



Hearing Testing, Hearing Aid & Implant Verification and Configuration

Axiometrix Solutions

APPLICATION NOTE // By Lars Winberg



Advanced Solutions for Hearing Aid & Implant Development

GRAS Sound & Vibration is a global leader in providing state-of-the-art acoustic measurement equipment for the development and testing of hearing aids, hearing implants and Calibration of the test equipment of these devices. Our solutions empower manufacturers and researchers to design, test, and validate cutting-edge hearing devices that deliver superior performance, reliability, and comfort to users worldwide.

Precision Equipment for Hearing Aid & Implant Testing

GRAS offers a wide range of specialized products that enable accurate and repeatable testing for hearing aid and implant development:

- **Head-and-Torso Simulators (KEMAR):** Accurately replicate human anatomy and hearing characteristics, providing realistic testing environments for hearing aid and implant performance.
- **Ear Simulators:** High-precision simulators for measuring sound pressure levels in the ear canal, critical for assessing device output and ensuring compliance with international standards.
- **Microphones:** Industry-leading microphones designed for precise acoustic measurements in controlled and real-world environments.
- **Calibration:** High-precision calibration system for Audiometers.

Supporting Innovation in Hearing Technology

GRAS products are used by leading hearing aid and implant manufacturers, research institutions, and audiology labs to drive innovation and ensure the highest product quality:

- **Performance Optimization:** Evaluate and fine-tune the performance of hearing aids and implants for various real-world scenarios and user needs.
- **Realistic Testing Environments:** Simulate human hearing and environmental conditions to assess device functionality and user experience.
- **Regulatory Compliance:** Ensure your devices meet global standards for safety, performance, and reliability.

Why Choose GRAS for Hearing Aid & Implant Development?

- **Unmatched Accuracy:** Our acoustic measurement solutions deliver precise and repeatable results, critical for the development of high-performance hearing devices.
- **Customized Solutions:** GRAS offers tailored equipment configurations to meet the unique needs of hearing aid and implant developers.
- **Proven Expertise:** With decades of experience in acoustics, GRAS is a trusted partner for hearing aid and implant manufacturers worldwide.
- **Comprehensive Product Portfolio:** From advanced ear simulators to high-performance microphones, we provide all the tools you need for hearing aid and implant testing.



GRAS 45BB-2



APx517



APx511

Applications

GRAS products are perfectly suited for a variety of hearing aid and implant development applications:

- **Hearing Aids:** Design and test devices for improved sound quality, speech clarity, and user comfort in diverse environments.
- **Cochlear Implants:** Develop and validate implantable hearing solutions that meet stringent medical and acoustic standards.
- **Assistive Listening Devices:** Test and optimize devices for individuals with hearing impairments across different use cases.

Recommended Solution Configuration

Based on the application requirements and environmental conditions, Axiometrix recommends a tailored measurement solution combining high-precision microphones, signal conditioning, and analysis systems to ensure reliable, repeatable, and standards-compliant results in demanding defense environments.

For Type approval of Hearing Aids for military use, is the following equipment recommended:

- **GRAS 45BB-2** KEMAR Head & Torso for Hearing Aid Test, 1-Ch CCP
 - **APx517**
- or
- **APx511**

For Calibration of Audiometers is the following equipment recommended:

- **GRAS 90AA**



GRAS 90AA

For more information or application-specific recommendations, please contact our team of specialists.

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About Axiometrix Solutions

Axiometrix Solutions is a global leader in advanced test and measurement solutions, supporting customers across aerospace, automotive, defense, audio, and electronics industries. With a strong focus on precision, reliability, and innovation, Axiometrix delivers technologies that enable accurate measurement and analysis in even the most demanding environments.

Axiometrix Solutions brings together three world-class brands:

- **GRAS Acoustics** – Specialists in high-precision measurement microphones and acoustic solutions, trusted for their accuracy, durability, and repeatability.
- **imc Test & Measurement** – Experts in intelligent data acquisition systems and real-time analysis for mechanical and mechatronic testing.
- **Audio Precision** – The industry standard in audio analyzers and electroacoustic test solutions.

Together, these brands provide a comprehensive portfolio of solutions that empower engineers and researchers worldwide to measure, analyze, and improve performance across a wide range of applications. Axiometrix Solutions operates globally through subsidiaries and distributors in more than 40 countries. Learn more at www.axiometrixsolutions.com