

# SE Electronics VR1/VR2

Joining the run of popularity of ribbon mics in a typically original manner, SE's newest passive and active ribbons also aim to make ribbon mic use more approachable.

JON THORNTON finds no chicken bones...

The SE VR1 and VR2 'Voodoo' ribbons are not the company's first step into the ribbon market, so they can't be accused of simply jumping onto a bandwagon. Very much the opposite in fact — the company have been making genuinely innovative advances in the design and manufacture of ribbon microphones for many years. Perhaps the most well known example of this is the mighty RNR1, which mated Rupert Neve designed electronics and custom designed transformers to a ribbon element. The aim here was to produce a microphone with the same smoothness of response associated with ribbon designs, but with the HF extension and detail of a capacitor microphone.

The RNR1 succeeded extremely well in this aim, but at a cost. All of those custom electronics and transformers add up to make the eventual selling price of the RNR1 effectively out of reach to a significant market, namely those who wanted to purchase their first ribbon microphone. And this established something of a mission for SE. The problem was in trying to produce a microphone with all of the magical qualities of a ribbon design, but one that also had a broad range of applications and a simpler learning curve. For example, experienced engineers might well use a combination of a ribbon and a capacitor microphone in some applications, balancing the two together to add a little 'air' to a sound. But this approach isn't for the faint of heart or inexperienced, requiring as it does careful microphone placement and/or a variety of signal processing approaches to deal with the inherent phase issues.

Added to this is the perception that ribbon microphones are inherently fragile (well, yes they are, although their robustness has improved in recent years), and somewhat limited in application — all of which adds up to a perceived reluctance from some potential buyers to invest in a ribbon design. And while the RNR1 would have met these goals, a different approach was needed that wouldn't require the expense of that Rupert-designed circuitry.

The answer came from a (patent pending) novel design approach created by SE's chief designer Siwei Zou. The specifics of the design are being kept pretty closely guarded at present, but fundamentally it is based on an additional mechanical element within the microphone body that acts as a form of acoustic equaliser for the ribbon element. This results in a reasonably flat output up to 15kHz or so, with a gentle roll off of 3dB down to 20kHz — in other words not dissimilar to your average capacitor design. Interestingly, the idea is not a new one as SE has been sitting on it for a number of years but has only recently judged the time right to release it to a market in which ribbon designs are enjoying such a resurgence.

The first two offerings are the 'Voodoo' VR1 and VR2 microphones (perhaps the 'Voodoo' refers to the aforementioned acoustic equaliser?). The

two microphones feature exactly the same ribbon element, but differ in that the VR1 is an entirely passive device while the VR2 features active circuitry to improve its sensitivity and make preamp choice a little less critical. Both microphones ship in wooden boxes and are supplied with a fixed clip and a suspension mount. The VR1 is physically much smaller than its active stable-mate, with an overall height of 125mm and a rectangular ribbon assembly that measures approximately 30mm wide and 15mm deep. Despite its diminutive size, it's a fair old weight courtesy of the magnets and transformer shoehorned into it. The looks are what you might term retro industrial, and quickly earned it the nickname 'The Dalek'. The VR2 looks slightly more ungainly, as the same ribbon assembly sits atop a much longer body that houses the electronics. Otherwise, the biggest difference (on paper at least) between the two lies in their relative sensitivity — the VR1 is quoted at 1.6mV/Pa, while the VR2 musters a more healthy 10mV/Pa.

Plugging up the passive VR1 first confirms that some preamps may struggle with the relatively low output — the standard mic pres on an Audient ASP8024, while just about having enough gain sounded like they were struggling a little on quieter sources. There was an immediate improvement when a Grace Design M103 set to ribbon mode was wheeled into service instead — more headroom, less noise and an overall livelier sound.

