

Pretty ribbon

In the Wotan VIII loudspeaker, Quadral use a ribbon tweeter that gives lovely treble, Noel Keywood finds.

This year's High-End Show in Munich confirmed that in Germany at least, premium grade hi-fi loudspeakers come with ribbon tweeters; we hardly saw a dome anywhere. British manufacturers aren't so sure. Ribbons have come and gone over the years, my first long term affair being with the Tonigen ribbon fitted to the Heybrook Sextet. It gave Wilkinson Sword treble: a top end that was cuttingly precise. I was impressed and have been a fan of ribbons ever since. This partly explains why I so liked the Quadral Vulkan VIII (£6600) reviewed in our April 2012 issue, and also why I was happy to review the less expensive (£2400) and less intrusive Wotan VIII, also in the Aurum range.

The Wotan VIII stands 920mm high, making it a fraction shorter than most of the standard pattern, one metre high floor standing loudspeakers on the market. To minimise visual intrusion the front baffle is relatively narrow, just 194mm. To make up cabinet volume, the rear baffle is 330mm deep, but the side panels slope rearward, raising maximum depth of the loudspeaker to 430mm. With chamfered edges and a deep gloss black finish, plus black grille cloths, the Wotans look less boxy and prosaic than many rivals. They are well built and finished, if conservative in appearance. Weighing 19.2

kgs these loudspeakers are easy enough to move; in fact they are quite light.

Whilst the Vulkan houses a large 13in bass unit, with the Wotan VIII Quadral have fitted what they describe as two 135mm bass units, each with a 4in cone diameter we found. These are the bottom two drive units of the vertical array, each with an Altima cone. They are reflex loaded by a single rear port and work up to 330Hz.

Above the bass units is a third 135mm Altima unit that handles the midrange and it works from 330Hz up to 3.2kHz, where it hands over to the ribbon treble unit you can see at the top of the array. It is this crossover point that poses problems to loudspeaker designers using ribbons and the difficulties were very apparent in the Sextet I once used. Ribbon tweeters don't reach down low enough to smoothly match midrange units, leaving a ragged gap between them, physically and aurally. And ribbon tweeters sound fast and precise, putting a 'country mile' between their sound and that of most other drivers. The Sextet had a lovely, clean but warm midrange delivered by a plastic cone drive unit, against which treble from its Tonigen ribbon stood out like a sore thumb. I simply got used to it, but integration could have been better, shall we say!

Quadral have tackled these issues by using a larger



ribbon that runs lower, plus a midrange unit with an 'Altima' cone that better matches up to a ribbon tweeter because of a similar tonal character. It is fabricated from a composite of three light metals aluminium, titanium and magnesium, specially developed to achieve optimal vibration characteristics, Quadral tell us. As they say the "resonances to be gathered and then eliminated via network" I interpret that this to mean the Altima has a stiff cone that resonates or 'breaks up' at a high frequency that the crossover network can eliminate. There is no sign of undulation or dip in our frequency response analysis so it all appears to work well.

In the Wotan VIII, Quadral have engineered in a flat and even tonal balance, with a small lift in the treble our measurements show. This keeps the sound stage in the plane of the 'speakers

"his Strad sounded solid and detailed, absolutely luminous in its power on the sound stage"

(because there is no midrange lift to emphasise vocals) but also results in a smooth rendition free of 'character' for want of a better word. The treble lift is just enough to ensure the ribbon tweeter's contribution is heard, but not enough to make it overpowering.

So the Wotan VIII has been carefully engineered to have an accurate tonal balance, with a 'fast character' and plenty of high end detail. It is essentially a metal cone loudspeaker though, with a harder demeanour than a plastic cone loudspeaker.

Connection is through bi-wire terminals on the rear. They accept 4mm banana plugs, spade connectors, or bare wire. A bridging plate is removed to enable bi-wiring.

SOUND QUALITY

In basic character the Wotan has a sheen to its sound, a bright demeanour that gives it a sense of openness and speed. The ribbon tweeter helps out in this, as expected, and it stands out a little, but its contribution is one of stunning speed and levity. Quadral's ribbon works very well

and after sitting in front of it you will be come well aware of how uneven domes are, and coloured too.

I'm quick to complain about excessive treble and the Wotan nudges up the threshold of excess, but doesn't exceed it. The gentle but steady tapping of stick on cymbal in Henry Mancini's 'Pink Panther' theme absolutely sparkled, locked into position at a point in space in front of me. It stood out like a small but sharp, bright beacon as the ribbon tweeter of each Wotan projected the signal with confident power.

Whilst upper treble was finely etched and elaborate from percussion, from the vigorously strummed steel guitar strings of Nils Lofgren playing 'Keith Don't Go' the Wotans projected them as an almost violent assault against my ears, there was so much lacerative speed invoked by plectrum on string – and this is

what a ribbon tweeter can do.

Complications soon arose! I started off using our Icon Audio MB845 MkII valve power amplifiers fed from an Electrocompaniet ECD1 DAC fed from a Cyrus CDt transport, as this is a good basic system free from funnies that might affect my assessment of the Wotans. However, as the Metrum NOS Mini DAC was passing through, courtesy of and enthusiastically endorsed by Rafael Todes, I hooked this into the system and was duly impressed by astounding dynamics and huge scale, as well as a lovely sense of grip and capacious sound staging. However, the Wotan's ribbons suddenly took a step back in proceedings and I rather missed their rapacious speed, so I swapped back to the Electrocompaniet to be better battered, as it were! Ribbons are fun but what they do so well is very obvious and I think Quadral are right to ensure the ribbons of the Wotans are obvious and enjoyable, but the corollary is that the Wotans are not shy wallflowers when it comes to treble delivery.





