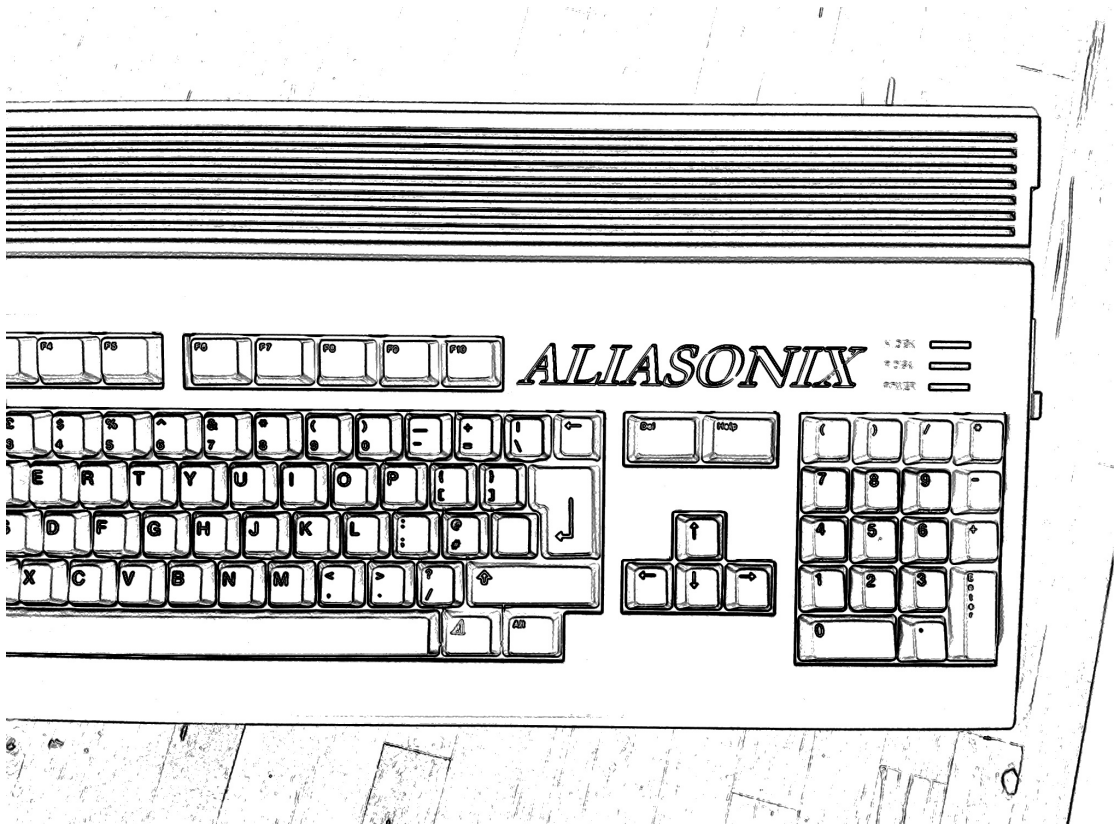




ALIASONIX

Installation Guide & User Manual

D.A.Wilson, Hideaway Studio, December 2013

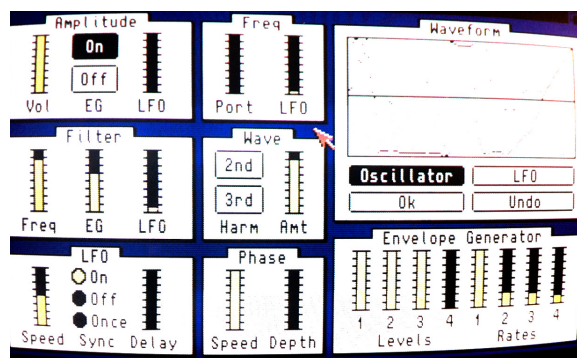
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Hideaway Studio Presents: Aliassonix

An Early Soft Synth... Running on a 25 Year Old Home Computer??

Anyone who knows me should realise by now that I have a fascination for rediscovering old technologies and combining the best of them in a constant attempt to create something new and unusual. Some of you will also know that I'm a big fan of the retro computing scene and especially the demo music scene that grew up around it during the mid '80s and into the '90s. Almost all of the time my technological foraging involves trawling up some physical lump of hardware but on recently rekindling my love of ProTracker on the Amiga I got curious one day and wondered if perhaps someone had attempted to not just play back samples as in Karsten Obarski's pioneering Ultimate Soundtracker (that came close to bringing Fairlight Series II functionality to the unwashed masses in 1987) but rather to synthesize them from scratch...

