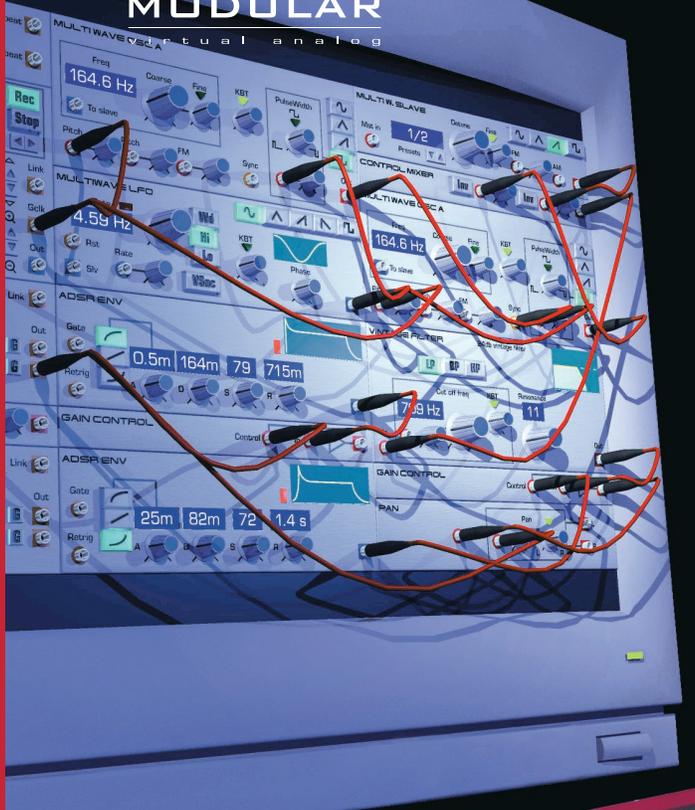


nord  
MODULAR

virtual analog



**C**lavia, the company that introduced the first commercial "virtual analog synthesizer" in 1995, unveils another revolutionary product based on the same innovative technology that brought the Nord Lead to the forefront of the keyboard market.

The new synthesizer – **Nord Modular** takes synth programming and sound development several steps further.

**P R E S S S T O P**

New software release available. V3.0 editor software runs on both Mac and PC. See special info sheet for details on V3.0



**YOUR IMAGINATION IS ONLY THE BEGINNING**



## THE VIRTUAL MODULAR CONCEPT

The Nord Modular is a polyphonic synthesizer where you can create your own synthesizer architecture from scratch on the computer screen with virtual modules that you connect using virtual cables. The modules are "digital models" of traditional synthesizer building blocks such as oscillators, filters, envelope generators, distortion processors, etc, plus a full array of special purpose modules. Both the sound generating and graphical information pertaining to the modules are storeable into the Nord Modular. All of this, together with the 18 assignable front panel knobs and the navigator buttons, allows the Modular to perform as a stand alone synthesizer, perfect for live performance. The Modules are 100 % software and new modules will be added by Clavia. New system software updates including new modules and additional features will be available FREE OF CHARGE at Clavia's Web site: [www.clavia.se/nord-modular](http://www.clavia.se/nord-modular). The Nord Modular is 4-part multi-timbral and offers a minimum of 4 voices or more (up to 32 voices) depending on patch complexity.

**W**ith the Nord Modular you are able to construct the "synthesizers of your dreams." Simply drag synth modules out onto the screen, make your connections using "virtual patch cords", and in no time, you'll have your new synthesizer in front of you. The innovative and flexible architecture of the Nord Modular allows for extensive sound sculpturing. How about a 5-oscillator-per-note synthesizer with 5 LFO's, two highly-resonant 24 dB/oct low-pass filters with separate envelopes or maybe a fat string sound with 14 oscillators – in stereo. Move your body to a megafat bass sound built up with 4 oscillators and a distorted classic analog lowpass filter. Or, why not a classic 6 Operator FM patch for that "electric" piano sound or a 24 sine wave oscillator patch for inharmonic spectrum generation. The possibilities are endless and ongoing due to future FREE software updates from Clavia containing even more exciting modules, for example; Formant Waveforms, Frequency Shifter etc, etc.

