

ART PYRITE-K

created by ARTVERA



www.artvera-music.com

ART Pyrite-K is a unique Virtual Instrument based on ART Pyrite VST synthesizer.

Compatible with the KONTAKT 5 (full version 5.42 or above).

ART PYRITE-K - ABOUT

I didn't have any possibility to create ART-Pyrite VST synthesizer in 64 bit version due to lack of 64 bit modules, so I decided to create ART Pyrite in the format of sound library/virtual instrument for the VST KONTAKT, which is possible to use also on the other operation system than Windows.

The graphic user interface of ART Pyrite-K is a rigorously scripted for the creation of the most similar interface to ART Pyrite VST synthesizer and also to its functions. Included samples are the identical like in the VST version.

Even though the KONTAKT's version of ART Pyrite-K doesn't offer all possibilities like the VST version, there are added some other options, not included in the VST version. In the result the final sounds are very similar to sounds of VST version, in some cases even better.

Because the KONTAKT is only the sampler, there wasn't possible to use the real oscillators, so all sound sources are based on samples. Some presets/patches produce the identical sounds like the VST version, other are a bit different depending on the possibilities of the KONTAKT and some presets/patches are completely new.

The count of modulation options is restricted in an effort to create the instrument with low CPU so from this reason the modulation feature "Sample & Hold" isn't implemented. In many cases the implemented modulation is completely sufficient to create the required sound.

Like the VST version, KONTAKT's version offers the possibility to use the function "RANDOM" for the exchange of all sound sources in oscillators, to change the levels at volume steps and also to change the pitch at all steps in the step sequencer. The „RANDOM“ feature offers the possibility to create own presets/instrument or snapshots very easily.

The Virtual Instrument ART Pyrite-K was scripted/created to provide a wide variety of sounds for Atmospheres, Soundscapes, Pads, Textures, Ambient, Sound Effects and Rhythmic Sequences.

Thank you for buying ART Pyrite-K.

I wish you great ideas, much inspirations and a lot fun tweaking ART Pyrite-K !

BASIC FEATURES

- Four sound sources (oscillators) based on samples. All samples are looped.
- Oscillators 1 & 2 powered by 24 basic multisampled waveforms.
- Oscillators 3 & 4 powered by 256 single waveforms.
- Two filters 24dB LP and HP (selectable) for oscillators 1 & 2.
- One multi filter 12dB LP/HP for oscillators 3 & 4.
- Two amplitude ADSR-style envelope generators.
- Two filter ADSR-style envelope generators including the envelope amount.
- Two units EQ 2-band, the one for each pair of oscillators.
- One effect unit Chorus for oscillators 3 & 4.
- One effect unit Delay (controls two units) with the option to select the free or synchronic echoes and with the special section "Subdelay" for the control of the panorama and echoes at all oscillators.
- One effect unit Stereo for all oscillators.
- One effect unit Reverb for all oscillators.
- One effect unit Torsion for all oscillators.
- One a special polyphonic 16-step sequencer with the option to route the Midi note messages to any oscillator, the pair or to all oscillators.
- Nine modulation slots with the free or synchronic modulation for all filters, the mixing and the panorama for each pair of oscillators.
- One section Option with the Master Limiter and possibility to set the Velocity sensitivity and Pitch Bend Range for the live playing.
- Three "Random" buttons for the exchange of all waveforms at all oscillators and the randomly setting at Volume level & Pitch shift at all steps in the step sequencer.
- RAM usage 178 MB.
- CPU usage about 7-10 %.
- Three preset categories (+Bonus) include 555 presets in the format NKI and NKS (snapshot).

THE FEATURES OF ART PYRITE-K IN DETAIL

THE TOP PANEL



The symbol of Pyrite cube turns the effect **Stereo** to ON/OFF. Because ART Pyrite-K includes only mono samples, is this feature very useful. This effect is without the individual setting.



The button **OPT** (Option) opens the section where you can adjust the **Velocity sensitivity** (useful mainly for the live playing) and **Pitch Bend range** (useful if you use the wheel Pitch Bend on your Midi keyboard).

Here you can find also the **Master Limiter** (suitable mainly for any rhythmic sequences with the type of percussive sounds).

