

✓ CUSTOMER

GN Audio

✓ HIGHLIGHTS

- Data consistency
- Production line testing across borders and locations
- Correct test solutions to test premium headsets

✓ KEY LEARNINGS

Achieving data consistency across multiple test locations can be challenging. For a strong brand like Jabra, failures on production lines can have fatal consequences for product releases. Jabra and GRAS have been working closely together for several years to meet these challenges, and in this beneficial cooperation GRAS measurement solutions have proven their value.

GRAS

Correct test solutions ensure data consistency

Production line testing can be very challenging – and achieving data consistency across multiple products and production lines requires the correct test solution. The company GN Audio A/S with the global brand Jabra knows all about this. GN Audio is a leader in engineering communications and sound solutions – innovating to empower both consumers and businesses. The Danish manufacturer of high-quality headphones, headsets, and speakerphones have worked closely with GRAS Sound & Vibration for many years.

The complexity of a test setup increases when testing products with a wide range of features. But this is only one part of the challenge. Another part is ensuring the quality of the measurements. This entails focus on achieving data consistency and repeatability across multiple testing locations. All manufacturers have seasonal peaks in their product introduction cycles where punctuality in the production is of great importance for product releases and ultimately global market share. This all point to the importance of ensuring correct test solutions.

Testing, testing, testing

Jabra is known for being among the first to introduce new technology: Recently, Jabra launched a new series of wireless headsets – Jabra Engage – that sets new standards for call quality, security and connectivity. New products and new technologies require rigorous testing due to the signal



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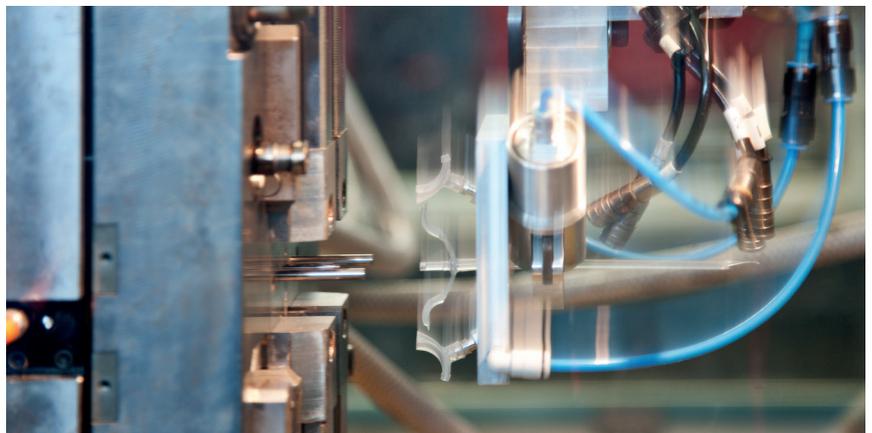
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levels involved, and this is where the measurement solutions from GRAS prove their value.

Tony Nesbitt, Manufacturing Project Manager at GN Audio A/S, says: *“The very nature of new products is that they will always pose new challenges to production line testing.”* This is the reason why the correct test equipment is so significant: *“For us, it is not just about getting test equipment. It's about ensuring data consistency across different measurement systems. Testing, testing and further testing is the key!”*, Tony explains.

Having the correct test equipment is vital because it decreases time to market. Even one day can be significant to the project schedule. Increase this to several days and you risk not being able to make product announcements as planned at key launch opportunities.

GN Audio uses the same test method in both R&D and manufacturing sites. This approach also reduces delays in investigating measurement challenges: *“We need to be confident that the testing facilities are aligned – also across projects and borders”*, Tony underlines. Rather than investigating design issues, it is sometimes easier to blame test equipment or assembly issues when something unexpected occurs. But with GN Audio's testing facilities – based on high quality equipment – the test equipment is never blamed for products failing to meet specifications during the development stage: *“We have come to know that acoustic sensors from GRAS are our guarantee of measurement reliability across all our facilities. They support our global success”*, as Tony Nesbitt puts it with a smile.



Honesty is the keyword!

The close relationship between GN Audio and GRAS has a long history. Tony Nesbitt looks back: *“It all started with Gunnar Rasmussen himself, almost 18 years ago. Here was a person and a company with the dedication to understand and solve our problems, and we have partnered with GRAS ever since to ensure the quality we strive for”*.

Niklas Larsen, Personal Audio Industry Manager at GRAS, nods in agreement: *“It is a huge encouragement for GRAS to be chosen as a partner by one of the world's leading audio experts. It inspires confidence to learn*

“It is a huge encouragement for GRAS to be chosen as a partner by one of the world’s leading audio experts. It inspires confidence to learn from GN Audio’s testing needs and motivates us to develop products, which will meet the testing demands of the future.”

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from GN Audio’s testing needs and motivates us to develop products, which will meet the testing demands of the future”, he says.

According to Niklas Larsen, the dialogue with Tony and his colleagues helps to constantly improve the testing on production lines globally. In addition to this, the close partnership also provides GRAS with valuable inputs for product road maps.

Avoiding the risk of audit failure

Niklas Larsen also highlights the risk of audit failures at quality controls as a key factor for audio customers around the world. As he explains, “We would never risk an audit failure due to measurement inconsistency because we invest in having a strong brand exactly as GN Audio does with Jabra”. Using high grade acoustic components minimizes the variation between test stations and the potential risk of audit failure. Additionally, it allows effective re-use of equipment at the end of project life and improves the ability to increase capacity at short notice.

Safeguarding measurements with in-house calibration

The long and close ties between GN Audio and GRAS has also involved collaboration on calibration of measurement equipment. Calibration at regular intervals is a way to safeguard the quality of measurements and to eliminate costs caused by unreliable equipment and data. Also, it is a way to ensure that historical measurement data are valid and comparable. Supported by GRAS, GN Audio have developed their in-house calibration procedures to verify performance of acoustic components to meet GN production requirements.

Tony Nesbitt boils down the two main reasons for choosing GRAS: “Firstly because of the “solution flexibility” – GRAS supplies what we need and not what they want to sell. Secondly, if you look at our total cost of ownership with GRAS equipment, it is actually quite low compared with other solutions”.

For more information please contact Industry Manager for Personal Audio, Niklas Larsen, +45 9189 6431, nbl@gras.dk

ABOUT GRAS SOUND & VIBRATION A/S

GRAS is a worldwide leader in the sound and vibration industry. We develop and manufacture state-of-the-art measurement microphones to industries where acoustic measuring accuracy and repeatability is of utmost importance in R&D, QA and production. This includes applications and solutions for customers within the fields of aerospace, automotive, audiology, and consumer electronics. GRAS microphones are designed to live up to the high quality, durability and accuracy that our customers have come to expect and trust.

GRAS is represented through subsidiaries and distributors in more than 40 countries. Read more at www.gras.dk