

Eighth Wonder

It may not have the classic ancestry of a Minimoog or the cachet of a Prophet 5, yet Roland's Jupiter 8 is arguably the most influential analogue synthesiser ever built.

What were the qualities that made it so popular, and how useful is it today?

Text by Tim Goodyer.



CAST YOUR MIND back to the long, hot summer of 1983, and the arrival of Yamaha's first FM synthesisers, the DX7 and DX9. Exciting, wasn't it? Two new synths that promised just what the technology-hungry (but relatively impoverished) keyboard player wanted: a completely new palette of sounds, a new vocabulary in sound creation, and a fully professional spec, at a laughably low price

tag. In other words, small synths with big ideas that actually worked.

Up until then, the big synth held court exclusively. The Prophet 5, Oberheim OBXa, Memorymoog and Jupiter 8 – all were professional, programmable analogue polysynths with lots of oscillators and filters, making obese brass sounds, rich, sweet string washes, and fascinating, polyphonic, portamento-enhanced (except

in the case of the Prophet) changes from one innocent chord to the next. They made very impressive listening (and playing), but not without making a £3000-4000 dent in your bank balance.

The DX7, on the other hand, weighed in at less than half the cost of the Jupiter. Anyone who'd thought seriously about investing in a professional analogue polysynth probably had enough cash to buy a DX straight out. It's little wonder, then, that the "big synth" found itself held in abeyance, while the novelty value of FM gave way to more serious use.

If a revolution in sound synthesis wasn't enough, another innovation accompanied the arrival of the DXs: MIDI. Although the MIDI implementation on the DX7/DX9 was crude, it was, nonetheless, MIDI. The same could not be said of Roland's DCB (Digital Communication Bus), Moog's ancient CV, Gate and S-trigger, Sequential's Analogue/Digital buses, or Oberheim's Performance System.

The big synth was in big trouble. Moog discontinued the Memorymoog, and stopped making synthesisers altogether soon after. Oberheim went a little quiet before helping to restore everyone's faith in analogue with their phenomenal Xpander. Sequential struggled with their SixTrak, MultiTrak and Max, before giving up on analogue synthesis making good with their Prophet 2000 sampler. And Roland hastily concocted the Jupiter 6 – a slimmed-down Jupiter 8 with a crude MIDI implementation – slipped further downhill, and then finally struck gold again with their MKS80 Super Jupiter module – as devastatingly versatile as the Oberheim Xpander, but in a format people were already familiar with.

What Oberheim and Roland proved was that FM was no more the death of analogue synthesis than the LinnDrum was the death of the acoustic drum-kit.

What, then, of the musicians who'd already invested thousands in yesterday's "big synth" technology? And what of the instruments themselves? Well, Roland Jupiter 8 serial number 222571 was the stuff dreams were made of when I bought it in 1982, and I'm happy to report that, five years on, it's still an extraordinarily powerful and usable synthesiser, even when set alongside Yamaha's latest DX7IIFD. And even five years on, JPBs are still cropping up in interviews, studio reviews, and on LP credits with monotonous regularity. In the States, where big, fat analogue synth sounds have never gone out of fashion, they have become something of an institution.

One glance at the Jupiter 8's control

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panel shows another major hardware difference between it and the DXs — knobs, and lots of 'em. And they all do different things at the same time, unlike these incremental controllers and multi-function whatsits. You can actually see what's going on in your patch, as opposed to jotting down hundreds of parameters on scraps of paper, or needing a short-term memory of Gigabyte order. Now, the cost of this hardware represented a significant proportion of the JP8's original retail price. But once you've worked with a panel full of knobs instead of a tiny LCD display (which many of today's younger synth programmers have not, of course), you'll know what all the fuss is about.

WITHOUT READING TOO much about oscillator syncing, cross-modulation of one oscillator by another, switchable — 12/—24dB/oct filters and self-diagnostic fault programs, the paper spec reveals the JP8 to be an eight-voice, 16-oscillator synth with split and layering facilities. Eight voices, that is, in Whole mode. When Split mode is selected, this becomes four voices each side of the split, and in Dual mode four voices stacked on top of the other four.

Each bank of four voices has its own output available simultaneously on standard quarter-inch jacks and cannons — neat when it comes to EQing and processing patches independently of each other.

A simple calculation tells us that the Jupiter 8 ordinarily uses two oscillators per voice, and a screwdriver reveals another of the beauties of the instrument: inside, there are two identical voicing boards, each responsible for half of the instrument's power — and each a fully capable four-voice synth in its own right. Apart from allowing you complete freedom to assign any of the Jupiter's 64 patch memories to either module, this configuration ensures independent detuning and dynamic characteristics, and an exceptionally flexible arpeggiator arrangement.