The setting in OPTION section is't the global setting, you can set the parameters for each instrument or snapshot individually.

With the slider **TORSION** you can control the amount of smooth tube saturation with emphasizing of harmonics for all four oscillators. This effect is without the individual setting. The small shine **LED** indicates the activation of effect.

The **Value box** shows the values at most of the major controls when you move them.

The button **SEQ** (Sequencer) opens the section of Step Sequencer.

The button **MOD** (Modulation) opens the section with all modulation controls.

THE SECTION OF OSCILLATORS



The oscillator's section is divided to two parts. The top part includes the sound sources and some important controls for the oscillator 1 & 2. The bottom part is designed for the oscillator 3 & 4.

Between both parts you can see the button "**R**" (Random). It allows you to exchange all sound sources at all oscillators.

PULSATION 1 & 2 - this section is designed for the modulation of pitch for the oscillator 1 & 2. Here you can create some vibrato effects or FX sounds at high values of knobs.

The **red button** turns this section to ON/OFF.

With the non syncable knob **Rate** you can set the rate (Hz) of modulation powered by the sine shape.

Both knobs **Range Level** determine the range of modulation in semitones.

The default setting of all knobs produces the classic vibrato effect.

The **main big display** in the mid part shows all sound sources for all oscillators. For the oscillator 1 & 2 you can choose the sound sources from 24 basic waveforms. The oscillator 3 & 4 includes 256 waveforms.

For the selection of any waveform you can use two small arrows on left and right side or simply click on **Waveform box** for the showing of list of all available waveforms.

On left side you can transpose the pitch of each oscillator in boxes **Octave** and **Semitone**.

The box of Octave is in the range of 3 octaves up and down. The box of Semitone is in the range of zero to 11 semitones up.

For the shift of pitch simply click on the box and drag by right mouse button up or down, depending what you need to shift (Octave and/or Semitones). *Use the button **SHIFT** on your PC keyboard for the fine setting.*

The slider **Detune 2** enables a small detuning in the range of one semitone (up or down) for the oscillator 2.

CHORUS - this effect is destined only for the oscillator 3 & 4.

The **red button** sets this section to ON/OFF.

The knob **Depth** sets the amount of LFO modulation.

The knob **Speed** sets the speed of LFO modulation.

The knob **Phase** adjusts the phase difference between the two LFOs.

The **three sliders SEND** (Chorus and Reverb) control the amount of signal sent to the Chorus effect (only oscillators 3 & 4) and the amount of signal sent to the Reverb effect (each pair of oscillators).

At right side of the main big display you can see the four buttons **MUTE ("m")**.

Very useful feature if you want to hear the sound only of some oscillator, for example if you want to programme any own instrument/preset/snapshot or you want to save instrument/preset/snapshot only with the sounds of unmuted oscillators.

The knobs **Level** determine the overall volume level of each pair of oscillators. These knobs are restricted to maximum value 0dB to prevent some damage of your speakers.

The knobs **Mix** allow you to adjust the volume level between each pair of oscillators. The turn to maximum position to right or left side will mute the output of one oscillator from pair.

The sections of **amplitude envelopes (A, D, S, R)** allow you to adjust the parameters for the attack, decay, sustain and release for each pair of oscillators.

THE SECTION OF FILTERS



Similarly to the oscillator's section is the filter section divided also to two parts.

The left part includes two filters for the oscillator 1 & 2, the right part includes the one multi filter for the oscillator 3 & 4.

In the mid part two **red buttons** turn the filter sections to ON/OFF.

For the oscillator 1 & 2 you can choose between 24dB LowPass and 24dB HighPass filter (**HPF button**). Isn't possible to use the both filters simultaneously.

If the red button is OFF, the button of HighPass filter is not available and both filters are bypassed.

If the red button is ON, is activated automatically only LowPass filter even though you activated HighPass filter before than you set the red button to OFF. If the red button is ON and you selected the one filter (LowPass or HighPass), the second filter is always bypassed.

All controls related to filters at oscillators 1 & 2 set all parameters for both filters simultaneously. It means if you adjust the cutoff, resonance, filter envelope and/or envelope amount, all these controls set the identical setting on both filters.

