

BSWA 308/BSWA 309 are octave sound level meters updating the dual-core (DSP+ARM) architecture to single chip ARM with float point unit, and updating all fix-point calculation to float-point, which significantly improves the accuracy and stability. Re-design analog front end circuit also lower the noise floor and linear range of product.

BSWA 308 is Class 1 and **BSWA 309** is Class 2. Both instruments have certificated by the China CPA (Certification of Pattern Approval) and CMC (China Metrology Certification).



BSWA 308

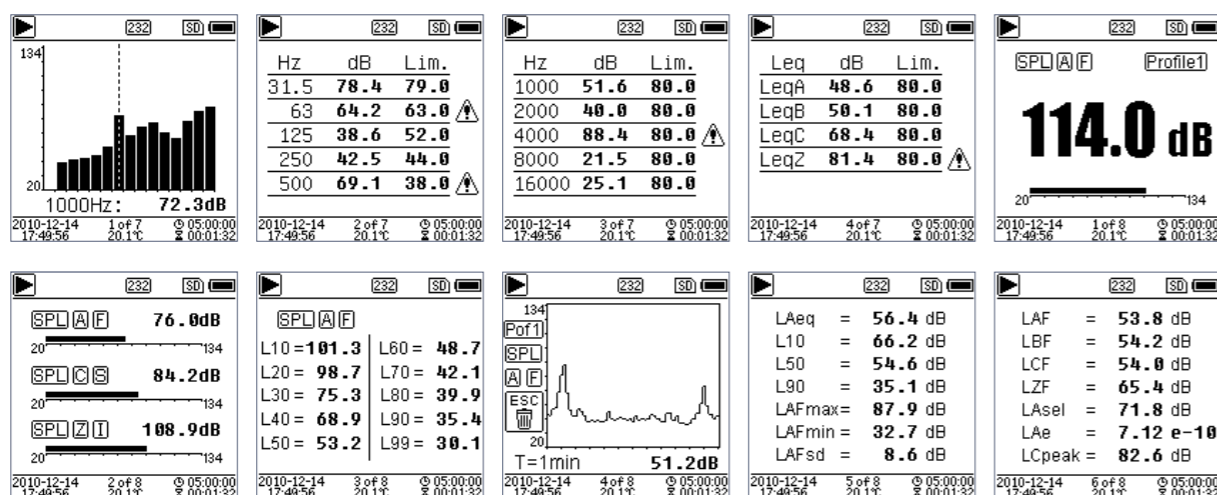
BSWA 309

FEATURES

- Class 1 (BSWA 308) and Class 2 (BSWA 309) sound level meter
- Comply with IEC 61672-1:2013, ANSI S1.4-1983 and ANSI S1.43-1997
- 1/1 Octave in accordance with IEC 61260-1:2014 and ANSI S1.11-2004
- Linearity range: 20dBA~134dBA (BSWA 308), 25dBA~136dBA (BSWA 309)
- Single range to cover 123dB/122dB dynamic range
- Frequency weighting: A/B/C/Z. Time weighting: Fast/Slow/Impulse
- 3 profile calculation in parallel with different frequency/time weighting. 14 custom define measurement
- Calculate SPL, LEQ, Max, Min, Peak, SD, SEL, E
- LN statistics and time history curve display
- User define integral period measurement, integral period up to 24h
- High speed ARM core with FPU (Float Point Unit) to achieve wide frequency response, large dynamic range and low noise floor
- 4G MicroSD card (TF card) mass storage
- RS-232 remote control port
- Mini thermal printer for measurement data print
- Internal GPS module (option), support GPS timing.

APPLICATION

- Basic noise measurement
- Environmental noise assessment
- Product quality check
- Evaluation of noise reduction engineering