### DO YOUR OWN VINTAGE SYNTHESIZER

Not only are you able to build your own synthesizers "from scratch," but within Clavia's large Patch library you will find many patch re-creations of famous, historic analog synthesizers. With the Modular you have not only one synthesizer – you have as many as you like! The Modular is able to sound like many different vintage synthesizers, because the Nord Modular is able to recreate them all.

### MODULATION PARADISE

One of the most powerful features with old modular systems was the almost endless modulation possibilities. With the new and innovative morph technology Clavia takes modulation to a higher level. With one of four morph sources, for example; velocity, mod. wheel, MIDI control numbers or after touch, you are able to modulate a group of parameters each one within a predefined range. This allows you to make really dynamic and complex modulations.

### IMPROVED FILTER DESIGN MAKES THE MODULAR SOUND SO ANALOG...

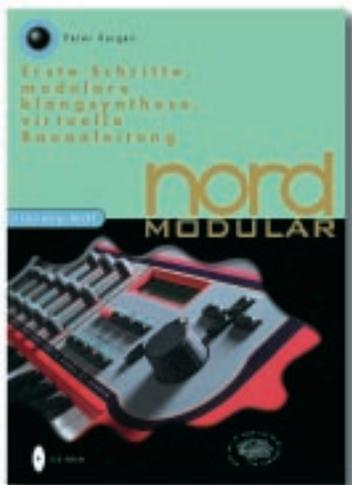
The Modular offers newly designed filter modules that simulate classic analog filters. Go to the filter section and make your choice from several new exciting filter modules which also include the traditional Nord Lead filter.

### ANALOG DRUMS AND SEQUENCING

The Modular offers typical analog step sequencer and event generator modules. An innovative, newly developed, percussion module is available for creating those great vintage analog drum sounds. Together with perfect emulations of classic analog drum sounds, you can build your own unique analog drum sounds utilizing filters that are easily controllable in real time.

### EXPERIMENTAL MUSIC

The extremely flexible architecture of the Modular makes it a perfect tool for experimental music where a synthesizer patch controls itself, almost giving it an "organic" life. Advanced modulation feedback, with clocked random generators and precision LFO's, is available with cycle times up to seven hours making it possible to create incredibly slow and unexpected transformations of sound structures. Let the patch be the composition!

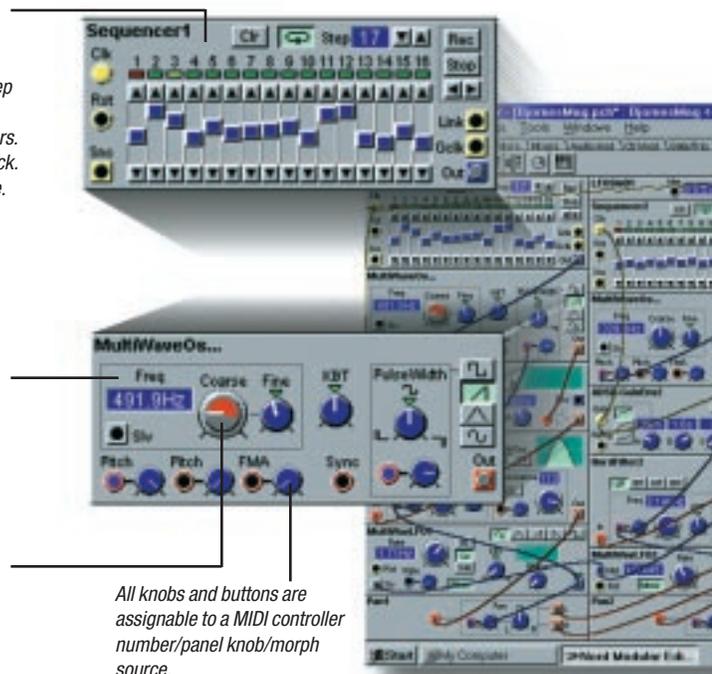


The tutorial book for Nord Modular is available. Holds plenty of useful information plus tips, tricks and examples. Written by the "wizard of oscs" Peter Gorges. Comes with a CD-ROM holding tutorial and audio examples available in english and german language.

