



## New BSWA 308 Octave Sound Level Meter



### Features:

- Class 1 (**BSWA 308**) sound level meter
- Comply with IEC 61672-1:2013, ANSI S1.4-1983 and ANSI S1.43-1997
- Real-time 1/1 and 1/3 Octave in accordance with IEC 61260-1:2014 and ANSI S1.11-2004
- Linearity range: 22dBA~136dBA (**BSWA 308**)
- Single range to cover 123dB (**BSWA 308**) dynamic range
- Frequency weighting: A/B/C/Z. Time weighting: Fast/Slow/Impulse
- 3 profile and 14 custom define measurement are calculate in parallel with different frequency/time weighting
- Calculate SPL, LEQ, Max, Min, Peak, SD, SEL, E
- LN statistical 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

### Introduction

New **BSWA 308** is a new generation octave sound level meter upgrade from base BSWA 308. The new type updates the dual-core (DSP+ARM) architecture to single chip ARM with float



point unit, and update 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 Class1. This instrument has been certificated by the China CPA (Certification of Pattern Approval) and CMC (China Metrology Certification).

The improvement of new **BSWA 308**:

|  |   |
|--|---|
| ➤ Single chip high speed ARM with FPU                          | ➤ USB port function implemented   |
| ➤ White backlight LCD  | ➤ Update firmware via USB (also power supply)                                       |
| ➤ Integral period from 1s~24h                                  | ➤ Timer feature support auto measurement  |
| ➤ 0.1s, 0.2s, 0.5s logger step added                           | ➤ Internal GPS (option) with GPS timing   |
| ➤ 5 templates to save user setting                             | ➤ Single range to cover 123dB dynamic range   |
| ➤ B-weighting added to meet ANSI standard                      | ➤ Reduce the noise floor (only for Class 1)   |
| ➤ Automatic power on with external supply, ease of integration | ➤ Upper limit of measurement: 136dB <sub>rms</sub> /139dB <sub>peak</sub> (40mV/Pa) |

### Specifications

|  |   |
|--|---|
| Type                                     | BSWA 308  |
| Accuracy                                 | Class 1 (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 <sup>1</sup>                      | Real-time 1/1 Octave: 8Hz~16kHz<br>Real-time 1/3 Octave (Option): 6.3Hz~20kHz<br>GB/T 3241-2010, IEC 61260-1:2014<br>ANSI S1.11-2004. Base 10 system.   |
| Supplied Microphone                      | MPA231T: 1/2" prepolarized measurement microphone, Class 1. Sensitivity: 40mV/Pa.<br>Frequency Range: 3Hz~20kHz.  |
| Mic Interface                            | TNC connector with ICCP power supply (4mA)  |
| Detector / Filter                        | Fully float-point digital signal processing (digital detector and filter)   |
| Integral Period                          | Infinite or 1s~24h user define integral period. Repeat time: Infinite or 1~9999   |
| Logger Step                              | 0.1s, 0.2s, 0.5s, 1s~24h  |
| Measurement Functions                    | L <sub>XY(SPL)</sub> , L <sub>Xeq</sub> , L <sub>XYSD</sub> , L <sub>XSEL</sub> , L <sub>XE</sub> , L <sub>XYmax</sub> , L <sub>XYmin</sub> , L <sub>XPeak</sub> , L <sub>XYN</sub> . Where X is the frequency weighting: A, B, C, Z; Y is time weighting: F, S, I; N is the statistical percentage: 1~99. 3 profile and 14 custom define measurement are calculate in parallel with different frequency/time weighting |
| 24h Measurement                          | Automatic measurement based on user define date/time and save the history data  |
| Frequency Weighting                      | Parallel A, B, C, Z (It can also be applied to 1/1 and 1/3 Octave)  |
| Time Weighting                           | Parallel F, S, I and Peak detection   |
| Self-Noise <sup>2</sup>                  | Sound: 19dB(A), 25dB(C), 31dB(Z)<br>Electrical: 13dB(A), 17dB(C), 24dB(Z)   |
| Upper Limit <sup>2</sup>                 | 136dB(A)<br>Increase to 154dB(A) with 5mV/Pa Microphone   |
| Frequency Response <sup>1</sup>          | 10Hz~20kHz  |
| Level Linearity Range <sup>2, 3, 4</sup> | 22dB(A)~136dB(A)<br>Octave: 30dB~136dB  |



