

# Novation Supernova II

Novation's range blasts upwards and outwards like, well, a supernova. Gordon Reid 'suits up' for the first review.

Novation is relatively new to the synthesiser game. The company appeared as recently as 1992 with the MM10 mini keyboard, following this in 1994 with the MM10X and the BassStation. Its next products – the BassStation Rack (1995), the DrumStation (1996) and the Super BassStation (1997) – consolidated its position as one of the leaders in the new wave of analogue synth manufacturers but, in 1998, Novation took a huge leap into the present when it released the respected Supernova rackmount synthesiser. This attracted a loyal following worldwide, but users complained that it lacked proper FM, lacked audio inputs and digital I/O, and that it offered no 'special' or 'alternative' waveforms beyond the standard analogue-esque waves.

In March 1999, Novation introduced the Nova, a desktop version that sacrificed polyphony (it offered just 12 voices) but added the sought-after audio inputs and a 42-band vocoder. More importantly, the company also

voices, the 'II Pro' has 36, and the 'II Pro X' offers a substantial 48. All are supplied as five-octave synths with a pleasant semi-weighted aftertouch-sensitive keyboard, or as racks with fewer controls and (understandably) no master keyboard functions. The unit itself is very solid, and I would have no hesitation taking one out 'live'. The keyboard itself deserves special commendation. It has the same 'textured' feel for the black keys which distinguished the Kawai K5000, and is both rapid and smooth in action.

Like the original Supernovae and competitors such as the Access Virus and Roland JP8000, the Supernova II is a 'Virtual Analogue' (VA) synth with no pretensions to the Korg Z1's physical modelling of strings, brass, and the like. (Its only nod in the direction

of digital synthesis is the inclusion of the requested FM capabilities.) Many of the parameters necessary for programming

analogue-style sounds exist under dedicated knobs and sliders on the control panel but, because of

the power of the machine, many more reside within its menus. I'm sure

most of us are now comfortable with the

'knobs plus menus' mode of synthesiser control, but a manufacturer can still fall into many traps with this approach. Happily, Novation has avoided these, and my only gripe is you have to cancel a selected menu button before returning to 'normal' operation. Oh well... I can live with that.

The Supernova II has two voicing levels: a Program is what you would normally think of as a 'patch', and its memory holds 1,024 of these. A Performance is akin to, well... a 'Performance', 'Multi', or 'Combi' (depending upon your background), and there are 512 memories for these. In addition, you can allocate 128 'Favourites' which contain Performances, Patches, or Arpeggios (more on those later).

## Fundamental Building Blocks

Like the Supernova, the fundamental building blocks of a Program are its three oscillators, plus noise. The oscillators have four waveforms: square, sawtooth, pulse and 'special', plus a dedicated 'sync' oscillator. Apparently, the 'special' setting will eventually host additional waveforms but, for the moment, it is limited to accepting the signal



announced the v3 operating system for the Supernova models themselves. This increased polyphony from 16 to 20 voices (32 to 44 voices on expanded instruments), expanded the number of reverb algorithms from one to sixteen, and introduced twelve effects configurations plus effects morphing. But, good as the original Supernova racks eventually became, Novation has now superseded them with a new range Supernova II keyboards and racks, with new Novas to follow.

## Models for the Millennium

There are three models in the Supernova II range. These are identical except for their polyphony: the 'II' boasts 24

from the two analogue inputs. The oscillator section also boasts a powerful modulation matrix, and it is this that facilitates the Supernova's new three-Operator FM. (Competitors' VAs are limited to simpler two-Op FM structures). Oscillator 'hardness' (an unconventional low-pass filter built into each oscillator) is another unusual feature worthy of mention. Add to this a unison mode (also new to the Supernova II) with definable voice allocation, plus 'VCO drift' – which imitates analogue instability – and you have an impressive oscillator package.

The standard signal path has just a single filter, but this can be 12dB, 18dB or 24dB/octave, and either low-pass, band-pass or high-pass. A notch filter, plus a selection of dual filter modes lurks in the 'special' menu, and some of these are extremely interesting. In particular, the 'hyper-resonant' filters – which allow you to create and control the positions of two resonant positions in the filter profile – offer all manner of strange and powerful possibilities.