What I was expecting to find was some sort of crude utility that took some basic settings and then went off and slowly processed a few waveforms to load into a sampler. To my amazement what I actually found was a relatively unknown program called Aegis Sonix released circa 1989 that managed to implement a full 4 voice subtractive soft synthesizer with a digitally modeled low pass filter and realtime dynamics control running purely in software.. on a 25 year old Amiga 500!! This predates even Dave Smith's first soft synth for the PC by several years and surely must be one of the earliest ever examples of a purely software based real time subtractive synthesizer running on a home computer. It even has some pretty nifty features such as hand drawn oscillator waveforms and LFOs and a cool feature to add 2nd and 3rd order harmonics to any waveform.



So what does it sound like? Having finally tracked down a working copy of this relatively rare software my expectations were not that high but to my surprise what transpired was so primitive in nature that it imparted significant character in its gloriously aliased 8-bit audio. The filters really worked but in an odd way, the dynamics control and phaser effects full of steppy artifacts and most excitingly of all – it sampled beautifully rendering two octaves of MC68000 generated goodness.

I ended up programming up some 40 or so patches and set about capturing 630 samples in 24-bits directly from the line outputs of a recently acquired Amiga A1200.

It must be noted that Aliasonix is entirely based on waveforms captured from a low sample rate 8-bit source and therefore noise, glitches, stepping and aliasing are very much part of the intended charm and character of this library.

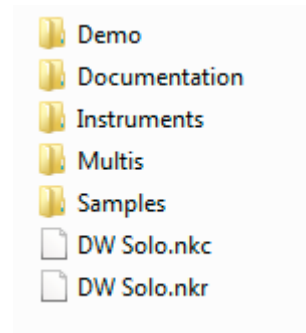
But what about combining technologies old and new?.. Feeding the raw aliased nature of the original 8-bit waveforms into smooth filters in a modern synth engine results in something more similar in nature to early digital/analog hybrid instruments such as the PPG Wave, μ Wave I and Mirage.

Installation

This library requires the full version of Kontakt 4.2.4 or higher.

Approximately 400MB of free hard disk space is required.

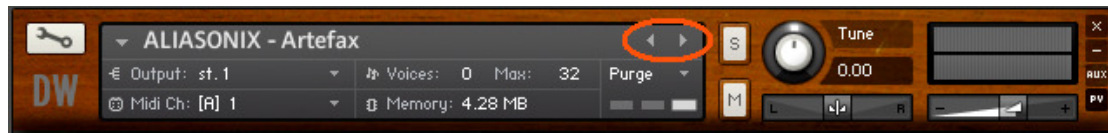
Uncompress the zip archive, this should result in a new folder called "Aliasonix" containing the following sub-folders and files:



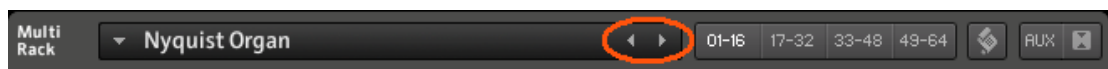
To run Aliasonix simply load up one of the .nki files in the Instruments folder.

Instant Gratification

You can easily cycle through any of the 70 instrument patches (.nki) in the instruments folder by clicking on the small arrows to the right of the instrument name. Note that the instruments prefixed with ZWF are basic raw oscillator waveforms to be used as starting points for new sounds.



Please note that the 31 example multi instruments (.nkm) in the Multis folder can also be cycled through by clicking on the arrows to the right of the multi rack window:



Hopefully by loading up the patches you will be able to see how they have been constructed in the synth engine and can be used as starting points for new sounds which can be saved under new file names.

NB: Please note that a velocity sensitive keyboard is almost essential as the sounds in this library have been designed to respond to playing style and often benefit from a delicate touch interspersed by more rigorous moments.

Editing Instruments in The Synth Engine



Naturally the example instruments packed with each release in the library can be used as is but the sounds can be tweaked to your needs using the synth engine control interface in a similar manner to the factory patches on a classic subtractive S+S synthesizer.

Introducing a Powerful New Synth Engine

Aliasonix is the first release from Hideaway Studio to feature a powerful new synth engine developed by Stephen Howell at Hollow Sun and his scripting guru, Mario Krušelj. Dubbed “Solo” the new engine is particularly well suited to serving lead and solo instruments with powerful real time modulation in a highly intuitive user interface.