The knob **Cut 1** sets the frequency above which signals are attenuated.

The knob **Q1** sets the resonance (boost at the cutoff frequency).

The filter section for the oscillator 3 & 4 includes the one multi 12dB LP/HP filter selectable at setting of Band Width.

The knobs **Cut 2** and **Q 2** set the cutoff and resonance for the oscillator 3 & 4.

The knob **B.Width** determines the gap between the cutoff frequencies of the two filters in octaves.

With two filter envelope generators you can adjust the way how the filter works on the incoming signal. The sliders Attack, Decay, Sustain and Release (**A, D, S, R**) provide the shape on filtering.

With two knobs **Envelope Amount** you can adjust the amount of this modulation applied on filters. The parameter „envelope amount“ is activated only if the value of knob is higher than zero. If the knob is turned to zero position, the red LED at knob is dark and the filter envelope is bypassed.

If you don't want to use the filter for any oscillator (and the red button is OFF), it could be good to set the knob Envelope Amount to zero position to deactivate (bypass) this envelope (even though this envelope uses almost none CPU).

If you decide to use the filter at oscillators 1 & 2 and you turn the red button to ON, the setting at knob Envelope Amount stays adjusted at the same value for both filters. At oscillators 3 & 4 it will work only for its one multi filter.

The small brown button marked **EQ** beside of the label FILTERS, opens the section of equalizers. This small button is always visible if you switch between Filter and EQ sections.

If you didn't use the filter section, now the signal of oscillators will be routed directly into the EQ section if you will activate it by red buttons.

THE SECTION OF TWO 2-BAND EQUALIZERS



Also the EQ section is divided to two parts, each part is assigned to the one pair of oscillators.

By click on the **red buttons** you turn the equalizers to ON/OFF.

The knobs **Freq1** set the frequency of the first EQ band.

The knobs **Freq2** set the frequency of the second EQ band.

The knobs **Bandw1** set the width of the first EQ band.

The knobs **Bandw2** set the width of the second EQ band.

The sliders **Gain1** set the level of the first EQ band.

The sliders **Gain2** set the level of the second EQ band.

THE EFFECT UNIT DELAY

The effect unit DELAY offers a delay line that can optionally be synced to the tempo and provides an adjustable feedback level and a pan control for ping-pong echo effects.

If you don't use the tempo syncing feature, the available delay range is 5 to 2900 ms. Delay times lower than 20 ms aren't discernible as delays, but can produce interesting comb filtering effects.

The **red button** turns the delay effect to ON/OFF.



The **Time box** and knob **Time** - by clicking on the box you can choose the time spacing between note and its echo. If you choose any time for the synchronisation to tempo of host, the knob Time isn't possible to adjust manually.

The Time box offers also the free setting of time spacing. In this case you can adjust the knob Time manually.

The knob **Feedb** (feedback) controls the amount of the output signal that's being fed back into the input of the delay line, thereby creating a series of echos that gradually fade into silence.

The knob **Pan** offers the setting of stereo panorama to create stereo echoes.

Setting at value higher than 0 creates a panning effect, which alternates echoes between the left and the right side of the stereo panorama. This is the effect called a ping-pong delay.

Higher values will result in wider panning.

At setting 100 % signals alternate between the far left and far right channel.

The knob **Mix-Vol** adjusts the amount of delayed signal mixed with the normal signal.

The small brown button marked **SD** between time box and label DELAY opens the special section SUBDELAY. This small button is always visible if you switch between Delay and Subdelay section.

THE SPECIAL SECTION SUBDELAY

This special section is one of the major features of ART Pyrite-K. It offers the exact control of panorama of all oscillators and if is used also the effect Delay, it controls also all echoes depending on the position of the knob Pan in the effect unit DELAY.

The section Subdelay is very closely linked with the *MAIN KNOB PAN /DELAY PAN* and the setting in this section will affect the behaviour of panorama.



The four buttons with the symbols of panorama and echoes introduce two types of channels / two types of echoes (if the effect unit Delay is ON).

You can choose only the one channel for the one pair of oscillators. Isn't possible to use both channels for the one pair of oscillators simultaneously.

