LICENSING OPPORTUNITY: INTERFEROMETRIC MICROPHONE CALIBRATOR AND COMPARISON CALIBRATING A MICROPHONE

DESCRIPTION

Problem

Traditional microphone pressure response calibration methods require mechanically coupling the front part of a microphone where its diaphragm/membrane is located to a partially sealed cavity with a small well-controlled vent. A sound source that is also coupled to the cavity provides an acoustic signal that is used for the calibration. The accuracy of a comparison calibration using this approach is limited, and the need to mechanically couple the microphone to the cavity and sound source can make the calibration process take longer than necessary. Also, microphones could potentially be used in locations where in-situ calibration is desired, but such physical mechanical coupling is not readily achieved or even possible.

Invention

A precision laser-based comparison calibration method for laboratory standard microphones that uses reference microphones calibrated by the pressure reciprocity method.

BENEFITS

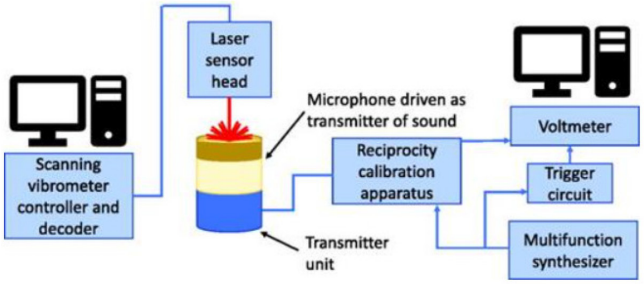
Commercial Application

There is a significant market for calibrated microphones in safety, health, and other applications. At the present time, these calibrations are done following complex and expensive procedures. This invention could be commercialized as a calibration system that would be used to quickly and simply preform such calibrations.

Finally, this system should be price competitive with existing secondary calibration systems, while providing the improvements listed above.

Competitive Advantage

The new method provides a significantly reduced uncertainty over the current secondary techniques. In addition, calibrations would be quicker and easier than following the current methods.



Block diagram of the experimental setup.

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