

INSTRUCTION MANUAL
NOISE DOSIMETER
MODEL AWA5920

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PRECAUTION

1. Please read this manual carefully before using the instrument for the first time.
2. Do not subject the measurement microphone to impacts.
3. Damage to the measurement microphone's diaphragm is not covered by the warranty.
4. Damage caused by improper use is not covered by the warranty.
5. This product uses a high-performance lithium battery; when storing the instrument, please ensure it undergoes a charge-discharge cycle every three months.
6. Please present the warranty certificate when the instrument requires repair.

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1. General Introduction:

The AWA5920 personal noise dosimeter utilizes digital signal processing technology to simultaneously measure multiple evaluation parameters; its modular design allows users to purchase specific modules according to their needs. The instrument offers advantages such as multifunctionality, high performance, compact size, and low power consumption.

Its performance complies with the requirements of IEC 61252:2025, meets the Class 2 sound level meter requirements of IEC 61672-1:2013, and satisfies the Class 2 filter requirements of IEC 61260-1:2014. It is classified as Class X regarding radio-frequency field susceptibility.

This instrument is suitable for a wide range of industrial and environmental noise measurements—including machinery, vehicles, ships, and electrical appliances—and is particularly effective for measuring impulse noise. It is applicable in fields such as industrial manufacturing, environmental protection, occupational health, education, and scientific research.

2. Key Features

- (1) Frequency and time weighting are implemented entirely using digital signal processing technology;
- (2) 1.3-inch TFT-LCD display with a resolution of 240×240;
- (3) Powerful functionality with selectable measurement modules for sound exposure level, statistical integration, 1/1 octave band, and 1/3 octave band analysis;
- (4) Precision audio recording capability, with recordings transferable to a computer for playback;
- (5) Includes statistical calculation functions for impulse noise exceeding peak levels,
- (6) Driver-free Type-C interface (supporting both charging and data transmission);
- (7) Integrated design: compact, reliable, durable, easy to operate, and convenient to install;
- (8) Power supply: 5V/1A; charging via USB cable;
- (9) External interface protection: IP65 dust and water resistance rating.

3. Key Performance Specifications

3.1 Basic Performance Specifications

- (1) Microphone assembly: Paired with AWA14421 measurement microphone; nominal sensitivity level: -33.0 dB to -33.9 dB;

Note 1: Sensitivity levels are referenced to 1 V/Pa (0 dB); unless otherwise specified, all references are to nominal sensitivity levels.

Note 2: The instrument's measurement range varies according to the sensitivity level.

(2) Frequency range: 20 Hz to 12.5 kHz;

(3) Measurement range for 1000 Hz sound pressure level:

A-weighted sound level: 51 dB to 142 dB;

C-weighted sound level: 51 dB to 142 dB;

Z-weighted sound level: 56 dB to 142 dB;

C-weighted peak sound level: 68 dBC to 145 dBC;

(4) Linearity range at other frequencies:

31.5 Hz: 51 dBA to 102 dBA;

4 kHz: 52 dBA to 143 dBA;

8 kHz: 51 dBA to 141 dBA;

12.5 kHz: 51 dBA to 137 dBA;

(5) Measurement ranges for other parameters:

Sound exposure measurement range: 0.01 Pa²h to 999.99 Pa²h;

Noise dose measurement range: 0% to 999999%;

(6) Sound exposure module:

Measured parameters: E, LEX,8h, TWA, LAVG, DOSE;

Exchange rate: Selectable (2, 3, 4, 5, or 6);

Threshold level: Selectable (40 dB to 90 dB);

Criterion sound level: Selectable (70 dB to 90 dB). (7) Instrument self-generated noise: ≤42 dBA, ≤42 dBC, ≤47 dBZ;

(8) A/D resolution: 24-bit;

(9) Sampling frequency: 48 kHz;

(10) Time weighting: F, S, I;

(11) Frequency weighting: A, C, Z;

(12) Detection characteristics: True RMS, digital detection;

(13) Instrument type: Sound level meter compliant with IEC 61672-1:2013 Class 2; sound exposure level compliant with IEC 61252:2025; filters compliant with IEC 61260-1:2014 Class 2;

(14) Display: 1.3-inch TFT-LCD screen, resolution: 240×240;