Using the Envelope Controls

Three independent envelopes are provided. One envelope controls the amplitude dynamics (VCA), one controls the filter dynamics (VCF) and the third controls the pitch (VCO).

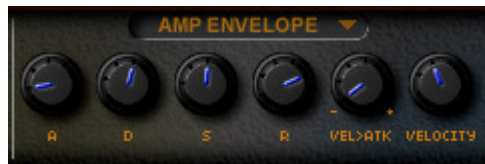
Each of the three envelopes is selected by clicking on the small arrow to the right of **ENVELOPE**.



This produces a pull down menu permitted the user to select the envelope that is required.

The relevant independent **Attack**, **Decay**, **Sustain** and **Release** controls are displayed on selecting one of the above.

Amplitude Envelope



The further the attack (**A**) control is moved clockwise the more gradually the sound builds up. The more the release (**R**) control is moved clockwise the longer it takes for the sound to decay after the note is released. The decay (**D**) control determines how quickly a sustained sound diminishes with time. The more clockwise the control, the longer it takes to decay. Very rapid attack and decay settings will produce plucked or staccato effects and slow settings will produce a swelling effect. The sustain (**S**) control determines the volume at which the sound will rest during sustain once the decay portion of the envelope has completed.

Responding to Playing Style...

There two further controls in the **AMP** section which can really bring a sound to life by changing the way it responds to changes in keyboard velocity.

VEL>ATK The further anticlockwise this control is set the more the attack phase is shortened with increased velocity. This is a very powerful means to increase the urgency of a sound when played with rigour. For this to be effective on strings, for example, it needs to be used in conjunction with a slow (more clockwise) attack (**A**) setting.

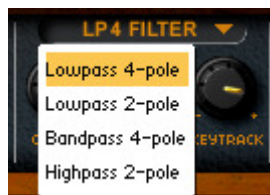
VELOCITY The further this control is moved clockwise the more the amplitude is changed in sympathy with the key velocity. For sounds that are not required to respond in amplitude to key velocity this control (eg. an organ) should be set fully anti-clockwise. Typical settings are around the mid point.

Filter Envelope & Controls



The filter cutoff and resonance levels are set by the **FREQUENCY** (cutoff) and **RESONANCE** controls. These are modulated by the **FILTER ENVELOPE**.

The filter **KEYTRACK** control is used to setup the relationship between the played key position and the cutoff frequency. This can be used to mask the effects of noise (eg. hiss becoming apparent in the lower registers), to mimic natural tonal responses over the playing range (eg. a piano) or, when used in conjunction with very high degrees of filter resonance, to accurately setup sympathetic self resonance with key position for the emulation of bells etc.



The new synth engine features 4 filter modes. By clicking on the arrow to the right of **FILTER** the type of filter can be selected from the pulldown.

The filter envelope is dedicated to controlling the filter cutoff. The further the attack (**A**) control is moved clockwise the more gradually the filter cutoff frequency increases. The more the release (**R**) control is moved clockwise the longer it takes for the cutoff frequency to decay after the note is released. The decay (**D**) control determines how quickly the cutoff frequency falls with time. The more clockwise the control, the longer it takes to decay. Very rapid attack and decay settings will produce plucked or staccato effects and slow settings will produce a brass like swelling effect. The sustain (**S**) control determines the cutoff frequency at which the filter will remain during sustain once the decay portion of the envelope has completed.

The more the **AMOUNT** control is moved away from its centre position, the more the filter cutoff is modulated by the envelope. For *most* filter control applications the control is moved clockwise to increase the amount of *positive* response to the envelope generator. Note that if you want the filter to be swept over its full range then the filter **FREQUENCY** must be set to zero and the **ENV AMT** set to fully clockwise. In cases where little or no modulation is required, the cutoff control may be used as a basic tone control by setting the **ENV AMT** to the centre position and setting the **CUTOFF** control to suit.

Making the Filter Respond to Playing Style...

VELOCITY The further this control is moved towards its extremities the more the filter modulation reacts in sympathy with the key velocity. Normally this control is used in it's positive phase (clockwise) as many acoustic instruments generally become brighter (their harmonic content increases) the louder they are played. For sounds that do not require velocity sensitive filter modulation (eg. organ) the control should be set to the mid point.

Pitch Envelope



Perhaps a little more unusually, the synth engine features a pitch modulation envelope which can be used to impart everything from subtle changes in pitch during moments of rigorous playing (eg. guitar/harp/drums) or during attack transients (eg. brass) to wild sound effects.

