To enforce generating chaotic ambient hold alt key.

For each sound, Spookomatic creates a random name, which is displayed in message area under instrument's name. The name is calculated from signal and ambient sequences configuration, it will be changed each time you press 'shuffle ambient', 'shuffle signal' or 'shuffle all'. Randomizing space or filters does not alter patch name.

...Play

Signal and noise layers are activated by midi note and ambient layers will produce sound, when **ambient sequencer button** is on. To activate modulation step sequencers, switch the **modulation sequencer button**. Sequencer buttons can be configured, to turn on for as long as a midi key is pressed and turn off when every key is released and/or turn on/off on transport start/stop (synchronize with DAW's play/record buttons). Or they can be switched manually. When you turn off modulation sequencer, all modulated values will remain at current values, from where the modulation will continue, when you switch the sequencer back on.

All sequences are synchronized with current tempo and transport position. As much as the sounds may seem random at times, when used in a project the machine will re-play the same sequences each time, you press play in DAW. Modulation sequencers apply to all layers, ambient, signal and noise.



Ambiance controllers

There are five ambient controllers. **Density** sets the ambient sequencer rate, possible values are half speed, normal and double speed. Note that, there may be several ambient layers running sequences at different speeds, density parameter changes clock rate for all ambient sequencers.

Cycle trim will limit sequence lengths for all ambient sequences, set lower values for less varied, more repetitive ambient. Use **quantize** button to round cycle trim value to a power of two.

Grain controller modifies playback duration of single noise snippet. Lower the value to play shorter sounds. At highest setting, the machine will play entire ambient samples.

Intensity controller sets the ambient mix volume.

Signal controllers

You can modify volume envelope and gain for signal layers. **Attack** and **release** controllers scale volume envelope parameters for all signal and noise layers. The machine assigns different envelope parameters for each layer, attack/release controllers adjust all of them proportionally.

Noise button switches noise layers on/off. **Gain** controller sets mix volume for signal and noise layers.

Drive controller is combined volume setting for all types of sound layers. Use it to adjust overall gain of the patch. Signal patch is then followed by a brickwall limiter.

You can use **filters switch** to turn filters on/off in all layers.

Space controllers

Panorama controller sets the stereo width. It will be used to scale sequence modulators for pan in all layers, as well as random pan range in ambiance layers (if used). It has no effect when modulation sequencer is off.

Reflect controller sets mix volume for reverb send effects, **multiply** sets mix volume for delay send effects and **dry** is amount of dry signal in the mix.

Numerology

Spookomatic is using a pseudo-random number generator for creating sound configuration. The generator is using a starting number, called 'seed' to derive following numbers. Given seed will produce a unique set of numbers. If you like to play with numbers, you can enter a custom seed. First show numerology parameters, with numerology switch (pentagram symbol). There are three numbers: **next** – seed number to use next time you press a shuffle button (when set to zero, the machine will pick a random number), **used** – number used in last shuffle, **last** – number used in previous shuffle.



To use a custom number, enter it in **next field** and press a shuffle button. Combination of given number and given shuffle operation will always produce the same results.

Clicking **the arrow** will copy previously used seed to next field, which can be used to re-create previously generated program.

Equalizer panel

Spookomatic is equipped with four band parametric equalizer (Kontakt's Solid-G EQ), for further shaping of randomly created sounds. Equalizer is inserted before effect sends in the signal patch. If it's not needed, it can be turned off, to save processing power.

Automation

Midi notes can be used as key switches for certain functions. You can assign note numbers on equalizer panel. Type-in desired note number, or use midi learn button (L) and press midi key. If you don't want to use up a key for automation, type '-1' as the note number. You can use keys as switches for ambiance and modulations sequencers.

Reset modulation switch will stop modulation sequencer and reset all modulated parameters to default values. Normally, when you turn modulation sequencer off, modulated parameters will remain at current state and will continue from there when modulator is back on.

The clock is used to synchronize sequences with transport. It is being set whenever you press play/record button in DAW, or change playback position. **Reset clock** switch will re-set the clock at any desired time. When clock is re-set, all sequences will be played from the beginning.



Face off

Spookomatic is using an unorthodox controllers graphic design. You can switch it to somewhat more conventional theme with **face** button.

face change button



Alternative setups

There are three alternative Spookomatic patches, they differ in layer numbers and configuration, send effects types and sequencer program range. **Default** setup is using 5 ambiance layers, 4 signal layers, 1 noise layer (5-4-1), 2 convolution reverbs and 2 delays.

Echo dome setup is focused on signal layers, layer configuration is 2-6-1 and it is using 4 delays as send effects.

Noise fiesta setup is focused on noise and ambiance, there are no signal layers, layer configuration is 4-0-5. Send effects are 2 convolution and 2 delays.

