



# S-VX Hybrid Synth Library

## Installation Guide & User Manual

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## Introduction

I have always been interested in mixing disparate technologies in an attempt to make something a little different and this project was no exception.



## The Equipment....

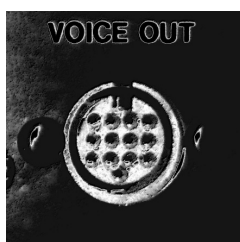
In the mid 80's AKAI released the infamous S900 which was to be one of the first of a new generation of highly affordable professional samplers. The S900 and it's bigger brother, the S950, became big sellers and completely changed the playing field amongst their competitors with their five digit offerings.

The S900 was a 12 bit machine with a tiny 750K memory and a floppy drive for sample storage. At the time it was a revelation but it's now really very basic by today's standards.

*However....*

Like so many early samplers such as the E-mu Emulator II, the Prophet 2000 and the Ensoniq Mirage, the S900 had sonic character in bucket loads and still has a following to this day.

One feature of the S900 that was often overlooked was a curious 13 pin connector on the rear panel marked VOICE OUT...



AKAI had released a small number of analog synthesizers during the same era as the S900. These included the AX73 keyboard and the VX90 rack mount. They have often been overlooked over the years possibly due to their rather control-free front panels and menu driven user interfaces. This is a perhaps a little unkind as these instruments feature genuine Curtis VCOs and filters unlike many offerings of the time such as the Juno-106 which was a DCO synth. To this effect they drift out tune with temperature like the best of them!

Thank god for the auto-tune button!

The infamous 13 pin connector permitted the sampler to be used as a complex oscillator source driving the filter stages and VCAs modulated by the envelope generators. In short, you get to mix 12 bit digital crunch with the warmth of analog filters!

### **The Sampling Process...**

The instruments in the S900-VX90 Hybrid Library were constructed using several vintage analog sound sources acting as complex sampled oscillators feeding the VX90 synth.

This formed the basis of an unusual albeit somewhat clunky hybrid synthesizer....

Sound sources were mostly Minimoog model D but also included 1938 Novachord, ARP Omni string section, Roland JUNO-106 polysynth and three tube waveshaped 1960's tube oscillators beating in parallel.

32 ten second long raw oscillator sources were captured in 12 bits using a recently refurbished S900 fitted with a new backlight and a (superb!) Lotharek HxC virtual floppy drive. The results were stored on SD card as a series of virtual disks.

The resulting interim sample set acted as oscillator sources for the VX90. Several patches were programmed on the VX90 to modulate the oscillator sources transposed over five octaves in the S900 and the resulting output from the VX90, including it's gorgeous analog chorus, was multi-sampled direct from the output in 24 bit stereo.

376 samples were captured in this manner for the library.

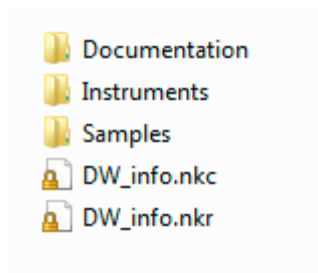
The result?...

Complex warm analog oscillator sources transposed over 5 octaves with a touch of 12 bit crunch shaped with classic Curtis VCFs and VCAs!

## Installation

Installation is straightforward. The S900-VX90 Hybrid Library requires Kontakt version 4.2.2 or higher. Once the .zip file has been downloaded unzip the archive making sure the original directory structure is retained.

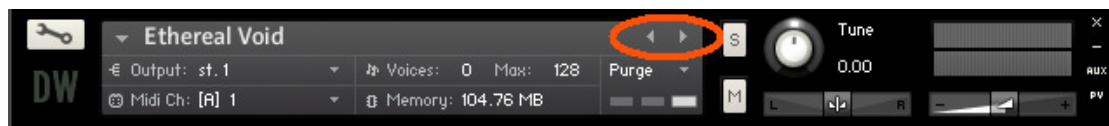
This should result in a folder called S900-VX90 Hybrid containing the following folders:



To run the library simply load up one of the .nki files in the instruments directory.

## Instant Gratification

You can easily run through each of the 30 or so example instruments (.nki) in the instruments folder by clicking on the small arrows to the right of the instrument name.



Please note that there are also small number of multi instruments (.nkm) in the instruments folder. These need to be loaded manually.

Hopefully loading up the examples you will be able to see how they have been constructed in the layering engine and can be used as starting points for new sounds.



## Using the Layering Engine



Naturally the example instruments packed with the library can be used as is but where the fun starts is having a go dialling in your own sounds using the intuitive layering engine. This permits up to four sounds to be blended together with a number of basic synthesis parameters at hand such as pitch and envelope control.

The layering engine consists of four identical programming panels and an effects section.

### Voice Selection

Above each of the four voice panels there is a green LCD display showing the selected voice. By clicking on each of the displays a pull down menu appears allowing one of 32 sounds to be selected.



The selected sounds can be used in any combination including multiple instances of the same sound.

## The Programming Panels

Each of the four voice programming panels features 10 basic controls to shape each sound in the layered instrument. Each control is altered by moving the mouse whilst clicking on it.

