



Bang & Olufsen partners with Audi and Fraunhofer IIS to create a revolutionary 3D sound experience in the car

A unique three-way industry cooperation between Bang & Olufsen, Audi and Fraunhofer IIS has produced a concept car that redefines expectations from car audio. The Audi Q7 uses revolutionary new 3D audio technology and will be unveiled at the 2013 Consumer Electronics show in Las Vegas. Struer, January 8, 2013

Bang & Olufsen, the global provider of exclusive high quality audio and video products, proudly announces its development in 3D sound technology in the car-audio segment, together with Audi and Fraunhofer IIS, the main inventor of mp3 and a renowned source for advanced audio technologies. Under the partnership, the 3D audio solution has been introduced in an Audi Q7 Concept Car, which will be unveiled at the 2013 Consumer Electronics Show in the Audi booth (North Hall, 1130).

The Bang & Olufsen Advanced Sound System is already available today as an optional feature in the Audi Q7. The Concept Car at the CES demonstrates how the next generation of the Advanced Sound System redefines what buyers can expect from an in-car audio system.

Denis Credé, head of sound system development, Audi AG: "At Audi we strive to improve the experience of music enthusiasts by consistently setting new benchmarks with our sound systems. We believe that the introduction of 3D movies has helped to define the next major step forward for in-car sound systems: the reproduction of music in the third dimension. The 3D acoustic dimension of music recordings is reproduced more naturally and more inspirationally than ever through 3D sound. This

produces an airiness and openness of the acoustics which corresponds to human hearing. With Fraunhofer IIS and Bang & Olufsen we have partners with whom we were able to jointly realize this idea."

3D sound adds a new emotional dimension to the user experience

"Bang & Olufsen Audio Systems for cars are widely renowned for their unique ability to turn a car interior into a real high-end listening room, and with the addition of the 3D sound algorithm and associated speaker units and amplifiers in this Audi Q7 Concept Car, we add a new important emotional dimension into the listening experience. Extending beyond the small confined space of the vehicle cabin, the available sound experience now ranges all the way from a very big and open sense of space to the purist setting such as a control room of a recording studio," says Bjarne Sørensen, Senior Manager Car Concept Creation and Communication.

This unheard listening experience is based on a sophisticated approach combining the expertise of the Audi and Bang & Olufsen acoustic engineers with the 3D sound know-how of the Fraunhofer team. The new 3D sound system takes any music of the user to the third dimension by a careful analysis built on psycho-acoustic knowledge. This analysis enables the intelligent distribution of the input signal to the loudspeakers in the car creating a highly realistic three-dimensional sound impression. With no more than a push of a button on the Audi Multi Media Interface, the user can adjust the settings and produce an individual level of 3D intensity.

Harald Popp, head of the Multimedia Realtime Systems department of Fraunhofer IIS states: *"Based on the know-how from our research and development in 3D audio, the Advanced Sound System of the Audi Q7 Concept Car not only creates an impressive dimensionality and spaciousness, which dissolves the geometry of the car. It also reproduces the genuine richness of the music with ultimate precision for an unrivalled music experience. We are very pleased with the opportunity to develop such a unique sound system together with Audi and Bang & Olufsen."*

Listen to the technology

The concept car has 23 active loudspeakers and more than 1500 watts of amplification power, driven by a new 23 channel DSP Most amplifier. The loudspeakers have been specially selected to compliment the architecture inside the car and create the unique sense of listening to music inside a concert auditorium.

- Two loudspeakers in the dashboard center (tweeter and broadband)
- Two tweeters in the dashboard (left/right) with acoustic lens technology
- One mid-high loudspeaker in each A pillar
- One tweeter in each A pillar
- Two loudspeakers in each front door with a woofer and a midrange
- Three loudspeakers in each rear door with a woofer, midrange and a tweeter
- Two surround loudspeakers in each D pillar, consisting of a tweeter and broadband
- One closed subwoofer box in the spare wheel compartment

All loudspeakers are covered by high-grade aluminum grilles that reflect the excellence inside the car. In addition, the two dashboard speakers use Bang & Olufsen's patented acoustic lens technology for accurate sound reproduction. The Acoustic Lens Technology was first fitted to the Audi A8 and its major benefit is the way it uniformly disperses high frequencies, broadening it to 180 degrees while at the same time limiting vertical reflections. This provides detailed acoustic staging from any seat of the car.



Experience it for yourself

As well as experiencing the new standards set by the Q7, you can also witness the revolutionary 3D audio technology for yourself at the listening room at the Consumer Electronic Show in Las Vegas, located in the Audi booth 1130 in North Hall. The room will also contain an impressive array of Bang & Olufsen products, including:

- 18 fully active Bang & Olufsen speakers, including seven floor standing BeoLab 5's and ceiling mounted BeoLab 3's, all showcasing the patented acoustic lens technology as seen in B&O car audio systems
- More than 20 KW of ICEpower amplification built in the speakers
- A 103" BeoVision 4 plasma TV, the ultimate in home cinema viewing

Meet our partners

Bang & Olufsen and Audi first began to cooperate in 2005 and have since introduced a number of innovations in car audio. We both share a focus on technological innovation as well as pioneering and innovative design. Now, we have teamed up with Fraunhofer IIS, a worldwide authority in the field

of advanced audio and acoustic signal processing. Together we present the Audi Q7 Concept Car – a genuine landmark in car audio.

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***Bang & Olufsen** was founded in Struer, Denmark, in 1925 by Peter Bang and Svend Olufsen, two innovative, young engineers devoted to high quality audio reproduction. Since then, the brand has become an icon of performance and design excellence through its long-standing craftsmanship tradition and the strongest possible commitment to high-tech research and development.*

Still at the forefront of domestic technology, Bang & Olufsen has extended its comprehensive experience with integrated audio and video solutions for the home to other areas such as the hospitality and automotive industries in recent years. Consequently, its current product range epitomizes seamless media experiences in the home as well as in the car and on the move. For more information on Bang & Olufsen, please visit www.bang-olufsen.com.

***Bang & Olufsen Automotive** offers its partners car audio systems with unprecedented sound quality and listening pleasure for the driver and passengers. In addition to the company's traditional craft skills within manufacturing and aluminium finishing, the systems incorporate the radical synthesis of emotional appeal and technological performance that has long been the hallmark of Bang & Olufsen.*

Bang & Olufsen Automotive launched its first car audio system in 2005, and will continue to innovate and refine together with its partners within the automotive industry.

Images are available free of charge from the **Bang & Olufsen media centre:**

<http://mediacenter.bang-olufsen.dk>.

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About Fraunhofer IIS

The Fraunhofer IIS Audio and Multimedia division, based in Erlangen, Germany, has been working in digital audio technology for more than 20 years and remains a leading innovator of technologies for cutting-edge multimedia systems. Fraunhofer IIS is the main inventor of mp3 and universally credited with the co-development of AAC (Advanced Audio Coding).

Through the course of more than two decades, Fraunhofer IIS has licensed its audio codec software and application-specific customizations to at least 1,000 companies. Fraunhofer estimates that it has enabled more than 5 billion commercial products worldwide using its mp3, AAC and other media technologies.

The Fraunhofer IIS organization is part of Fraunhofer-Gesellschaft, based in Munich, Germany. Fraunhofer-Gesellschaft is Europe's largest applied research organization and is partly funded by the German government. With 20,000 employees worldwide, Fraunhofer-Gesellschaft is composed of 60 Institutes conducting research in a broad range of research areas. For more information, contact Matthias Rose, matthias.rose@iis.fraunhofer.de, or visit www.iis.fraunhofer.de/amm.