**Step sequencer and Event generator.** These specially designed sequencer modules offers innovative features. Record your pattern into the Step sequencer. Link various sequencers together to make a "matrix" of sequencers. All sequencers are synchronizable to MIDI clock. Here you see the Step sequencer module.

Several **Oscillator modules** are available. Choose from traditional waveforms such as: Square, Sine, Saw and Triangle. Several oscillator modules offer FM and AM modulation. Because the Modular is software based, new exciting waveform patterns will be released.

All knob and button settings are morphable. There are 4 independent morph sources in the Nord Modular. You will find that you are able to create outrageous morphing patches.



All knobs and buttons are assignable to a MIDI controller number/panel knob/morph source.

## INSERT A SIGNAL AND PATCH IT!

Nord Modular offers two, independently routable, analog inputs. Just insert the external signals into your patch. Let the audio signal control parameters and trig events. You can also do interesting processing of the incoming signals like dynamic filtering and ring modulation. Future software updates will offer new exciting modules suitable for handling audio signals, like vocoder and pitch tracking modules.

## NORD MODULAR AND MIDI – MODULAR SYNTHESIS HAS FINALLY "COME OF AGE"

The Nord Modular can be synched in real time with your sequencer allowing exciting step sequencer patches to be locked to the tempo of your music. Within each patch you are free to assign any parameter to any MIDI controller number.

## GOING TO SCHOOL

The Modular is a "natural" for education. It's pedagogical interface is a perfect tool for use in the study of sound generation and sound processing. The teacher can easily create an educational synthesizer model well adapted for his/her way of teaching. The modular makes it possible to more easily understand the secret of synthesizer programming by going step by step from one single module up to a very complex structure. The Nord Modular can be used to teach other synthesis techniques (types) such as subtractive, additive, FM, non-linear, etc., and this is only the beginning. New modules and even more new forms of synthesis will be developed by Clavia's engineers and made available to Nord Modular owners.

## GET NEW SYSTEM UPDATES – FREE OF CHARGE!

The Nord Modular features flashmemory to hold the operating system software. This allows for easier future software updates via your computer. A software update contains new modules, additional features and even more new sounds. As an owner of a Nord Modular you will have FREE access to new system updates at Clavia's Web site: [www.clavia.se/nordmodular](http://www.clavia.se/nordmodular). This guarantees a long and useful life for the Modular.

## PLAY LIVE WITH THE MODULAR

Live performance is a strong point with the Nord Modular. Not only do you have 1 modular synthesizer – you have 4! Play them simultaneously using separate outputs. Assign important parameters from each of the 4 parts to the 18 knobs on the panel. Inside it's internal flashram memory is storage for 100 of your own patches. Simply unhook the Nord Modular from your PC and take it with you to the gig.

## KILLER SOUNDS RIGHT FROM THE START!

Right out of the box you have 100 spectacular patches reminiscent of patches that could only have been created with a "maxed-out" vintage modular synth.

Super pads, booming basses, multi step-sequencer, and other sounds you've never imagined. By using these patches as "templates" you can immediately start turning knobs, modifying sounds, and saving your own creations. If that isn't enough you will, of course, have free access to even more exciting new sounds and synthesizer templates and patches at Clavia's website: <http://www.clavia.se/nordmodular/sounds>.

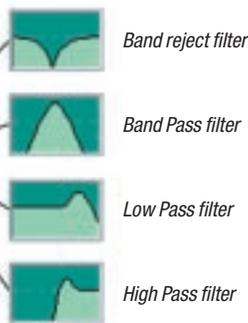


All parameters in the patch are assignable to knobs on the Modular. Highlight the parameter of your choice and assign it to a knob. In this example, the parameters Filter frequency, resonance and envelope amount are assigned to the three marked buttons on the Modular.