When the **AMOUNT** control is positioned within the positive (clockwise) half of its travel, the further the attack (**A**) control is moved clockwise the more gradually the pitch rises. The more the release (**R**) control is moved clockwise the longer it takes for the pitch to fall after the note is released. The decay (**D**) control determines how quickly a sustained note falls in pitch with time. The more clockwise the control, the longer it takes to fall. The sustain (**S**) control determines the pitch at which the sound will rest during sustain once the decay portion of the envelope has completed.

The pitch modulation is reversed when the **AMOUNT** control is positioned within the negative half of its travel. The further the control is moved towards its extremities the more dramatically the pitch modulation responds to the pitch envelope.

Responding to Playing Style...

VELOCITY The further this control is moved towards its extremities the more the pitch modulation reacts in sympathy with the key velocity. For sounds that are not required to respond in pitch to key velocity this control should be set to the mid point.

The LFO Controls



The synth engine provides three independent LFOs each dedicated to modulating pitch, amplitude and filter cutoff.

To select the LFO that requires adjustment click on the triangle to the right of **LFO** and a pull down menu will appear. Click on the LFO required.

Pitch LFO



Vibrato is a regular modulation of pitch and can produce anything from natural effects such as a gently quivering flute or legato strings to a deep plunging effect. The **RATE** of the Vibrato effect can be altered along with the depth of the pitch modulation using the **DEPTH** control.

No vibrato effect is heard when the depth control is set to its most anti-clockwise position.

A typical vibrato effect is heard with the rate control at roughly the 12 o'clock position and the depth control at the 2 o'clock position. For a more natural vibrato a triangular modulation wave is a common choice of waveform. The shape of the modulating **WAVE** (waveform) may be set by the slider switch to the right of the rate control. The 4th (lowest) position is the sample hold position which imparts a random amplitude modulation effect.

The **VIA** switch to the right of DEPTH control determines whether the degree of depth control is fixed (**D**irect), increased by turning the modulation **W**heel on the controlling keyboard or by the amount of ***A**ftertouch during keypress.

***NB:** Not all keyboards support aftertouch or transmit it over MIDI.

Amplitude LFO



Tremolo is a regular modulation of amplitude and can produce anything from natural effects such as a gently beating bell or an electric guitar tremolo to a dramatic fading effect. The **RATE** of the tremolo effect can be altered along with the depth of the modulation using the **DEPTH** control.

No tremolo effect is heard when the depth control is set to its most anti-clockwise position.

A typical tremolo effect is heard with the rate control at roughly the 12 o'clock position and the depth control at the 2 o'clock position. For a more natural tremolo a triangular modulation wave is a common choice of waveform. The shape of the modulating **WAVE** (waveform) may be set by the slider switch to the right of the rate control. The 4th (lowest) position is the sample hold position which imparts a random amplitude modulation effect.

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***NB:** *Not all keyboards support aftertouch or transmit it over MIDI.*

Filter LFO



An LFO is dedicated to modulating the the Filter cutoff frequency and can produce anything from natural effects such as a sustained brass effect to dramatic filter sweeps. The **RATE** of the modulation can be altered along with the depth of the modulation using the **DEPTH** control.

No effect is heard when the depth control is set to its most anti-clockwise position.

As with all of the LFOs the effect is disabled when the **DEPTH** control is set to the mid position.

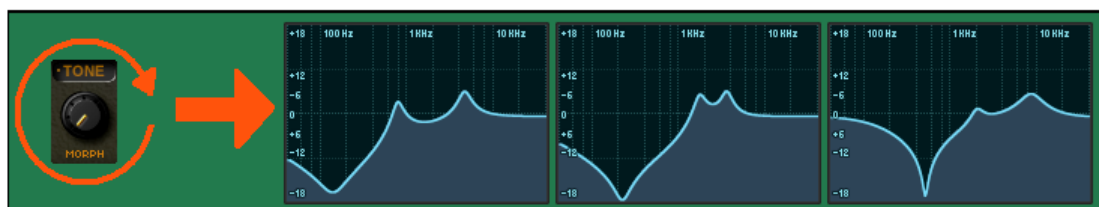
For a more natural effect a triangular modulation wave is a common choice of waveform. The shape of the modulating **WAVE** (waveform) may be set by the slider switch to the right of the rate control. The 4th (lowest) position is the sample hold position which imparts a random filter modulation effect.

The **VIA** switch to the right of DEPTH control determines whether the degree of depth control is fixed (**D**irect), increased by turning the modulation **W**heel on the controlling keyboard or by the amount of ***A**ftertouch during keypress.

