



## SE Electronics RNR1

It's been the most eagerly awaited microphone of recent years and sees the dramatic combination of one of the oldest and one of the newest brands in a new venture.

**JON THORNTON** reports on a mic that sounds like no other ribbon yet looks like the Shanghai World Financial Centre...

The RNR1 is the first of what is promised to be a series of microphones resulting from a collaboration between Rupert Neve and SE Electronics founder Siwei Zou. The seeds of this collaborative journey were sown nearly four years ago when Rupert approached a range of microphone manufacturers to explore the possibility of working jointly to develop some ideas he had. Having spent the majority of his life designing the signal path upstream of the microphone, he felt that it was time to turn his attentions to the electronics employed in the microphone itself.

This was never going to be simply an exercise in re-badging, though. Rupert's ideas involved the creation of a wholly new microphone from the ground up, with attention to detail, hand-built meticulousness and high quality (read expensive) component choices being crucial. As a result, surprisingly or unsurprisingly depending on your point of view, the established high-end players fell away as potential partners. That left what we might call the 'mid-market' still in the negotiations, and the development partner of choice ended up being SE.

The choice of a relatively young company with

a Chinese manufacturing base might come as something of a surprise to some, but you have to remember that SE has really raised its game in recent years — investing heavily in its manufacturing and R&D provision. And yes, its range includes the ludicrously cheap (but still sweet sounding) SE1, but also includes microphones such as the Gemini, which has won the hearts and ears of many a jaded engineer.

Rupert's views about the importance of HF to the audio path, even ultrasonic HF, are widely known. Even if you can't hear those high harmonics, he argues, they have an effect on our perception of lower frequencies. So the choice of a ribbon design as the first of the microphone series may seem a little strange. Although long favoured for their smooth response and sense of 'being there', most ribbon designs, whether vintage or modern, exhibit a gradual HF roll-off starting at anything between 5k and 10k. The advantage, though, is that while this falling response starts earlier, it's nowhere near as steep as that of a typical capacitor microphone. So the first step in the process was to design a new ribbon element that had as extended a response as possible before the Rupert electronics were put to use.

SE is no stranger to ribbon designs having launched two of them in recent years, but the element in the RNR1 is a wholly new design that has learnt from this experience and it's not a case of simply grabbing an existing part off the shelf. The element in question is a fairly standard corrugated aluminium ribbon that even without the help of an active stage, maintains a reasonably flat response up to about 7kHz. Purists could argue that that should have been enough, and the addition of a passive output stage should finish things off nicely. But that would have defeated the object somewhat. Instead, the addition of no less than two custom-designed transformers (one as an impedance convertor prior to the electronic stage and one as an output stage), and the same discrete single-sided circuit topology employed in the RND 5088 console treats the output of the ribbon to a good deal of signal conditioning.

Of course, the addition of an active output stage to a ribbon microphone isn't a new idea and it's been an approach that has been taken by manufacturers such as Royer Labs for some time and with a good deal of success. At the very least, it means that the issues surrounding source/load impedance matching and the resulting colouration and potentially low output levels are addressed. But the Rupert design was always intended to do much more; to try to reveal some of the HF detail that has been the historical Achilles heel of ribbon designs.

The result is a supplied frequency response that is interesting to say the least. There's the usual inherent bass lift that tips the response up below 100Hz, but thereafter it remains reasonably flat with a very gradual rise to a slight peak at about 3kHz. From about 5kHz it drops gently to end 10dB down at 15kHz, but then rises again so the output at 25kHz is more or less the same as that at 5kHz.

Before attempting to explain how this actually sounds, it's worth examining how this particular confection is packaged. The RNR1 (UK£1895 + VAT) is supplied in a hard shell flightcase and comes with its own suspension mount. The microphone itself has its own wooden storage box, which looks fabulous from the outside, but a bit tatty inside, as the fabric used to line it was already peeling away. I appreciate that this was one of the first production versions but users will expect these kinds of detail to be sorted.

