



## Case Study: Gore Venting Technology for High-Performing TWS Earbuds

# The Power of Synergy: Elevating TWS Earbuds to Excellence



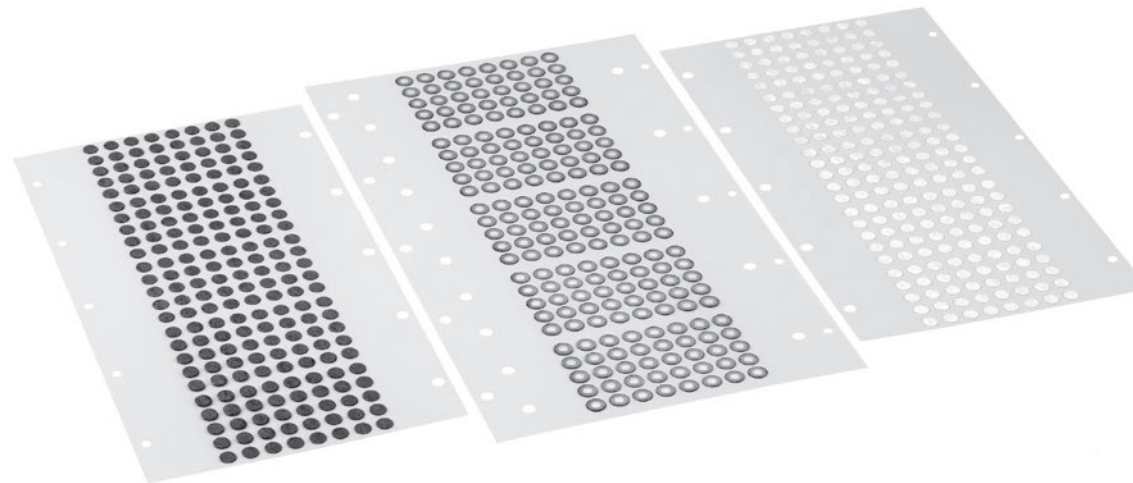
### ? CHALLENGE

In late 2021, a major electronics company from Asia started to develop their flagship model of true wireless stereo (TWS) earbuds. Due to the rising popularity of TWS earbuds at that time, manufacturers needed additional features to stand out from the growing competition — while also maintaining excellent acoustic performance.

“The market developments could not have been clearer: Consumers were expecting a higher standard for active noise cancellation, a smaller design, and waterproof technology all without compromising sound experience.”



**Takeshi Kori, Gore Sales Associate**





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### SOLUTION

Our customer aimed for both **maximum sound quality and reliable water protection**. Thus, our team suggested a brand-new membrane that would be a perfect match for our customer's requirements. The original equipment manufacturer (OEM) was more than satisfied with the membrane's performance, so we were able to further enhance its benefits by decreasing the vent's size. Usually, such changes would lower the device's acoustic transparency, but thanks to Gore technology, we were able to **maintain its remarkable sound quality**.

For the final part of the development process, we relied on close collaboration with Gore's local Application Engineering and Technical team. That way, we were able to **provide local technical support** to the OEM's contract manufacturer, ensuring seamless integration of our solution into the automated production line without degrading its state-of-the-art performance.

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#### THE TECHNOLOGIES BEHIND THE SOLUTION: GORE® ACOUSTIC AND PRESSURE VENTS

Every project is different and requires a tailored solution. In this case, it was a synergy of Gore technologies that led to success: **GORE® Acoustic Vents** and **GORE® Pressure Vents**.

For specifications and more detailed information on both technologies, please visit [gore.com/acoustic-vents](https://gore.com/acoustic-vents) or [gore.com/pressure-vents](https://gore.com/pressure-vents).

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"Our customer and their contract manufacturer had challenging requirements regarding the automated process. Thus, we had to think outside the box and provide local technical support. Our work on site was highly appreciated by the customer."



**Quennie He, Gore Application Engineer**



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### RESULTS

With the joined experience from our global teams and strong local technical support, Gore was able to develop a solution that meets all of our customer's requirements. Here are the key results of the project:

- Minimized insertion loss close to 0 at all frequencies up to 10 kHz
- Sound quality exceeding the contract manufacturer's expectations from tested materials
- Achievement of IPx4 spray and splash protection
- Seamless installation in the contract manufacturer's automated production line despite challenging tolerance
- Strengthening of the relationship between Gore and our customer

"We proved to be a valuable partner in improving acoustic performance for high-quality products, and we will strive to fulfill the needs of our customers for a continuous partnership."



**Takeshi Kori, Gore Sales Associate**

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#### WANT TO KNOW MORE?

To learn more, visit our website:  
[gore.com/portableelectronics](https://gore.com/portableelectronics)

Or check out more of our case studies:  
[gore.com/mestories](https://gore.com/mestories)

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# Why Choose GORE® Portable Electronic 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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