'Q Norm' is another interesting feature which offers a far wider range of timbres than the Supernova could produce using a single filter characteristic. At one extreme, Q Norm makes the filter suppress the body of the sound and allows it to self-oscillate at high resonances. This is reminiscent of most early analogue synths. At Q Norm's other extreme, the filter does not attenuate the body of the sound when you add resonance. The trade-off is that, in this position, it does not self-oscillate. This is a characteristic of many later analogues and analogue/digital hybrids. On top of this, there's filter overdrive and another modulation matrix. There's even an Oscillator Bypass mode which filters the noise sources but sends the oscillators' outputs directly to the amplifier. Why would anybody want to do this? Simple: it's the fundamental architecture of analogue drum sounds.

The big news in the Envelope section is the addition of sliders. These improve the II's user-interface considerably. Okay, so the Supernova II has three envelope generators and just two sets of sliders, but that's not a problem. Envelope One has four stages, whereas Envelopes Two and Three have five, but all share a curious sustain structure which allows you to determine whether the sustain level remains constant, decays to zero, or climbs to a maximum. They also have a 'repeat' function which loops the attack and decay stages at speeds which can reach audio frequencies. Indeed, the envelopes are so rapid they can introduce clicks at their fastest settings. This is as it should be, and I wish some players would stop seeing it as a fault. Embrace these clicks, they are your friends!

The Supernova II's two LFOs are similarly well endowed. They offer Slow, Normal and Fast options and, at their maximum rates, they will oscillate at kHz, so you can use these as additional AM and FM sources. There are four waveforms, including Sample & Hold, and very welcome fade-in and fade-out facilities. These fades have a novel side effect. If you select a squarewave LFO and reduce the rate to zero, you can use the fades as a simple ASR envelope generator. Cute! What's more, the LFOs

incorporate dedicated low-pass filters so you can smooth their outputs for more subtle modulation effects.

## More Toys

Like the Supernova before it, the Supernova II boasts a 64-step arpeggiator with 128 preset monophonic arpeggio patterns, 128 preset polyphonic arpeggio patterns, and 128 user patterns (of which 64 are monophonic and 64 are polyphonic). If this isn't sufficient, the number of user arpeggio memories will triple in the next software upgrade. You can synchronise the LFOs and some destinations in the effects section (see below) to the arpeggiator (or to Midi clock). The only limitation is that you cannot chain arpeggios into a sequence. Well, it is an arpeggiator, not a sequencer, so there have to be limits!

You can insert the II's new, dual audio inputs into Programs as two oscillators, or you can send their signals directly to the effects section for treatment, but it's perhaps the vocoder that makes the best use of them. The vocoder offers 42-bands, and can derive its modulator and carrier from any of the Programs or either of the inputs. I suspect the Vocoder Balance control is unique to the Supernova II series. This ranges from '1' (pure carrier is passed to the outputs) to '127' (pure modulator is passed to the outputs). You hear the pure vocoder with the balance set to 64. The section also incorporates a simple spectrum analyser which shows the modulating spectrum. Best of all (and, in contrast to some of the competition) there's no reduction in polyphony when you use the vocoder.

Once you have created a Program, you can modify it using all seven effects sections. Six of these – reverb, chorus (which includes many other modulation effects), delay, EQ, distortion and pan/tremolo – are accessible from the control panel, while the seventh – comb filtering – is available via the menus. Sure, the Supernova's effects are no Lexicon 300L (either in sound or complexity) but there are still too many parameters to discuss here, so here are three important points:

Firstly, the distortion, EQ, comb filter and pan effects are fixed in a pre-defined series, but there are 18 configurations for the chorus, reverb and delay. However (and I have never seen or heard of this before) you can 'morph' between configurations. In an analogue world this would be inconceivable – you would be morphing patch leads!

Secondly, the comb filter is actually two comb filters routed to left and right of a stereo pair. You can split the fundamental frequencies of these, and modulated them in phase or anti-phase using an integrated LFO. This creates many otherwise impossible effects.

Thirdly, all the effects are fully integrated within the Programs. This is unique to the Supernova and its descendants, and has enormous benefits when you come to assemble Programs into Performances. All of which bring us to...

