ORANGE 4

Reason ReFill based on the sounds of the Waldorf Microwave XTk

User Manual

PINK NOISE STUDIO

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About ORANGE4

ORANGE4 is a wavetable synth refill, based on the sounds of the famous Waldorf MicroWave Xtk synthesizer. It combines two methods: the maximal utilization of Reason's internal samplers and the fat sound of the original instrument. The outcome is a very versatile and rich sounding patch collection that beats all electronic music styles from dry electro to dreamlike ambient.

The german Microwave XTk is a beautiful orange performance synthesizer. The synth engine is relatively the same as the Microwave II and Wave synths that came before it. Digital wavetable synthesis, where each wavetable contains 64 simple waves. The main difference of wavetable synthesis in comparison with other sound generation principles is the facility not only to play one waveform per oscillator, but also to walk through the wavetable via different modulations, and you can create wavetable sweeps. The results can be dramatic - much more so than those any sample playback based system could ever produce!

Contents of the refill

Samples

This folder contains the recorded samples of the Microwave synthesizer. All samples are perfectly looped and contain the unity note information for quick auto-mapping. You can find two main categories:
1) Simple Oscillators: simple waveforms (4-8 different positions has been recorded of each wavetable) and morphing (or sweeping, traveling, name it as you wish) wavetables for further tweaking in NN-XT: you can create complex sounds in a multilayer structure.
2) Complex samples: the Microwave synth in action - a wide range of complex programmed synth sounds.

ReDrum Kits

ReDrum patches for old-school musicians. To modify the kit, the easiest way is to click on the sample slot (red letters), and choose another drum sample from the drop-down list.

Dr.Rex loops

These rex loops were created for the **Keyboard Loop Player** Combinator device.

Kong Bank

This folder contains both individual drum programs (.drum files) for Kong Drum designer and complete Kong setups .kong files).

NN-19 Bank

NN-19 was the first sampler in Reason, but this folder wasn't only added for compatibility reason!
Although NN-XT is a much more advanced sampler than NN-19, it would be a blunder to leave out this smart green device. NN-19 has a big advantage: while NN-XT has only 6 global controls (and these controls apply relative offset, depending on the actual settings of each layer), NN-19 offers a complete remote control on each synth parameters. This feature is very useful if you want to control a special parameter of the sound in Combinator.

You can find 5 categories in this folder:

- Bass & Lead
- Key & Polysynth
- Pad & Atmosphere
- SFX & Perc
- Simple Oscillators

NN-XT Bank

This is the most complex bank, so probably a little explanation will be helpful at certain sub-folders.
You can find 10 categories, of which two special categories, they are in parenthesis.

- [All Complex Layers]
- [All Simple Oscillators]
- Arp & Short key
- Atmosphere & Pad
- Bass
- Drum & Perc
- Experimental & SFX
- Keyboard
- Lead
- Rhythmic Seq

The first two special categories might be a starting point for your further sound design. These presets are the "building blocks", if you want to build new complex NN-XT patches or want to modify the existing Combinator setups, use these patches.

[All Complex Layers]: as the name suggests, this folder contains all layers of the recorded complex Microwave XTk presets. Each layer contains 10-12 samples. The name variations (-A, -B, -C, -D, etc.) indicates different sound variations of the same preset. The parameter settings in NN-XT are set to default: no filter cutoff, or other modulations, these presets sound exactly as they were recorded.

[All Simple Oscillators]: simple waveforms and traveling wavetables. The name variations (-A, -B, -C, etc.) means different positions in the wavetable in question. The sweeping wavetables are indicated as -trav1, -trav2 in file name. You can also find four additional sub-categories in the [All Simple Oscillators] folder.

Alternate triggering: multizone structure, where each zone represents a different position in the wavetable. The incoming midi note triggers these layers semi-randomly. These patches are used for continuously changing sounds, like arpeggios and short sequences.

Basic WaveForms: the really basic elements of every synthesizer: Sawtooth, Square, Triangle and White Noise.

Velocity switches: similar to “Alternate triggering”, but the different zones will be selected and played by velocity (see also: Velocity ranges section). These patches can be used for building velocity sensitive instruments, like bass or piano type keys.