At the main knob **Pan** you can see the four small **LEDs**. It will help you in the orientation what the type of channel is selected for each pair of oscillators.

The button **REVERSE PAN** provides the option to reverse the panorama only for the pair of oscillators 3 & 4. This button is available only if both channels (the type1) are selected at each pair of oscillators. If you choose other combination of channels, this button is unavailable.

NOTE:

If you choose any combination of channels and the effect unit DELAY is OFF, the setting of the main knob PAN in the mid position is without any influence to the panorama. The sounds of all oscillators will play always in a mid position if is not used the modulation of panorama.

COMBINATIONS OF CHANNELS

The explanation of all combinations of channels and their influence to the panorama setting of sounds of oscillators.

You can notice that each combination of channels shows a different count and positions of small luminous **LEDs** at the main knob Pan.

The settings 1:



This combination is the default setting of channels. In this case the main knob Pan works in the standard way. The sounds of all oscillators will be placed in the panorama depending on the position of this main Pan knob.

The settings 2:



This combination of channels with the active button Reverse Pan reverses the panorama of the oscillator 3 & 4. It means if you rotate the main knob Pan to left side, you will hear to play the oscillator 1 & 2 on left side and the oscillator 3 & 4 at the opposed side. If you rotate the main knob Pan to right side, the positions of sounds of all oscillators will be exchanged.

The settings 3:



This combination of channels creates the reversed pairs of oscillators. It means the oscillator 1 and 3 will be the one pair and the oscillator 2 and 4 will be the one pair. If you rotate the main knob Pan to left side, you will hear to play the oscillator 1 & 3 on left side and the oscillator 2 & 4 at the opposed side. If you rotate the main knob Pan to right side, the positions of sounds of all oscillators will be exchanged.

The settings 4:



In this case the combination of channels creates the triad of oscillators 1 & 2 & 3. The oscillator 4 will be separated. If you rotate the main knob Pan to left side, you will hear to play the oscillator 1 & 2 & 3 on left side and the oscillator 4 at the opposed side. If you rotate the main knob Pan to right side, the positions of sounds of all oscillators are exchanged.

The settings 5:



At this last setting the combination of channels creates the triad of oscillators 1 & 3 & 4. The oscillator 2 will be separated. If you rotate the main knob Pan to left side, you will hear to play the oscillator 1 & 3 & 4

on left side and the oscillator 2 at the opposed side. If you rotate the main knob Pan to right side, the positions of sounds of all oscillators are exchanged.

The control of echoes if the effect unit DELAY is activated (ON)

Valid for all combinations of channels :

If the **main knob Pan is turned to the full left side**, echoes will be created depending on the setting of the knob Pan in the effect unit DELAY.

If the **main knob Pan is turned to the full right side** and the knob Pan in the effect unit DELAY is turned to value 100 %, it doesn't produce any echoes. The decreasing of the value of the full right position of the main knob PAN will produce the weaker echoes at all oscillators shifted to the right side in the panorama and more loud echoes at all oscillators shifted to the left side in the panorama.

If you turn the main knob Pan to the full left position, it will produce echoes at the same level, no matter if the oscillator is shifted to left or right side.

It provides the possibility to regulate the level of echoes depending on the setting of channels and on your decision about the panorama placing of the one, pair or the triad of oscillators.

The movement of sounds and its echoes you can control in the section MOD (modulation) where you find the possibilities to modulate the movement of sounds of the pair of oscillators or separately for each oscillator by using the buttons REVERSED PHASE.

THE EFFECT UNIT REVERB



This effect unit simulates the natural reverberation that occurs when a sound source is placed in an acoustic environment, thus adding a feeling of spaciousness to the sound.

The **red button** sets this effect section to ON/OFF.

The knob **PreDly** introduces a short delay between the direct signal and the reverb trail build-up. This corresponds to the natural reverberation behavior of large rooms, where a short time elapses before the first reflection of a sound wave returns from a wall.

The knob **Size** adjusts the size of the simulated room. This affects the duration of the reverb trail.

The knob **Width** simulates the proximity to the stage through the amount of stereo effect.

The knob **Damp** sets the amount of absorption in the room.

The slider **Level** adjusts the level of the processed signal.

