



REAKTOR SERIES

Version 2.3

User's Guide

for



REAKTOR



GENERATOR



TRANSFORMATOR

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1 Introduction	3
1.1 What is DYNAMO ?	3
2 NI Premium Library	4
2.1 3-oSC	4
2.2 6-Pack	5
2.3 Beat Breaker	7
2.4 Cube X	8
2.5 Cyclane	10
2.6 Drumatik	11
2.7 DSQ-32	13
2.8 Formantor	14
2.9 FritzFM	15
2.10 GeekFX	17
2.11 Gonzzo	18
2.12 InHumanLogic	20
2.13 ManyMood	22
2.14 Matrix Modular	24
2.15 Me2SaleM	25
2.16 NanoWave	27
2.17 New Primitive	28
2.18 NewsCool	30
2.19 Plasma	31
2.20 rAmplifier	33
2.21 Random Step Shifter	34
2.22 SH-2k	36
2.23 SineBeats	37
2.24 Triptonizer	39
2.25 Uranus	40
3 Interfaces	42
3.1 VST 2.0	42
What is VST 2.0 ?	42
Using VST 2.0 with REAKTOR	42
3.2 ASIO	43
What is ASIO ?	43
Using ASIO with REAKTOR	44
Buffer size and audio routing	44
3.3 DirectConnect	45
What is DirectConnect ?	45

Native Instruments – REAKTOR SERIES

Using DirectConnect with REAKTOR	45
Audio Channel Configuration	46
Recording REAKTOR in Pro Tools	47
3.4 Output Recorder	47
3.5 MIDI File Player	49

4 Introduction

4.1 What is DYNAMO ?

With DYNAMO, you can use (and enjoy) the very best REAKTOR Ensembles contained in the overwhelming and steadily growing NI Premium Library. There are no restrictions, except that you are not able to modify the instruments or build your own.

Like REAKTOR, DYNAMO can be used as a VST 2.0 PlugIn, with ASIO, DirectConnect or stand-alone.

5 NI Premium Library

In this fine collection you will find instruments and sounds which have been developed for you by brilliant sound-designers from all over the world.

5.1 3-oSC



3-oscillator synthesizer for classical analog sounds

The 3-oSC synth has the straight-forward voice architecture of classical analog synthesizers. Its strength is not the production of extraordinarily complex sounds or unique, innovative timbral creations, but rather quick access to typical, powerful analog sounds.

The sound of the 3-oSC is – as the name already indicates – powered by three separate oscillators which can generate either sawtooth or pulse waves. If the pitch setting is the same for all oscillators and the fine tuning values are spread out, a floating, tight basic sound is produced, which is equally suited for pads as for bass or lead sounds. When the oscillators are tuned one or more octaves apart, the result is a very powerful and broad sound with a typical vintage-analog character. With the three oscillators it is also possible to set up the intervals between them to produce a chord when a single note is played. Such sounds are

well known, for instance in the style of house music, but even the forefathers of modern electronic music – the gentlemen with the legendary project name "Kraftwerk" – knew how to use these possibilities.

Although the architecture of the 3-oSC is intentionally kept on a simple level, its filter allows the sound to be shaped in many ways: You can switch the filter to the classic low-pass characteristic or to band-pass high-pass or combined low-pass/band-pass mode. For the low-pass and the band-pass modes you can also choose between a slope of 12 or 24 dB – this means you can decide whether the filter acts softly or with "bite". The filter has its own envelope with a modulation amount control which can be both positive and negative. Negative modulation intensities are particularly interesting for high-pass and band-pass filter modes.

Instrument: NI; Sounds: Sound Burst; Demo Song: Demo Song:
M.S.Zanx

5.2 6-Pack



Six special samplers as an ideal tool for the studio or for live performance

6-Pack combines sequence controlled sample playback with loop playback based on Granular Synthesis. These words may sound very technical and rather unspectacular, but the possibilities they describe are astonishing: 6-Pack lets you load samples and loops into the 6 samplers

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and they will automatically all play in perfect time – regardless of their original tempo. You can mix, mute and filter these loops, alter their pitch and shift them with beat precision – all in real-time and without affecting the tempo.

Two of 6-Pack's samplers are intended to be used with one-shot samples. These samplers include a simple 16 step sequencer where you can program patterns with the percussion samples.

The other four samplers are optimized for loop playback. Correctly cut loops are automatically synced and can be shifted against other each in time. This works using a 16th note grid, so it is always rhythmically correct and absolutely smooth – even in live performance. In addition, you can alter the pitch of each loop and filter it with separate modulated high-pass and low-pass filters.

Important for live performances: Each of the six samplers has its own presets. This means that you can switch between variations for each sampler while the playback is running. And with the presets of the "6-Pack" module (the one with the scope) you can change the presets of all samplers simultaneously.

Autor: NI/Monolake; Sounds: Monolake

5.3 Beat Breaker



Loop rearranger with extensive sound shaping functions

Beat Breaker is a very powerful tool rearranging existing loops or creating completely new loops. You can load the source material – drum loops or any other sample loops of your choice – into the two sampler modules Beat Loop or Resynth. It is important that the loops are quantized to even note values and that they are accurately cut so that they can be played in cycles over their entire length.

You can rearrange the steps of the loops with the integrated 16-step sequencer, you can change the pitch and volume of individual loop steps, and you can even combine several different loops to create a new one. The various sequencers can be operated with different time bases (Subdiv) and they can have different lengths (Length) measured in steps. If you wish, you can transpose the pitch sequencer even from a MIDI keyboard.

The rearranging area is followed by the Sound-Shaper block which allows processing of the created loop: Here you will find a multi-mode resonant filter with a ring-modulator at the input and another at the output. Then there is an envelope follower to control the filter, a resonator, a distortion effect and a double LFO with integrated rate envelope for the modulation of different sound shaping parameters.

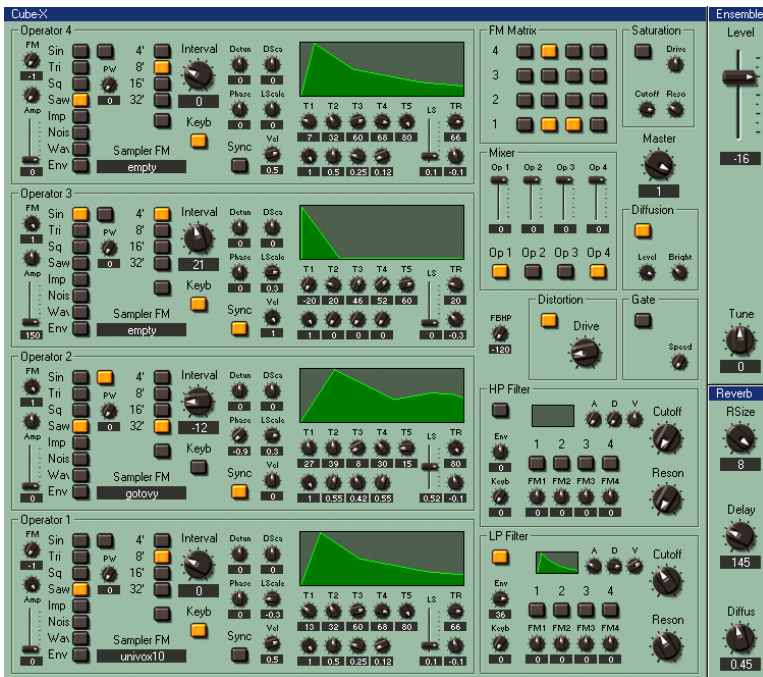
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The sound shaping block is followed by a stereo delay which can enhance the sense of space or can lead to a greater rhythmical complexity of the loop. A recorder can be used to make an accurate recording of the new loop which then can be exported as an audio file.