|                              |   |
|------------------------------|---|
| Dynamic Range <sup>2</sup>   | 123dB (13dB(A)~136dB(A))  |
| Peak C Range <sup>2, 3</sup> | 47dB~139dB  |
| 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 (Sampling interval for LN: 20ms)  |
| Time History                 | Time domain noise curve display. Duration time: 1min, 2min, 10min   |
| LCD Display                  | 160x160 LCD with white backlight, 14 step contrast level, 1s display update rate  |
| 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 Output (max 5V <sub>RMS</sub> , ±15mA), DC Output (10mV/dB, max 15mA),<br>RS-232 serial interface and USB (USB disk mode or modem mode)  |
| Alarm                        | User define alarm threshold. LED indicate the alarm status  |
| Setup Template               | 5 templates to save user setup for different application, template can be save in MicroSD card  |
| Auto Power On                | Automatic power on and start measurement when power supply available, ease of integration   |
| 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.<br>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;<br>Sensitivity: Tracking -161dBm, Reacquisition -160dBm, Cold Start -147dBm, Hot Start -156dBm;<br>Horizontal position accuracy: 2.5m, Timing accuracy: 30ns, Velocity accuracy: 0.1m/s;<br>Update Rate: 1Hz, Operation Limits: Dynamic≤4g, Altitude<50000m, Velocity<500m/s |
| Calibrator | CA111, Class 1, 94dB/114dB, 1kHz  |
| Printer    | Mini thermal or dot-matrix printer, RS-232 port   |

Note 1: Ignore the result outside 20Hz~12.5kHz for type BSWA 309 alone due to microphone frequency response of Class 2.

Note 2: The data was measured with 40mV/Pa microphone for BSWA 308.

Note 3: Measurement according to GB/T 3785 and IEC 61672.

Note 4: Measurement according to GB/T 3241 and IEC 61260.



BSWA 308 CPA



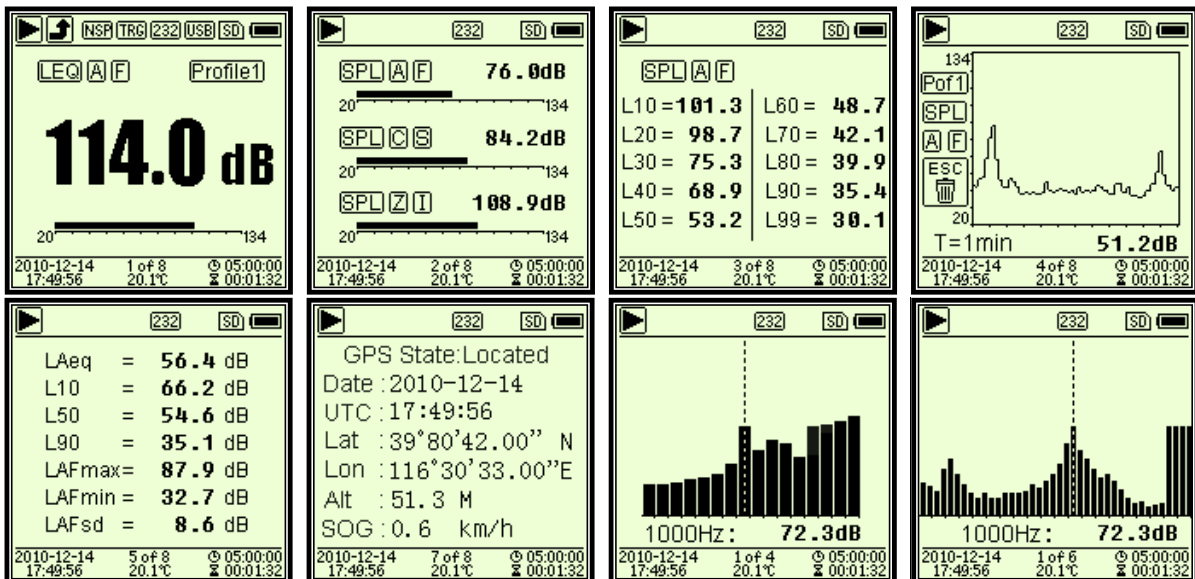
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BSWA 308 CMC



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Measurement Screen



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