OUTPUT SECTION – PANORAMA / VOLUME

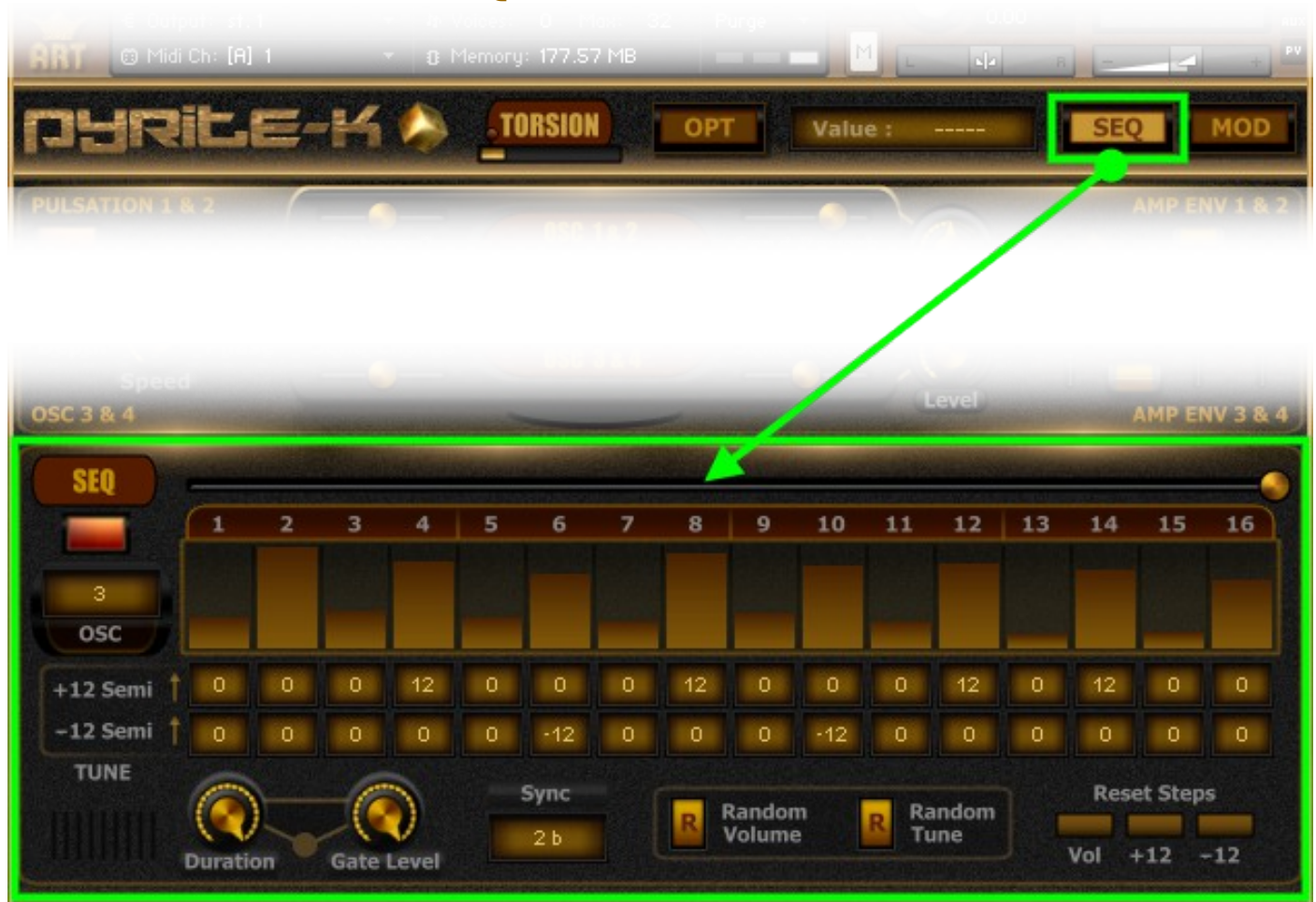


The knob **Pan** - the multi functionality of this knob is exactly described in the chapter about SUBDELAY. This knob provides the control above the panorama setting of sounds of all oscillators and echoes (if the effect DELAY is activated).