As well as being one of the strengths of analogue synthesisers in general, strength of tone is one of the Jupiter 8's specialities — and keys to its popularity. In Whole mode the oscillators and filters give a pretty good account of themselves, but there are two ways to fatten the sound still further. The first of these is Unison mode, which ensures that all 16 oscillators are in operation regardless of the number of notes being played. Be warned, though. One 16-oscillator note assumes the destructive power of a small bulldozer, and should be treated with extreme care. Meanwhile, a two-note chord has four oscillators assigned to each note, and so on. Apart from anything else, this arrangement also keeps the audio level fairly constant, and so prevents your chord melody disappearing should you choose to throw in a couple of single notes, and stops the inverting speaker cones if you want to duck a couple of big chords into an ear-splitting single-note solo. Calculated, but

The alternative sound-fattening procedure is patch layering. When a patch is

layered on top of itself, slightly detuned and stereo panned where possible, the results can be devastating — never mind SPX90s, and all the other outboard sound-fattening tricks that have been discovered over the last 12 months.

Yet the value of sound layering has been sadly underestimated by a good many pre-MIDI analogue programmers. I found that, by treating the JP8 as a four-voice synthesiser with four oscillators and four envelope generators per voice, it became a far more sophisticated programming tool. Not only have you then doubled-up on the number of oscillators and envelope generators per note, but each pair of oscillators and envelopes is completely independent of the other. In other words, you're dealing with a simple, but very powerful, two-stage wavetable. It's possible to construct a composite patch (and store it as such in one of the eight Patch Preset memories that accompany the 64 ordinary memory locations) with each keyboard layer responsible for different aspects of your sound. Among other things, this is still the only way to get a convincing Simmons drum sound from a keyboard synthesiser, as the demands placed on the filter by the white noise and pitched elements of the sound are normally incompatible.

Meanwhile, the value of a Split mode had been conveniently overlooked by FM designs (and by post-FM analogue designs) until the recent popularity of MIDI layering and MIDI controllers with keyboard zones.

AS WELL AS having a useful programmable split point (now once again common property among well-specified modern keyboards), the Jupiter 8 takes splitting a stage further with its arpeggiator.

In Whole mode, the arpeggiator deals with as many as eight notes arpeggiated up, down, up and down or randomly over one, two, three or four octaves. In Dual mode, the same options are available to both patches but with only four note polyphony. And in Split mode, only the patch assigned to the lower area of keyboard is arpeggiated, with the same options including the four-octave range. This, again, is more like having two four-voice synths playing simultaneously than compromising one synth by asking it to do two jobs at once.

Being more cunning than most of its brethren fitted to less worthy machines, the JP8's arpeggiator also has the ability to memorise notes in the order in which they are input, and at the pitch they are input. Or to put it another way, they are not compressed into one octave before being repeated over the chosen octave range.

Yet the arpeggiator really comes into its own when synced up with a drum machine. Happily, the provision of a Sync 24 input means that it's possible to sync to most recent drum machines, and if all else fails there's always MIDI and a suitable interface.

Now, my guess is that, after reading the last couple of paragraphs, you're thinking either that the JP8's arpeggiator is the finest ever designed, or that it's no less a waste of time than any of the others. But let me put it like this. Before I got my JP8,

I'd probably have fallen into the latter category. Arpeggiators were poor man's sequencers, I thought, and not to be meddled with when there was more serious work to be done. The Jupiter made me an instant convert. So much so, in fact, that I'd say there are fewer better uses for an arpeggiator than alongside a sequencer, where a little confusion equates to a little

► *"The MD8 interface allows transmission and reception of note-on/off, pitch and program-change data over any of MIDI's 16 channels. Not stunning, but it keeps the JP8 on speaking terms with advancing technology."*

harmonic *je ne sais quoi*. The Random setting, in particular, can help bring freshness to a tiring chord progression. Believe me, it's a useful tool.

The original Jupiter 8 production model had no facilities for interfacing above a CV/Gate output from the highest keyboard note in use, and Roland Sync 24 and trigger inputs for the arpeggiator. A modification became available, however, to fit Roland's Digital Communication Bus (DCB) and hence permit the instrument to exchange note-on/off and pitch data with the MC4 MicroComposer — and eventually with the JSQ60 DCB sequencer and the MSQ700 MIDI/DCB sequencer. Later models, dubbed Jupiter 8A, were fitted with DCB as standard.

But then along came MIDI, and with it (Roland must have known people were going to hang on to their JP8s) came the MD8 MIDI-DCB Interface. This allows transmission and reception of note-on/off, pitch and program-change data over any of MIDI's 16 channels. Not a stunning spec, but one that helps keep the Jupiter 8 on speaking terms with ever-advancing technology. You may have a few communication problems, but you shouldn't ever be faced with a total breakdown.

You can pick up a secondhand Jupiter 8 now for around £1000 — or less than the cost of most state-of-the-art digital synthesisers. Not bad for an instrument that was once high up in (perhaps even the leader of) the big league of big synths. If you're at all interested in creating fat, original, electronic sounds, and you're prepared to forego the luxuries of disk storage and the more comprehensive interfacing capabilities of MIDI, it makes an awful lot of sense. Your JP8 may be a little dirty between the keys and a little scratched around the edges, but they don't build them like this any more — it should last a long while yet.

Then again, if MIDI is an essential part of your music-making, the above-mentioned MKS80 Super Jupiter module contains the essentials of the Jupiter 8, plus a healthy dose of MIDI, increased programming flexibility, and an improved bass end — though this too has become something of an industry standard, and doesn't come cheap. Ah, the high price of fame. ■