Although Beat Breaker may appear quite complicated at first, the handling becomes very easy after a short period of getting familiar with it. Try out all the presets and experiment with the parameters and you will soon feel at home with its enormous capabilities.

Instrument: Jos van Gemert; Sounds: Lazyfish

5.4 Cube X



Hybrid FM synth with four multi-wave operators, samples, filters, distortion and diffusion effect

Cube-X gives you a broad spectrum of different sounds and is probably the most flexible FM synth in the NI Premium Library. It features only four operators, but these operators offer outstanding capabilities: You can choose between five waveforms and can even use a sample as a carrier or modulator waveform. Operator synchronisation and pulse width control for the pulse waveform are also supported. These features make possible the creation of very rich and complex FM sounds that have never been heard before.

Each operator includes a 6-stage time/level envelope with a graphic representation of the envelope generator's slope for easy and intuitive programming. Operator routing is controlled with a switching matrix; the operators' output signals are combined in a small mixer.

Cube-X also features separate high-pass and low-pass filters which can be fed by any combination of the operators and can even be frequency modulated by the operators. The effects section of Cube-X offers distortion, gate, and a diffusor for reverb effects.

Because of the flexible operators with their various waveforms, even samples as waveforms, you don't need to build up sounds using complex FM oscillator routings and modulations. Instead, new and interesting sounds can be created even with the operators working in parallel and not using FM at all.

Instrument: SolarX; Sounds: Jörg Holzammer; Demo Song: Jörg Holzammer

5.5 Cyclone



Performance system with sequencers, drum synth, FM synth and effects

Cyclone is more than a single instrument. In fact, it offers a complete production environment for interesting loops and grooves: A charismatic drum synthesizer with sequencer, an unusual FM synthesizer with sequencer and a mixer with filters, resonators and delay.

The heart of Cyclone is the drum synthesizer: When its sequencer is activated, the sequencer of the FM synthesizer is started synchronously. The drum synthesizer is based on four oscillators which generate either a sine wave, an impulse wave form very rich in overtones, or noise. The oscillators can cross-modulate (ring modulation and FM) each other. You only need one line of buttons on the sequencer to control the four oscillators: With the Min and Max buttons you can select – separately for each of the oscillators – the range of value to which the oscillator is supposed to respond. The sequencer for the drum synthesizer offers a groove parameter for each step which lets you shift the time position of

the step forward or backward. Moreover, there are options for reversing the direction of the sequence (Up/Down), for playing it forward and backward in alternation (Bidir) and for setting the starting point and the length.

The FM synthesizer is based on a carrier oscillator and a modulator – it features ring modulation and synchronization, a multi-mode filter and two LFOs which can modulate numerous parameters. The sequencer for the FM synthesizer can determine the pitch of the 16 steps and the sequence can also be transposed via MIDI notes – if you wish even with a scale correction. Finally you can mix down the drum and FM synthesizer, filters, resonators and delay using the mixer.

Instrument: Siegmars Kreie; Sounds: Rob Acid, NI

5.6 Drumatik



Eight specialized virtual analog drum synthesizers with mixer and distortion

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DRUMATIK emulates the analog sound generation of classic beatboxes and, consequently, it can emulate all the popular beatbox sounds. As a virtual drum synthesizer Drumatik has specific and individually programmable instruments for kick drum and sub-kick drum, snare, two toms, two hi-hats and clap. The output signals of these instruments are combined in a mixer where they can be distorted with variable intensity and where the volumes and stereo panorama positions can be controlled.

Drumatik's range of sounds is not limited to the simulation of typical 808 or 909 sounds. On the contrary: Drumatik uses REAKTOR's many possibilities to create the optimum raw material for the programming of synth percussion full of nuances and variety. Previously, this kind of sound required hardware modular systems, as used on the recordings of Vince Clark or Kraftwerk.

44 bass drum sounds cover the analog spectrum from the classical 909 to "Hard Noiz". They are complemented by 22 snare drums, including not only soft 808 sounds or typical pitch-bend sounds but also hard flanger snares. The sub-kick drums deliver the necessary punch in the low frequencies. Brilliant high frequencies, dirty electro variations and even reverse effects are produced by the two hi-hat modules with 11 or 15 presets. The 18 presets in the two tom instruments cover the complete range from clicking percussion variants to the legendary Simmons sound. And, last but not least, the claps deserve special attention – they comprise the styles of old drum machines as well as wild variations of the "industrial" kind.

You can play Drumatik like any other drum expander: The MIDI notes are assigned according to the General MIDI standard. For example, the bass drum is assigned to key C1 (MIDI note number 36). Like this, sequencer drum tracks which you created with another GM standard sound generator can easily be played on Drumatik.

Instrument: SolarX, NI; Sounds: ear2ear; Demo: ear2ear

5.7 DSQ-32



32-step sequencer with seven drum synthesizers, morphing function and delay

DSQ-32 is a virtual drum computer with seven instruments: Bass drum, snare, closed and open hi-hat, tom 1 and 2 as well as crash cymbals. The sequencer of the DSQ-32 uses the popular sequencer grid programming, the sound generation of the instruments is modelled after classic analog beatboxes.

As the name already indicates, the DSQ-32 offers a maximum pattern length of 32 steps. The length of a pattern can be set with the controllers St (starting point) and End (end point). The buttons on the seven tracks allow you to switch the individual beats on or off for the respective instruments. Track eight is available to set an accent for all instruments on the given step. The two controllers lo and hi are used to set the volume for the unaccented and accented steps respectively.

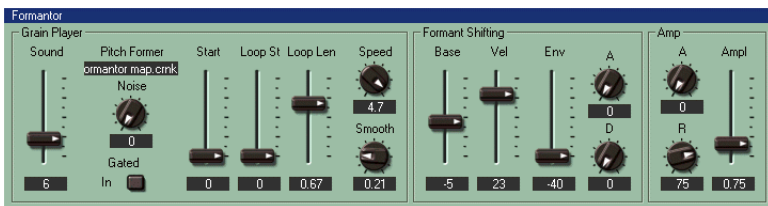
As a special feature of the DSQ-32, each step provides an adjustable morph value. This value is used to control those parameters in an instrument which are duplicated and labelled "... 0" and "... 1". Each of the two controls determines the value at one end of the morph range for the given parameter. The actual value used then depends on the morph value which changes with time. For example, if P0 and P1 (for pitch control) are set to different values, a sequence of notes in the given range can be programmed for the instrument using the morph knobs in

the sequencer. To exclude a certain parameter from the morphing process just set the "... 0" and "... 1" knobs to the same value. By activating the man button of the sequencer the morph value can be controlled manually with the morph knob.

Another component of the DSQ-32 is a simple delay which automatically synchronizes with the currently used tempo and the delay time can be set in steps. The generated beat patterns can be captured with the integrated recorder and exported as audio files.

Instrument: Martin Brinkmann; Sounds: Rob Acid

5.8 Formantor



Granular sampler with separate control of replay speed, pitch and formant shift

Formantor is a sampler of the special kind because it gives you the option to control pitch, replay speed and even formant shift independently of each other for any sample. Going to the extreme, you can even "freeze" the replay at a freely selectable position of the sample. This is made possible by the granular synthesis algorithm which lets you loop very short sections of a sample, to repeat them as often as you like, to shift them and to fade between them smoothly all at the same time.