With the knob **Vol** (volume) you can adjust the overall volume level of all oscillators without the necessity to change the volume level separately for each pair of oscillators by using the knob Mix and Level. This knob is linked with the volume slider on the main Kontakt's top panel. The moving of this knob will change the values on both controls simultaneously.

I recommend you to use only the knob Vol (not slider) because its position is saved in the snapshot together with the position of the Kontakt's volume slider. If you will adjust the overall volume level only at slider on the main top panel of Kontakt, this setting isn't saved in snapshots. The value and position of the volume slider on Kontakt's top panel is saved only in case if you save preset in the format NKI (instrument).

THE SECTION OF STEP SEQUENCER



By clicking on the button **SEQ** on the top panel, you open the section of the Step Sequencer.

This special polyphonic step sequencer doesn't play the sound at start of sample always at each step but continues at whole length of sample. It can produce some interesting sequences at variable samples and FX loops without the long gaps in the sample.

The **red button** on the left side turns the sequencer to ON/OFF.

The small oscillator's box labeled **OSC** allows you to choose the oscillator which you want to assign to the sequencer. You can choose any one oscillator, the pair of oscillators or all oscillators.

The Step Sequencer includes 16 steps but you can use the **long slider** above steps to make some shorter sequence.

Each step includes the setting of volume level and the transposition of pitch to the one octave up or down in semitones.

To change the transposition (up and/or down) at each step simply to click on the small box and drag by right mouse button upward. ***Use the button SHIFT on your PC keyboard for the fine setting.***

With the knob **Duration** you can adjust the length of each step/note. The rotation of this knob to the left position will produce more shorter notes.

The knob **Gate Level** sets the level of gate effect. The rotation of this knob to the left position will produce the lower effect of gate.

The small box **Sync** allows by click to choose the rate of BPM synchronized to tempo of host application.

Rates of the sequencer at BPM tempo - synchronized to host tempo:

1/4 = all 16 steps play the rate of 1/4 beat (very speedy)

1/2 = all 16 steps play the rate of 1/2 beat

1 b = all 16 steps play the rate of 1 beat

2 b = all 16 steps play the rate of 2 beats

4 b = all 16 steps play the rate of 4 beats

8 b = all 16 steps play the rate of 8 beats (very slow)

Two **Random** buttons allow to set the random values at volume steps and transposition.

Three **Reset** buttons allow to reset all volume steps and transposition to the zero values.

IMPORTANT NOTE (valid only for Step Sequencer):

Because the classic sequencer or arpeggiator doesn't allow to transpose the pitch in the different position of length at replayed sample and it plays always the sample at start, this a special step sequencer uses the Midi CC (Continuous Controller) for its a specific functionality.

It uses Midi CC the number 20 to 31. These numbers of Midi controllers are very infrequently used in the Midi Implementations. I recommend you don't use these CC numbers for the automation of controls. It can cause some unexpected behaviours and the outputs of all oscillators can be muted.

All used Midi CC include the values from zero to 127 and these values of Midi controllers used for the transposition of the pitch are automatically divided to Kontakt's octave ranges. From this reason you can hear that some keys/notes aren't exactly at proper frequency.

It is very useful at some sequences with the ethnic overtones. However keep in mind that this step sequencer is designed mainly for the composing of the effect sequences for Atmospheres and for the Ambient and FX kind of sounds.

THE SECTION OF MODULATION



By clicking on the button **MOD** on the top panel, you open the section of the modulation.

The modulation section offers the modulation options for all significant functions. It includes the nine modulation slots for all filters, the mixing and the panorama for all pairs of oscillators.

The settings of the first and second modulation slots will be valid for both filters (LP and HP) of the oscillators 1 & 2, but on depending what filter you choose, the modulation for the inactive filter will be bypassed.

With the knob **Modulation Amount** you can adjust the overall depth of modulation. The smaller values will produce the finer effect.

Two **small buttons with the symbols of two lines and of one line with two connected spots** allow to activate the free or synchronic modulation.

If the filter sections are not activated by red buttons ON/OFF, all small modulation buttons related to filters are unavailable and all LFOs for the modulation of filters are bypassed.