The "knob floater" is a useful tool on the monitor screen to display your knob assignments.

A helpful display is there to guide you when you set the Filter contour.



The newly designed **Filter modules** offer filtering with a more analog behaviour for "warmer" sound characteristics.

The **ADSR envelope generator** comes with a display to visually guide you in your sound design work.

Important parameter values are shown in real time.

## AN ANECDOTE ABOUT PATCH SYNTHESIZERS

Remember old analog modular patch synthesizers when you would make up one patch after hours of tedious patching? When you created a sound to your taste, ohh it sounded so good, but you needed to totally re-arrange your patch cords and knob settings to create new sounds. The process would have to start all over again and that great mono sound might never be heard again (unless you took the time to draw a comprehensive diagram of your settings and patches). To sample a patch is not the solution. Sampling is static and cannot reproduce random nuances.



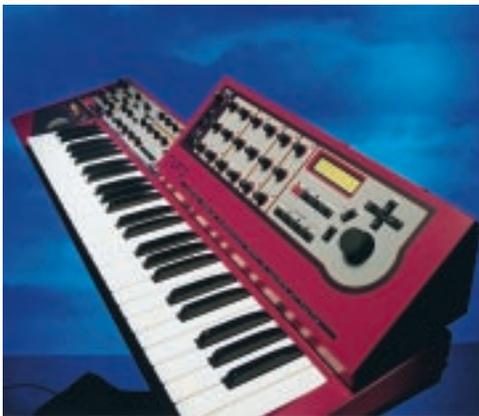
*Thanks to the Navigator buttons on the Nord Modular, it's a breeze to adjust sound parameters in the Patches without using the PC editor.*



*The Nord Modular rack or keyboard models sport two analog inputs, two pedal inputs, four assignable outputs and one headphone output. There are separate sets of MIDI jacks for connecting the Modular to the editing PC and to your MIDI rig.*



*The Nord Modular rack version is designed to snug perfectly into a 19" rack.*



*A dream set-up? Nord Modular fits perfectly on a Nord Lead 2. Connect them and you have a perfect combination of sounds and real time controllers. The Nord Lead controllers and buttons can be set to control the Nord Modular's various parameters.*



#### **FOUR MODULAR SYNTHESIZERS IN ONE**

On the computer screen the user can toggle between 4 separate patches (synthesizers). These 4 patches can be played simultaneously and assigned to 4 independent outputs.



#### **NORD MODULAR EXPANSION CARD**

An expansion card is available that doubles the capacity of the Nord Modular polyphony to a minimum of 8 voices and maximum 32 voices.



#### **REAL TIME EDITING**

The Nord Modular can also be used without the editing software as a stand-alone two octave synthesizer. You can carry it with you to the gig! Mounted onto the panel are 18 knobs that can be assigned to different parameters. As with the Nord Lead, all editing parameters can be assigned to and controlled through MIDI.



#### **INPUTS AND OUTPUTS**

The audio output from each multi-timbral slot is fully assignable to any of the 4 outputs. In the old days there were signal inputs to the modular systems. The Nord Modular offers two analog inputs assignable to each of the four parts. Insert the signal and patch it!



#### **SYSTEM DESCRIPTION**

The Nord Modular system is built around hardware, a 2 octave keyboard or a 19" rack module, and a PC Software package. Editing options feature all of the classical synth building blocks you might expect. They are all available within the software editor where the user can create patches by first assembling the desired modules on the monitor screen and then drawing virtual cables to make the proper connections.



#### **MEMORY**

100 Patches can be stored into the Nord Modular modules. Patches can also be stored onto the computer.



#### **MORPHING**

The modular offers morphing possibilities in a startlingly new way. Four separate morph sources can be set to independently control a group of knob- and button parameters in the patch. All four morph sources can be simultaneously controlled by any MIDI controller, the Modular assign knobs, key note and velocity.