With Formantor you can use samples in a totally new way, which is extremely useful for creating special effects. However, Formantor also enables you to play a polyphonic rhythm loop with your keyboard without the usual effect that the loop plays faster for higher notes. Why not take a section of any recording you like and play chords with it?

If you load several samples into the Pitch Former module, you can switch between them with the Sound controller. With the Gated switch activated, sample playback starts from the beginning when you strike a note. With the Start controller you can set the starting point in the

sample for replay. Loop Start and Loop Length define where a loop starts and how long it will be. Speed regulates the replay speed. If you want to "freeze" sample playback, you only need to set the loop length to zero and to choose a position in the sample with the Loop Start controller. Noise generates random deviations from the exact replay position and with Smooth you can even out the generated sound.

The formants can be shifted using the Base controller. Furthermore, they can be modulated by the note velocity and by an separate AD envelope.

Instrument: NI; Sounds: Danny Zelonky/Crank; Demo: Danny Zelonky/Crank

5.9 FritzFM



FM synthesizer with six operators, overdrive, phaser, rotary speaker and delay

Fritz FM generates its sounds using FM synthesis (frequency modulation). Six "operators" produce sine and parabolic wave forms and modulate each other's frequencies. Fritz FM is good for typical FM sounds like electric pianos, bass sounds, bells, digital pads and organ sounds.

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The timbre produced by the FM synthesis depends on which operators are modulated by which other operators and on the intensity and the frequency of the modulation. Each operator can modulate any other operator except for itself. All operators have the same structure with an individual volume envelope and parameters for pitch (**Ratio** and **Fine**). An operator can either follow the played pitch, or generate a fixed frequency.

With the **Out** switch you can decide whether an operator becomes audible or whether it only modulates other operators. With the **Level** controller you can set both the intensity of modulation and/or the volume of the operator. The **FM** controller determines the level of all modulations that are affecting the operator. The keytrack parameters **LoScl**, **Break** and **HiScl** influence the modulation intensity by the played pitch: **Break** defines a specific note, the other two parameters define the decrease or increase of the modulation intensity below (**LoScl**) or above (**HiScl**) this note. With these parameters you can, for example, prevent the FM sounds from becoming too sharp at high frequencies.

Fritz FM features a sine LFO for vibrato which is controlled from the modulation wheel and can be activated separately for each operator. For effects processing of the FM sounds, Fritz FM offers overdrive, chorus, phaser, rotary speaker and delay. All effects can be activated separately.

Instrument: Fritz Hildebrandt; Sounds: Fritz Hildebrandt; Demo Song: M.S.Zanx

5.10 GeekFX



Multi-effects processor with multiple routing options

Geek-FX provides a wide variety of effects, some of them quite unusual, for flexible effects processing of audio inputs or samples. Apart from an input and output section, three banks of effects processors as well as a flexible routing system for triggering the effects are at your disposal. In order to eliminate unwanted noise in the source sample, the input section is equipped with an expander.

The effects offered in Geek-FX are subdivided into distortion, filter and delay banks. Each bank features several effects processors with individual presets. All three banks can be used simultaneously, one effects processor per bank can be activated. Each bank provides a separate LFO and envelope follower for the modulation of central effect parameters.

The routing system allows each effects bank to be fed a mix of the 'dry' original signal and the output signals of the other banks. With this feature you can create diverse effects chains which can result in extremely interesting types of effects processing. You can mix down the source signal and the output signals of the three banks in the output section and process the sum with an equalizer.

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The distortion effects bank offers delicacies like the simulation of a defective cable with a loose connection, classic tube distortion with very nuanced control options, quantization distortion in two variations, simulation of radio distortions and a ring modulator. The filter effects bank features the Vowel Morph Filter which simulates the human vocal tract, an 8-pole band-pass filter, a filter bank with 12 bands and a resonator. Finally, the delay effects bank is equipped with a phaser, a flanger, a 2-tap delay, a 4-tap delay and a granular pitch delay for producing extraordinary delay effects.

Instrument: NI; Presets: NI

5.11 Gonzzo



Features eight drum sample players with different sound parameters and effects

Gonzzo fulfills a rather unspectacular but nevertheless very useful task: With Gonzzo you can assign different playback parameters to eight samples which you then trigger with different MIDI notes. This makes it an excellent drum sample player, but, of course, you can just as well load other kinds of samples.

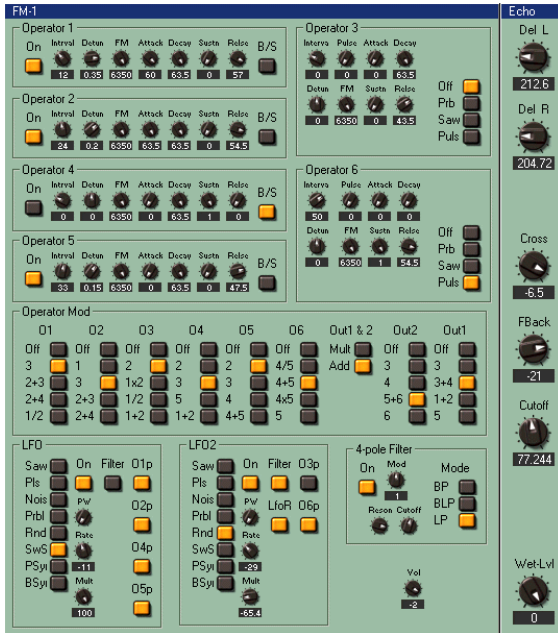
Gonzzo provides eight separate sample "slots" with similar structures, which are triggered by different MIDI notes. The assigned MIDI note for each slot can be seen at the top of its frame. Multiple samples can be loaded into each slot and a particular sample can then be selected with the **Sample** controller.

With the **Start** controller you can shift the starting point within a sample. The controllers **D**, **S** and **R** represent attack, decay and release – the volume envelope of the sample. To achieve typical compressor effects you should choose quite a short decay time and a sustain level of about 50 % or less. You can set the sample's pitch with **Pitch**, the volume with **Level** and the stereo position with the **Pan** controller. Each sample slot can be deactivated with the button in the top left corner. The trigger LED indicates whether a MIDI note command is being received. With the **Send** controller you can define how much reverberation or delay is added to a sample's sound.

The frames in the bottom half of the Gonzzo window contain multiple effects which are used for all samples: Here you will find the parameters of the reverb and the delay, which can be used in parallel or as an alternative to the reverb. The rest of the effects work on the sum: A three-band EQ with full parametric midrange and shelf characteristic for low and high frequencies, a resonant filter with fading between low-pass and band-pass modes, and a compressor.

Instrument: Uwe G. Hoenig; Sounds: Tok Tok; Demo Song: Tok Tok

5.12 InHumanLogic



FM synthesizer with six operators, extreme modulation options and multi-mode filters

InHumanLogic features another very interesting variation of FM synthesis: Different to Fritz FM this synthesizer is less vintage model oriented but rather offers an innovative hybrid concept which combines the advantages of both the FM Synthesis and the Subtractive Synthesis. This concept introduces sounds which are audibly more modern and more "evil" than a classical FM architecture – not least because of the manifold interactions of the operators.

InHumanLogic is also based on six operators: Four of them are identical and deliver parabolic and sawtooth waveforms. The two remaining operators are a bit different as they can additionally generate a pulse wave with an adjustable pulse width. The frequency modulation of

waveforms with many overtones like sawtooth or pulse automatically results in sounds that are more complex and more aggressive than sounds based on the classical sine wave. Again all operators provide pitch parameters and a volume envelope.

