SONICCOUTURE

NOVACHORD

USER GUIDE

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NOVACHORD

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INSTALLATION

TO UNPACK THE DOWNLOAD RAR FILES

1. You need all parts of the RAR fully downloaded to the same location.

2. **IMPORTANT** - Only double click the first RAR file to unpack the library files. (You cannot unpack part 2 by itself.)

3. You should now have a folder named "*SC Novachord*".
Put this somewhere safe on your hard drive.

If you do not own Kontakt, you will need to download and install the free Kontakt player which you can do here ; Kontakt Player Download Link

TO ADD THE LIBRARY AND AUTHORIZE IN KONTAKT

1. In Kontakt or Kontakt Player open the Browser on the left (the folder Icon at the top).

2. In the Libraries tab at the top of the Browser go to "Add Library"

3. Click and use the dialogue window to navigate to and point Kontakt to the location of the *SC Novachord* Library folder. This will add it to the Kontakt Library list AND to the Service Center.

4. If Kontakt asks you to Activate the library, the *NI Service Center* program will launch and you will need your serial number to authorize Novachord.

If Kontakt *doesn't* ask you to authorize, you can force it to by clicking the little "Activate" button in the upper right corner of our Novachord Library logo, in the Browser/Libraries list. It will then prompt you to launch the Service Center.

(You will find your serial number in the email you were sent when you purchased. If for some reason you haven't received this yet, you can run your library in demo mode until it arrives.)
N.B : After authorization, you should restart Kontakt.

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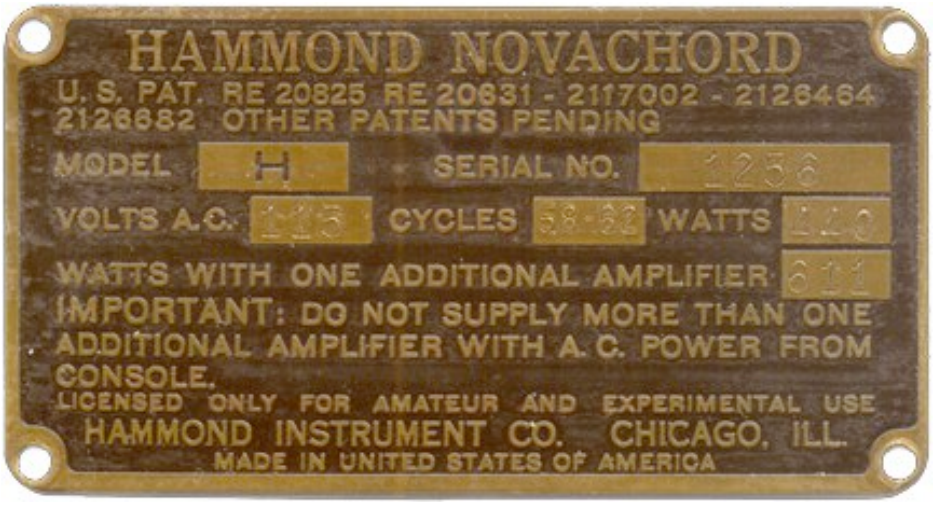
NOVACHORD : THE FIRST SYNTHESISER

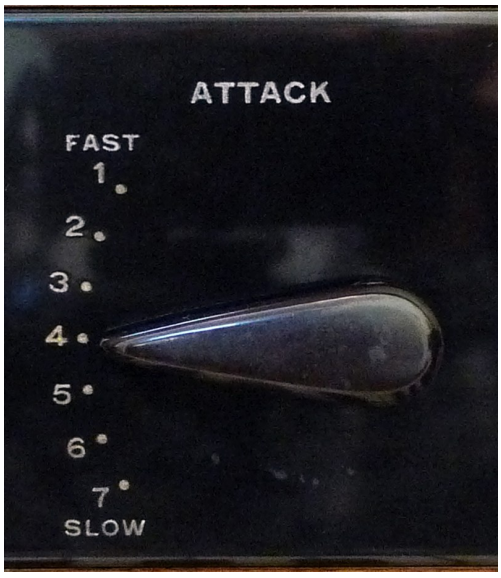
It is a little known fact, but The worlds first commercially available synthesizer was designed by the Hammond Organ Company in 1938 and put into full production from 1938 to 1942. The Novachord is a gargantuan, entirely tube based, 72 note polyphonic synthesizer with oscillators, filters, VCAs, envelope generators and even frequency dividers.

