KS Rack
polyphonic synthesizer

4 part multi-timbrality, 16-voice polyphony, 4 individual outs.
And that's just the start.

Wire yourself into a KS Rack polyphonic synthesizer and you'll experience the kind of aural delight you can only get from genuine Novation Liquid Analog Sound. - Three powerful oscillators feature waveform 'doubling' and 24 additional complex waves make for a vast sonic armoury, from shimmering glass to mega phatt sounds, drums and percussion - it's all there.

Plus the KS Rack is also incredibly adept at creating surreal electric pianos, characterful organs and screaming leads.

Just like its keyboard equipped brothers (KS-4 & KS-5), the KS Rack also gets unique HYPERSYNC™ feature, a predictably stellar Novation technology for instant and quite simply earth shattering audio motion syncs & effects.

Add-in 4 completely editable drumkits and powerful FM routing, flexible rackmount or desktop mount operation, lots of knobs, loads of buttons plus a few sliders and you've got one of the most creative synths available.

Flexible, modern, traditional - whatever you want it to be.
Atmospheric dance. Hedonistic trance. The KS Rack are not only an über synth for today's Drum 'n' Bass, Hip Hop musicians. It's also adept at creating surreal electric pianos, characterful organs and screaming leads.

novation
in music, anything is possible.

Architecture

Voices	16
Modes	Program (Mono Timbral)
	Performance (Four Part multi timbral)
Part Edit	Note range / Fine/semi-tone detune / On-Off / Output select / MIDI channel
Audio Input	1 x 20 Bit A/D
Audio Outputs	4 x 24 Bit D/A

Oscillators 1, 2 and 3

Waveforms	Square / Saw / Variable Pulse / Tri / Sine / Double Saw / Double Tri / Double Sine / 24 Complex Cycle Waveforms
Noise Sources	White / Crack / Metal 1 / Metal 2
Octave Range	Shift -1 / 0 /+1 / +2
Mod Env Depth	-64 to +63
LFO1 Depth	-64 to +63
PWM Source	Mod Env / Manual / LFO2
Ring Mod	1 * 2
FM	2 * 3
2 * 3 FM Level	0 – 127
2 * 3 FM Mod Level	0 – 127
FM Env Attack Rate	250uS-20 Seconds
FM Env Decay Rate	1mS-20 Seconds

Comprehensive Aftertouch, Breath and Pitch / Mod Wheel control of both static pitch and modulation of pitch

Mixer

Osc 1 Static Level	0 – 127
Osc 1 Mod Level / Lfo1	-64 to +63
Osc 2 Static Level	0 – 127
Osc 2 Mod Level / Lfo2	-64 to +63
Osc 3 Static Level	0 – 127
Osc 3 Mod Level / AD Env	-64 to +63
Noise Static Level	0 – 127
Noise Mod Level / Lfo1	-64 to +63
FM StaticLevel	0 – 127
FM Mod Level / AD Env	-64 to +63
Ext Input Static Level	0 – 127
Ext Input Mod Level / AD Env	-64 to +63

Filter

Frequency	5Hz-24kHz
Slope	12dB / 24dB
Modes	Low Pass
	High Pass
	Band Pass
Resonance	0-Self Oscillation (24dB mode)
Mod Env Depth	-64 to +63
LFO 2 Depth	-64 to +63
Cut Off	0 – 127
Keyboard Tracking	0 – 127
Velocity	0 - 127
Overdrive	0 - 127
Q normalise	0 - 127

Comprehensive Aftertouch, Breath and Pitch / Mod Wheel control of both static filter freq and modulation of filter freq

Amplifier & Modulation Envelopes

Velocity	-64 to +63
Attack	250uS-20 Seconds
Decay	1mS-20 Seconds
Sustain	0 – 127
Release	1mS – 20 Seconds
Delay (Mod Env)	1mS-20 Seconds

LFO1 - LFO2

Modes	Cyclic / One-shot
Waveforms	Sine / Tri / Saw / Squ / Sample & Hold / Sample & Hold / Quantize / Random / Crossfade 24 Intricate Wavetables
Speed	0 Hz – 1Khz
Delay Fade In	0 – 5 Seconds
LFO Sync	Internal – MIDI Clock

