

CES DEBUT FOR NEXT-GENERATION DSP AUDIO TECHNOLOGIES

January 2024

CES debut for next-generation DSP audio technologies

- Electric Vehicle acoustic challenges addressed
- Second-generation vibrohaptics you 'hear' not feel
- Next-generation DSP gives spatial boost to existing hardware
- New thinking for soundbar tech, domestic and automotive
- Visit Meridian Audio at the Bellagio

08 January 2024 – Alongside CES 2024, British audio pioneer Meridian Audio will be demonstrating the ability of next-generation digital signal processing technologies to substantially upgrade the immersive listening experience achieved by existing premium hardware. Developed by the company's Engineered by Meridian (EbM) consultancy division, the new DSP modules can be applied to multiple products and environments including automobiles, home audio and cinema, luxury yachts, soundbars and headphones.

Meridian is inviting journalists and other industry professionals to experience a selection of new audio products and software technologies at the Bellagio, located centrally on the Las Vegas Strip. To arrange demonstrations with the Meridian team, please email info@meridian.co.uk.

Demonstrations of domestic audio systems will include the recently launched DSP9 loudspeakers (the third product of Meridian's Extreme Engineering Programme) and a selection of high-end, third-party products that benefit from embedded Meridian DSP technologies. Demonstrated for the first time will be a new 'Bass & Space' technology that increases the sense of soundstage without the loss of impact and power that can happen in such systems, making it ideal for applications such as portable speakers where the left and right audio channels may not be optimally spaced.

The British audio pioneer will also be revealing elements of its automotive technology roadmap, showing how vehicle manufacturers can use advanced digital signal processing systems to provide a next-generation, immersive audio experience for music, speech, games, movies and other systems that are enhanced by high-quality sound. Amongst these will be Meridian's Vibrohaptic Audio technology for automotive seating which, as well as enhancing the audio experience, has the potential to enable impressive audio performance without large, hard-to-package bass speakers. "This is a long way from the thumping-bass vibrating seat that is usually associated with vibrohaptics," comments Meridian Audio automotive director Paul Andrews. "Through our understanding of how our brains use more than our ears to interpret sounds, we have developed a system that is most effective when you can barely feel it working."

This deep understanding of psychoacoustics has also allowed Meridian to take a global lead in solving the unique challenges of high-quality sound in electric vehicles. "EVs may be quieter, but their acoustic profile requires a significantly different approach to conventional vehicles," explains Andrews. "We believe we are the world leader in this new science." Meridian's fresh approach to immersive sound is already supporting new vehicles from some of the world's most ambitious manufacturers. Recently launched electric vehicles that incorporate Meridian's audio technologies include the highly praised new Kia EV9 and the HiPhi Y from luxury vehicle innovator Human Horizons.

Meridian advanced technology demo

Fresh out of Meridian's UK laboratory and displayed for the first time anywhere, a new multi-purpose

Soundbar concept being debuted during CES '24 demonstrates an advanced engineering implementation of proprietary Meridian technologies that can take a typical premium soundbar and give it the ability to deliver a much more authentic, powerful and spatial surround sound experience.

For the demonstration, Meridian's engineers have selected an off-the-shelf third party soundbar and subwoofer package, to which they have added their new Semantic EQ interface to provide users with an intuitive, personalised equalisation based on natural language. A range of proprietary software technologies have been carefully selected and calibrated to maximise the performance and push the boundaries of what listeners would typically expect to experience from this hardware.

"The beauty of this system is that impressive results have been achieved through our understanding of psychoacoustics, allowing us to engineer software that optimises the signal for how people actually perceive and react to sound, rather than by adding hardware complexity," explains Meridian CEO, John Buchanan. "This has allowed us to focus on what really makes a difference to the quality of the sound, creating a high-performance and luxurious experience without large and costly hardware."

The demonstration will deliver impressive results from 2-channel music, 5.1 surround or 7.1.4 Dolby ATMOS, all achieved through digital signal processing that will render any incoming signal to any channel configuration. Meridian describes the sound as 'authentic, lifelike and natural with great bass, clear vocals and spatiality.'

These new proprietary DSP technologies can be applied to any soundbar or portable loudspeaker design, for use anywhere the compact architecture is appropriate. "While the obvious applications are domestic and marine, we can see the physical simplicity being attractive to vehicle manufacturers too," states Andrews. "We believe this is a revolutionary concept that could be transformational for many vehicle segments."

Buchanan adds that while the Meridian brand will only be seen on the very high-performance systems that his team creates for luxury vehicles, high-end yachts and bespoke homes, its EbM consultancy works across numerous sectors, licensing the company's proprietary DSP software and delivering audio engineering and tuning expertise for a wide range of ambitious clients.

"In the 45 years that Meridian Audio has been one of the world's most highly regarded developers of high-performance audio technologies, we have never seen such dramatic changes in how great sound is achieved," concludes Buchanan. "By consistently investing around 15% of revenue in R&D, we are creating a full pipeline of innovations across our market sectors, helping our clients add value and competitive advantage in exciting new ways."

To learn more about Meridian's unique, second-generation Vibrohaptic technology, click [here](#).

To learn more about Meridian's solution to the challenges of high-quality audio in EVs, click [here](#).

To learn more about Bass & Space, click [here](#).

To arrange demonstrations with the Meridian team, please email info@meridian.co.uk

About Meridian Audio

Meridian is a multi-award winning British audio technology innovator with a rapidly growing automotive business. In home audio, Meridian is best known for the hi-fi and surround sound cinema products chosen for many of the world's most astonishing residences and super yachts. For the demanding in-car environment, the company focusses on pioneering DSP and other software technologies, supported by deep expertise in electronics, hardware integration and system tuning. Many of the world's most ambitious vehicle manufacturers trust Meridian to support their audio system design, adding value to their most premium systems through the addition of the Meridian brand. Meridian is a technology-driven business that invests around 15% of revenue in R&D, ensuring a full pipeline of innovations that deliver exciting upgrade paths for its customers.

Press Contact for Meridian Audio's automotive business

To arrange an interview on this or any related topic, call Meridian Audio's automotive PR specialist, who is always happy to talk through ideas.

Richard Gotch

richard@richardgotch.com

+44 7831 569732

Follow Meridian on Facebook, Twitter, Instagram, Pinterest and You Tube @MeridianAudio.

PRESS RELEASE