The first instrument was delivered to President Franklin D. Roosevelt on Jan. 30, 1940 as a birthday present, but despite this auspicious start, the 500 lb instrument struggled commercially.



Neither piano nor organ, it was misunderstood by many and was not the success it perhaps could have been. Stability issues contributed to this, due in part to World War II and its impact on component supply and manufacturing. However, its eerie, ethereal sound did find sympathetic ears, and became a mainstay of film and television soundtrack production. *Gone with the Wind, The Maltese Falcon, Rebecca, House of Frankenstein, The Outer Limits* and *The Twilight Zone* are just a few classics that feature Novachord as part of their soundtrack.

Production stopped because of a shortage of parts in 1942; poor sales kept it from being built after the war. It is estimated that less than 200 Novachords are still in existence and considerably less than this are in working order.



When we first read about the Novachord, we knew we had to sample it. The idea of those 163 valves turning each key in to a synthesiser in its own right, the iconic, part horror-organ, part-analogue synth sound, the huge bakelite dials - everything about this instrument has a unique character that deserves to be captured and made available to a new generation of musicians.

Maybe the Novachord sound will find its way back into some horror movies again - wouldn't that be fantastic?

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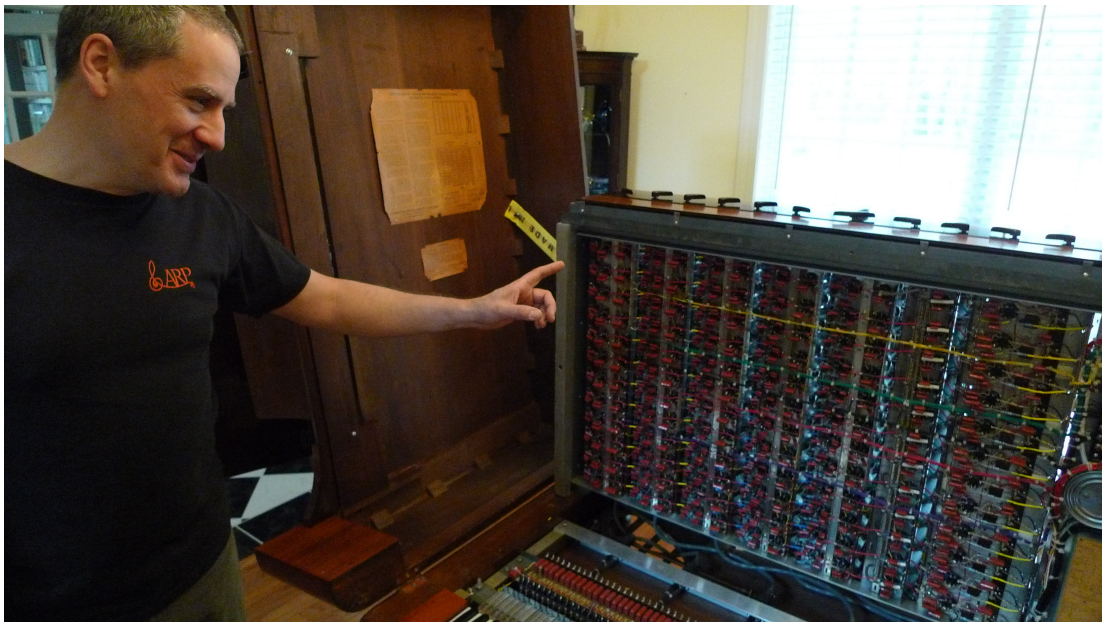
THE NOVACHORD RESTORATION PROJECT



Phil Cirocco with his Novachord (generator cover open)

Phil Cirocco is an electronics engineer and synthesizer designer who runs Discrete Synthesizers in Savannah, GA, in the United States.