| Specifications | | |
|--------------------------------------|--|---|
| Type | BSWA 308 | BSWA 309 |
| Accuracy | Class 1 (Group X) | Class 2 (Group X) |
| Standard | GB/T 3785.1-2010, IEC 60651:1979, IEC 60804:2000, IEC 61672-1:2013, ANSI S1.4-1983, ANSI S1.43-1997 | |
| Octave ¹ | 1/1 Octave, Centre Frequencies: 31.5Hz to 16kHz GB/T 3241-2010 Class 1, IEC 61260-1:2014 Class 1 ANSI S1.11-2004 Class 1 | 1/1 Octave, Centre Frequencies: 31.5Hz to 8kHz GB/T 3241-2010 Class 2, IEC 61260-1:2014 Class 2 ANSI S1.11-2004 Class 2 |
| Supplied Microphone | MPA231T: 1/2" prepolarized measurement microphone, Class 1. Sensitivity: 50mV/Pa. Frequency Range: 10Hz~20kHz. | MPA309T: 1/2" prepolarized measurement microphone, Class 2. Sensitivity: 40mV/Pa. Frequency Range: 20Hz~12.5kHz. |
| Mic Interface | TNC connector with ICCP power supply (4mA/24V) | |
| Detector / Filter | Fully float-point digital signal processing (digital detector and filter) | |
| Integral Period | 1s-24h user define integral period. Repeat time: infinite, 1~9999 | |
| Measurement Functions | $L_{XY(SPL)}$, L_{Xeq} , L_{XYSD} , L_{XSEL} , L_{XE} , L_{XYmax} , L_{XYmin} , L_{XPeak} , L_{XN} . Where X is the frequency weighting: A, B, C, Z; Y is time weighting: F, S, I; N is the statistical percentage: 1~99. | |
| 24h Measurement | Automatic measurement and log the history data | |
| Frequency weighting | Parallel A, B, C, Z | |
| Time Weighting | Parallel F, S, I and Peak detection | |
| Self-noise ² | Sound: 18dB(A), 23dB(C), 31dB(Z) Electrical: 11dB(A), 16dB(C), 21dB(Z) | Sound: 20dB(A), 26dB(C), 31dB(Z) Electrical: 14dB(A), 19dB(C), 24dB(Z) |
| Upper Limit ² | 134dB(A) Increase to 154dB(A) with 5mV/Pa Microphone | 136dB(A) Increase to 154dB(A) with 5mV/Pa Microphone |
| Frequency Response ¹ | 10Hz~20kHz | 20Hz~12.5kHz |
| Level Linearity Range ^{2,3} | 20dB(A)~134dB(A) | 25dB(A)~136dB(A) |
| Dynamic Range ² | 123dB (11dB(A)~134dB(A)) | 122dB (14dB(A)~136dB(A)) |
| Peak C Range ^{2,3} | 45dB(A)~137dB(A) | 47dB(A)~139dB(A) |
| Electrical Input | Maximum input voltage: 5Vrms (7.07Vpeak). Input impedance of preamplifier: >6GΩ | |
| Range Setting | Single range to cover whole dynamic range | |
| Resolution | 24Bits | |
| Sampling Rate | 48kHz | |
| Noise Curve | Time domain noise curve display. Duration time: 1min, 2min, 10min | |
| LCD Display | 160x160 LCD with white backlight, 14 step contrast level | |
| Mass Storage | 4G MicroSD card (TF card) | |
| Post-processing | Post-processing software VA-SLM can read, analyze and generate reports of store data. | |
| Export Data | Directly connect to the computer to read the memory card (USB disk) | |
| Output | AC (max 5VRMS output), DC (10mV/dB), RS-232 serial interface and USB virtual serial port | |
| Alarm | User define alarm threshold. LED indicate the alarm status | |
| Power Supply | 4x1.5V alkaline batteries (LR6/AA/AM3), sustainable use of approx.10 hours (depends on battery). It also can be supply by external DC power (7V~14V 500mA) and USB power (5V 1A) | |
| RTC | Built-in backup battery has been calibrated at factory to the error <26s in 30days (<10ppm, (25±16) °C). It can keep RTC running when replacing the main batteries.GPS timing function available (option with GPS module) | |
| Language | English, Chinese, Portuguese, Spanish, German, French | |
| Firmware Update | Update firmware via USB port | |
| Conditions | Temperature: -10°C ~ 50°C. Humidity: 20% ~ 90%RH | |
| RT Temperature | Real-time temperature display on the main screen | |
| Size (mm) | W70 x H300 x D36 | |
| Weight | Approx. 620g, including 4 alkaline batteries | |
| Option | | |
| GPS | Receiver Type: 50 Channels; Time-To-First-Fix: Cold Start 27s, Warm Start 27s, Hot Start 1s; Sensitivity: Tracking -161dBm, Reacquisition -160dBm, Cold Start -147dBm, Hot Start -156dBm; Horizontal position accuracy: 2.5m, Timing accuracy: 30ns, Velocity accuracy: 0.1m/s; Update Rate: 1Hz, Operation Limits: Dynamic≤4g, Altitude<50000m, Velocity<500m/s | |
| Calibrator | CA111, Class 1, 94dB/114dB, 1kHz | |
| Printer | Mini thermal printer, RS-232 port | |

Note:

- 1.Ignore the measurement result above 12.5kHz for type BSWA 309 alone due to microphone frequency response of Class 2 capsule.
- 2.The data was measured with 50mV/Pa microphone for BSWA 308 and 40mV/Pa microphone for BSWA 309.
- 3.Measurement according to GB/T3785 and IEC61672.