Minimal setup is simplified one. Layer configuration 1-3-1, 1 convolution reverb, 1 algorithmic reverb and 2 delays.

The book

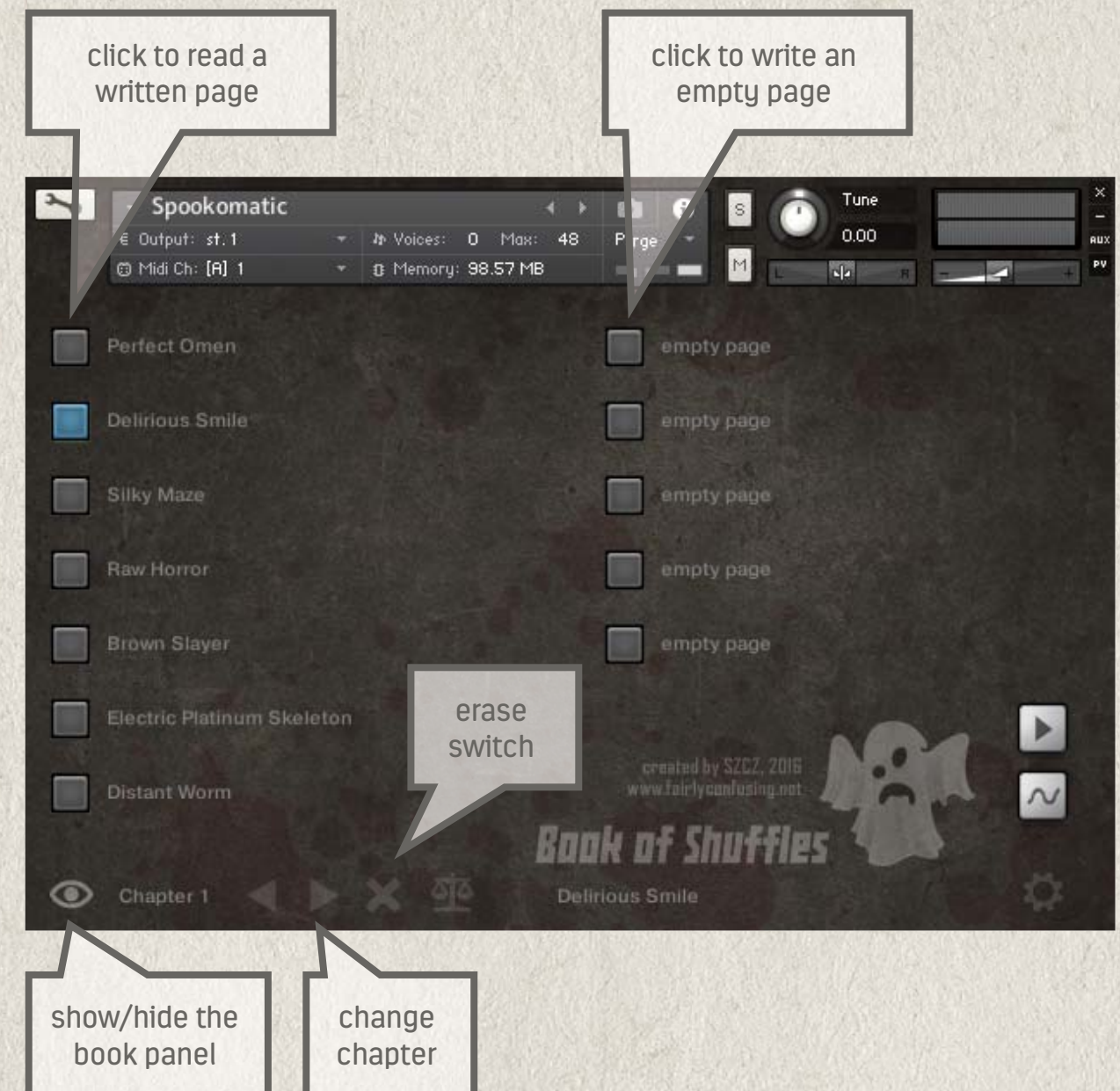
Generated and tweaked sound can be saved using preset system named Book of Shuffles. Spookomatic comes with several ready-made sounds and there is space to save more. Presets are saved to files located in /book/ folder. Preset system will not work, if /book/ folder is removed or renamed. Because the data is stored in a file and not within the patch, the book contents is shared between instances of the instrument.

There are 6 chapters, 12 page each, in the book. Each page can store a single sound. To write a page press a button next to an 'empty page'. To read a page press a button next to a named page. Use arrow button to change chapter. You can erase a page to make space for new sounds, to do so, press erase button and then press a button next to page you would like to erase. Have in mind, that there is no way to recover erased page.

When writing a page, the machine will use automatically generated sound name. You can rename a saved page. To do so simply click on the name and enter a new one. Note, that you may need to stop the sequencers to be able to do so. It seems, it's the way text box works in Kontakt.