#### **MODULES**

New synth building blocks will be developed, by Clavia, for the Nord Modular. At this moment the modules listed to the right are available.

# Nord Modular Specifications

- Virtual analog synthesis
- Modular patch synthesizer
- Minimum 4 voices expandable to minimum 8 voices
- Maximum 32 voices
- Total polyphony depends upon patch complexity
- 4 part multi-timbral
- Special Morph groups that can be routed independently to controller, velocity or button.

## User interfaces

### THE PANEL

18 editing knobs and 18 function buttons. 1 master volume. Rotary encoder, Navigator 2x20 character backlit LCD display

### THE EDITOR

Runs on a PC/penium minimum 90 MHz with Windows 95 or Windows NT

## The memory

Holds 100 user-patches (sounds) and operating system software in Flashmemory. Software upgradeable via the computer. Backup software in ROM.

## Building blocks (modules) with DSP power consumption

### IN/OUTS

Keyboard voice, patch and global	0,13%
Audio in	0%
1 output	0,64%
2 output	1,1%
4 output	2,4%
Morph	0%
Note detection	0%

### OSCILLATORS

<b>Oscillator A</b> with Sine, Triangle, Saw and Square/Pulse waveforms. Frequency range 8.18 Hz - 12.54 kHz. Fine tune. Continuously keyboard tracking. Two pitch modulation inputs, one FM modulation input, one Sync input and one Pulse-width modulation input.	11%
<b>Oscillator B</b> with Sine, Triangle, Saw and Square. Frequency range 8.18 Hz - 12.54 kHz. Fine tune. Continuously keyboard tracking. Two pitch modulation inputs, one FM modulation input and one Pulse-width modulation input.	8,3%
<b>Oscillator C</b> with Sine waveform. Frequency range 8.18 Hz - 12.54 kHz. Fine tune. Keyboard track on/off. Pitch, FM and AM modulation inputs.	5%
<b>Oscillator Slave A</b> with Sine, Triangle, Saw and Square waveforms. Fine tune. One FM and one AM modulation inputs.	7,9%
<b>Oscillator Slave B</b> with Square waveform. Fine tune. One Pulse-width modulation input.	7,1%
<b>Oscillator Slave C</b> with Saw waveform. Fine tune. One FM modulation input.	6%
<b>Oscillator Slave D</b> with Triangle waveform. Fine tune. One FM modulation input.	5,9%
<b>Oscillator Slave E</b> with Sine waveform. Fine tune. One FM and AM modulation inputs.	3,1%
<b>Noise generator</b> , continuously fade between white and colored noise.	1,7%
<b>Percussion Oscillator</b> with pitch, click and decay control. Trig and velocity inputs. Punch activator.	4,1%

### LOW FREQUENCY OSCILLATORS

<b>LFO A</b> with Sine, Triangle, Saw, Inverted Saw and Square waveforms. Three selectable ranges, 699 to 5.46 seconds, 0.02 to 24.4 Hz and 0.26 to 392 Hz. Adjustable Phase. Continuously keyboard tracking. Poly/mono switch. Reset input. One modulation control input.	1,8%
<b>LFO B</b> with Square/Pulse waveforms. Three selectable ranges, 699 to 5.46 seconds, 0.02 to 24.4 Hz and 0.26 to 392 Hz. One input for Pulse-width modulation. Adjustable Phase. Continuously keyboard tracking. Poly/mono switch. Reset input. One modulation control input.	1,2%