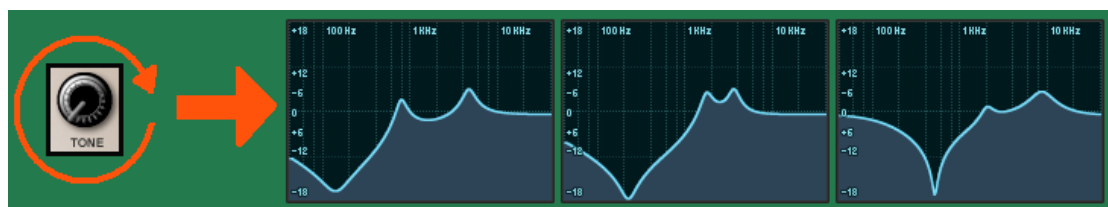


The **LEVEL** control sets the level of the voice in the layer

The **PAN** control sets the position of the voice in the stereo mix

The **SEMI** control sets a fixed pitch offset above or below the key played

The **FINE** control sets the fine pitch of the voice



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.

The **LAYER ON/OFF** enables each of the four voices in the instrument. By clicking on the button the layer toggles on and off. It is often useful to use this feature whilst creating new sounds to determine how each voice is contributing to the overall sound.

### The Envelope Controls

The **ATTACK** and **RELEASE** controls offer basic envelope control. The further the attack control is rotated clock wise the more gradually the sound builds up. The more the release control is rotated clockwise the longer it takes for the sound to decay after the note is released.

Please note that several of the programs in this library make use of velocity controlled attack modulation. This means that the attack parameter is lowered the harder the note is played. This is a means of improving the playability and expression of a sound especially in a live performance. It can be used to good effect by setting the attack a little more clockwise than first expected.

It is also important to note that, in the interest of preserving some of the magic of the source instruments, their original attack transients have been preserved. In such cases it may not be possible to apply very fast attack curves to the selected sound.

### The LFO Controls

Each voice features it's own pitch LFO. This permits everything from a gentle vibrato to a dramatic plunging effect.

Both the **RATE** and the **DEPTH** of the LFO can be altered. To disable the LFO simply set the depth control to the centre position. The depth control is bi-polar which is not something you can hear in isolation but can become a very powerful effect when LFOs of opposite polarity are used on adjacent voices. A typical gentle vibrato is created by setting the depth control just slightly to one side of the centre position with the rate control somewhere around half way.

## Mixing it all up

Although the layering engine is basic, it can be used to great effect. With experimentation a multitude of sounds can be created.

As well as the more obvious layers consisting of four different voices all tuned to the same pitch it is also possible to create other effects:

### Making it Fat

Try selecting four instances of the same voice and then slightly detuning them using the **FINE** pitch controls and even setting different **LFO** parameters.

### Expression

Setting a different **ATTACK** level for each voice can often help to make an instrument more responsive to changes in velocity and through sustain.

### Making it Wide

Try setting the **PAN** controls for each voice to wildly different settings for each voice for a more spatial effect.

### Intervals

Some interesting and sometimes quite beautiful effects can be created by setting one or more of the **SEMI** controls to something other than a simple octave. This can be used to create partials on organ voices in conjunction with careful adjustment of the level controls.

### Phasey

When using two or more of the same voices setting the **FINE** tune controls to very similar but not identical settings can result in some interesting phasing effects.

### Wobbly

Using relatively deep **LFOs** of slightly different speeds across all four voices, especially in conjunction with a suitably timed delay can be quite effective.



## The Effects Section

To the right of the layering engine is the effects section.



The effects section comprises of four basic effects. Each of the four effects are chained in series and can be disabled by turning their respective **AMOUNT** control fully anti-clockwise.

### Reverb

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

Click on the yellow LCD display to select the type of room simulation required and then use the **SIZE** control to set the size of the space and the **AMOUNT** control to set the amount of the effect to be mixed with the dry signal.

### Echo

The echo section is a delay with feedback and damping. The **TIME** control sets the delay whereby turning the control clockwise increases the delay time. 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 **DAMPING** control determines how the delay decays with time. The **AMOUNT** control determines how much of the effect is mixed in with the dry signal.

## Phaser

The phaser is a digital simulation of a classic analog phaser. The **RATE** control determines how rapidly the phaser is modulated and the **AMOUNT** control sets the amount of the effect to be mixed with the dry signal.

## Chorus

The phaser is a digital simulation of a classic stereo analog chorus (minus the noise!). The **RATE** control determines how rapidly the phaser is modulated and the **AMOUNT** control sets the amount of the effect to be mixed with the dry signal.

## Saving Your Own Sounds

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 it!

## Credits

**Dani Wilson (Hideaway Studio)**

Hybrid Concept, Raw Oscillator Design, Sample Set & Example Instruments

**Stephen Howell (Hollow Sun)**

Layering Engine Concept, GUI Design & Graphics

**Mario Krušelj**

Layering Engine Script

*A big thank you also goes to Petri Alanko for his positive feedback  
after kindly offering to beta test the library.*

For more information and many more releases for Kontakt by Hideaway Studio please visit:  
[www.hideawaystudio.net](http://www.hideawaystudio.net)

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