There is another difference of InHumanLogic to the classical FM: The wiring of the operators – the way they modulate each other – is carried out via a switching matrix which is based on several presets. Moreover, the signals of the modulating operators may be processed by addition, multiplication or division.

A four-pole resonant filter – with the modes low-pass, band-pass and mixed low-pass/band-pass – forges the link to Subtractive Synthesis and is very useful to control the sometimes very aggressive FM sounds of InHumanLogic. Other ingredients are two LFOs with a rich variety of waveforms which can modulate the filter and/or the pitch of selectable operators.

Instrument: InHumanLogic; Sounds: InHumanLogic; Demo Song: InHumanLogic

5.13 ManyMood



The emulation of a legendary classic with additional distortion, chorus and ring modulator

The ManyMood emulates one of the most successful and legendary synthesizers of all times: The Minimoog. This charming instrument with its hinged lid, wooden sides and bulky controllers has embossed the history of synthesizers as well as the history of electronic music.

Although the mentioned physical attributes differ from the genuine model – the ManyMood emulates the generating and character of the Minimoog sound and, moreover, offers some additional effects. The basis of the ManyMood sound are three oscillators: The first and the third of them can be used as LFO when needed. The signals of the oscillators are gathered in a mixer where you can add white or pink noise.

The best known and most decisive component of Minimoog and ManyMood is the filter: The famous cascade circuit of the minimoog produced a lot of distortions which caused the warm and pleasant sound of the instrument. Of course, ManyMood also simulates this feature of the classic, of course. Apart from that the filter is equipped with the usual parameters as cut-off, emphasis (which is nothing more than resonance) and contour (the intensity of filter envelope modulation). The filter has a separate envelope which can be velocity dependent. It can be used either in single trigger mode or in multi trigger mode.

Complementing the Minimoog architecture the ManyMood provides the option of a cross modulation of the first two oscillators, EQ, distortion, chorus, ring modulator, reverb and a stereo delay. By the way: The button marked "440" – in the output section – delivers a "tuning fork" which was quite useful in the minimoog as the instrument had the tendency to get out of tune easily; the "440" button of the ManyMood, however, was implemented for nostalgic reasons only...

Instrument: NI, Easy Sounds; Sounds: Easy Sounds; Demo Song: M.S.Zanx

5.14 Matrix Modular



Extremely flexible synthesizer with an integrated sequencer and a 16 x 16 modulation matrix

The Matrix Modular combines the flexibility of a completely modular concept with the clarity of a compact synthesizer. All modules can be linked freely via the matrix buttons. Thus, totally new sounds can be created in very short time. The operation is as easy as it can be and reminiscent of legends like the EMS Synthie A.

The Matrix Modular is the perfect tool for creating wild and experimental sounds. Amongst others a ring modulator, distortion, delay and the step sequencers – which can be linked without limitations – produce vivid analog sounds. In case you think that two oscillators are not enough you can feed the sampler and modulate the samples with LFO, oscillators or sequencers. A special feature of the sampler is the option to switch between a 'normal' sample player and a re-synthesis unit. With this concept the entire spectrum of sampling technology can be used fast and playfully. Try it out and load the same sample in both sampler modules and compare what you will hear...

The Matrix Modular can be controlled internally via the step sequencers but also externally with keyboard and software sequencer. The Matrix Modular is superb in creating complex sequencer structures. For this purpose the sequencer lines 1 - 3 can be connected – via the matrix – with different targets. Below this section four lines of gate sequencers are positioned which deliver trigger signals. The first line sends to envelope 1, the second line to envelope 2, the third line sends to the sampler and the last line synchronizes the LFO.

The routing is always carried out via the button matrix, the level controllers of the individual modules are used for the mix. For your own experiments get inspired by the delivered presets: You will find everything from soft to hard, from "spine-chilling" beautiful piano sequences and hard machine beats to the SID charm of the legendary C64.

Instrument: NI; Sounds: ear2ear

5.15 Me2SalEM



Two classical analog synthesizer modules with mutual modulation and feedback via external inputs

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Like ManyMood the Me2SaEM emulates – even twice – a legend in the history of synthesizers: the famous SEM synthesizer module of the Oberheim company. Each of the two identical synthesizer modules is equipped with two oscillators that can be synchronized, a flexible filter, a simple LFO and, furthermore, two envelopes which can control the filters, volume, frequency and/or pulse width.

The special feature of Me2SaEM is the option of a mutual influence of both synthesizer modules via the "FB Mixer" (feedback mixer). The feedback mixer provides a high-pass filter which is useful to reduce the feedback audio signals if necessary. Effect editing can be carried out with a stereo delay which works tempo related and can be set in selectable note values.

The oscillators of both synthesizer modules provide parameters for rough and fine tuning. The waveform can be faded between pulse and sawtooth. Both, frequency and pulse width can be modulated by a freely selectable source of modulation. If the switch for selecting the modulation source is set to "Ext" the audio signal coming from the feedback mixer serves as the modulation source. The frequency of the filters can also be modulated.

The filter of both modules can be switched between band-pass mode and mixed high-pass/low-pass mode in which you can smoothly fade between the two modes with the "LP/HP" controller.

Although the architecture of the Me2SaEM synthesizer seems to be quite simple you can achieve complex sounds as well, particularly due to the mutual modulations with frequencies in the audio range. Not only the oscillator modulation is attractive but also the filter modulation, especially at high resonance values.

Instrument: Josue Arias, NI, John Bowen; Sounds: John Bowen; Demo: John Bowen

5.16 NanoWave



WaveSet synthesizer for vivid digital sounds

NanoWave is an homage to the legendary WaveTable synthesizers of PPG and Waldorf. The sound generation – called "WaveSet" synthesis here – is structured similarly to the classical subtractive synthesis of analog synthesizers but it has some special features on the oscillator level which result in a significantly wider variety of sounds.

The WaveSet oscillators of Nanowave do not base on one of the common waveforms like sawtooth or square. They use one of 43 so-called "WaveSets" in which many different waveforms are stored. Within a WaveSet a particular waveform can be chosen manually but the really striking feature of the WaveSet synthesis is the option to "travel", to dynamically switch between the waveforms of a WaveSet.

Both of the NanoWave oscillators have an identical structure: Each of them gives you the option to select the WaveSet, the octave and the pitch tuning in semitones. With the slide switch you can manually move through the WaveSet, alternatively the waveform position can be modulated by a separate wave envelope, by attack, keytracking or by the LFO. Additionally frequency modulation is possible. As further sound sources are available: A simple sine oscillator, a noise generator with selectable tone colour and the ring-modulated signal of wave 1 and 2.

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The multi-mode filter of NanoWave works with a slope of 12 db per octave and can be modulated in various ways. The LFO starts with note onset and, consequently, allows envelope-like modulations; it also has an individual envelope for the amplitude.

The three envelopes of the NanoWave can be modulated by the attack and have a special parameter which enhances the exponential characteristic of this process – very good for extremely percussive sounds.

Instrument: Uwe G. Hoenig; Sounds: Sound Burst; Demo: Sound Burst

5.17 New Primitive



Sampler and synthesizer based rhythm machine

New Primitive features a rhythm machine which is controlled by 16-step sequencers that run in parallel. A sampler and a little synthesizer with typical "analog" waveforms are used to generate the sound.