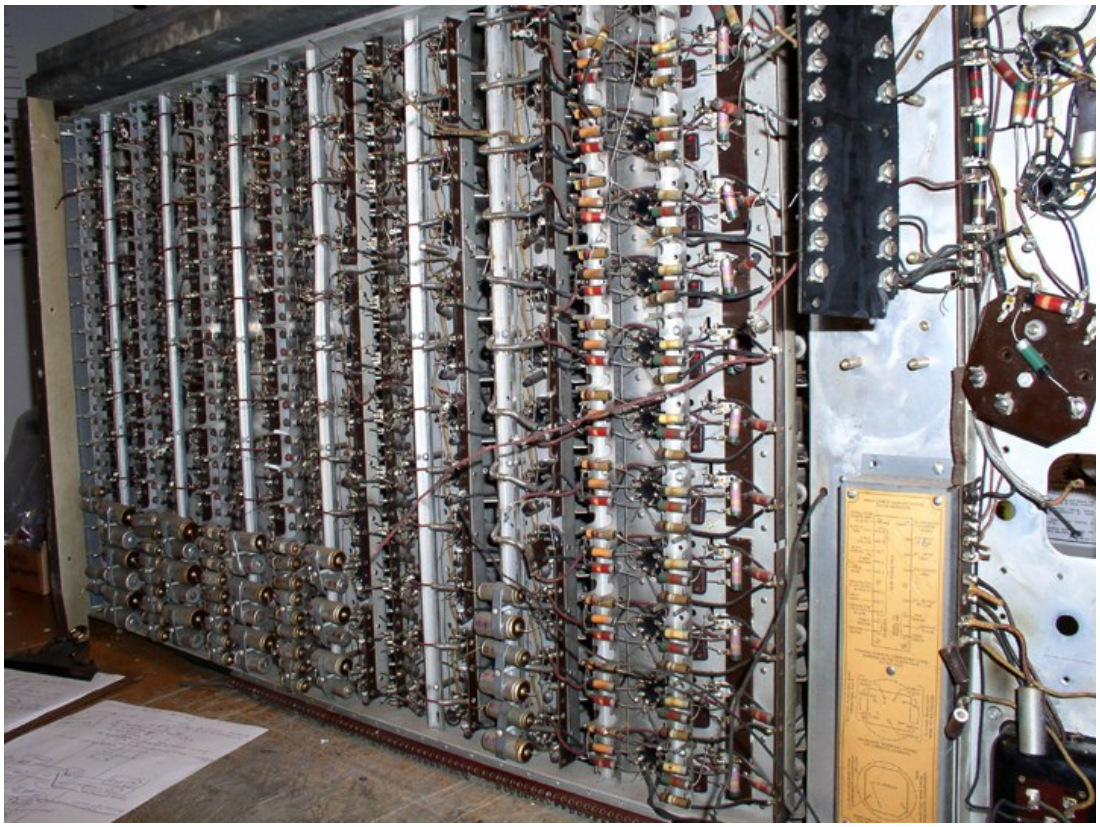
Phil bought his Hammond Novachord in October 2004 in Connecticut. After some initial research he realized that he would need to replace all the passive components to make the instrument stable and reliable. 1940s resistors can change values just due to the ambient temperature. It was a case of replacing every single one - a massive undertaking.

You can read the full details of the restoration on Phil's website here

The restoration required the complete refurbishment of the 'generator' - this is the 'brain' of the Novachord, and contains the front control box, the resonators and the 9 vacuum tube channels. It contains 12 oscillators, 60 frequency dividers, 60 band pass filters, 72 VCA's, a pre amp and a hex-vibrati in the generator. There are a total of 146 tubes in the generator.

Each generator channel was restored, painstakingly, piece by piece. You can see from the pictures here and on Phil's website the incredible amount of work involved in just one of the channels.

The damaged generator before restoration



Stripping the underside of the generator

The now-gorgeous looking copper power-amplifier with its huge valves was completely rebuilt, looking for all the world like a piece of hi-fi exotica.