What is actually stored in the book, is seed numbers for all four shuffles, state of main panel controllers, equalizer parameters and some of parameters available in service panel, which will be discussed next. Note that actual sequence data is not being stored using the book function. When a page is read, sequences are being re-created using seed numbers. If you need to store manually edited sequences (which is possible using service panel), use Kontakt snapshots. Also any program changes are stored within a Kontakt patch or a DAW project.

Each of alternative setups is using separate book files.



Service panel

Spookomatic's service panel was designed to test and debug patch generator. Although it is not its primary function, it can be used for deeper tweaking of a sound configuration. Also some of instrument's global settings can be set here.

Keyboard sensitivity is instrument global setting, it is the amount of note velocity impact on signal layers volume.

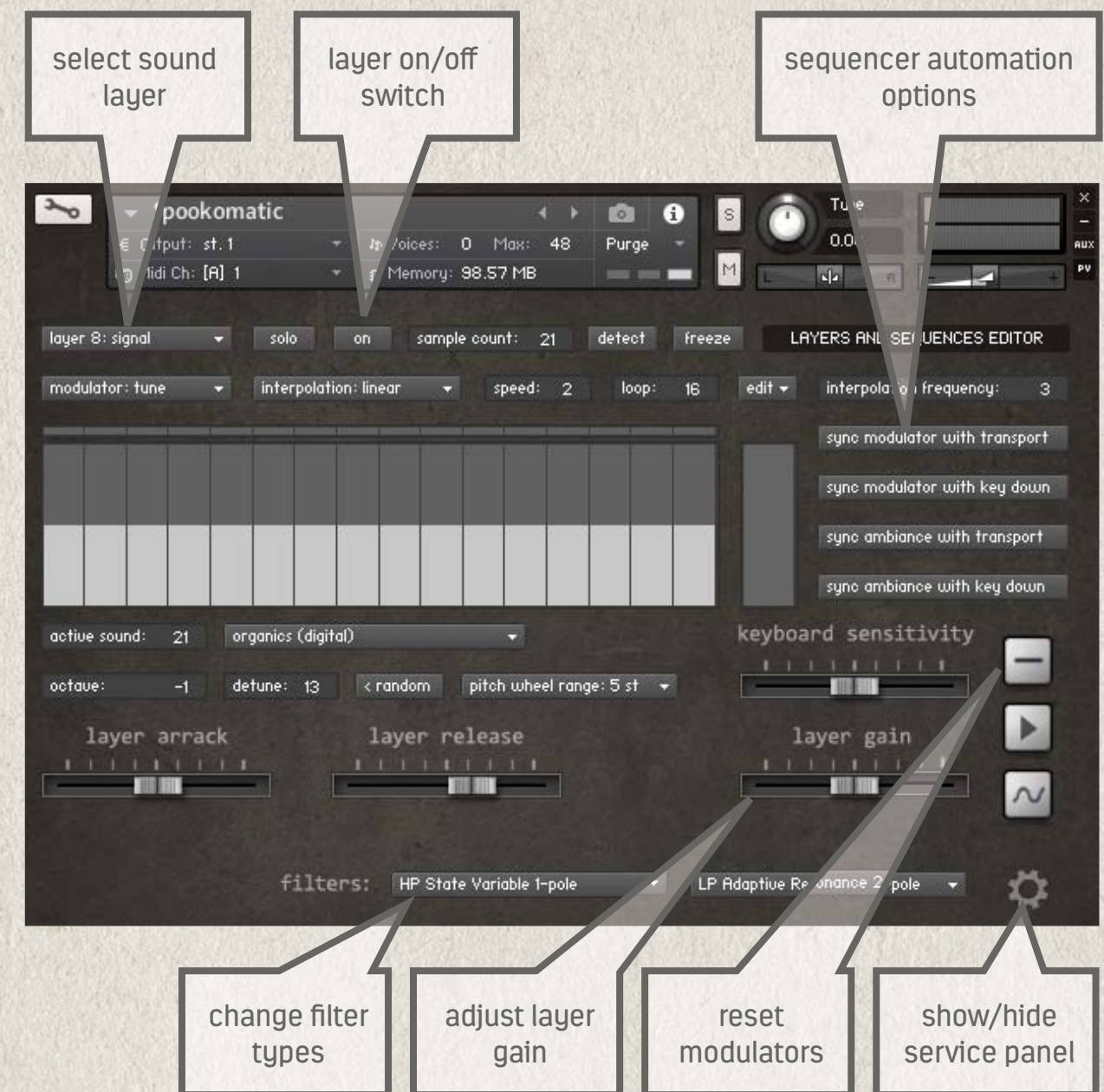
Service panel is where you can configure sequencer switches behavior. When **sync with transport** switch is on, the sequencer will start whenever transport starts (you press play/record button in DAW) and will stop when transport stops. When **sync with key down** switch is on, the sequencer will start when a midi key from instrument's used range is pressed. It will keep running as long as at least one midi key is down.