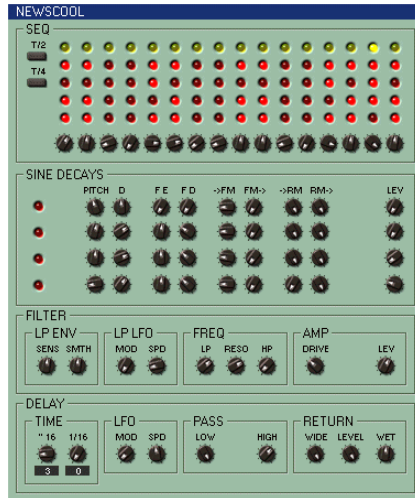
Each of the sequencers in the first row sends the trigger signal and controls the velocity. Rhythm breaks can be created by setting the velocity value to zero. The sequencers in the second row modulate different targets like, for example, filter cut-off and release, sampler pitch or the parameters of distortion. The targets of modulation can be selected by the routing controllers positioned below the second line of sequencers.

With the routing panels the New Primitive provides extensive control options. This variety is – beside the possibility of a fast comparison and the vast number of resulting combinations – the special feature of this machine. It does not take long until you can create an almost infinite number of different rhythms. All 32 presets were derived from only five short samples which were combined with the sounds of the synthesizer. Obviously you can load your own samples into New Primitive. The samples do not even need an accurate cut – the smart triggering of the samples by the step-sequencers of the New Primitive makes meticulous editing history.

Please keep in mind: The sound of New Primitive does not necessarily have to be loud or primitive! Every user can very easily create his own sound basis. Everything is possible: Individual waveforms, effect sounds, short rhythmical sequences, noises or vocal samples. The direct access to the loaded samples via the select controller allows intuitive working and the effect of a chosen sample on the result in sound can be easily checked by comparison.

Instrument: ear2ear, NI; Sounds: ear2ear

5.18 NewsCool



Innovative beatbox – four bass/drum synthesizers cross-modulate each other

Newscool is a rhythm machine with an innovative and very effective concept: A simple 16-step sequencer triggers – in an intelligent way – four drum synthesizers with only a few parameters; nonetheless they can mutually frequency and ring-modulate each other. Despite the few parameters you can create complex sounds and sound sequences.

The triggering of the four drum synthesizers by the sequencer follows the binary principle: In its minimum position the controller of a step does not trigger a synthesizer; by turning the knob slowly towards "maximum" the first synthesizer is triggered first, then the second synthesizer is triggered, after that the first and second synthesizers, then the first, the second and third one etc. are triggered – i.e. only one controller is necessary to trigger any combination of the synthesizers. This concept implies an important advantage to four lines of buttons: It is easy to control via a fader-box and, consequently, it is a device you can use live on stage.

The drum synthesizers of Newscool are based on sine oscillators. Each of the four sounds is equipped with a parameter for pitch, a decay parameter for the volume, a parameter for the intensity of a pitch sweep and a decay parameter for the duration of this sweep. Furthermore, there are two controllers for each sound defining to which extent the sound is frequency modulated by the other sounds and, vice versa, to which extent that particular sound is supposed to frequency modulate the other sounds. There are to similar controllers for ring modulation.

The signals of all four sounds can be processed together by a filter section, an amplifier with a saturator and a delay. The filter can be modulated via an envelope follower and an LFO and features high and low-pass paths with separately selectable frequency. The duration of the delay can be set in notes values; it is equipped with a separate LFO and high and low-pass filters in the feedback path.

Instrument: laZyfiSh; Sounds: laZyfiSh; Demo: laZyfiSh

5.19 Plasma



Granular sampler for the creation of pads and atmospheric sounds

Native Instruments – REAKTOR SERIES

Plasma uses the extraordinary potentials of Granular Synthesis to change almost any sample into tight and atmospheric sounds. This is the idea: The natural development of the sound is "frozen" – instead you "travel through" the sample manually. Thus Plasma works similar to Formantor, but it is specialized in certain sounds and therefore has a different sound characteristic than the very neutral Formantor.

The basis of the editing can be any sample which has been loaded to the "Sample / Map" module. If several samples are loaded you can select the one you want to edit with the "Sample" controller. Plasma can be triggered either via MIDI notes or can be set to continuous operation with the "Note" switch. In both cases the attack and release time of the sound can be controlled by the "A" and "R" controllers.

With the "Position" fader you can move to any position inside the sample; this position will then be repeated continuously. "Inertia" defines how fast the position in the sample follows the movement of the controller. "Random" varies the position randomly and consequently makes the sounds more vivid.

The parameters in the Re-Synthesis frame influence important parameters of the granular sound editing: The frequency or "granularity" of this process and accidental variations of this granularity, the smoothing of the generated sound and an artificial broadening of the stereo panorama. Of course, the pitch can be adjusted here, random pitch oscillations are also possible.

You can choose whether the resonance filter of Plasma is supposed to serve as a low-pass or band-pass – and it features two variants of "dirtying" the sound. Moreover, with the diffusion effect Plasma provides a simple reverb which enhances the space and depth of the sounds. Volume and the amount of high frequencies of the reverb effect are adjustable.

Instrument: NI; Sounds: Danny Zelonky/Crank; Demo: Danny Zelonky/Crank

5.20 rAmpler



Multi-purpose sampler with extensive sound shaping and modulation possibilities

rAmpler is the native answer to high-end hardware samplers: It has a transparent design and is easy to use, has a brilliant sound, great filters, FM and many modulation routings. rAmpler additionally sports special granular functions that allow you, for example, to alter a sample's length without affecting its frequency.

rAmpler is a true stereo sampler. It can load single or multi samples in a normal sample playback module, or in a special sample module based on Granular Synthesis. The normal sampler module is well suited for bread-and-butter sample playback, whereas the granular module allows for more complex sample treatment and special effects. With this sampler module you can play loops at different pitches while preserving their length, for example. This allows for smaller and less RAM consuming multi samples – to mention just one advantage.

rAmpler offers you parameters and functions you would expect to find in a full-blown professional sampler: amongst others a great sounding and extensively modulatable resonance filter with different modes, slopes and a separate envelope generator as well as two LFOs and a time/level envelope with extensive routing capabilities.

Native Instruments – REAKTOR SERIES

rAmpIer offers even more: For example an additional oscillator with a separate volume envelope for "pumping up" the sound or frequency modulating the sample. By the way: You can even frequency modulate the normal sample module by the granular sample module.

Last, but not least, a stereo delay is included with rAmpIer. It can be synced to the song's tempo and can be adjusted in note values or in milliseconds.

Instrument: NI; Sounds: Fritz Hildebrandt; Demo: Fritz Hildebrandt

5.21 Random Step Shifter



This is a tool for the randomly controlled generation of new sample loops from existing sample loops

Apart from the effect section the Random Step Shifter is by far the most simple instrument of this library because it has one and only one (!) parameter. Nevertheless, it has some potential: The Random Step Shifter rearranges the sixteenth notes of loaded sample loops according to an intelligent random principle and thus creates new loops in no time. You only have to turn the knob of the already mentioned parameter and you will be surprised... By the way – the blue bars indicate which sixteenth note of the source sample is replayed at a distinctive position of the loop.

You can load any one-bar loops into Random Step Shifter. However, please keep in mind to cut the loops accurately i. e. that they play correctly when they are looped over their entire length. This is an important prerequisite for Random Step Shifter's proper rearrangement of the sixteenth notes.

To edit the sound of the new loops Random Step Shifter provides a filter section with high and low-pass filter. The frequency and resonance of both filters can be adjusted individually and independently of each other. Moreover, a simple LFO is available which modulates the frequency with a selectable intensity and speed.