<b>LFO C</b> with Sine, Triangle, Saw and Square waveforms. Three selectable ranges, 699 to 5.46 seconds, 0.02 to 24.4 Hz and 0.26 to 392 Hz. Reset input. One modulation control input.	1,5%
<b>LFO Slave A</b> with Sine, Triangle, Saw, Inverted Saw and Square waveforms. Adjustable Phase. Reset input. Poly/mono switch.	1,2%
<b>LFO Slave B</b> with Saw waveform.	0,35%
<b>LFO Slave C</b> with Sine waveform.	0,76%
<b>LFO Slave D</b> with Square waveform.	0,35%
<b>LFO Slave E</b> with Triangle waveform.	0,35%
<b>Clock generator</b> Range 24 BPM to 214 BPM. Two assignable clockpulses, 4 or 24 cycles/beat.	0,41%
<b>Clocked random step generator</b> Clock input. Mono switch. White or colored randomization modes.	0,61%
<b>Random step generator</b>	0,61%
<b>Random Pulse generator</b> Density controller.	0,32%

### ENVELOPE GENERATORS

<b>Attack, decay, sustain, release</b> Width build-in gain control. Three attack characteristics: logarithmic, Linear and exponential. Invertible. Gate and retrig inputs. One control output. Range: 0,5 ms - 45 sec.	1,5%
<b>Attack, decay</b> Width build-in gain control. Gate or trig input. One control output. Range: 0,5 ms - 45 sec.	1,3%
<b>Envelope follower</b> Attack and decay controllers.	1,1%

### FILTERS

<b>Filter A</b> Static lowpass with a slope of 6dB/octave. 12 Hz - 20 kHz.	0,64%
<b>Filter B</b> Static highpass with a slope of 6dB/octave. 12 Hz - 20 kHz.	1%
<b>Filter C</b> Static multimode. Lowpass, bandpass or highpass, with a slope of 12 dB/octave. 10 Hz - 15,8 kHz. Resonance controller.	1,8%
<b>Filter D</b> Multimode. Lowpass, bandpass or highpass, with a slope of 12 dB/octave. freq. 10 Hz - 15,8 kHz. Resonance controller. Continuously keyboard tracking. Gain compensation. One control input for freq.	4%
<b>Filter E</b> Multimode filter. Lowpass, bandpass, highpass and band reject with slope of 12 dB or 24 dB. Freq. 10 Hz - 15,8 kHz. Resonance controller. Continuously keyboard tracking. One modulation input for Freq. One modulation input for resonance.	6,5%
<b>Filter F</b> Classic lowpass filter with a slope of 12/18 or 24 dB per octave. Freq. 10 Hz - 15,8 kHz. Resonance controller. Continuously keyboard tracking. Two modulation input for freq.	5,5%

### MIXER

<b>Mixer with three inputs</b>	0,89%
<b>Mixer with 8 inputs</b> 6 dB attenuator.	1,9%
<b>Gain controller multiplier</b> One modulation input.	0,76%
<b>Crossfade controller</b> One modulation input.	1,7%
<b>Pan controller</b> One modulation input.	1,7%
<b>On/Off switch</b>	0,38%
<b>4-1 switch</b>	0,76%
<b>1-4 switch</b>	0,89%
<b>Amplifier</b> Continuously attenuation-amplification.	0,84%

### AUDIO MODIFIERS

<b>Clip</b> Peak clipping of audiosignal. Symmetrical on/off. One modulation input.	1,5%
<b>Overdrive</b> Overdrive of audiosignal. One modulation input.	4%
<b>Wavewrap</b> Signal transformation. One modulation input.	2,7%
<b>Quantizer</b> Step reducing. 12 bits to 1 bit internal resolution.	0,51%
<b>Delay line</b> For flanger and chorus. 0 - 2.65 ms range. One modulation input.	8%
<b>Sample and hold</b> One logic control input.	1%
<b>Diode processing</b> Full and half wave rectifying.	0,64%

<b>Chorus</b>	8,4%
<b>Inverter</b>	0,51%
<b>Level shifter</b> Transforms signals from bipolar to unipolar.	0,13%
<b>Control shaper</b> Log1, log 2, linear, exp1 and exp 2.	0,41%

### CONTROL MODIFIERS

<b>Constant</b> Unipolar or bipolar mode.	0%
<b>Smooth</b> Range 0.32 to 318 ms.	0,22%
<b>Portamento A</b> Range 5,3 ms - 45 sec.	0,32%
<b>Portamento B</b> Range 5,3 ms - 45 sec.	0,38%
<b>Note scaler</b>	0,13%
<b>Note quantizer</b> 0-127	0,41%
<b>Control signal mixer</b> Two inputs. Polarity inverters.	0,16%