The power supply before restoration ..and after.

The keyboard also required extensive contact cleaning and repair work, with new custom circuit boards made by Phil for the key circuit. The keyboard also houses the release function for all 72 envelope generators, so is good deal more complex than a modern design.

Phil's restoration efforts were not confined to electronics - he also got pretty involved with the woodwork as well. As you can see in the following pictures, the cabinet was not in a good state, and needed fully sanding and re-varnishing. Anyone who has ever undertaken restoring a piece of furniture will know how slow and frustrating that can be!

The various stages of the cabinet restoration.

Soniccouture would like to congratulate Phil on doing such a wonderful job, and thank him once again for agreeing to let us sample it!

SAMPLING THE NOVACHORD

Dan from Soniccouture travelled to Savannah, Georgia to record the Novachord in Phil Cirocco's dining room, where it resides.

The direct mono output was recorded though Apogee convertors. Every note (72 in total) was recorded, 50 times with different Novachord settings each time.

The samples were left intentionally long, to preserve as much of the natural fluctuation of the Novachord's circuits as possible.

THE NOVACHORD FRONT PANEL

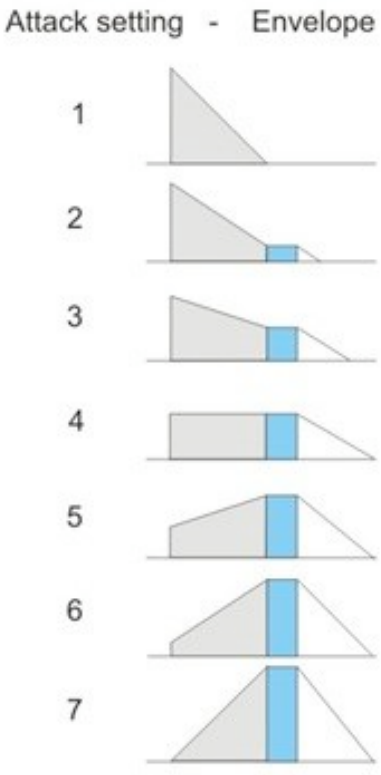
The front panel of the Novachord provides the player with an array of levers that control various aspects of the instrument.

Starting from the left, the first 6 levers control the relative levels of a set of six filters. Starting from the left, these are: *Deep Tone* (a low pass filter), *First Resonator*, *Second Resonator*, and *Third Resonator* (which are resonant band pass filters), *Brilliant Tone* (which is a high pass filter), and *Full Tone* (a sum of all the other filters.)

Blending these six filter channels is how you control the timbre of the Novachord, very much like stops on an organ.

After this there is a control for *Bright-Mellow*, which is a very gentle low pass filter over the entire output. There is a Balancer lever, which controls the keyboard tracking of the filters.

One lever is called *Attack*. This controls the whole envelope of the Novachord,not just the attack, but the decay and sustain settings as well. When *Attack* is set to Fast, the sound is a percussive decaying sound. When it's in the middle the envelope has an organ characteristic and sustains indefinitely. When the *Attack* is set to Slow, the attack time is very slow, as we might consider a pad sound today.



The Release on the Novachord was fast unless you used the foot pedal, which would introduce a long release time.

The Novachord also had a lever called *Combination*, which was actually two "presets" named "Percussion" and "Singing". These were mechanical presets, so that when you moved this lever, all the other levers physically moved to the correct position for these two sounds. We include these two presets in our sample set.

Then there is a lever for Volume control, which we left at maximum. (There is also a volume pedal on the original instrument.)

There are two levers for Vibrato, which are on/off switches for a "Small Vibrato" or "Normal Vibrato".

Finally, there is the *Starter* lever, which you physically need to "wind up" the instrument to get the vibrato relays running (a bit like starting a lawnmower).

As you'll see in the next few pages, we took some time to try and reproduce the experience of the Novachord front panel in our instruments, as well as sampling the Novachord as it is.

