

# A Vue of the future

As a new manufacturer with decades of combined experience, Vue Audiotechnik has unveiled its first loudspeakers, but what unique technology is inside the cabinets?

**‘OUR ULTIMATE OBJECTIVE WITH**

the h-Class is to redefine what is considered “state-of-the-art” performance – improving everything from linearity of response, to coverage, output and consistency over time,’ explains Ken Berger, CEO of newly founded manufacturer Vue Audiotechnik. ‘To achieve this we’re using a combination of advanced technologies and design architectures, as well as an extremely aggressive testing methodology that more accurately duplicates real-world stress conditions.’

Following this approach, the manufacturer, which was launched by Mr Berger – co-founder and former CEO of EAW – in partnership with Jim Sides – former Meyer Sound Germany CEO and Apogee Sound co-founder – used InfoComm 2012 to unveil its first offerings. In bringing to market the a-Class, h-Class and i-Class speakers, the company claims to have ‘re-examined every component of the loudspeaker equation’, but according to the CEO one of the most important factors in this process has been the unique approach to system testing.

‘Many of today’s best loudspeaker systems deliver performance that tends to degrade under longer duration, high power use,’ explains Mr Berger. ‘We’re overcoming this challenge by integrating large signal performance testing into our design process. In most cases manufacturers test with small signals – 1W to 10W – and those tests are carried out almost exclusively in a



The full team – members of the Vue Audiotechnik, Materion and Speaker Trade teams

lab environment. We’re testing our products at high power levels, over longer timeframes and in real-world conditions. In essence, we’re taking the best testing practices in the industry and bringing them up a notch.

‘A loudspeaker is a highly complex, electromechanical ecosystem where dozens of individual components and their respective functions are completely dependent on one another,’ continues Mr Berger. ‘Incremental improvements in one area can have significant impact on overall performance. Because of this complexity many loudspeaker designers accept compromises in one area in order to achieve a perceived improvement in another. Our objective is to push past these

ways to improve performance.’

This approach has seen Vue turn to different construction materials as well as some new design architectures as it seeks to improve overall performance. Notable examples can be seen most clearly in the manufacturer’s flagship h-Class speakers, which feature beryllium compression drivers and a new subwoofer design called Active Compliance Management (ACM) technology.

‘ACM is a patent-pending technology that combines band-pass and vented alignments – both sharing a common chamber – with sophisticated DSP,’ Mr Berger clarifies. ‘The hs-28 places two 18-inch woofers into this configuration. Dual, 2,000W amplifiers provide power while the DSP precisely aligns the outputs of the front-facing driver and both vents. This configuration has never been attempted before because the technology necessary to align all three outputs was beyond reach. Our unique application of DSP overcomes this hurdle. As a result the

compromises and re-examine each individual component to achieve a more cohesive whole,’ he explains. ‘From transducers, enclosures and electronics, all the way down to diaphragm materials or suspension parts, it’s our intention to explore any and all possible paths to improving

**‘A loudspeaker is a highly complex ecosystem where dozens of individual components are dependent on one another’**



The hs-28 subwoofer

the performance of the overall ecosystem.

‘And as an extension to our rigorous testing efforts, we’re examining every performance parameter before, during and after the system has dissipated hundreds of watts per driver over long periods of time,’ the CEO adds. ‘Measuring these variables under high power requires that we then re-examine each individual component to see how they interact under this type of large signal testing. We can then look at

hs-28 delivers higher output, lower distortion, and a great deal more definition in the critical 32-80Hz frequency range.

‘ACM is the first in a whole new generation of subwoofer advancements from Vue,’ Mr Berger declares. ‘The technology is completely new, and offers more output and definition from less space. Plus, it achieves a level of musicality that’s almost never addressed in subwoofer design. You can actually hear real notes rather



Jim Sides and Ken Berger

than the undefined pressure wave common with most large diaphragm designs.'

With ACM looking after low end, Vue has also taken a different approach to producing the high frequencies. For this, the manufacturer took a close look at the materials used in compression driver constructions and quickly identified an opportunity to boost performance through the use of beryllium diaphragms.