### LOGIC

<b>Positive edge delay</b> Range 1.0 millisecond to 18 seconds.	0,61%
<b>Negative edge delay</b> Range 1.0 millisecond to 18 seconds.	0,25%
<b>Pulse</b> Range 1.0 millisecond to 18 sec.	0,32%
<b>Delay</b> Range 1.0 millisecond to 18 sec.	0,25%
<b>Inverter</b>	0,16%
<b>Logic processor</b> Three different modes; AND, OR and XOR.	0,25%
<b>Compare level</b> +- 64 units.	0,16%
<b>Compare A B</b>	16%
<b>Clock divider</b> 1-127 units.	0,61%
<b>Clock divider fixed.</b>	0,8%

### SEQUENCER

<b>Event sequencer</b> 2 x 16 step. Loop function. Toggling between gate and trigg. Link.	1,1%
<b>Control sequencer</b> 16 step. +- 64 units. Loop function. Random function. Uni or bipolar modes. Link.	0,86%
<b>Note sequencer A</b> 16 step. +-64 units. Recordable. Loop function. Link.	0,86%
<b>Note sequencer B</b> 16 step. +-64 units. Recordable. Loop function. Random Link.	0,86%

### MIDI FEATURES

All parameters, except the master level, can transmit and receive Control Change messages. Notes can be received over the entire MIDI range Bulk dumps for System exclusive data. MIDI clock Synchronizing.

## Nord Modular hardware specifications

### KEYBOARD VERSION

- 2 octave velocity sensitive keyboard with octave shift buttons (5oct.)
- 4 assignable outputs. Line level
- Headphones output
- MIDI Out
- PC Out
- Two audio in: line level
- Control pedal, Sustain or ON/Off pedal
- MIDI In, PC In

**Dimensions:** 473(W) 264(D) 70(H) mm  
18,6"(W) 10,4"(D) 3,5"(H)  
**Weight:** 4,7 kg, 10,36 lbs

### RACK MODEL

- 19" space
- 4 units high, Midi In trig indicator.
- 4 assignable outputs. Line level
- Headphones output
- MIDI Out
- PC Out
- Two audio in: line level
- Control pedal, Sustain or ON/Off pedal
- MIDI In, PC In

**Dimensions:** 423(W) 176(D) 118(H) mm  
16,6"(W) 6,9"(D) 4,6"(H)  
**Weight:** 3,2 kg, 7,05 lbs

Specifications are subjected to change without notice.

Keyboard voice, patch and global
Audio in
1 output
2 output
4 output
Morph
Note detection
Oscillator A
Oscillator B
Oscillator C
Oscillator Slave A - E
Noise generator
Percussion Oscillator
LFO A
LFO B
LFO C
LFO Slave A - E
Clock generator
Clocked random step generator
Random step generator
Random Pulse generator
Attack, decay, sustain, release envelope generator
Attack, decay envelope generator
Envelope follower
Filter A
Filter B
Filter C
Filter D
Filter E
Filter F
Mixer with three inputs
Mixer with 8 inputs
Gain controller Multiplier
Crossfade controller
Pan controller
On/Off switch
4-1 switch
1-4 switch
Amplifier
Clip
Overdrive
Wavewrap
Quantizer
Delay line
Sample and hold
Diode processing
Chorus
Inverter
Level shifter
Control shaper
Constant
Smooth
Portamento A
Portamento B
Note scaler
Note quantizer
Control signal mixer
Positive edge delay
Negative edge delay
Pulse
Delay
Inverter
Logic processor
Compare level
Compare A B
Clock divider
Clock divider fixed
Event sequencer
Control sequencer
Note sequencer A
Note sequencer B

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MODULAR  
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Photo: K. Johansson. Printed in Sweden.



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