NOVACHORD LIBRARY SPECS

- 24 Bit 44.1khz mono sampling
- 3.6 GB core library
- 3600 samples
- over 200 Kontakt Instruments

2 DIFFERENT SAMPLING CONCEPTS

Firstly, Novachord patches were recorded in the traditional way ; set up the Novachord with a certain sound, and then record every note. These were then mapped and looped and labelled :

THE '311300' LABELING SYSTEM

Each different patch setup sampled from the Novachord is named according to where each of the filter levers was set, eg :
301331 - *Deep Tone = 3*, *First Resonator = 0*, *Second Resonator = 1*, *Third Resonator = 3*, *Brilliant Tone = 3* , *Full Tone* = 1

'MODELED' FILTER SAMPLING

Secondly we took a more experimental, 'modeled' approach : we recorded each 'oscillator' - *Deep Tone, 1st, 2nd, and 3rd Resonators, Brilliant Tone* and *Full Tone* - separately, and at 3 different vibrato settings for each.

The idea here was that these individual sample sets could be layered in Kontakt to allow the user to mix them together, to give a more authentic, flexible Novachord experience.

These two approaches resulted in two type of Kontakt preset, or templates. We call them the **1939/2039 Novasynth** and the **Dual Layer Novasynth**.

THE KONTAKT INSTRUMENTS

OVERVIEW

As mentioned in the previous chapter, we designed 2 different types of instrument for the the Novachord library, to accommodate the different sampling concepts within it : ***The Dual Layer Novasynth***, and the ***1939/2039 Novasynth***.

THE DUAL LAYER NOVASYNTH

This instrument was designed to utilize the traditionally sampled Novachord multi-sampled patches. It can be used very simply with one set of Novachord samples, loaded into PATCH 1. This is the most 'authentic' way of experiencing the exact sound that came out of the Novachords output.

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For added voicing richness and versatility, a second layer can be loaded into NOVA PATCH 2. These two layers can then be mixed and modulated together or independently of each other.

CONTROLS OVERVIEW

THE NOVA PATCH MODULES

This is where you select different Novachord sample sets. You can select from each of the fifty fully multi-sampled sets we recorded with this drop down menu. You can also use the grey arrows above and below the menu to step through these sample sets.

A note about the preset naming: As we sampled so many different settings of the Novachord we needed to find a way to keep track of what the settings were. The six digits that many of the preset waveforms begin with are the relative positions of the six channel levers. So, in the above picture “333333 No Vibrato” means that this waveform is the Novachord with all six filter levers up at maximum, and the vibrato switched off.

Often (but not always) you’ll find the same sound has a Vibrato and No Vibrato version right beside it in the list.

THE AMP ENV SECTION :

This gives you control of the Amplitude Envelope.
The *Attack* time is controlled by the big lever, with *Decay*, *Sustain*, and *Release* times on the smaller knobs. You also have control over the Velocity>Volume sensitivity via the *Velocity* knob.

THE FILTER SECTION

In the centre, the Filter section gives you control over the main Low Pass Filter Cutoff (the big lever), and then starting from the bottom left you have controls for:

- Keyboard Tracking (TRACK)
- Envelope Depth (ENV) of the Filter Envelope to the Main Filter
- Resonance of the main filter (RES)
- Velocity to Cutoff Sensitivity (VEL.)
- A High Pass Filter (HPF)
- The Resonance of the High Pass Filter (HP RES)
- An LFO to the Filter Cutoff (triangle wave) (LFO)
- The LFO Rate (RATE)

THE FILTER ENV SECTION

This gives you control of the Filter Envelope. The Attack time is on the big lever, with *Decay*, *Sustain*, and *Release* times on the smaller knobs. You also have control of the velocity sensitivity of the Filter envelope on the VEL knob.

THE MIXER AND EDIT SELECT SECTION

As the name implies, this instrument lets you load two complete Novachord sample sets, one into *Nova Patch 1* and the other into *Nova Patch 2*. The respective level of each these is controlled by the large lever to the side of the menu.

N.B : It is important to note the behaviour of the selection LEDs!