'Beryllium has an extremely high stiffness-to-weight ratio that is far beyond that of aluminium or titanium. This allows it to retain its structural integrity across a wide frequency spectrum while offering a lower overall moving mass,' says Mr Berger. 'These characteristics reduce mechanical deformation and shift the resonant frequencies inherent in more traditional metals well outside the audible range. While other products in this class start to exhibit anomalies in the 6-8k range, using

practicalities. However, this did not deter Vue. 'We forged a development partnership very early with the world's leading supplier of acoustic beryllium, a company called Materion Electrofusion,' explains Mr Berger. 'Materion has developed innovative manufacturing and milling techniques that are both safe and more cost-effective than previous methods. We've been working with Materion for many months and are now able to bring the benefits of beryllium to a much wider market. The compression drivers in our h-Class systems are the first results of this partnership.'

Indeed, as h-Class is the company's flagship line it has benefitted from both ACM and beryllium, as well as a number of other advancements. 'There's currently nothing in this category that achieves the output, frequency response and definition that the h-12 and h-15 deliver,' the CEO claims. 'We've addressed



**Mike Adams and Mark Engebretson**

best possible performance,' the CEO reveals. 'This includes things like installing high coercivity ferrite magnets and large 4-inch voice coils to increase power handling and optimise thermal venting for decreased power compression. These qualities are present in every h-Class transducer.'

The early response to Vue's new products is something the CEO has been taken aback by. 'We've held a series of private demos at our San Diego headquarters with a few of the industry's most influential people. We've been absolutely humbled by their response. People are definitely enthusiastic about what we're doing.'

Part of the credit must go to the designers. Mr Berger is rightly proud of the work done by the R&D team to develop the new products and technologies, and is quick to point to some of the key figures in the design process. 'We have a global R&D operation with resources in the US, Germany and Asia, as well as a key technology partner, who have all contributed to the development of our h-Class products.'

'Design leadership is based in San Diego and is under the direction of Michael Adams, who comes from nearly four decades as a FOH/monitor engineer and system designer for one of America's top touring and installation sound companies. Michael was also co-founder of Audio Composite Engineering (ACE) and was a key contributor in the development of

leading products from companies like Yamaha, JBL and QSC,' the CEO enthuses. 'Mark Engebretson, who's held executive-level, design leadership positions at QSC, JBL Professional and Altec Lansing to name just a few, is also part of our design leadership team.'

'Supporting Mike and Mark we have a world-class R&D and manufacturing resource through founding partners Speaker Connection GmbH of Solingen, Germany,' continues Mr Berger. 'Speaker Connection has been designing custom components for A-list audio companies for nearly three decades. In addition to the German headquarters, they operate a 27,000 sq-m manufacturing facility in Asia, which adds a skilled, 600-person production staff and an additional 30-person R&D team. Through this partnership, Vue designers have immediate access to purpose-designed transducers, world-class enclosures, as well as an expanding range of digital and analogue electronics – all designed to our own specifications.'

'All these components come together to form our development and manufacturing infrastructure. Combined they represent a formidable resource that's on par or better than the largest and most established loudspeaker brands in our industry today.'

With this level of support, the CEO is understandably looking to the future and potential new products that the Vue Audiotechnik design team is now working on. 'Our team at every level is working on three time horizons. The current products, which were announced at InfoComm, an intermediate wave, and a longer-term wave,' he explains. 'There will be innovations in each group and while each is impressive, we're obviously limited by how much we can reveal right now. We've done so much already, imagine what we can do with just a bit more time.'



**Voice coils on the production line**



**Horn molds during production**



**Vue Control software**

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**An h-15 in the anechoic test chamber**

beryllium allows us to push that out more than an octave to above 15k. This translates to a flatter response, less distortion and more consistent long-term performance – exactly our objective.'

Beryllium has long been acknowledged as the ideal material for HF diaphragms, but the metal has generally been avoided in the past due to its prohibitive cost as well as manufacturing

all elements of the loudspeaker ecosystem, from the dedicated DSP platform and state-of-the-art amplification to the fact that the full-range models are the first loudspeakers in their class to provide control over Ethernet as a standard feature.'

Vue's attention to detail also goes as far as the individual transducers. 'We carefully tailor each transducer for each system to achieve the

clean, smooth and detailed.

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