NOTE:

If the filter section is active and you activate the modulations of filters at the choice of one of type modulation (free or synchronic) and then you turn the filter section to OFF, all small buttons will be unavailable and it resets them to OFF. It means if after you switched the filter section to OFF and then you decided to turn the filter section again to ON, you will need to activate the modulation again by clicking on the one (free or synchronic) small button.

By clicking on the **Waveshape box** you can choose the one wave shape from the four basic shapes of modulation - Sine, Triangle, Square and Sawtooth.

With the knob **LFO Rate** you can adjust the rate of modulation. If you choose the synchronic modulation, you will see a bit different knob.

The settings of **rate values** are shown in small boxes (even though you can see the values also in the main display on top panel if you move this knob), so you can see at first look all values without necessity to click on this knob.

Very small buttons at bottom part are **Reversed Phases**. It allows you to reverse the modulation phase always for the second oscillator of one pair. It means if for example you choose the modulation for the panorama at the oscillator 3 & 4 and you reverse the phase, the modulation for the oscillator 4 will start at the opposite side than the modulation of the oscillator 3.

The modulation slots of the Mixing doesn't include the buttons Reversed Phase because the reversed phase for the second oscillator cancels the mixing between two sounds.

Two **LEDs** above the modulation slots of filters indicate if the controls of Envelope Amount in the filter sections are active or not. If all small modulation buttons for the free and synchronic modulation are not visible, it means that the filter is not used so you can set the knobs Envelope Amount to zero position for their deactivation.

THE GRAPHIC MIDI KEYBOARD



The **range of red keys** shows the best playable range of sounds of oscillators.

Please, keep in mind that the oscillator 3 & 4 uses only the one sample across the whole key range so very high transposition of very high notes can produce some small aliasing.

FAQ (Frequently asked questions)

1) Why the oscillator 1 and 2 is multisampled and oscillator 3 and 4 not ?

The first two sound sources in ART Pyrite VST synthesizer are based on two classic oscillators so there was the possibility to record some waveforms from different keys. Sound sources 3 and 4 were created and recorded randomly only like the one longer samples for the format SF2. So it doesn't make the sense to create multi samples from one sample.

2) Why isn't used the option DFD (direct from disk) for all samples ?

I detected if I used the same waveform for two oscillators and one oscillator was linked to step sequencer, from some reason the playing was stopped at higher keys. The option "mode Sampler" resolved this problem.

3) Why all presets are in two formats - NKI and Snapshots ?

Even though ART Pyrite-K includes the same samples in all NKI files, persistently reloading of all samples can increase the RAM usage. The usage of snapshots will not reload repeatedly all samples into RAM because it includes only the setting of all controls without information what samples should be loaded. It prevents of some small increase of RAM usage.

4) Why isn't possible to add ART Pyrite-K into the Kontakt's Library Tab ?

This is because the add library function is reserved only for licensed instruments. The contract between an developer and Native Instruments costs another money so ART Pyrite-K could cost a lot more if it should be a licensed product.

5) Why some notes in step sequencer are a bit detuned ?

Because the classic sequencer or arpeggiator doesn't allow to transpose the pitch in the different position of length at replayed sample and it plays always the sample at start, this a special step sequencer uses the Midi CC (Continuous Controller) for its a specific functionality. All used Midi CC include the values from zero to 127 and these values of Midi controllers used for the transposition of the pitch are automatically divided to Kontakt's octave ranges. From this reason you can hear that some keys/notes aren't exactly at right frequency. It is very useful at some sequences with the ethnic overtones. However keep in mind that this step sequencer is designed mainly for the composing of the effect sequences for Atmospheres and for the Ambient and FX kind of sounds.

6) In some cases on bottom Kontakt's panel I can see the message "SCRIPT WARNING: invalid slider value (clipped to max value)! Line: 471, Program: 0" - is it an bug in the script ?

This message relates to the knob Pulsation - RATE. This knob is restricted at its range of values for its better and fine setting. From this reason sometime KONTAKT can show this message. It doesn't influence the function of this knob or another control. Basically it isn't a bug in the script, KONTAKT only reports that this knob doesn't include the setting of the full range of values : 0 to 1000000 (its range is 300000 to 800000).