If you select the red LED above either Patch 1 or Patch 2, all the modulation controls in the upper part of the panel (*Amp EG*, *Filter*, and *Filter EG*) will affect ONLY that selected waveform.

So if *Nova Patch* 2 is selected (as in the above picture), and I adjust the filter cutoff, then only the filter cutoff of the Nova Patch "333333 Vibrato" will change.

If the EDIT LINK green LED in the middle of the page is selected:

Then all changes to the modulation settings will affect all the Nova Patches at once.

This is important to remember. If LINK is active, all the sample-sets, whether displayed or not, will be affected.

TIP : This is handy for resetting the entire instrument. If you need to reset the entire instrument to "nominal", you select the LINK, and then Command-click on each of the controls. (Control-click in Windows) Command-click or Control-click resets any knob to it's "nominal" value, ie. the value where it has least effect.

GLOBAL EFFECT KNOBS

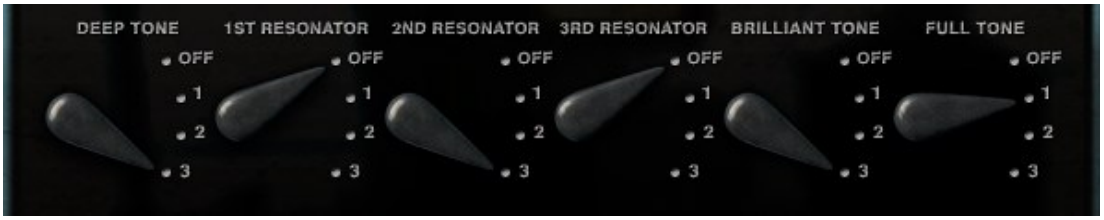
At the bottom of the main Novachord panel, you'll find four extra knobs. These four knobs work on the Instrument as a whole, irrespective of the state of the EDIT select or LINK buttons.

- DRIFT is a very subtle pitch drift that causes each note to wobble very slightly, as if the oscillators have become unstable.
- DETUNE is a standard unison type detune mode. It doubles the polyphony you're using as soon as it's set to anything other than 0. As you bring it up, it increases the amount of detune.
- WIDTH is the panning of the DETUNE effect in the stereo field. 0 is mono.
- TUBE SAT is a saturation effect, to emulate vacuum tubes getting overdriven!

N.B. These four knobs work on the Instrument as a whole, irrespective of the state of the EDIT select or LINK buttons.

1939 / 2039 NOVASYNTH

This instrument was designed as a more experimental sampling concept. We wanted to present each 'Tone' and resonator individually, to be mixed as in the original instrument. This gives you some feeling for how the Novachord controls are in real life.



Firstly, you have the six channels (which were filters in the Novachord, of course). *Deep Tone, 1st, 2nd,* and *3rd Resonators, Brilliant Tone* and *Full Tone.*

These are exact samples of those channels, so by using these levers, you adjust the sound very much like the original instrument. One key difference is that our levers are continuous, instead of having just 3 settings. This makes more detailed adjustments possible.

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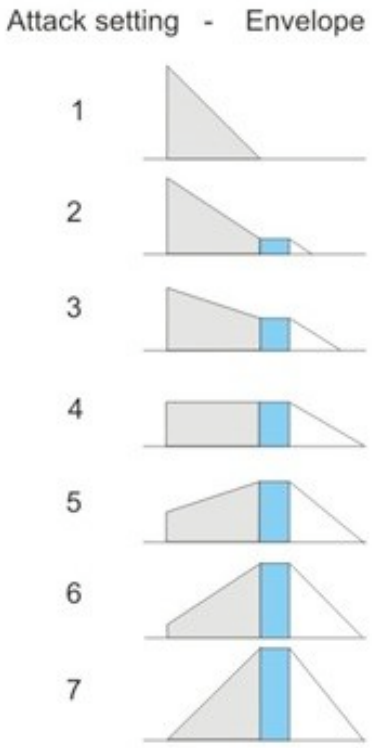
THE ATTACK KNOB

