



Aviation & Tactical Communications

Axiometrix Solutions

APPLICATION NOTE // By Lars Winberg

Advanced Testing Solutions for Aviation & Tactical Communications

In high-stakes environments like aviation and tactical operations, reliable communication and hearing protection are critical. GRAS Sound & Vibration and Audio Precision, part of the same trusted group of companies, deliver world-class testing solutions for the development and optimization of advanced communication systems. From aircraft communication headsets to tactical systems for squad-level operations, our equipment ensures your products meet the highest standards of performance, durability, and safety.

Specialized Testing Equipment for Aviation & Tactical Communications

GRAS and Audio Precision provide a comprehensive range of tools for precise and repeatable testing of communication and hearing protection systems:

- **GRAS Head-and-Torso Simulators (KEMAR):** Simulate real-world human anatomy and hearing to test the performance of aviation and tactical headsets in realistic scenarios.
- **GRAS Acoustic Test Fixtures (ATFs):** Ensure accurate and standardized testing of dual-function systems that combine hearing protection with communication capabilities.
- **Audio Precision Analyzers:** Industry-leading audio analyzers for evaluating signal quality, speech clarity, distortion, and latency in critical communication systems.
- **Noise and Environmental Testing Solutions:** Evaluate headset performance in high-noise environments, including aircraft cockpits, tactical vehicles, and combat zones.



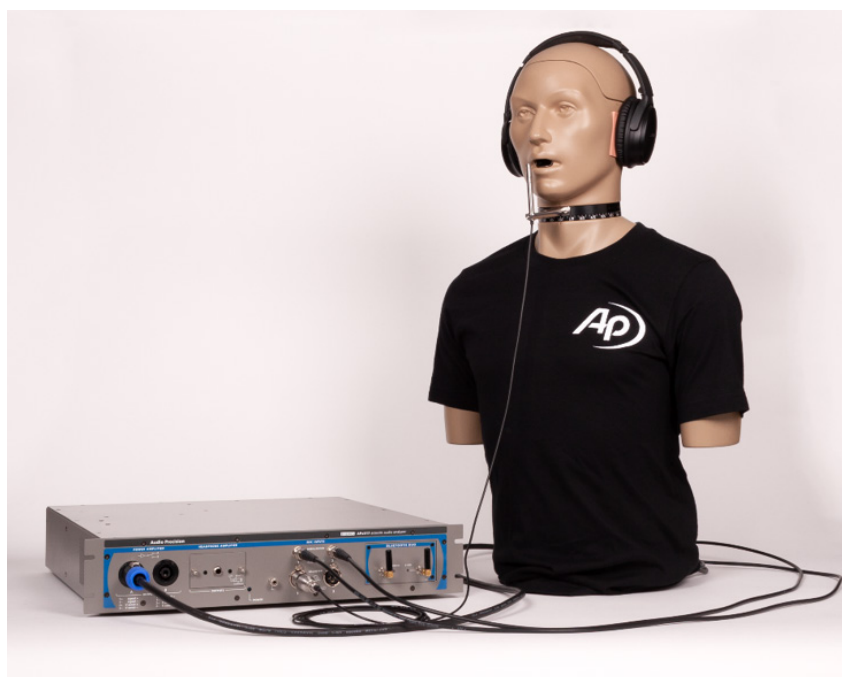
Applications in Aviation & Tactical Communications

Our solutions are tailored to support the development and testing of advanced communication systems for:

- **Aircraft Communication Headsets:** Ensure crystal-clear communication in high-noise environments such as cockpits and control towers.
- **actical Headsets for Squad-Level Operations:** Test and optimize headsets designed for secure and reliable communication in dynamic and high-risk situations.
- **Dual-Function Systems:** Evaluate systems that combine hearing protection with communication capabilities, ensuring operational safety and effective team coordination.

Why Choose GRAS and Audio Precision?

- **Proven Expertise:** GRAS and Audio Precision are trusted by leading aviation and defense organizations worldwide for their acoustic and audio testing needs.
- **Integrated Solutions:** Together with Audio Precision, we offer a complete suite of testing tools, from acoustic measurement hardware to audio signal analysis, ensuring seamless workflows.
- **Unmatched Precision:** Our equipment delivers industry-leading accuracy, enabling the development of high-performance communication systems.
- **Global Standards Compliance:** Our solutions are designed to support testing in accordance with aviation, defense, and international standards, ensuring your products meet stringent requirements.





GRAS 45BC



APx517



GRAS 45CB



GRAS 46AQ



GRAS 46AE

Advancing Communication in Critical Environments

GRAS and Audio Precision are committed to supporting the development of cutting-edge aviation and tactical communication systems. Our advanced testing solutions empower you to create devices that deliver exceptional communication and hearing protection in the most challenging environments.

Recommended Solution Configuration

Helmet and headsets for this application has often two functions:

1. **Communication, test of the sound quality in both the helmet and mounted microphone boom**
2. **Protection of the operators hearing**

In some cases is the helmet/headset used under extreme environmental conditions which might require a special measurement solution. In these situations can Axiometrix help with a tailored solution combining high-precision microphones, signal processing m and analysis systems to ensure a reliable , repeatable, and standards-compliant results.

Typical recommended solutions may include:

1. Communication Part:

- **GRAS 45BC** KEMAR the world's leading head and torso simulator for acoustic research
- **AP APx517**

2: Protection Part:

- **GRAS 45CB** Acoustic Test Fixture
- **GRAS 46AQ** or **46AE**
- **APx517**

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