The microphone itself is extremely well screwed together but I dare say it will divide opinion in terms of its looks. Finished in a no-nonsense battleship grey, it has an incredibly statuesque form factor that tapers away from the cylindrical base into a soft wedge shape. It actually brings to mind the Shanghai World Financial Centre skyscraper. On balance, I like the look of it — it's not self consciously retro in its design and it's not as outright wacky as some offerings from the likes of Violet Designs or JZ Microphones. I'm left wondering whether it needs to be quite so tall though, as you can see the ribbon element standing off on a good four inches worth of screw thread behind the grille.

The supplied suspension mount screws into a thread at the base of the mic and provides a snug fit; it's a very long thread though, so it does take a good while to get it firmly attached. The only external control is a very welcome high pass filter that can be switched in to tame the LF bump typical of ribbons when used close up. The active circuitry derives its power from standard 48V phantom, although somewhat curiously and no doubt due to those transformers, you do actually get some output from the microphone without powering it first. The output in this case is neither big nor clever though, as I somewhat embarrassingly found out when first setting it up. There must be something deeply ingrained in my subconscious about ribbons and phantom power, as I completely forgot about this and spent a couple of minutes wondering why things sounded so feeble. Providing Rupert's circuit design with power changed that quite dramatically!

First impressions on spoken voice are of an incredible weight and texture to the low end, nice smooth mids, and more detail to the HF than you might expect. That's not to say that it sounds like a

capacitor microphone as it's nowhere near as bright, but the gradual HF roll-off doesn't seem to go hand in hand with a loss of definition. The polar pattern is fig-8 as you would expect, and moving around the axis of the microphone shows a smooth drop in level towards the null points with no objectionable shifts in frequency response.

Like most ribbons, the RNR1 seemed to deliver the most flattering overall sound when given a little distance from the source, but when switching to (male) sung vocals, capturing a close sounding vocal without too much room sound intruding required moving in a little closer ensuring, of course, that a pop shield was firmly in place first. At this point, the LF starts to sound incredibly overblown, a situation helped to some degree by switching in the high pass filter on the microphone, but requiring a little more help from additional EQ with some voices. As a comparison for testing, I also set up a Royer R122 ribbon, which shares a similar design philosophy (ribbon element, active output stage). On the same male vocals, the Royer seems to have a little more in the way of presence in the mid-range; it's a slightly warmer sound in this application. But it can't match the RNR1 for sheer guts and solidity at the low end, and in that sense of detail to both the mid-range and HF that the RNR1 captures so well. Granted, when used close-up, the Royer is a little easier to tame than the RNR1, as it doesn't have quite such a hefty LF lift but this works against it when set at greater distances to source.

Moving on to a 12-string acoustic guitar, normally a job I'd assign to a nice large-diaphragm capacitor to really grab all of that harmonic and transient detail, and the RNR1 was actually more of a revelation. It needs a good bit of working distance — 40cm or so from source — to balance out the sound, but once

more you get that sense of solidity and definition to the sound together with a distinct lack of some of the more irritating squeaks and the slightly spikey sound that a capacitor microphone might give you here.

'Solid' seems to be the adjective that best sums up the RNR1 in appearance and in sound. But that solidity is coupled with the smoothness that most people associate with ribbon microphones, and a sense of detail to the sound that is more than simply an elevated HF response. I wish I had had a little more time than I did with this microphone, because based on what I heard it would have sounded sensational on electric guitar, piano, drums and strings. But it was the only one in the country, and it had a fairly tight schedule to adhere to.

It would be well worth a demo, particularly if you've considered investing in a ribbon microphone but felt that it wouldn't be quite as flexible in application as you'd like. It really does sound very different to any other ribbon design I've heard. And the SE/Rupert Neve collaboration doesn't end here. A couple of large diaphragm capacitor designs are also in the pipeline. If they work as well as the RNR1 does, I can't wait. ■

**PROS**

Huge sounding, solid LF response; smooth HF roll-off without sacrificing detail; quiet; looks.

**CONS**

Needs care when worked close-up; price; some issues with the finish of the packaging.

**Contact**

**SE ELECTRONICS, CHINA:**

**Website:** [www.seelectronics.com](http://www.seelectronics.com)

**UK, Sonic Distribution:** -44 (0)845 500 2500