This knob controls the envelope in a similar way to the original Novachord, as mentioned in an earlier chapter. Although it's named Attack, it controls not just the attack time, but the sustain level and the decay time as well.
The Attack knob controls the envelope behaviour something like this:

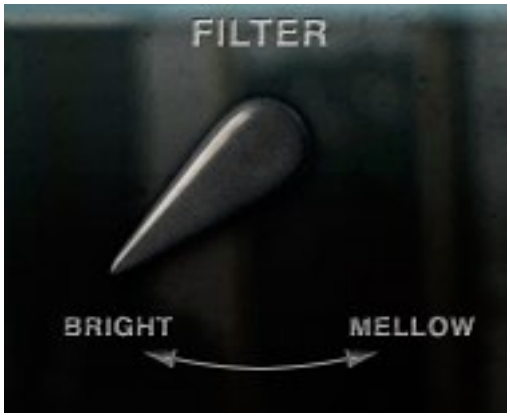


You'll also notice a small LED saying Release. This will add a release to the envelope. If you route a MIDI CC to this, you'll be able to control the release in real time (using a pedal or other controller), very much like the original Novachord.

(NB. To assign a MIDI CC, use the Automation tab on the left of the Kontakt screen, and just drag your desired CC to the Release switch itself.)

BRIGHT > MELLOW

This controls the overall brightness of the instrument. It's a very shallow (single pole) low pass filter that works globally across the entire output of the instrument.



VIBRATO

This knob gives you three different levels of vibrato, which is the natural vibrato sampled from the Novachord. By switching the knob you select a different set of sampled waveforms, with varying degrees of vibrato.

2039 PANEL : ENTER THE FUTURE!

You might have noticed, in the top right hand corner, just beside the Vibrato control, the inset “1939” button.

If you click on this button, the entire panel changes to this:

This is our 2039 (well, 2010, but *2039* sounds better) version of the Novasynth. We’ve added a lot more controls, individual editing for each channel, and modulators not available on the original Novachord. The next section explores these controls in detail.

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THE ENVELOPE SECTION

Now (in the future) the Attack section is supplemented by a full ADSR set of controls. The big main lever is now a true “Attack” time controller, and the *Decay*, *Sustain*, and *Release* knobs are smaller knobs beside it. There is a VEL knob here as well, to give you control of the velocity sensitivity.

The LED switch named *FEG* switches the controls to those of the Filter Envelope. Note that in *FEG* mode, the Velocity sensitivity is bipolar.

THE FILTER

Instead of the *Bright Mellow* control, this is now a dynamic filter, which is by default a 2 pole LPF with resonance.

You can see that additional controls have appeared around the main cutoff lever. These are:

- Keyboard Tracking (TRACK)
- Envelope Depth (ENV) of the Filter Envelope to the Main Filter
- Resonance of the main filter (RES)
- Velocity to Cutoff Sensitivity (VEL.)
- High Pass Filter (HPF)
- High Pass Filter Resonance (HP RES)
- LFO to Filter Cutoff (triangle wave) (LFO)
- LFO Rate (RATE)

These are identical to the Filter controls in the Dual Layer template.

VIBRATO

Vibrato works the same as in the 1939 setting, except that now it can be set independently for each of the six channels.

See ‘Channel Selection’ next.

CHANNEL SELECTION

You will notice that above each channel lever you now have a red LED. This will select that channel for editing. When a channel is selected, it is affected by any editing you do to the modulation controls above... filter, envelopes, etc.

If ALL is selected, then you are adjusting that parameter for all 6 channels at once.

SOLO : Since you are hearing all 6 at once (if all six levers are down), it’s sometimes useful to be able to solo one of the channels while you’re editing it. You can do that using the solo switch beside the ALL switch.

In the case of the picture above, you would only be able to hear the Brilliant Tone while you’re editing it.

TIP : Remember that you can reset any knob to it’s default position by using Command-click or Control-click.

GLOBAL EFFECT KNOBS

As with the Dual Layer NovaSynth, you'll find four extra knobs. These four knobs work on the Instrument as a whole, irrespective of the state of the EDIT select or LINK buttons.

