

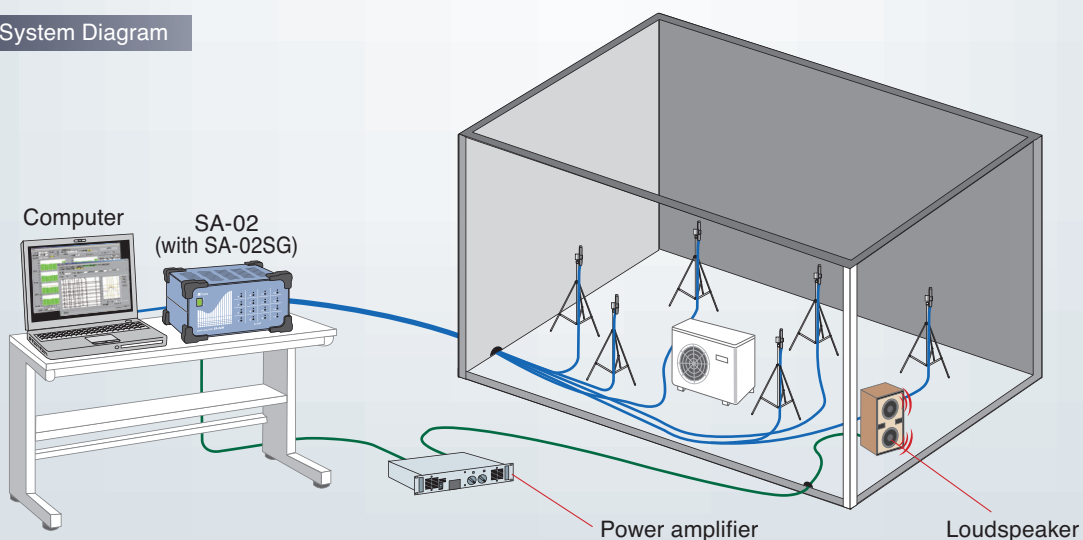
Reverberant Acoustic Power Level Measurement System

The acoustic power level is a quantity used to express the intensity of sound emitted by machinery or equipment.

It represents the total acoustic energy generated by the sound source. If likened to an earthquake, the noise level is similar to the seismic intensity at various locations, and the acoustic power level corresponds to the magnitude of the seismic event. The seismic intensity depends not only on the distance to the epicenter but also on factors such as the transmission path and structure of the ground. Similarly, the directional characteristics of the sound source and the distance to the measurement point have an influence on the noise level. To eliminate this variable, the acoustic power level is used as an evaluation quantity, and its rating is often required for equipment, especially in Europe and North America.

Measurement methods for the acoustic power level are covered by ISO standards, including the sound pressure method and the acoustic intensity method. The sound pressure method involves the use of semi-anechoic or anechoic chamber, semi-free sound field on a reflecting surface, or a reverberation room. Acoustic intensity measurement can be performed using either the discrete point method or scanning method. The current system is designed for measurement of reverberant acoustic power levels.

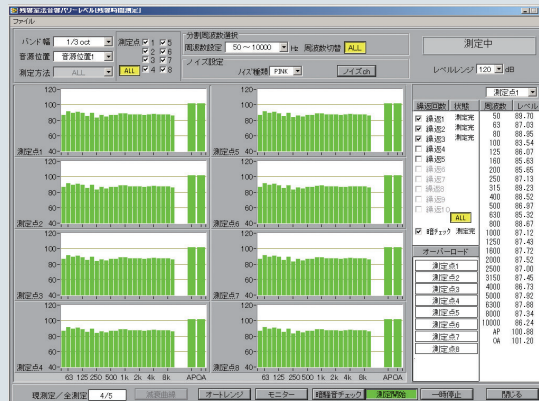
System Diagram



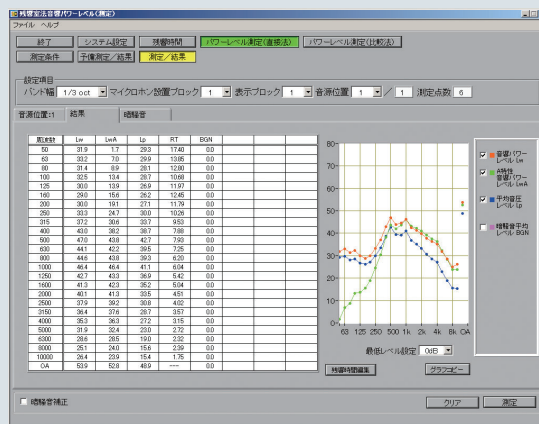
Equipment configuration

Product	Model	Quantity
Multi-Channel Signal Analyzer	SA-02M (1 to 32ch)	1 to 2
Signal Output Unit	SA-02SG	1
Computer for SA-02		1
Anechoic Acoustic Power Level Measurement Software	AS-31PA5	1
Loudspeaker		1
Microphone/Preamplifier	UC-52/53A/57/59+NH-22A, UC-52T/57T/59T	1 to 32
BNC-BNC coaxial cable	EC-90 series	1 to 32
Microphone stand		1 to 32
1/2 inch microphone holder	UA-90	1 to 32

Measurement result examples



Measurement screen



Measurement result screen

Application examples

Acoustic power level measurements of consumer electric appliances, office automation equipment, air conditioners, etc.

Applicable standards, reference material

ISO 3741 Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Precision methods for reverberation test rooms



RIION Co., Ltd. is recognized by the JCSS which uses ISO/IEC 17025 (JIS Q 17025) as an accreditation standard and bases its accreditation scheme on ISO/IEC 17011. JCSS is operated by the accreditation body (IA Japan) which is a signatory to the Asia Pacific Laboratory Accreditation Cooperation (APLAC) as well as the International Laboratory Accreditation Cooperation (ILAC). The Quality Assurance Section of RIION Co., Ltd. is an international MRA compliant JCSS operator with the accreditation number JCSS 0197.



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* Specifications subject to change without notice.

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