

### ✓ CUSTOMER

Aiways

### ✓ HIGHLIGHTS

- Valid and repeatable measurements
- Efficiency and support for rapid innovation processes
- Flexibility of using GRAS microphones across different applications

### ✓ KEY LEARNINGS

Efficiency and valid measurement data are critical for a rapidly expanding company like Aiways.

Microphones from GRAS have ensured repeatable testing and valid data, hence supported Aiways' innovative expansion.

# GRAS

## Chinese EV Manufacturer - Looking for Quality Solutions

**Innovation and rapid expansion is not only a question of having the right skills and ideas. You also need the right tools and instruments that can support and validate your findings as you test new models. This is the case for Chinese automotive manufacturer Aiways, one of the newcomers on the global automotive scene. Using microphones from GRAS Sound & Vibration has allowed for quick and efficient tire noise and interior noise testing.**

As any NVH test engineer will know, working with noise is a complicated matter and involves a lot of planning to get it all right. Most importantly, the engineer needs to be able to rely on his data. If not, many hours are wasted, not to mention the risk of making conclusions based on "poor" data.

The efficiency issue as well as the importance of valid data was exactly why Chinese car manufacturer Aiways turned to GRAS Sound & Vibration. Aiways, founded in February 2017 by two experienced Chinese automotive entrepreneurs, is already a significant player in the mid to high-end range of urban vehicles, employing more than 1,000 technical employees. Aiways' € 1.73 billion purpose-built "Industry 4.0" production facility in Shangrao, Jiangxi Province, was finished in just 14 months. The plant is highly automated and able to produce 150,000 cars a year. It can even accommodate an increase in production capacity to 300,000 cars a year as demand grows. It also includes a separate battery plant, primarily run by robots. Aiways has recently been granted EU access for their latest U5 model – which is based on German-led R&D expertise.



The new U5 model from Aiways is planned to be the first Chinese EV launched in Europe.

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*GRAS turned out to be the best option in the market.*

Xinxi Lu, NVH Engineer at Aiways.

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The GRAS 146AE ½” CCP Free-field Microphone Set is the new standard in the NVH industry.

In China, customers have been drawn to the U5’s blend of zero-emissions power, high-tech features and eye-catching design.

In such a dynamic setting, where speed and efficiency in every phase of the NVH measurements are key for keeping the commercial momentum of the business, selecting the right measurement microphones is crucial. Aiways had early developed a strong measurement chain but needed to be sure that all measurements were easy to perform and repeatable in every aspect.

According to Mr. Xinxi Lu, NVH Engineer at Aiways, GRAS was the obvious choice:

*“We were looking for reliable and stabile measurement microphones for our tire noise and interior noise testing. GRAS turned out to be the best option in the market”, says Mr. Xinxi Lu, NVH Engineer at Aiways’ site in Shanghai.*



### Flexibility is key

Mr. Lu has been especially interested in the versatile 146AE measurement microphone from GRAS – the new standard in the automotive testing world – robust and capable of working across a number of NVH applications. But also the classic 46AE free-field microphone set together with the flexible 42AG calibrator from GRAS have been used by Aiways for many testing applications during the U5 development.

This flexibility combined with the reliability of the microphones have been important to keep momentum in the development process. Mr. Xinxi Lu adds:

*“We understand how important it is to have the right products at hand. Even few days of delay can have a huge impact on general planning and launches. We quickly concluded that by using GRAS equipment we would ensure efficiency in all NVH testing aspects”.*

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NVH testing has been an important parameter for developing the U5 as an alternative to the Audi e-tron, Mercedes EQC and Tesla Model X.

The U5 model creates a comfortable and caring space capsule.



First of all, it was important to use microphones that were reliable under huge temperature fluctuations – from the high temperatures in Turpan to a very low-temperature environment in Heihe. Furthermore, Aion needed microphones that could be used across different applications. The same microphones were used both in the laboratory and on the road.

Mr Lu explains why flexibility is so important:

*“For measuring noise in the car, the microphones are placed on the car seat. For measuring the reducer and compressor noise, we place the microphone in the cabin. For tire noise, we place the microphone near the tire on the outside of the car. We mainly test under full throttle acceleration, slow throttle acceleration, and all vehicle speeds below 120 km per hour.”*

By being able to move the same microphones around for different test riggings in the lab, dyno and on road, work and preparations at Aion have been much easier thanks to GRAS' microphones.

GRAS' microphones have been part of measurement chains including software from LMS Siemens and Head acoustics Ltd.

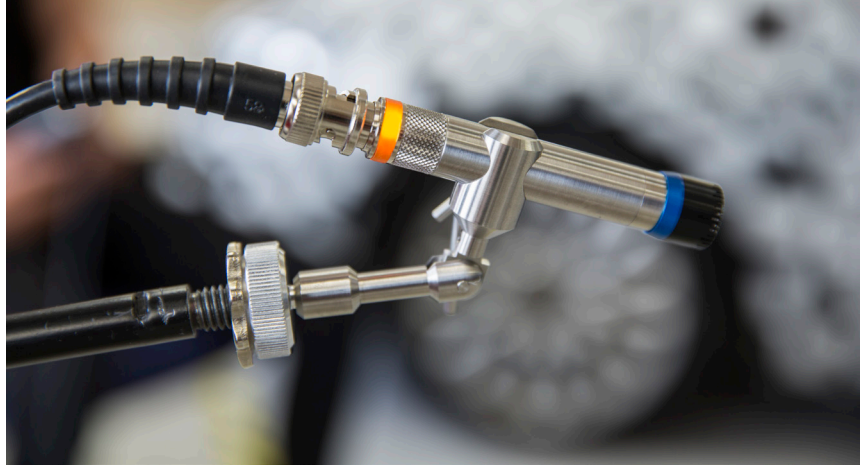
According to Mr. Lu, data results and benchmarks were easily compared and shared, supporting the Aion culture of sharp and swift processes around the company.

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We are very happy to work together with what we consider as one of the future champions of the industry.

Chris Yu, Head of GRAS China.



The GRAS 146AE ensures valid data and is both flexible and cost-efficient for most types of NVH testing.



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*By being able to move the same microphones around for different test riggings in the lab, dyno and on road, work and preparations at Aiways have been much easier.*

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### An open and honest dialog is crucial

According to Chris Yu, Head of GRAS China, all this would not have been possible without a very strong working relationship between Aiways and GRAS.

*“We really appreciated the fact that Aiways was willing to share their ideas and thoughts with us along the way. In this way, we were able to give them our best support. We are very happy to work together with what we consider as one of the future champions of the industry”, says Chris Yu.*

Mr. Lu from Aiways nods in recognition. He explains how the open dialog very quickly defined the needs of Aiways and combined these with the most optimal testing solutions from GRAS. Of course, microphones are a small part of all the testing done at Aiways, but according to Mr. Lu, GRAS can be proud to contribute to what is now becoming a successful launch of a new global OEM brand!

*“It’s not just a question of looking in a catalog for the right products and specifications. What we need is a trusted advisor whom we can turn to anytime during our development and testing processes for all sound measurements. Surely, GRAS has taken this role and we look forward to continue this close cooperation”, Mr. Lu concludes.*

**For more information, please contact Martin M. Khan, Global Marketing Director, +45 5157 3095, [mmk@gras.dk](mailto:mmk@gras.dk).**

### ABOUT GRAS SOUND & VIBRATION

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](http://www.gras.dk)