## The Performances

Each Performance can include up to eight Parts, each of which is a Program. Performances offer a healthy array of

additional facilities such as splits, layers, velocity zones, independent tuning for each part, mutes, solos, and user-definable polyphony for each part (overriding the Program settings in the Part). You can direct any Part to any of the eight outputs and, because there are no output multiplexers in the Supernova II (each output has a dedicated D/A converter), there are no delays or signal degradations when you do so.

However, the best thing about the Performances (the one which sets the Supernovae apart from every other multi-timbral synth) is that you can include *all* the Programs' effects within a Performance. This means that the Supernova II has – in effects – 56 effect units. Likewise, the Performance accepts, and will play simultaneously, each of the eight arpeggios defined within each of the eight Parts.

You can override the Program effects within a Performance and define Part effects if you wish. These are saved as part of the Performance itself, leaving the original Programs untouched. What's more, when you dump a Performance via SysEx, it saves the Program data and Part effects (if defined) together with the Performance itself. Superb!

## Drums

Finally, we come to the drums. Each of the eight banks of Programs has an attached map of 49 drum sounds, plus an extra 'sound' which controls the effects settings for the map. This means that the Supernova II can store 392 different drum sounds on eight effects 'busses'. The downside of this architecture is that, since the effects program in any given map is applied to every sound within it, you must use extra Parts to apply different effects to different percussion sounds.

## In Use

Thanks to the hugely improved user-interface of the Supernova II keyboard, I was creating relatively complex patches within minutes. (Manual? Who needs to read the manual?) There are more knobs and buttons available than were offered on the original Supernova, and I think that Novation's designers and programmers have performed an excellent job, making a powerful instrument clear, stylish, and intuitive. Admittedly, I'm no fan of continuous rotary controllers on synthesisers but, to be fair, I found the Supernova's better implemented and more usable than many others I have encountered.

And how does it sound? There's no simple answer to that. It sounds rich. It sounds warm. It sounds punchy. It sounds thin. It sounds brittle. It sounds smooth. It sounds harsh. All these adjectives apply, as do many others. With no shortage of top or bottom end, you can make it jump through the hoops of your choice. Admittedly, there are occasional annoyances. For example, it's too easy to make it distort, and you sometimes have to back the Program Gain down close to zero to get the sections to interact cleanly (an overload LED also gives you a visual indication when the amplifier is overloaded). On the other hand, more than 130 modulation routings and nice

touches such as the Midi Controllers and NRPNs (every knob, slider and button sends and receives them) make it a programmer's playground.

Like so many DSP-based synths, the Supernova II is still under development. This has a downside... some things are missing from the OS [v1.3] installed in the review instrument. Happily, v2.0 will be available by the time you read this, downloadable free of charge from the company's web site. Novation has stated that this will have every parameter implemented (let's be fair... only two are missing in v1.3) as well as some new facilities. On the hardware front, there is also a digital I/O board planned.

Less easily fixed, here are some suggestions that I would like to offer to Novation for a (as yet mythical) Supernova III. Firstly, this synth would benefit considerably from a full, graphical screen. The fluorescent 128 by 18 matrix is not bad, but the power of the Supernova deserves graphics. Secondly – and although Novation has already done a good job minimising this on the most important parameters – there are still some controls and edits that produce 'zipper' noise and glitches. Next, the factory sounds lean heavily towards dance, trance and hardcore. The Supernova II is capable of much more, so why don't Novation employ some programmers to demonstrate this?

And, while I'm having a moan, I'm not in favour of complex instruments whose only external storage capability is SysEx. Where's the on-board drive or RAM card slots? Furthermore, at five octaves, you can hardly accuse the Supernova II of being an ideal size for a mother keyboard. Since you can use the Performances as an eight-part master controller, using the splits, zones, program change controls and other parameters to control external synths and modules, how about a 76-note or even an 88-note version? That would be tasty.

## Champagne Supernova?

Despite a handful of criticisms, you will have gathered that the Supernova II impresses me. It looks good, it sounds as good as any of the competition, it's easy to edit, and it has a nice keyboard. Sure, there are other products for which this is true, most notably the Access Virus Keyboard. But if you're looking for a powerful synthesiser (rather than a workstation or a retro-analogue-on-steroids) I reckon the Supernova II's ability to incorporate all the Program effects into its Performances make it the VA of choice.



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