



CHROMATIX

Installation Guide & User Manual

D.A.Wilson, Hideaway Studio, June 2015

HS-K4L-A019

Hideaway Studio Presents... CHROMATIX



Chromatix is a celebration of yet another successful resurrection of an old classic saved from the grave... this time it was a lovely 1983 Rhodes Chroma!

After a very deep clean inside and out followed by a visual inspection it was quickly realised the original rather large and somewhat grizzly linear PSU had burnt out and was showing signs of several past repairs. News got round that a new cooler running switched mode PSU retrofit had been made available and was duly installed. Having returned power to the beast it quickly transpired that at least two voice cards had serious issues and were failing the dreaded auto-tune. This rapidly became a can of worms when it became apparent that almost all of the considerable number of analog multiplexors within the beast were practically dying in front of my eyes due to age and after the shock of being pressed back into action for the first time in several years. Following removal and replacement of some 40 or so unsocketed ICs much of the instrument returned to life leaving a final stubborn voice card really determined not to play ball. On discovery of a number of leaky transistor arrays and tired charge pump oscillators the final voice card eventually succumb to my continued harassment only to have a third voice card fail during soak testing!

After two weeks of intense toil the beast returneth to life... and what a beast!

ARP's Last Gasp...

ARP Instruments, the hugely influential name behind a string of famous instruments such as the ARP2500, ARP2600, Odyssey, Avatar, Omni, Quadra and Axxe was in its prime during the 70s but by the early 80s the tables had turned for the worse and the company was losing money hand over fist thanks to a series of unfortunate business decisions, excessive cost of sales figures and overheads.

Work had started on the Chroma in the autumn of 1979. After two years of intense development interspersed by the project being temporarily shelved on a number of occasions things were looking decidedly shaky at ARP on the financial front. This was no fault of the R&D team behind this technically challenging design but due to increasing resistance from management who had their own battles to fight.

Philip Dodds was left to head a company dying before his eyes and several months of development were lost to company politics. The situation became dire and he was eventually left with little option but to close down the R&D department. Despite the ongoing stress of the situation he succeeded in selling on the IP rights to the Chroma design to CBS Musical Instruments and in the process was hired to oversee its production. If it wasn't for this last gasp for survival the Chroma would surely never have existed.

The Chroma was an advanced digitally controlled analog synthesizer released after the initial success of the Sequential Prophet-5. Both instruments offered patch memory with the Chroma sporting a bank of 50 user programmable patches. It was one of the first analog synths to offer multi-timbral operation, voice layering and keyboard splitting with velocity sensitivity. The voice architecture was unusually flexible whereby the firmware could route signals through two low pass filters, in parallel or series, or switch the VCA before or after the filters. Through a bespoke digital interface (Chroma pre-dated MIDI) it was even possible to edit voices in a program on the Apple II computer.

CBS released the Chroma in 1981 with a list price of \$5295 and proved to be pretty successful with estimates of around 1400 units eventually sold.

The Trendsetter: Peering through the letterbox...

The Chroma featured a new method of programming interface whereby a front panel full of sliders and dedicated control knobs was replaced with menus shown on a small display with a single data slider and multiple dual-function membrane switches to edit parameters. This design may well have influenced Yamaha in their design of the DX7. Sadly this concept, although sleek and modern, proved to be much disliked by those who wanted to go beyond loading the factory sounds and have a go programming something new for themselves.

Equipment Used:

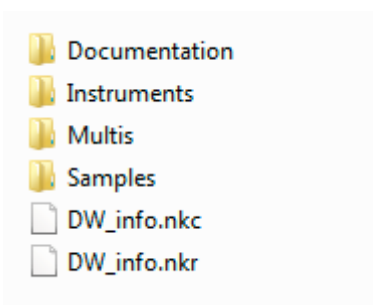
All sample material captured from a recently restored 1983 Rhodes Chroma with very kind permission from Will Gregory. Sample capture in 24-bits via a TL Audio EQ-2011 Tube EQ to the RME Fireface.



Installation

Installation is straightforward. Chromatix requires Kontakt version 4.2.4 or higher and around 1.34Gb of free hard disk space. Once the .zip file has been downloaded unzip the archive making sure the original directory structure is retained.

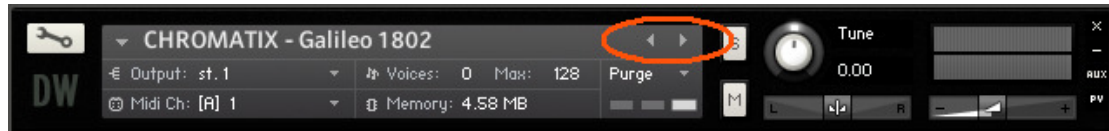
This should result in a folder called Chromatix containing the following folders:



To run the library simply load up one of the 75 example .nki files in the Instruments folder.