The delay of the Random Step Shifter (which is adjustable in note values) is, likewise, equipped with an LFO that modulates the delay time if you want. With this feature one cannot only generate crazy echoes but also chorus effects when a short delay time is defined. Thanks to the separate high and low-pass filters in the feedback route you can achieve wild delay effects – especially in the context of delay time modulation. Last but not least: As the delay is a so-called "diffusor" delay one can also achieve simple reverb effects with it. For this purpose the individual delays will be "smeared" according to the diffusion parameters ("Diffs").

Instrument: laZyfiSh; Sounds: laZyfiSh; Demo: laZyfiSh

5.22 SH-2k



The authentic emulation of a famous analog Techno/House synth

Pulsing basses, screaming hooks and hard noises are essential when it comes to making Techno and House music. The SH-2k emulates one of the most famous synths for such music styles. It also adds some new usefull functions and a Twin Fuzz, a 3 band EQ, a Dual Chorus and a Stereo Delay to the original's architecture.

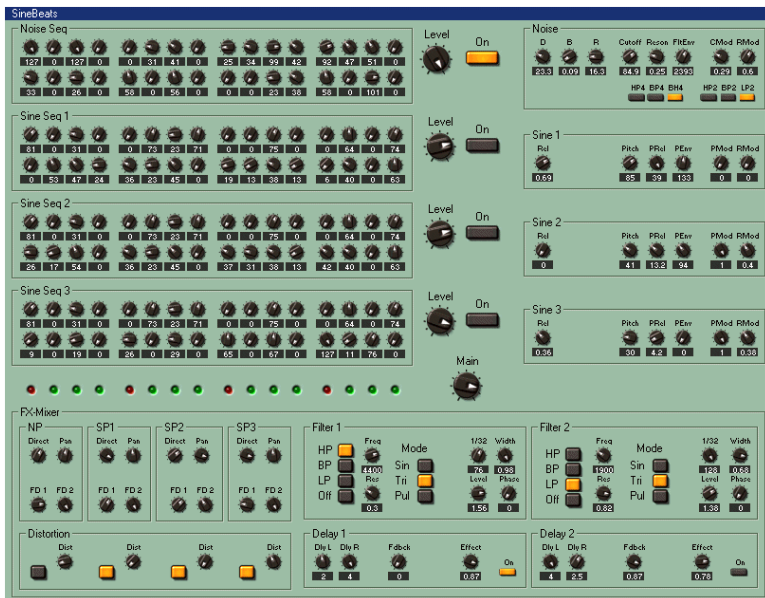
The oscillator's puls width can be controlled manually, by the LFO, or by the envelope generator. Puls wave and sawtooth wave can be mixed in the Source Mixer. The sub oscillator generates puls, triangle, or sawtooth wave. It has the same pitch as the main oscillator or a frequency of one or two octaves below, respectively. The sawtooth wave of the sub oscillator can be fine-tuned – this is especially useful when the sub oscillator has the same frequency as the main oscillator, because it makes the sound fatter and warmer.

SH-2k's filter works in low-pass, band-pass, or high-pass mode and can be modulated by the envelope, the LFO, or keytracking. The amp is controlled by the ADSR envelope or by its own AR envelope. The ADSR envelope can be used in single or multi trigger mode, or can be triggered by the LFO.

The knobs below the main modules control how much the pitch bend wheel affects the oscillator's pitch ("VCO"), the cutoff frequency of the filter ("VCF"), and how much the modulation wheel affects vibrato amount ("LFO M."). Portamento can be activated only for legato notes or can be switched off completely. The influence of velocity can be switched of globally. "Osc Sprd" adds an a unison effect to the sound; "PanSprd" broadens the stereo image. "RndmPan" adds random variations to the pan position controlled by "Pan".

Instrument: NI, Easy Sounds; Sounds: Easy Sounds; Demo: SolarX

5.23 SineBeats



Sine wave beats with additional noise generator, multiple sound parameters, distortion, modulated filters and delays

Native Instruments – REAKTOR SERIES

Sine Beats is a beatbox – based on three sine oscillators and a noise generator – which can generate a variety of classical sounds but likewise totally new beatbox sounds. Each of the four instruments features a sequencer and individual sound parameters. Two flexible filters and two delays add even more motion to the generated beats, four distortion effects create the rougher sounds.

Each of the four instruments is equipped with its own 16-step sequencer with 2 tracks. The first track controls the volume. In case you want to program a break – simply set the volume of the respective step to zero and the instrument will not be triggered. The second track sends modulation data which can vary different sound parameters of the instrument. The two adjustable sequencer tracks per instrument allow a significantly more vivid rhythm programming than simple buttons.

The noise instrument features a DBR envelope (decay, breakpoint, release) which controls the volume and, if you wish, the filter of the noise instrument. You can add up the several outputs of the filter which also features the parameters cut-off, resonance and modulation intensity of the envelope. Release and cut-off can be modulated via the second sequencer track.

The three sine instruments are structured identically. Each of them features a release parameter for the decay time, a pitch parameter and a simple pitch envelope with an intensity and a release parameter. Here you can modulate the intensity of the pitch envelope and the decay time.

With a little mixer you can adjust the four instruments' position in the stereo panorama and you can mix them proportionally to the two filters. Behind every filter a delay is positioned, both filters provide a modulation LFO.

Instrument: Mole, NI; Sounds: NI

5.24 Triptonizer



Granular synthesizer which can bend samples beyond recognition

Tritptonizer uses the specific potentials of the granular synthesis for extraordinary tone colours of instruments. This synthesizer is not only made to generate spectacular effects but it is also very well suited to generate new, striking and expressive playable synthesizer sounds.

Any given sample which can be loaded into the "sample map" module serves as an "oscillator". In case several samples are loaded you can select the particular one you want to use via the "sample" controller. The main parameters of granular synthesis – position in the sample, formant shift and volume – can be controlled via envelopes and/or LFOs. Additionally available are LFOs for vibrato and stereo position, a saturation/distortion component, an extensive modulation delay for echo and chorus effects and finally a reverb. Moreover, the tone colour of a sound can be varied via the parameters "hi boost" and "body".

The behaviour of the sound in the granular synthesis can be influenced with "noise" (accidental variation of the replay position) and "smooth" (smoothing of the generated sound). With the "keytrack" controller formants can be shifted depending on the played note.

In the Triptonizer the loaded sample will principally lose its natural sound – the replay is generally "frozen" at a position of the sample which can be defined with the "wave" slider. You can re-establish the natural sound via the wave envelope or the wave LFO.

Native Instruments – REAKTOR SERIES

With the "vel" parameter you can scale – depending on the played velocity values – all envelopes which allows very dynamic modulations and therefore a nuanced and expressive way of playing the generated sounds.

Instrument: Uwe G. Hoenig; Sounds: Danny Zelonky/Crank; Demo: Danny Zelonky/Crank

5.25 Uranus



High-end virtual analog synth

Uranus offers an extensive voice architecture with three oscillators, a shaping/distortion unit, two multimode filter, four envelope generators, two LFOs, and a very "expensive" sounding chorus effect. Uranus is well suited for the whole range of analog sounds: basses, leads, effects, and especially pads. Many useful presets give you a good demonstration of Uranus' flexibility.

Each of the two main oscillators of Uranus offers eight waveforms; the third oscillator offers five waves and noise. Oscillator 2 can be frequency modulated by oscillator 1. Before being fed to the filters, the oscillator mix can be tweaked with one of four different effects in the distortion unit.