4Morph OSCs: this is a special section, they were created to use them in “4Morph synth” Combinator setups. These patches contain 4 different layers (in this case, each layer represents a wavetable position), and these layers use separated outputs (see the picture below). The “4Morph synth” Combinator can morph among these layers continuously, similar to a real wavetable sweep. Of course this is a very simple emulation of the original wavetable concept, but surprisingly effective, check it out!

Combinator Bank

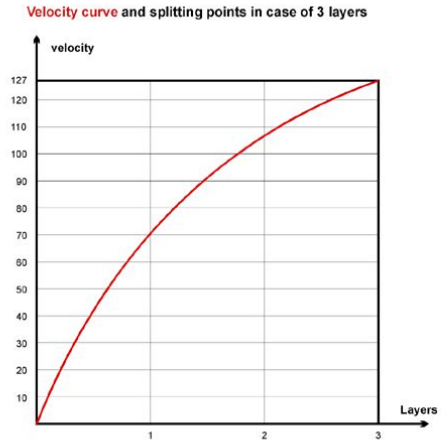
This is probably the most inspirational part of ORANGE4. You can see a little blue info panel on the right: it provides a short description and help of the actual Combinator instrument.

The Combinator Bank contains 8 categories:

- Arp
- Atmosphere & Pad
- Bass
- Drum & Perc
- Experimental & SFX
- Keyboard
- Lead
- Rhythmic Seq

Velocity ranges

The NN-XT patches in ORANGE4 use a “soft-positive” velocity curve (see the diagram).



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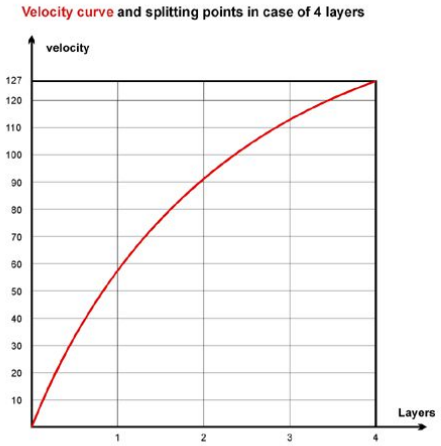

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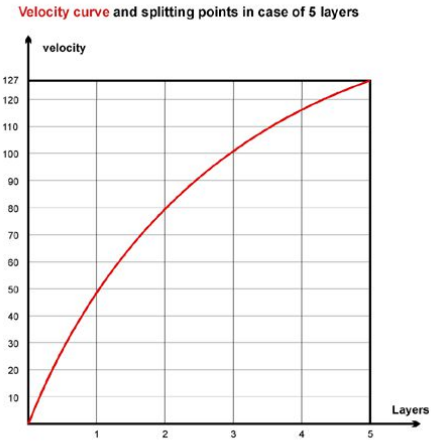

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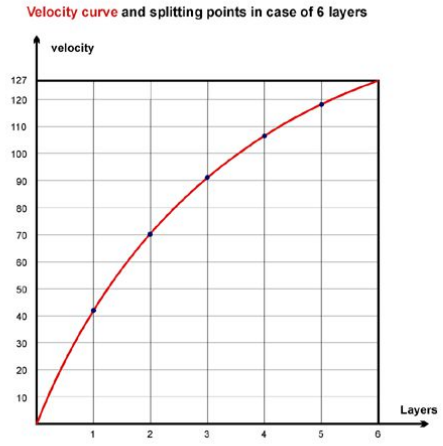

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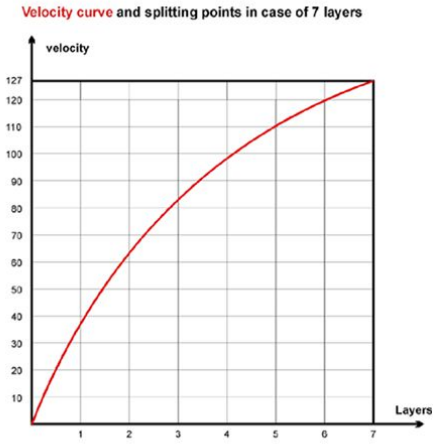

