



BOSE INTRODUCES QUIETCOMFORT ROAD NOISE CONTROL

Innovative Sound Management Solution Helps Car Makers Build Better Vehicles

January 8, 2019 — Today, Bose announces a new offering from its industry-leading portfolio of Active Sound Management solutions for cars: Bose QuietComfort Road Noise Control (RNC). Now available to global vehicle manufacturers, it joins Bose Engine Harmonic Cancellation (EHC) and Bose Engine Harmonic Enhancement (EHE) to form the most comprehensive and effective set of technologies for managing sound inside cars, trucks, and SUVs.

Bose QuietComfort RNC efficiently solves a critical issue that car makers and consumers have dealt with for decades: how to minimize unwanted sound in the cabin caused by driving over rough roads, grooved concrete, and uneven pavement. Conventional approaches to solving this problem include adding thick insulation to the vehicle body, using customized tires that trade drive performance for lower noise, and other passive countermeasures that can increase vehicle weight and drive down fuel efficiency — while delivering limited effectiveness. QuietComfort RNC is a smarter, more flexible, and adaptable electronic solution that uses the vehicle's existing sound system.

Bose pioneered noise cancellation for consumers with its iconic QuietComfort headphones. And Bose has applied its research and engineering in this area to other industries, including automotive, to help deliver quieter, more enjoyable experiences. Since 2010, the Bose automotive division has provided car makers with EHC, a highly targeted technology for reducing undesirable engine noise. But eliminating more dominant road noise is a bigger challenge.

"For years, we've been asked why we can't simply adapt our noise cancelling headphone technology to vehicle cabins for a quieter driving experience," said John Feng, manager, Bose Automotive, Active Sound Management Solutions. "But we know it's much more difficult to control noise in a large space like a car cabin compared to the relatively small area around your ears. However, through research advances and our relentless efforts to solve tough problems, we've achieved a level of road noise reduction that sets Bose apart from competitive offerings."

Sensing, Processing, and Reducing Road Noise

Bose QuietComfort RNC uses a combination of accelerometers, proprietary signal-processing software, microphones, and the vehicle's audio system to electronically control unwanted sound. Accelerometers mounted on the vehicle body enable a Bose algorithm to continuously measure vibrations that create noise. This information is then used to calculate an acoustic cancellation signal, which is delivered through the vehicle's speakers to reduce the targeted noise. Microphones placed inside the cabin monitor residual noise levels, allowing the system to adapt the control signal for optimized performance over different road surfaces, while automatically adjusting over time as the vehicle ages.

Bose will collaborate with manufacturers during the vehicle development process to custom-engineer QuietComfort RNC into the car. Tuning adjustments can be made quickly and easily throughout the development cycle, and the solution is available for vehicles with or without Bose premium sound systems. QuietComfort RNC is planned to be in production models by the end of 2021.

Bose Active Sound Management Solutions

Bose Active Sound Management technologies help car makers more effectively control the sound environment inside the car. Its algorithms and signal processing can be used to create precise sound characteristics specified by the car manufacturer. Using proprietary technologies, Bose Active Sound Management can reduce unwanted engine and powertrain noise, enhance more desirable engine sounds, and now, minimize noise from the road.

More information on Active Sound Management and other Bose automotive technologies is available at [BoseAutomotive.com](https://www.boseautomotive.com).

About Bose Automotive Systems

In the early 1980s, Bose engineers created the world's first factory-installed premium automotive sound systems. Unlike conventional or aftermarket automotive systems, Bose systems were designed and tuned for a specific vehicle — and changed the industry. Since then, Bose has developed proprietary speaker designs, advanced amplification and signal processing

technologies, exclusive analysis and design tools, and technology for controlling the sound environment inside vehicles — all based on a heritage of research and engineering.

Today, Bose automotive systems are recognized globally as the industry benchmark for performance and customer satisfaction, validated by independent research rating Bose as the top choice among car consumers in multiple global regions.

About Bose

Bose Corporation was founded in 1964 by Dr. Amar G. Bose, then a professor of electrical engineering at the Massachusetts Institute of Technology. Today, the company is driven by its founding principles, investing in long-term research to develop new technologies with real customer benefits. Bose innovations have spanned decades and industries, creating and transforming categories in audio and beyond. Bose products for the home, in the car, on the go and in public spaces have become iconic, changing the way people listen to music.

Bose Corporation is privately held. The company's spirit of invention, passion for excellence, and commitment to extraordinary experiences can be found around the world — everywhere Bose does business.

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