The filter section of Uranus offers two multimode resonance filters that can be used in parallel or serial configuration. Each filter has its own set of parameters and a separate envelope generator. In serial mode, a saturation effect for emulating Moog-like filter distortion is located between the two filters.

The modulation section of Uranus features two LFOs and another envelope with flexible routing capabilities. All envelopes work as classic ADSR types. The chorus effect is mainly responsible for Uranus' elegant and "expensive" sound. It offers four separate delay lines, each with an independently controllable modulation rate.

Instrument: Olivier Gerber; Sounds: Olivier Gerber; Demo: M.S.Zanx

6 Interfaces

6.1 VST 2.0

What is VST 2.0 ?

VST and VST 2.0 are software interfaces developed by Steinberg. VST, in the original version 1 of the interface, had been developed in order to be able to integrate real time effects as "plug-ins" into so called "host programs", which are usually MIDI/audio sequencers or sample editing programs. VST 2.0 additionally makes it possible to send MIDI data to compatible plug-ins and thereby allows the integration of native sound generators. The MIDI control via VST 2.0 is sample precise and allows absolutely precise timing during the playback of MIDI tracks.

Using VST 2.0 with REAKTOR

If you want to use REAKTOR as a VST 2.0 plug-in, you have to move the "REAKTOR host plug-in" into the VST plug-in folder of your VST 2.0 compatible host program. Then you can call and activate REAKTOR as any other VST 2.0 plug-in. Please read the respective information in the manual of your host program, since the installation and operation of VST 2.0 plug-ins is different in different host programs.

After calling the REAKTOR plug-in, an empty window appears into which you can load an ensemble of your choice by the File/Open... dialog. You can use several REAKTOR plug-ins at the same time. Under VST 2.0, two inputs and outputs can be used simultaneously for each REAKTOR plug-in or ensemble.

Since VST 2.0 allows only one window for each plug-in, only the ensemble panel can be used as a user interface. Therefore all panel elements which you want to use should be visible in the ensemble panel and not only in the panel of the instrument. Of course invisible panel elements with activated MIDI remote control can be controlled during the operation as a plug-in, as well.

Obviously the restriction to a single window has a further consequence: If you use an ensemble as a plug-in, you can not change its structure. In order to make such changes, the ensemble has to be opened with the normal (stand alone) version of REAKTOR. After changing the structure and saving, the ensemble has to be loaded into the plug-in again in order to activate the modifications. Changes which only affect the parameters of the ensemble (as new or changed snapshots) can be stored also if the ensemble is being used as a plug-in: The file menu of the plug-in window allows you to save the ensemble to disk like in the stand alone version of REAKTOR. You can also use this possibility to make copies of an ensemble or to update the reference path in the host document (see below). Since REAKTOR ensemble can get very big (due to embedded samples) it is not possible to make them a component of the host document. Consequently, an ensemble which is being used as a plug-in will not be saved as part of a song of a VST compatible sequencer. Only a reference to the path of the ensemble will be saved instead. In order to guarantee that a song can be reproduced later, copies of all ensembles which have been used with this song should be archived together with the song itself.

If you want to use the same ensemble with different settings within one song, it is necessary to make differently named copies of the respective ensemble and to archive them with the song. This is the only way to ensure that each plug-in slot has access to the ensemble with the corresponding settings.

6.2 ASIO

What is ASIO ?

ASIO ("Audio Streaming Input Output") is an audio card driver architecture developed by Steinberg. ASIO is available for MacOS and Windows computers. It offers low latency and supports multi-channel audio cards.

Native Instruments – REAKTOR SERIES

ASIO drivers are usually offered by the audio card's manufacturer and allow working with every ASIO-compatible program. The main field of application is HD recording, but with the growing number of native software synthesizers ASIO also becomes more and more important for these programs because of its low latency.

Using ASIO with REAKTOR

REAKTOR supports ASIO under MacOS and Windows and allows the simultaneous use of up to 16 audio inputs and outputs. The latency you get depends mainly on the quality of the audio card's ASIO drivers and their optimum configuration.

MacOS: For REAKTOR to use the ASIO drivers, they have to be in a folder called ASIO Drivers, which must be in the same folder as REAKTOR.

To activate the ASIO drivers in REAKTOR you have to select ASIO in REAKTOR's System/Audio Port menu. If you have installed more than one ASIO driver (under Windows for instance the Steinberg ASIO MME and ASIO DirectX, which you should better not use because of their poor performance) you can subsequently choose the right ASIO driver in the System/Audio Settings dialog.

What options are available under System/Audio Settings basically depend on the ASIO card you are using. Some cards can be configured only in their own control panel, though usually you can adjust the buffer size and clock rate directly in REAKTOR's audio settings dialog. If your audio card is able to receive external clock signals but doesn't automatically adapt to the right clock rate you can usually choose a sync source [here](#).

Buffer size and audio routing

You should pay attention to one peculiarity in regard to buffer sizes: ASIO cards normally specify a range of buffer sizes in which they work on every system without problems. Since most ASIO drivers are designed for HD-recording applications and not for realtime synthesis, sometimes this range is unnecessarily high to avoid crackles in problematic systems. REAKTOR allows you to set of smaller

buffer sizes than the audiocard's default settings. With some badly programmed drivers this can lead to a program crash. Therefore, the default setting in REAKTOR is always the manufacturer's recommended value. Just try if smaller values are possible.

Under **System/Audio Routing** you can assign up to 16 inputs and outputs from REAKTOR to the various ASIO channels of the audio card. Because this routing is used for configuring REAKTOR to the system environment, the settings are global and not saved with the Ensemble.

Selecting **Default** activates all inputs and outputs and **All Off** deactivates them all. Activated but unconnected inputs and outputs don't tax the CPU to the full extent, but there is definitely some saving to be had by deactivating unused ASIO channels.

6.3 DirectConnect

This interface is only available on Macintosh systems.

What is DirectConnect ?

DirectConnect provides an easy way for applications to stream audio directly into Pro Tools or other Digidesign DAE hosts. DirectConnect allows up to 32 separate audio channel outputs from any host-based application, such as software-based synthesizers or samplers, to be independently routed, recorded, processed and mixed within the Pro Tools TDM mixing environment. Currently, only Digidesign "Mix" systems are supported due to the dependency on an SRAM DSPs which is only available on these systems.

Using DirectConnect with REAKTOR

Currently, REAKTOR supports a maximum number of 16 DirectConnect audio channels. Audio input into REAKTOR with DirectConnect isn't supported yet by Digidesign, but it is planned. REAKTOR calculates 32 Bit floating point audio internally, and DirectConnect is communicating with REAKTOR with 32 Bit resolution, too. DirectConnect automatically calculates the output for DAE Hosts, involving bit conversion if necessary. DirectConnect is working with 44,1 kHz sampling rate internally.

Native Instruments – REAKTOR SERIES

Additionally to a working REAKTOR environment, you need:

- DAE 5.x
- a DAE Host, e.g. Pro Tools 5. Pro Tools 4.x works also, using DAE 5.x.
- the DirectConnect plug-in must be installed
- the ReaktorPI file within the System/DAE-Folder
- the DirectConnect SharedLib in the System/Extensions-Folder.