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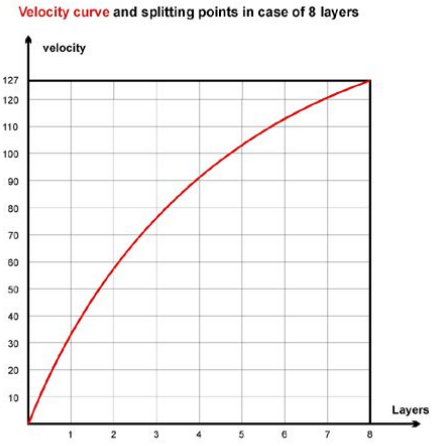


splitting points: 33, 57, 76, 92, 103, 113, 121

Velocity ranges in case of:

2 layers: 1-92, 93-127

3 layers: 1-71, 72-107, 108-127

4 layers: 1-58, 59-92, 93-113, 114-127

5 layers: 1-48, 49-79, 80-102, 103-116, 117-127

6 layers: 1-42, 43-70, 71-91, 92-106, 107-118, 119-127

7 layers: 1-37, 38-63, 64-83, 84-97, 98-111, 112-119, 120-127

8 layers: 1-33, 34-57, 58-76, 77-92, 93-103, 104-113, 114-121, 122-127

The Keyboard Loop Player – how it works

Playing with loops is a great fun. You can get inspirations, catch the feels of the original sequence, and using the advanced features of Dr.Rex player you can simply build up different rhythmic grooves.

But what about the melodic instrument loops? Can we play a bass loop - for example - on the keyboard? Yes, you can – but probably you won't be happy with the result. In Dr.Rex, when you play notes on the keyboard, it will trigger the slices of the loop, but will not change the pitch.

It's not a fault; - it's a feature: Dr.Rex player was designed to work with drum sequences, not with melodic loops. Using the keyboard we can not change the pitch on the fly,... not in Dr.Rex... we have to find another way!

The solution – what a surprise – is the sound designer's best friend: the Combinator!

OK, let's see: our mission is to construct an instrument that can play melodic loops, where the pitch can be controlled by the keyboard on the fly, like an arpeggiator in a real synthesizer!

Step 1: playing loop continuously

When DR.Rex receives a D0 note, it starts playing the whole loop from the first slice to the last one. Matrix's sequencer can be used to exploit this feature for continuously triggering the loop. Since the Matrix note CV range is limited to C1 and above, we have to insert a Spider CV to transpose down the Matrix's “Note CV” signal by one octave *(picture 2)*.

Open the **KLP-tutorial.rps** file, and check the “Step 1” in the first track.

You can see that the Matrix pattern is already prepared to playing the loop, the first step is D1 (spider transposes it to D0), the others are set to C1.
Please note that we reduced the keyrange of Dr.Rex to D0-D0 on the Combi's key mapping panel as well,

because we don't want to trigger the slices with the keyboard *(picture 1)*.

Now run the Combinator: you can hear the Rex loop triggered by the Matrix note events.

Picture 1

Picture 2

Step 2: sound only when a key is pressed.

When you run the Combinator, the loop starts playing infinitely, which is great, but will become boring after a while. We want to hear the loop only when we press a key on the keyboard, don't we? But how can we achieve this? The answer is an envelope generator, triggered by the midi note.

Let's load a Thor into the rack (by pressing “shift” will help to avoid auto routing). We will use its global envelope to control the amp of the loop. Initialize Thor, and connect the audio output of Dr.Rex to the audio in 1 and 2 of Thor (*picture 3*).
Now set up the modulation buses. Choose “Audio in1” as source, “Filt3 L.In “ as destination, set the amount to 100 and the scale to “Global Env”. Now repeat these steps with the right channel, source: “Audio in2”,

destination:“Filt3 R.In “, scale:“Global Env” and amount is 100 (*picture 4*).
We still have to prepare the global envelope. Set attack to 0, sustain to maximum and choose an appealing short release.