- DRIFT is a very subtle pitch drift that causes each note to wobble very slightly, as if the oscillators have become unstable.
- DETUNE is a standard unison type detune mode. It doubles the polyphony you're using as soon as it's set to anything other than 0. As you bring it up, it increases the amount of detune.
- WIDTH is the panning of the DETUNE effect in the stereo field. 0 is mono.
- TUBE SAT is a saturation effect, to emulate vacuum tubes getting overdriven!

N.B. These four knobs work on the Instrument as a whole, irrespective of the state of the EDIT select or LINK buttons.

NOVASYNTH EFFECTS PAGE

The effects page is the same whether the instrument is the **Dual Layer Novasynth** or the **1939/2039 Novasynth**. They both use the same effects setup.

Select the Kontakt tab below the main panel, and the view will change to the effects panel :

This gives you some quick access to a selection of effects:

REVERB - The send level is on the main lever, and you have small knobs for the return level and a high pass filter (on just the reverb).

The pull down menu gives you access to some of our favourite convolutions.

DELAY - The main lever is the send level, and there are knobs for the Delay Time, Feedback, Damping and Panning.

PHASER - The LED turns on the phaser effect, there are control knobs for the Phaser speed, Mix level, Phaser Depth and Feedback.

CHORUS - The LED turns on the Chorus effect, and there are control knobs for the Chorus Speed, Mix level, Chorus Depth and Phase.

ROTARY - The LED turns on the Rotary effect, and there are control knobs for the proximity of the Rotary (NEAR), which basically controls the amount of stereo movement of the effect, the Mix level, the High/Low frequency Balance, and the Speed.

CABINET - Here you have a choice of cabinets on one knob. There are also knobs for the size of the cabinet, and High and Low frequency adjustments.

N.B. The Effects are always global - i.e. : you cannot apply them to a Nova Patch or Tone separately.

THE PRESETS

The Novachord library features over 200 presets. Here is a guide to finding your way around them all :

INIT PRESETS

On the top level of the preset library you will see two .nki instruments, *2 Layer NovaSynth Init.nki* and *1939-2039 NovaSynth Init.nki*

These are provided here as handy, quick starting points for building your own patches from scratch. There is also a folder of more specific template voices, see below for details.

PRESET FOLDERS :

BASSES
The Novachords growly low-end provides some interesting and meaty bass patches.

KEYS
These are generally patches that are good for playing as chords, or as you would any keyboard patch.

LEADS
Distinctive sounds useful for playing a main melody or motif.

ORGANESQUE
These presets use the Novachords distinct organ tones to create something halfway between organ and synth.

ORIGINAL SETTINGS
This folder contains the original Novachord sample-sets, presented as a single layer in the Dual layer NovaSynth, with no additional modulation settings. These are the presets to use for a genuine, unadulterated Novachord sound.

PADS
The Novachord's forté, and the biggest preset folder! Slow, ethereal and evolving.

SEQUENCE
Tempo-sync'd sequenced voices using KSP sequence tools.

SFX
Stranger voices that don't fit into any other category.

STRINGS
Orchestral/synth string influenced voices.

TEMPLATES
Here we have provided a number of different templates as starting points for sound design. The internal Kontakt parameters have been edited to give a different character to the default Novasynths, as denoted by the name of each instrument. For example: *2 Layer NovaSynth BP4 Filter.nki* has a band-pass filter instead of the default low pass, *1939-2039 NovaSynth Glide Monophonic.nki* is in monosynth mode with portamento/glide.

Many of the preset voices in the other folders were edited in this way to give slightly different filter or other characteristics. Providing templates of this kind is useful if you do not own a full version of Kontakt 4 (which permits editing), or if you're not confident editing the NKIs.

SUPPORT

If you have any problems or questions relating to the use of this product, please feel free to contact us. You can either email us at :

customerservices@soniccouture.com

or we have a support forum within the KVR Audio community, which can be found here :

Soniccouture Support Forum

We will always endeavour to reply to any enquiry within 12 hours, but do bear in mind the differences in time zones, so please be patient!

E.U.L.A.

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