Instant Gratification

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



Hopefully by 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 which can be saved under new file names.

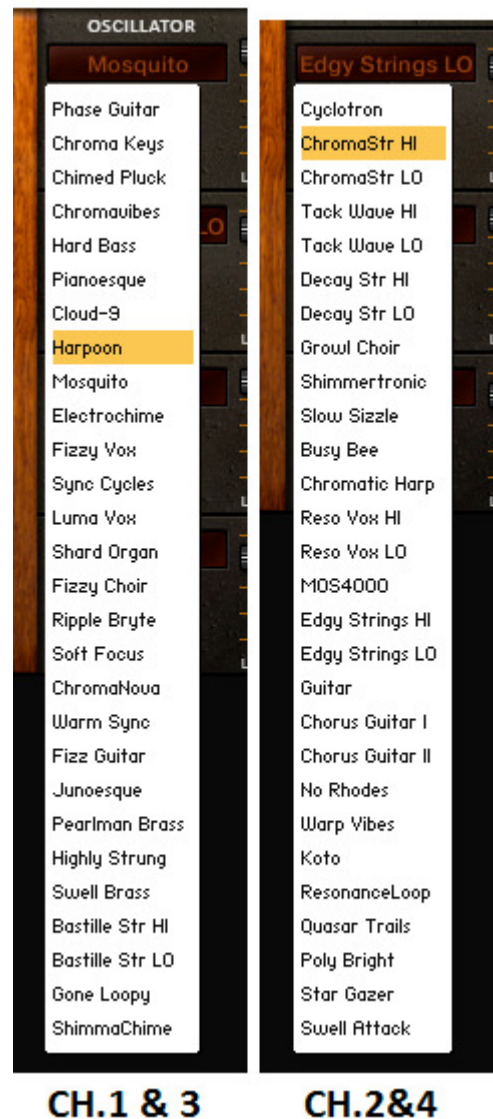
Using the Layering Engine



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. This release is the first to use a recently updated version of the layering engine which has recently been revised to include separate velocity sensitivity controls for each layer.

Voice/Partial Selection



Above of each of the four voice panels there is an orange LCD display showing the selected voice. By clicking on each of the displays a pull down menu appears allowing one of 56 voice partials to be selected. With a potentially vast number of layered permutations at hand two different banks of 28 partials are available the first set assigned to channels 1 and 3 and the second bank of 28 partials assigned to channels 2 and 4.

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

The Voice Programming Panels



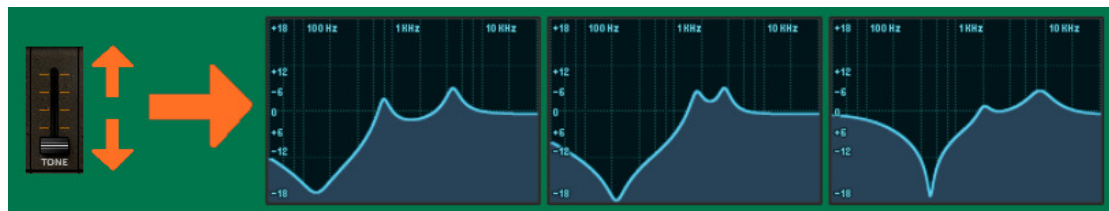
Each of the four voice programming panels features 12 basic controls to shape each sound in the layered instrument. Each control is altered by moving the mouse whilst clicking on it.

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 downward position the signal is unaffected. As the control is moved upwards 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.

Channel Mutes

The square button to the right of the control sliders is the **LAYER ON/OFF** which enables each of the four voices in the instrument. By clicking on the button the layer toggles on and off. When the red LED is off the voice is muted. 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 (Loudness Contour)

The **ATK** (attack), **DEC** (decay), **SUS** (sustain) and **REL** (release) control sliders offer basic envelope control for modulation of the amplitude over time (VCA). The further the attack control is moved upwards the more gradually the sound builds up. The more the release control is moved upwards the longer it takes for the sound to decay after the note is released. The decay slider determines how quickly a sustained sound diminishes with time whilst sustained. The higher the setting, the longer it takes to decay. Very rapid settings (sliders towards the bottom of their travel) will produce plucked or staccato effects and slow settings will produce a swelling effect. The sustain

control determines the volume at which the sound will rest during sustain once the decay portion of the envelope has completed.

The **VELO** control determines how sensitive the amplitude modulation (VCA) is to changes in key velocity. In the lowest position key velocity has no effect on volume.