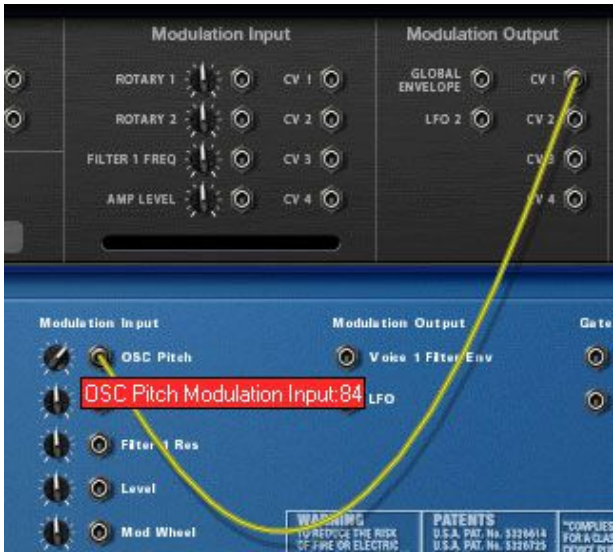
Let's run the Combinator. If you did everything properly, you can't hear anything until you press a key on the keyboard: now the Thor's envelope controls the amp of the loop. Cool, isn't it? OK, move on to the next step, let's play melodies!

Picture 3

Picture 4

Step 3: control the pitch of the loop

Nothing could be simpler! Just connect the Thor's CV1 out to Dr.Rex's “OSC pitch modulation input”. Now flip the panel, and set up the modulation bus. Choose “MIDI Note” as source, the destination is “CV Out1” and set the amount to 100.
Got it? Let's check out! Run the Combinator... wow, it works! Great... but... ooh dear, sounds like a charivari, it's false!
Yes, because we haven't set the sensitivity of the modulation input yet. Turn the little rotary encoder to the right on the Dr.Rex's back panel and set it to 84 *(picture 5)*. Sounds better, right?



picture 5

Well, we are almost ready, just a few final touches...

transposing: use the transpose keys or the osc octave switch of Dr.Rex

velocity sensitivity: connect Thor's CV2 out to the Amp level modulation input of Dr.Rex. To prepare the Thor's modulation bus: choose “MIDI Vel” as source, set amount to 100 and the destination to “CV Out2”.

OK, finished now, mission is complete!

Some tips and tricks for the Keyboard Loop Player

1) Most important: RUN must be on!

The "Run pattern device" knob in the Combinator must always be on (red lights on), otherwise you won't hear any sounds: it is the matrix pattern sequencer (which triggers the loops) that so requires.

2) Tweak the loop in the Dr. Octo Rex player!

You can adjust the volume, pan and pitch of each slice of the loops in Dr. Octo Rex player. This feature is a lovely option to create totally new sequences using the existing rex files.
If you want to change the rhythm of the loop, you can mute certain slices by setting the slice volume to 0. You can create chord arpeggio by changing the pitch of certain slices.

3) Offset the loop!

In some cases you may want to shift the start of the loop in question. You can do it in the matrix sequencer: by default the starting point has been set to the beginning of the bar, but you can modify this by moving the D2 note (which triggers the loop) to the second, third, etc. grid.
Please note: each loop slot has its own Matrix slot, it changes as well when you switch to another loop slot!

4) Play staccato!

When you play a bass or arp run, don't hold the key pressed all the time – it's so boring! Try to play staccato, with a little practice you will be able to invent very interesting new melodies.

5) Be creative!

Bear in mind that the keyboard loop player is just a tool that is designed to give you inspirations. But it is always the creative composer that gives birth to music; you will have to bravely apply this magnificent tool to fully exploit all its features!

Have fun! :)

Credits

Andras Haasz: main idea, recording & editing, sound design

Marco Raaphorst, Eric Corminier: additional NN-XT programming

Kilfish: graphic design, artwork

Dr. Gabor Bardosi: consulting editor of this Users' Guide

Beta testers: Marco Raaphorst (Raapie), Eric Corminier (the Reason.fan), Roland Pauk, Sam Haasz, Patrick Maerker (masslevel).

If there is anything we can do to further assist you, tell us. We are always open for suggestions that help to us improve our service to you. Our e-mail support: getinfo@pinknoisestudio.com

Requirements

The Combinator and Kong patches of ORANGE4 need the full version of **Reason 6.5** or higher version.
NN-19, ReDrum and NN-XT patches will also work with the previous versions of Reason (from version 2.5).

This ReFill was designed for performer musicians, so a good velocity sensitive keyboard with mod-wheel and aftertouch is highly recommended!