****NB:** Not all keyboards support aftertouch or transmit it over MIDI.*

The Tone Control

The **TONE** control is a deceptively powerful feature. In the fully counter clockwise the signal is unaffected. As the control is rotated a continuously evolving complex EQ curve is applied. With some experimentation this



feature can be used for embellishing formants within each voice and helping to sit each of the layered voices together in the mix.

The Effects Section

Below the main synth user interface is the effects section:



To enter the effects page the right hand slide switch is set to the **FX** position.

The effects section comprises of four basic types of effects: auto-panning, modulation, echo and reverb.

Each of the effects are chained in series and can be disabled by turning their respective **AMOUNT** control fully anti-clockwise. In the case of **AUTOPAN** the effect is disabled by setting the **DEPTH** control fully anti-clockwise.

Autopan Effect

The **AUTOPAN** section features three controls. The **RATE** control determines how rapidly the position of the instrument is moved within the stereo field. The **DEPTH** control determines how far it pans from the centre position and the **WAVE** slide switch sets whether the pan is gradually modulated by a triangular wave or jumps between two set positions by a square wave.

Modulation Effects

The synth engine offers three basic forms of modulation FX:

To select each of three options, click on the triangle to the right of the **FLANGER/CHORUS/PHASER** indicator and select from the pulldown menu:



The **CHORUS** is a digital simulation of a classic stereo analog chorus (minus the noise!). The **RATE** control determines how rapidly the chorus is modulated, the **DEPTH** control determines how much the effect is modulated, the **FEEDBACK** control determines how much of the effects output is fed back to its input and the **AMOUNT** control sets the amount of the effect to be mixed with the dry signal.

The **FLANGER** is a digital simulation of a classic stereo analog flanger. The **RATE** control determines how rapidly the flanger is modulated, the **DEPTH** control determines how much the effect is modulated, the **FEEDBACK** control determines how much of the effects output is fed back to its input and the **AMOUNT** control sets the amount of the effect to be mixed with the dry signal. The effect is particularly dramatic when the **FEEDBACK** control is set high (clockwise).

The **PHASER** is a digital simulation of a classic stereo analog phaser. The **RATE** control determines how rapidly the phaser is modulated, the **DEPTH** control determines how much the effect is modulated, the **FEEDBACK** control determines how much of the effects output is fed back to its input and the **AMOUNT** control sets the amount of the effect to be mixed with the dry signal. The effect is particularly dramatic when the **FEEDBACK** control is set high (clockwise).

Echo (Delay)

The echo section comprises of delay with feedback and damping and may run in either a mono or stereo mode.



By clicking on the triangle to the right of **ECHO** a pulldown menu will appear permitting **Mono** or **Stereo** modes of operation to be set.

The **TIME** control sets the delay whereby turning the control clockwise increases the delay time. The **DAMPING** control determines how much the effect is diminished on each echo. The **FEEDBACK** control sets the amount of the signal from the delay that is fed back to the input. The further this control is turned clockwise the more the input signal is recycled thus creating dramatic repeating and sustain effects. The **AMOUNT** control determines how much of the effect is mixed in with the dry signal.

Reverb

The reverb utilises the latest convolution technology to digitally simulate the reverberation of a physical or simulated acoustic space.

Three types of reverb simulation are provided. Select each reverb by clicking on the slide switch marked **TYPE**.

H is a large HALL simulation.

P is a classic plate reverb simulation.

S is a vintage spring line tank simulation.

Use the **SIZE** control to set the size of the selected reverberation space and the **AMOUNT** control to set the amount of the effect to be mixed with the dry signal.

Saving Your Own Patches

All of your creations can be saved as .nki instruments simply by using the **save as** function by clicking on the **files** icon in the main Kontakt control pane.

Remember that if you edit an existing sound you must save it under a new name otherwise you will overwrite the original!

Credits

Dani Wilson (Hideaway Studio)

Sonix Patch Design, Sample Capture, Example Patches & Demos

Stephen Howell (Hollow Sun)

UI Concept, GUI Design & Graphics

Mario Krušelj

Synth Engine Script

A very big thank you to Stephen and Mario for their support and crafting such wonderful GUIs.

Many thanks to Cris Matthews for the supply of a superb Amiga A1200 and thanks also to Simon Power and Matt Creamer for helping to play test the library during development.

For more information and many more releases for Kontakt by Hideaway Studio please visit:
www.hideawaystudio.net

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