



Case Study: GORE® Acoustic Vents Provide a Unique Sound Experience

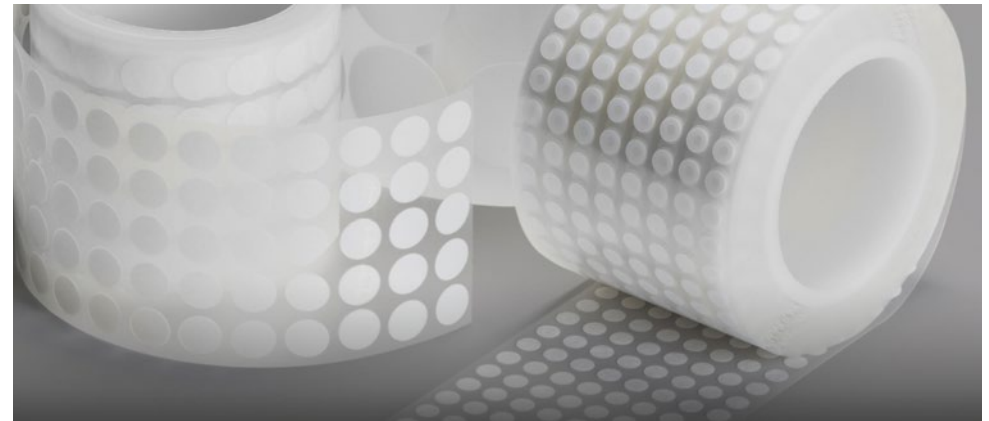
A New Membrane for the Most Advanced Noise Cancellation



? CHALLENGE

When a well-known OEM of True Wireless Stereo (TWS) earbuds developed the second generation of their flagship model, they aimed to **stand out from the growing competition**. While creating a device 15% smaller than the previous version and introducing new colors to catch consumers' eyes, the OEM also sought to **improve acoustic performance and Active Noise Cancellation (ANC)** to create a unique sound experience.

While our customer invested in **high-SNR microphones**, they needed to protect them from contamination and water immersion – without degrading the acoustic performance. Fortunately, they could rely on Gore's experience to find the perfect solution.



GORE® Acoustic Vent for Microphone

"Our customer wanted to enable clear phone calls and the highest acoustic performance possible, so they included an AI-based, intelligent ANC to block any external noises."



Yan YU Heo, Marketing Development



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SOLUTION

The TWS earbuds in question contain **six digital MEMS microphones in total**, as the OEM wanted to provide a unique 360° sound experience. Gore was tasked with developing a solution for each individual microphone, achieving not only **IPx7** standard water resistance, but also **meeting all acoustic requirements**.

Gore's engineering team has already developed a **new membrane for acoustic vents**, which is placed on the outside of the MEMS microphone. When our team introduced this new membrane to the customer, we quickly received positive feedback. From there, we developed the solution in collaboration with our customer to ensure it would **fit their specific requirements in design and performance**.

"Achieving the highest sound quality possible was very important to our customer. They invested a lot of resources in finding the perfect MEMS microphones with high SNR for their project to offer the most advanced ANC."



John Park, Application Engineer

THE TECHNOLOGY BEHIND THE SOLUTION: GORE® ACOUSTIC VENTS

The solution used to support the OEM was a highly customized version of GORE® Acoustic Vents. For specifications and more detailed information on our standard acoustic vents, please visit

gore.com/acoustic-vents



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★ RESULTS

Thanks to Gore and strong teamwork throughout the project, our customer achieved a competitive edge in the TWS earbud market. Our solution not only supported the intelligent ANC our customer desired but also provided a flawless 360° sound experience. Below are the results:

- Our new membrane enabled a higher SNR than previous solutions
- The sensitivity attenuation was minimized at low frequencies
- The IPx7 standard from the previous model was maintained
- The acoustic performance of the earbuds was improved
- The relationship between Gore and our customer was strengthened

“Our customer instinctively turns to Gore when starting a new program, seeking out our latest membranes and technologies. This demonstrates the high level of trust they put in our solutions and their satisfaction with the result.”



Yan YU Heo, Marketing Development

WANT TO KNOW MORE?

To learn more, visit our website: gore.com/acoustic-vents

Or check out more of our case studies: gore.com/mestories



Why Choose GORE® Protective Vents for Your Electronic Devices?

Leading OEMs have specified over 5 billion GORE® Portable Electronic Vents because they know our products and services can help accelerate their development of innovative and differentiated devices in fast-paced, highly competitive markets.

PRODUCT AND APPLICATION LEADERSHIP

Grounded in a deep understanding of material science and acoustics, Gore can provide the optimum venting solution. We balance trade-offs between diverse problems such as adverse operating environments, immersion events and acoustic performance.

RELIABLE PERFORMANCE

To ensure products are “fit for use”, every Gore product must adhere to the highest standards of quality, performance and reliability. Through a comprehensive understanding of end-use applications and requirements, our products do what they say they will do.

FAST DEVELOPMENT

The mobile electronics industry develops and releases new products quickly. Our fast response to customer requests during the development process sets us apart. Gore supports this need for quickness with designs and prototypes to ensure engineering teams can meet their project timelines and their application requirements.

SUPPLY SECURITY

Leading OEMs specify Gore because we have consistently proven our ability to quickly ramp up to supply vents for projects of over 10 million devices per year and to continue to supply high quality products on-time without disruption.

MATERIAL SCIENCE

Gore is a global materials science company dedicated to transforming industries and improving lives. Gore develops materials with microporous structures that provide desirable attributes and performance characteristics to engineer vents and other products used in a variety of markets and industries.

GLOBAL SUPPORT

Our global teams of sales associates, application engineers, manufacturing engineers, and research personnel enable us to provide agile and robust support to customers around the world.

Interested in Testing Our Products or Talking to Our Experts?

For additional assistance, please contact a Gore representative.

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