Did this make Nigel Kennedy's violin shriek? No it didn't. There was an emphatic sheen, no doubt, but his Strad. sounded solid and detailed, absolutely luminous in its power on the sound stage – and Rafael, who plays an Amati, declared the Wotans close enough to reality (he owned a Strad) and an acceptable, even impressive listen (phew!). There was something not quite convincing about the upper midrange and both of us felt the midrange Altima drive unit had some slight softness or was losing a bit of treble detail somewhere, but the ribbon tweeter more than made up for it.

This is being critical though. That the Wotan runs absolutely flat across the midband is audible as a sense of academically even, subjectively neutral balance, with a hint of dryness to it. There is none of the softness a midrange crossover suckout brings, so the Wotans are no gentle lullaby; they deliver with precision as well as speed.

Renee Fleming sang 'Un bel

di Vedremo' from Madame Butterfly with force and conviction from centre stage, every small nuance and inflexion clearly conveyed by the Wotans. They positioned her firmly, just a little in front of the plane of the loudspeakers. Crescendos were nicely supported; I heard no strain or distortion playing at very high volume.

I chose to use our Icon Audio amplifiers for their intense projection but their one limitation, a low damping factor, was obvious with the Wotans. Their bass was soft and a little bloated with these valve amplifiers. It fell into place with a pair of Quad II-eightys that proved a better match.

I swapped in an Audiolab 8200A with transistors in it and this gripped the bass drivers best, showing the Wotan has generous bass that is not especially well damped acoustically; it has been voiced using solid-state amplifiers. It's bass sounded powerful and played a tune well enough, rolling along powerfully behind Amy Winehouse singing 'You Know I Am No Good', but kick drum and bass guitar on this track invoked some boxiness. To get a feeling of bass power from two small-ish bass units the system is underdamped.

That they were working hard was obvious when volume was turned up on the Audiolab, playing Rock loud in a big room (24ft x 24ft). There's nothing unusual here though; it just isn't possible to get small bass units in a cabinet of limited volume to do much else sonically, I have found from designing and building many loudspeakers, as well as measuring them.

CONCLUSION

If you want a clean, fast sound with plentiful bass from a reasonably sized floor stander, the Wotan does a great job, better than most. Quadral have put a lot of effort into this design to get fabulous treble and intense detailing from their ribbon tweeter, and match it well with their purpose designed Altima drivers.

The end result is a loudspeaker that is finely balanced to sound exciting whilst also being very accurate. Because it has been so judiciously balanced the Wotan suits both classical music and Rock. It needs a smooth, clean transistor amplifier for drive, or a valve amplifier with good damping like the Quad II-eighty. Then rivals will find it hard to keep up, as this is fine piece of engineering you should audition.

MEASURED PERFORMANCE

The Wotan VIII has an almost ruler flat on-axis frequency response free from unevenness or a crossover dip, with just a small amount of plateau treble lift measuring +2dB above 9kHz. The ribbon tweeter has wide dispersion so off-axis response was little different. The Wotan VIII will be just a trifle bright in balance but the very smooth behaviour of the ribbon tweeter is a result of low coloration (i.e. few local resonances) and ribbon treble at this level is rarely a subjective problem. The balance chosen is judicious I feel. The cabinet is probably best pointed down a room and not straight at listeners but differences will be small and mostly affect imaging and stage width rather than tonal balance. A response so flat means the Wotan is very accurate, more so than most loudspeakers and it will give a very natural tonality.

Bass output is generous but not over inflated. The port is tuned very low to 25Hz and will produce an obvious subsonic signal, plus strong lower bass.

A long 200mS decay analysis shows little coloration exists across much of the audio band, the box looking a bit 'hot' below 200Hz, especially at 80Hz where there is some overhang.

It wasn't possible to measure bass unit DCR and a rising impedance curve below 100Hz suggests the Wotan is a.c. coupled through a capacitor. However, the impedance curve reaches down

to 4 Ohms and this is almost certainly the DCR of the bass section. Overall impedance measured out as 6.6 Ohms. As a result the Wotan draws current but it is very sensitive, producing 90dB Sound Pressure Level from one nominal Watt (2.8V). It needs little power to go loud as a result, a 40 Watt amplifier being enough. This makes the Wotan suited to valve amplifiers with 4 Ohm outputs, as well as transistor amplifiers. NK

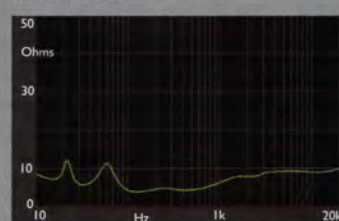
FREQUENCY RESPONSE



Green - driver output

Red - port output

IMPEDANCE



VERDICT

A compact floorstander that sounds clean and detailed, with lovely treble and great detail. It needs little power too. Fine for Rock and Classical.

AURUM WOTAN VIII £2400

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FOR

- smooth and accurate
- fast, detailed treble
- big bass

AGAINST

- bass control
- sheen
- obvious highs