Arpeggiator

Arpeggiators	4 Independent
Controls	Speed / Range / Gate Time MIDI Clock / Sync / Keysync
Modes	Up / Down / Random Chord / Drum
Rhythmic Patterns	32
Drum Patterns	32

Interfacing

MIDI Sockets	In / Out / Thru
Audio Input	Line Level 1 x Mono 1/4" Jack
Audio Outputs	Line Level 1 x Mono 1/4" Jack
Pedals	Sustain / Expression 1/4" Jack

Effects

Reverb	Level / Echo Chamber, Small Room, Large Room, Small Hall, Large Hall, Grand hall / Decay / Wheel Level
Chorus - Phaser	Level / Rate / Type / MIDI Clock Sync / Feedback / Mod Depth / Centre / MIDI clock sync initial Position, Wheel Level
Distortion	Drive / Compensation / Wheel Level
Panning	Position / Mod Depth / Speed / MIDI clock Sync, Initial Position
Delay	Depth / Time / Feedback / MIDI Clock Sync / Stereo Width / Ratio / Wheel Level
16 Band Vocoder	On –Off / Sibilance Level / Sibilance Type
EQ / Filter	Depth / Freq / Mod Depth / Mod Speed. MIDI clock sync / MIDI clock sync Initial position

General

Power (AC Mains)	85 - 270 V.A.C 250mA
Dimensions (mm)	W=483 H=78 D=223
Weights	4.2kg

Hypersync™ What it can do for you.

With predicable Novation insight and innovation, the unique Hypersync function allows you to 'tempo synchronize' up to 8 parameters associated with any one of the 400 synthesizer programs.

Before Hypersync, creating tempo locked synth and effects parameters would take ages, manually selecting and adjusting settings.

With Hypersync a single rotary control selects templates of pre-selected settings for each parameter.

The master tempo can be controlled either by the KS Rack's internal clock (the front panel tempo control sets the speed), OR by the tempo control on an external sequencer connected via MIDI.

The KS Rack is shipped with 16 handy templates, each one being a collection of musically useful settings for the 8 parameters.

Hypersync™ In operation.

The 8 parameters that may be 'tempo locked' or 'synced' fall into 2 categories. 4 are associated with the effects processors and 4 directly affect the synthesizer engine:

Effects	Synth Engine
Chorus / Phaser	LFO 1
Panning	LFO 2
Delay	LFO 1 Delay
EQ / Filter	LFO 2 Delay

Hypersync templates are recalled by simply turning the rotary control. When you like what you hear, you can save it with the program in any one of the 400 memory locations.
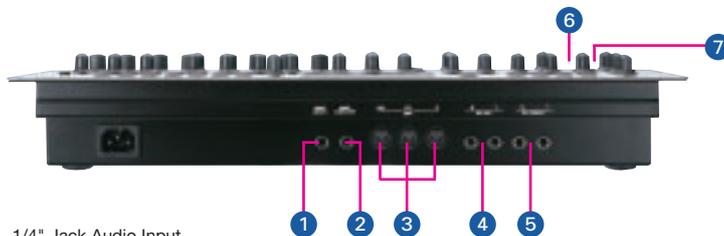
Hypersync™ You're in control.

But Hypersync is more than a factory pre-set über-function as its real usability comes when creating your own Hypersync template. Start with a factory preset or go it alone from scratch - the choice is yours.

Modify a preset and add a little more chorus, change the timing of LFO 1 to 1/4 bar, tweek the delay from 4ths to 8ths - then save.

It's easy, musical and it will open up the creative possibilities of 'tempo synchronized' audio motion effects like never before.

Interfacing

1. 1/4" Jack Sustain Pedal
2. 1/4" Jack Expression Pedal
3. 5-pin DIN MIDI IN/THRU/OUT
4. 1/4" Jack Aux Output L/R
5. 1/4" Jack Master Output L/R
6. 1/4" Jack Audio Input
7. 1/4" Jack Stereo Headphones

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