***NB:** Several of the programs in this library make use of **velocity controlled attack modulation**. The use of **velocity sensitive** keyboards will therefore really bring out this feature. 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 slider a little further upward (slower) than first expected.*

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 seemingly basic, it is 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 voice partials all tuned to the same pitch it is also possible to create other effects:

Making it Fat

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

Expression

Setting a different **ATK** (attack) level for each partial can often help to make an instrument more responsive to changes in velocity and through sustain.

Please note that most voice/partial sounds in this library are designed to react in a number of ways to velocity (volume, VCA and VCF attack phase, filter cutoff and pitch). With this in mind it is highly recommended that a velocity sensitive keyboard is used and that many featured sounds often benefit from a very gentle and sustained playing style thus adding to the dynamic effect when more strident notes are subsequently played.

Making it Wide

Try setting the **PAN** controls for each voice to wildly different settings for each partial 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 used to create partials on organ voices in conjunction with careful adjustment of the level controls.

Morphed

By setting the **ATK** (attack) to different rates and the pitch **SEMI** control to form intervals for each partial complex morphing effects may be achieved.

Wobbly

Using relatively deep **LFOs** of slightly different speeds across all four partials, 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 red 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 moving 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 increased 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.

Flanger

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

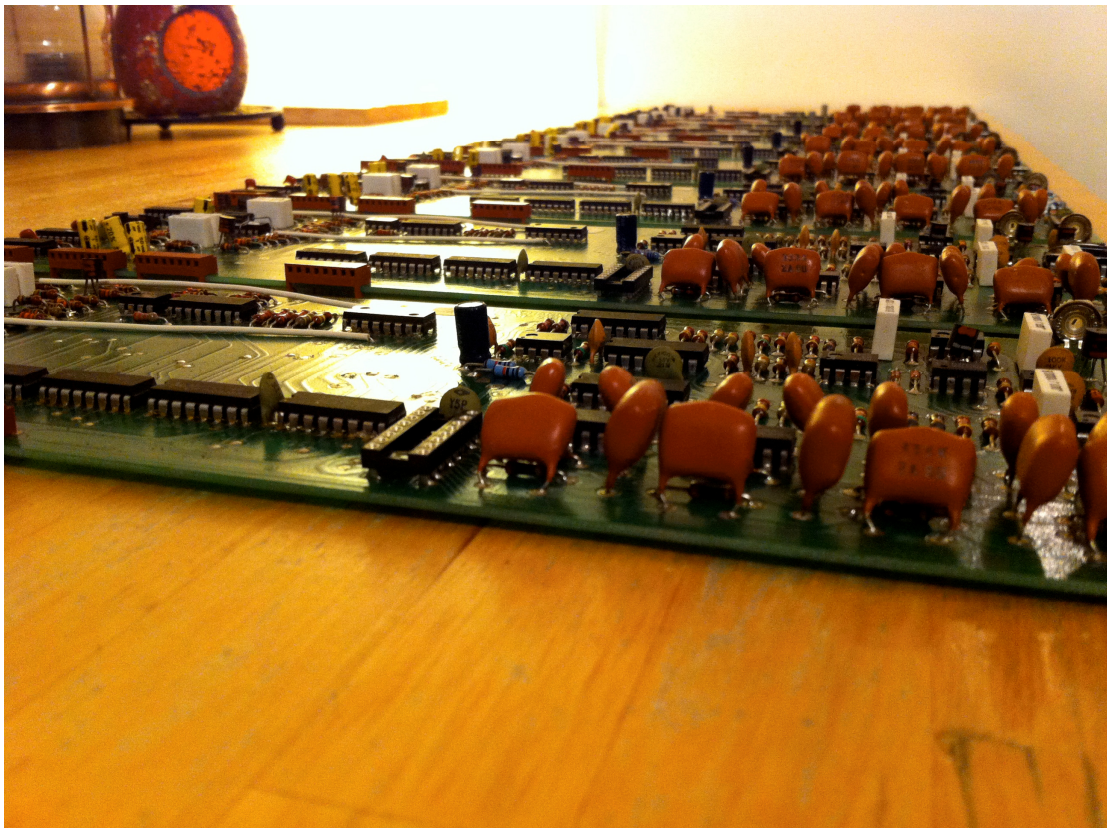
Chorus

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!



A Sea of Components on 8 Voice Cards
No. 21010096 ...Returned to Life!

Credits

Dani Wilson (Hideaway Studio)

Rhodes Chroma Restoration, Sound Design, Example Instruments & Demo

Stephen Howell RIP (Hollow Sun)

Original Layering Engine Concept

Anders Hedström (Flavours of Lime)

GUI Graphic Design

Mario Krušelj

Layering Engine Script

A very big thank you to Will Gregory for granting permission to sample the Chroma following major restoration at Hideaway Studio.

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

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