Initial tests on spoken and sung vocals immediately showed that whatever voodoo is lurking inside it is clearly doing its job — there's an obvious sense of air to the HF that isn't present when compared to other ribbon microphones. Perhaps more impressively, this doesn't seem to be at the expense of the microphone's polar response, which is typically smooth and consistent as the source moves of axis, with a good deep null at the side of the fig-8 pattern. What it isn't, though, is a response that sounds like a capacitor microphone. Direct comparison with a 414 suggests that the VR1 doesn't have quite the same HF extension, and there's less 'immediacy' to the sibilance, spit and other HF artefacts in vocals. Not actually a bad thing in a lot of applications, but you are never going to mistake it for a large diaphragm capacitor.

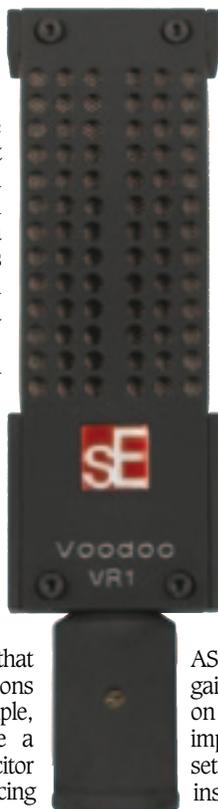
With an RRP of UK£529 for the VR1 and £799 for the VR2, the Voodoos are priced quite aggressively, and are clearly positioned against some established designs — perhaps most obviously the Royer 121 and 122. This suggested the Royer 122 as the best comparator for further evaluation, starting with acoustic guitar. I don't actually have the passive 121, so the first comparison may have been slightly unfair, comparing the passive VR1 mated to the Grace Design pre to an active R122 feeding the standard desk preamp. Both microphones turned in very acceptable results — very smooth sounding without

being dull and capturing the transient detail nicely without sounding at all 'edgy'. In this application the VR1 sounded a little less weighty in the low mids than the 122, although the elevated HF response resulted in a more delicate and refined sound overall.

In an attempt to level the playing field somewhat, I swapped out the VR1 for the active VR2, and fed both this and the Royer 122 through the desk's preamps. In this application though, there was little difference — the Royer still had that added weight and fullness, and if anything the added HF extension of the VR2 was nowhere near as obvious. Swapping the acoustic guitar for an electric via a Mesa Boogie cab, and the sonic signature stayed much the same, although this time the more delicate, less low-mid dominant tone of the VR2 helped with the overall sound. Still, the relatively close position seemed not to bring out the best in the VR2.

Moving both microphones away from the cab starts to reveal more differences though — the Royer's sound softened off very quickly, while the VR2 started to sound a little more balanced, if anything. A quick change to percussion (congas) seemed to confirm this trait — the added HF reach of the VR2 seems to be sensitive to working distance — and definitely seems a little more pronounced when the source is further away from the capsule. It's not just proximity effect tilting the bass response up and down that's suggesting this, it sounds different to that. Perhaps it's just my ears, or the particular sound sources I was using but it had me wondering whether this was an effect of whatever mechanical acoustic device is lurking inside.

Once you understand this you learn how to work these mics — give them that little bit more room and they really are very flexible performers. On balance, my money would go on the passive VR1 — given a couple of good preamps there's even more scope for tonal variety by mixing and matching — but the VR2 delivers almost as well if that approach isn't viable. Both microphones deserve a serious audition for anybody in the market for a new microphone and not necessarily only if you're looking for a ribbon microphone. The extended frequency response allows them to be just that bit more flexible in application, and gives a sound that a little bit of EQ can dial back nicely to give what might be termed a 'classic' ribbon sound. Leave your hands off the EQ though and you get something even more distinctive — almost like a different class of mic altogether. They aren't quite in the same league as the RNR1, but they aren't that dissimilar sounding either. ■



**PROS** Neat and compact (VR1); fantastic HF response for a ribbon design; flexibility in application; price.

**CONS** A little ungainly (VR2); needs mating to a decent preamp (VR1); seem quite sensitive to working distance on some sources.

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