You can notice a third sequencer button, which is **modulation reset**. Pressing it will stop modulation sequencers and reset modulated parameters to default values. This button can be automated by a midi note.

Use the drop-down menu to select a layer. Next there is **solo button**, when it's on, only selected layer can be heard. You can use **on/off button** to enable/disable layer. Patch generator doesn't always use all layers, some layers will be off after a shuffle. **Sample count** setting defines how many samples/sound sources are used in a layer. **Detect** button will set sample count value automatically. There is no need to modify sample count, unless you edit actual layer contents (it is possible to add custom samples). Freeze switch can be used to exclude layer from shuffle procedure. A frozen layer will not be affected when you press a shuffle button, any other layers will be overwritten with automatically generated content.

Layer gain slider can be used to adjust volume of individual layers. Automatic generator always resets layer gain (unless the layer is frozen).

You can also change filter types used within selected layer, using drop-down menus.



There are options specific to layer type. For signal and noise layers you can select **sound source** (change value or select from drop-down menu). Change its **tuning** +/- one octave. Set **detune** (in cents), with optional **random** switch (generate different detune value for each note, from selected range). Adjust **pitch wheel** modulation range (separately for each layer).

For signal and noise layers, there are volume envelope **attack** and **release** parameters set separately for each layer. Actual attack and release values are calculated according to global attack and release controllers on main panel.



ambience sequencer program

When you select an ambience layer, you can examine its sequencer program. Sequence can be edited, though using the data table is not very convenient. Sequence **pitch** is global pitch change for all layer sounds. Sequence **speed** is the divide rate of sequencer, lower values will make sequencer run faster. Setting speed to 8 will set duration between steps to a quarter note. Sequence **loop** is the size of the sequence. Sequence **shift** will reposition sequence in relation to other sequences, that is, when the clock is reset, the sequence will not start from the beginning, but from defined sequence step.

Random pan can be used to randomize pan value for each next sequence grain. Random pan values will not loop within the sequence. Pan values are calculated from seed number according to signal and ambience seeds, so when used in a project, the machine will play back the same panning sequence each time you play back the track.

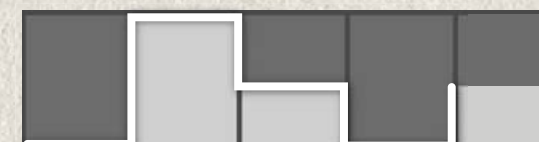
Sequencer rate mirrors ambience density value from main panel controller.

Modulation sequencer

Spookomatic's modulation sequencer is the machine's unique feature, as the sequence can be interpolated. In interpolated sequence, modulated parameter is not set to given value at given step, but changes gradually in between steps according to selected curve. It's like an LFO with amplitude controlled by step sequencer program.

Here's the list of interpolation curves and value transition visualizations:

none



linear



sinusoidal



parabolic



inverse parabolic



linear x2 + hold



linear x8 + hold



linear x16 + hold



8 step ladder



There are 11 modulation sequences per layer: tune, volume, pan, filters cutoff and resonance, send effects amount. When selecting a modulation sequence, you can notice that the machine will describe modulator as 'static' or 'sleeping'. These parameters are used to save CPU, by not modulating sequences that don't have varied program (such sequence is named static). Static sequence is put to sleep when modulated value matches sequence program, then according sequencer stops running.

As ambiance sound sequence, modulation sequencer is synchronized to host's tempo.

Interpolation frequency is global parameter defining resolution of transition curve. It determines, how often a modulated parameter is being updated in between sequence steps. Higher values will produce smoother transitions at the cost of CPU processing power. At the lowest setting, a linear transition will look quite like the 8 step ladder.

Modulation sequence can be edited manually, or by using automated operations available in **edit** drop-down menu. Operation names are mostly self-explanatory. Some of them take first and last sequence step as input data. For example **flat** operation will copy first step value to all visible steps. **Line** will make a transition between first and last step. **Peak/dip** operation is similar to line, but it will reach last step value halfway through sequence and then go back to first step value. **Random in range** will examine entire sequence to determine value range and fill it with random values within the range. You can randomize sequence, compress, expand, invert, mirror it and so on.

Any sequence edits will be saved within Kontakt patch or DAW project. However they will not be saved when using Book preset system, which stores seed numbers instead of actual sequence data. If you want to edit sequences manually and save the result for later, use Kontakt's snapshot system.

However, some of the service panel parameters are being saved in Book system, so a minor tweak can be stored. Specifically, saved parameters are: layer gain, state of layer on/off switch, signal sound source number, signal tune octave shift, signal attack and release.

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This document ends here. Have fun with Spookomatic.

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