Running the REAKTOR as a client with Pro Tools as host:

1. Start REAKTOR.
2. Choose System/AudioPort and select "DAE/TDM DirectConnect". This option will be only selectable if you have installed DirectConnect correctly and if you have placed the ReaktorPI file within the System/DAE-Folder.
3. Choose System/Audio Settings. In the upcoming dialog box, set up a configuration, e.g. "4 X mono" and "2 X stereo". Until now, there is no audio activity of REAKTOR, because there is no host using the DirectConnect audio data.
4. Start Pro Tools.
5. Load a Pro Tools Session. If you activate the "Reaktor" DirectConnect plug-in, you can finally hear the sound output of REAKTOR.

Now you have up to 16 outputs from REAKTOR to the Pro Tools Mixer. You can record, mix and tweak the streams with plug-in effects within Pro Tools. You can choose another output-channel configuration for REAKTOR, but the sum of mono and stereo streams must be lesser or equal than a total of 16 output streams. Please note that there will be also always at least 2 channels of audio. You cannot setup only one channel or no channel at all. Since each activated audio stream needs CPU power, you may get less CPU usage by activating less channels in your audio channel configuration.

Audio Channel Configuration

If you have set up a number of 'm' mono channels and 's' stereo channels, the first channels of the AudioOut Module represent the mono outs (1, 2,...m) and the pairs of the following ports represent the stereo outs. For example, an AudioOut Module representing a configuration of 4 mono and 2 stereo output channels will be configured like this:

- 1 (mono)
- 2 (mono)
- 3 (mono)
- 4 (mono)
- 5 (stereo 1, L)
- 5 (stereo 1, R)
- 6 (stereo 2, L)
- 6 (stereo 2, R)

Recording REAKTOR in Pro Tools

Since recording any plug-ins in Pro Tools is only possible via busses, a Session able to record REAKTOR signals is a bit more complex. The idea is to route REAKTOR into AUX channels and send the AUX's outputs to busses. Audio tracks should get these busses as source input. Monitoring the bus input (instead of monitoring the audio files/tracks in the Pro Tools Arrange window) is only possible when setting the audio track to record ("r").

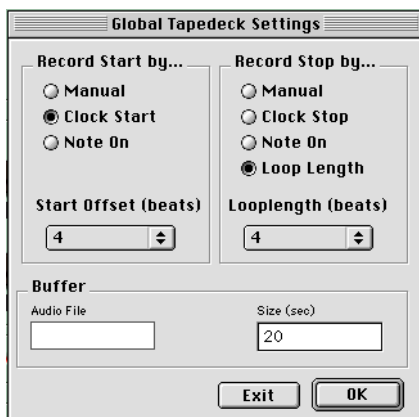
Syncing of REAKTOR and Pro Tools is only possible with Pro Tools version 5.x, since earlier versions do not provide MIDI Clock.

6.4 Output Recorder

REAKTOR offers a global stereo tapdeck for recording the stereo sum signal of an ensemble easily. The tapdeck records into the computer's RAM memory and the sound can be exported as an audio file to the hard disk drive after finishing the recording. You can also use the output recorder for loading and playing back an existing audio file from the hard disk.

The output recorder has its own toolbar buttons and its own menu (Recorder) where you can make some important adjustments.

Use Recorder is the main switch for activating the recorder. When this menu item is deactivated all other menu items in the Recorder menu are greyed out and the recorder cannot be used. The item Output Recorder Settings opens a dialog where you can define events for starting and stopping the recorder.



Output Recorder Settings Dialog

You have the following options:

- **Manual** (separately for start and stop): You start and stop the recorder using the transport switches in the toolbar.
- **Clock** (separately for start and stop): The recorder starts when the clock is switched on with the **Start/Restart Clock**-switch in the toolbar. The **Pause/Rewind Clock**-switch stops the recording.
- **Note On** (only used for starting a recording): The recorder is started by a MIDI Note On event.

Under **Start Offset** you can define a time delay, measured in beats, for the start of the recording. This can be useful if you want to record an echo effect in an advanced phase for instance but you don't want the beginning. You can also define a length for the recording with the option **Loop Length**. In this menu item you can choose a number of beats as the duration of the recording.

Under **Size** you can enter in seconds how much RAM you want to allocate for the recording buffer. If you are going to do long recordings your computer must have enough RAM.

With Load Audio in the Recorder menu you can load and play back an audio file from the hard disk. Reload Audio repeats the loading process and loads again the currently loaded audio file. With Export Audio you can save the current recording as an audio file on the hard disk. With Overwrite Audio you overwrite the last saved audio file with a new recording.



Im Toolbar besitzt der Recorder (rechts oben) einen Schalter für die Aufnahmebereitschaft, eine LED, die im Aufnahmebetrieb leuchtet, einen Stop-Schalter sowie einen Wiedergabe-Schalter (mit dem bei aktivierter Aufnahmebereitschaft die Aufnahme manuell gestartet wird). Der Loop-Schalter (ganz rechts) dient dazu, den aufgenommenen Abschnitt im Wiedergabebetrieb dauernd zu wiederholen.

There are buttons in the toolbar (at the top right) for activating the recorder, an LED to indicate that recording is in progress, a stop switch and a playback switch (to start the recording in manual mode when the recorder is "armed"). The Loop switch (far right) is used for repeating playback of the recording in an endless loop.

6.5 MIDI File Player

There is an integrated MIDI File Player in REAKTOR allowing the import and playback of MIDI files in the Standard MIDI File format (SMF). Such MIDI files can be produced by nearly every sequencer program. Under Windows they have the file name extension .mid.

With the integrated MIDI File Player you can have REAKTOR play arrangements even without a separate sequencer. This option is especially interesting when using REAKTOR in live performances: A sequencer running in the background on the same computer can cause problems and makes the handling more complicated, since you have to load new files into the sequencer as well as into REAKTOR. On top of that, you have to keep switching between the two programs to have access to important parameters.

Native Instruments – REAKTOR SERIES

There is another advantage to using the integrated MIDI File Player versus using an external sequencer – you will have sample accurate timing. In other words: All notes in the MIDI file which begin at the same time are played by REAKTOR absolutely simultaneously, so the timing is perfectly tight. Nevertheless, it depends on the sequencer you have used for producing the MIDI file, what resolution and accuracy you will get for the timing of the notes.

The REAKTOR MIDI File Player can be load with a MIDI file either manually or automatically: You can find the entry **Open Midi File...** in the **File** menu, for opening a dialog to select a standard MIDI file. When opening and ensemble, REAKTOR loads a MIDI file automatically if it is in the same folder and has the same name as the ensemble (but with the extension .mid).

In the **Settings** menu there are three entries for navigating the MIDI File Player. When the item **Play MIDI File** is activated, the MIDI file is played back when you start the REAKTOR clock. The MIDI file will be played in an endless loop when **Loop MIDI File** is activated. You can use this for instance to keep repeating a pattern or sequence of patterns. Finally, the item **Ignore Tempo Change** disables the tempo changes contained in the MIDI file. When activated the tempo changes are ignored and the whole MIDI file is played back with the tempo set by the REAKTOR clock.

The transport functions of the MIDI File Player are controlled from REAKTOR's clock control functions.

- Pressing the **Start/Restart Clock** button starts the MIDI File playback from the beginning.
- Press the **Pause/Rewind Clock** once and playback of the MIDI File pauses, the **Start/Restart Clock** button jumps out and the player stops playing but maintains its current position.
- Press the **Pause/Rewind Clock** button once more and you reach the **Stop mode**: The button stays pressed down and the player returns to the start position of the MIDI file.

There is a display for the current position of the MIDI file in the toolbar. With the fast-forward and rewind buttons (<< and >>) you can scroll manually to a any position in the song.