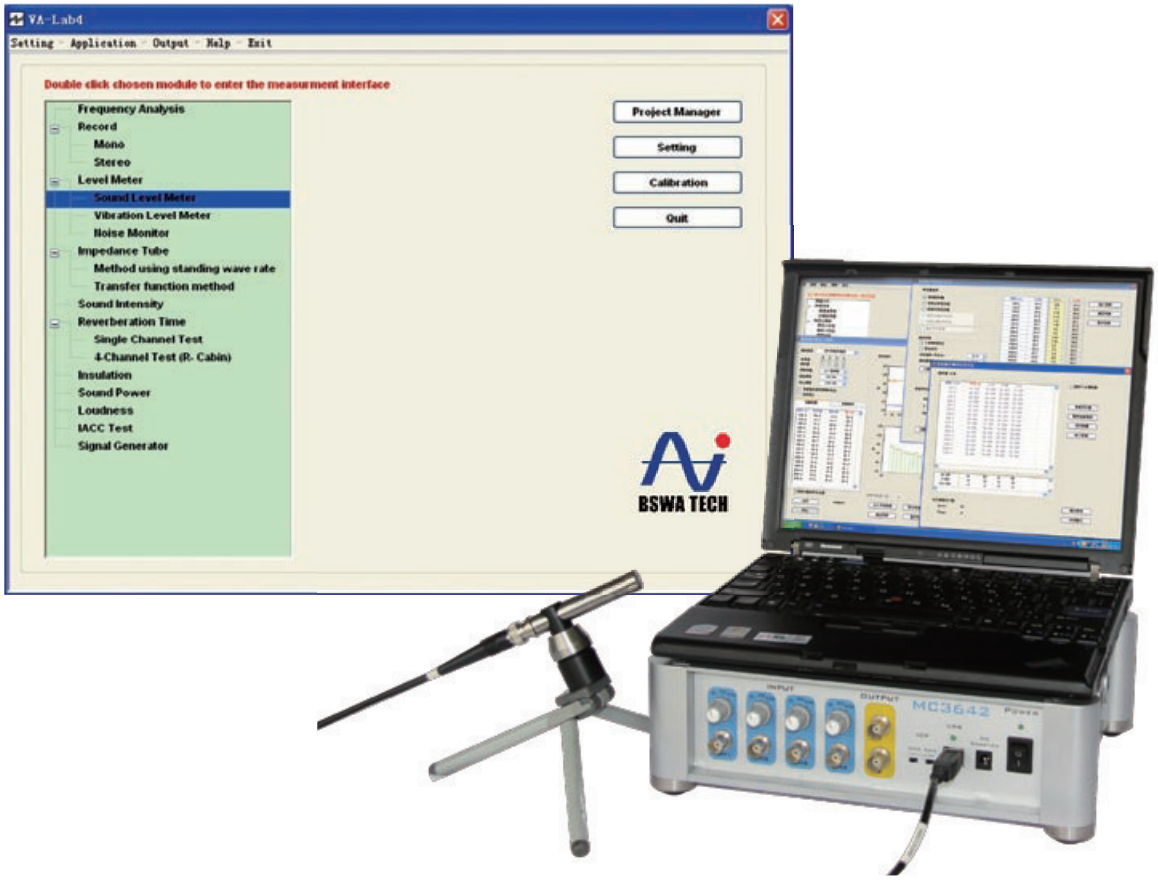
VA-Lab is acoustical measurement software developed by BSWA. VA-Lab takes the advantage of computer power and performs all signal analysis within the computer. With BSWA Data Acquisition Hardware and Microphones, VA-Lab represents the most cost-effective solution for all your needs in acoustic measurement and analysis.

VA-Lab is developed based on the international standards and BSWA's experiences in acoustics. These experiences cover environmental, architectural, material and industrial measurements. VA-Lab has module design with special applications according to ISO standard requirements, such as Sound Power, Sound Insulation, and Impedance Measurements.

The VA-Lab Main Application Modules Include:

- BASIC: FFT based signal analysis for vibration and acoustics
- ENV: Sound pressure level and environment noise measurements
- IMP: Two or four microphone methods for absorption and TL measurements in Impedance tube according to ISO10534
- SI: Sound intensity measurements
- REV: Reverberation time measurements according to ISO3382
- TL: Sound Insulation measurements for building material according to ISO 140.
- POWER: Sound Power Measurements according to ISO3745.



Environment Module

VA-Lab ENV is a powerful sound level meter. It supports maximum 10 channel sound pressure level measurements at 10 locations. Each channel can perform multi-task analysis such as statistical levels, 1/3 octave, and levels vs. time.

VA-Lab ENV has built-in data logger function, it can continuously log the overall and spectral data into the memory.

Impedance Tube Module

Impedance Tube Module is for impedance tube measurements. It supports sound absorption and sound insulation measurement for BSWA SW series impedance tubes. The software works with BSWA MC3022, MC3522, MC3242 and MC3642 hardware for data acquisition and analysis.

VA-Lab IMP supports two methods to measure the absorption coefficients of material:

- Method using Standing Wave Ratio (ISO10534-1)
- Transfer Function Method (ISO10534-2)

Sound Intensity Module

The measurement of Sound Intensity provides information of magnitude and direction of the sound field, which is used in a variety of applications such as the determination of sound power and the noise source localizations.

VA-Lab SI module provides a simple system for sound intensity measurements. The system requires two-channel (or two channels of multi-channel) data acquisition hardware and intensity probe SI512. With BSWA VA-Lab SI module, the measurements of sound intensity become very easy task.

Sound Power Module

In order to determine the sound power level produced by the noise source, one method is to measure the sound pressure level on the measurement surface enveloping a noise source.

VA-Lab Power module is specially designed to satisfy sound power level test according to ISO3745. With NI Compact DAQ and BSWA microphones, the noise level can be tested simultaneously in 10 channels; the sound power level is calculated automatically based on the measurement surface area.

With microphone conditioning unit MC104 (MC1010 is 10 channel version), the background noise can be below 20 dBA for some critical measurements.

Architectural Module

VA-Lab ARCH module provides reverberation time measurements and sound transmission loss measurements according to ISO standards. The main features of VA-Lab ARCH are as follows:

- Two methods: interrupted noise, impulse response measure reverberation time in 1/1 or 1/3 octave frequencies according to ISO 3382
- Sound pressure decay curves display, support user-defined reverberation time calculation
- Airborne sound insulation of building elements Measurement
- Measurements of impact sound insulation of floors
- Automatically calculate single-number quantity: Rw, Xw, and its spectrum adaptation