(15) Main display content: Real-time measurement and display of up to 6 measurement parameters;

(16) Main measurement functions: Sound exposure level, statistical integration, 1/1 OCT analysis, 1/3 OCT analysis;

(17) Main measurement parameters: E, Lxyp, Lxeq,T, Lxymax, Lxymin, LN, SEL, LEX,8h, LAVG, TWA, DOSE, SD, Lxpeak, NLApeak>120, NLApeak>130, NLApeak>140, gravityX, gravityY, gravityZ, etc.;

Note: x = A, C, Z; y = F, S, I; N = 5, 10, 50, 90, 95. (18) Data storage: 64 GB storage;

(19) Output interfaces: USB port, 4G (optional), Bluetooth (optional);

(20) Calendar/Clock: Monthly error < 1 min; clock settings are lost if the lithium battery is removed;

(21) Power supply: One 3.7 V 2000 mAh lithium battery; external power supply 5 V/1 A; charging time approx. 8 h; over 41 h of continuous use on a full charge.

Note 1: Test conditions: Normal temperature and pressure; only sound exposure function enabled; display timeout 30 s; brightness 10%;

Note 2: Continuous operating time varies based on functions and settings; ensure the battery level is sufficient for the selected operating mode before starting a test.

(22) Measurement duration: Adjustable from 1 s to 99 h;

(23) Operating temperature: -10 °C to 40 °C;

(24) Relative humidity: 20% to 90%;

(25) Atmospheric pressure: 65 kPa to 108 kPa;

(26) Dimensions (mm): 90 × 49 × 64;

(27) Weight: Approx. 119 g.

3.2 Other Features

(1) Large-capacity storage function:

a) Measurement results are saved in the storage memory as text files, which can be opened directly using PC text editor software (files modified externally will not be recognized by the instrument);

b) When connected to a computer via the USB interface, the instrument switches from serial port mode to USB flash drive mode, allowing measurement data to be read on the PC.

(2) Audio recording function:

a) File type: WAV format;

b) Sampling frequency and bit depth: 12 kHz/16-bit, 24 kHz/16-bit, 48 kHz/32-bit;

c) Recording duration:

At 12 kHz/16-bit: 720 hours of recording;

At 24 kHz/16-bit: 360 hours of recording;

At 48 kHz/32-bit: 90 hours of recording;

d) Playback: Playback on PC.

3.3 Optional Functions

(1) 1/1 OCT Function (see table below):

(2) 1/3 OCT Function (see table below):

Filter Type	1/1 OCT	1/3 OCT
	Parallel (Real-Time) Octave Bands, $G=10^{3/10}$	
Compliant with standards	IEC 61260-1:2014 Class 2	
Nominal center frequency	31.5 Hz、63 Hz、125 Hz、250 Hz、500 Hz、1 kHz、2 kHz、4 kHz、8 kHz	20 Hz、25 Hz、31.5 Hz、40 Hz、50 Hz、63 Hz、80 Hz、100 Hz、125 Hz、160 Hz、200 Hz、250 Hz、315 Hz、400 Hz、500 Hz、630 Hz、800 Hz、1 kHz、1.25 kHz、1.6 kHz、2 kHz、2.5 kHz、3.15 kHz、4 kHz、5 kHz、6.3 kHz、8 kHz、10 kHz、12.5 kHz
Real-time analysis speed	Perform all center frequency analyses along with A-weighted, C-weighted, and Z-weighted analyses simultaneously	
Linear range	Over 85 dB	
Main Measurement Interface	Graphical interface, list interface	
Key Performance Indicators	Lp、Lmax、Lmin、Leq,T	

4. Structure and Functions

The appearance of the instrument is shown in Figures 4-1 and 4-2; it consists of a measurement microphone and a main unit. The housing is made of injection-molded ABS+PC; the nominal effect of the personal noise dosimeter housing on sound reflection is specified in Appendix C. It is powered by a 3.7 V, 2000 mAh lithium battery housed in a dedicated compartment, which is charged separately using the standard power adapter (charging time is approximately 8 hours). The instrument features a 1.3-inch TFT-LCD display with a resolution of 240×240. Pressing and holding the power button for 3 seconds turns the instrument on or off, while simultaneously holding the power button and the "OK" button for 10 seconds forces a shutdown.

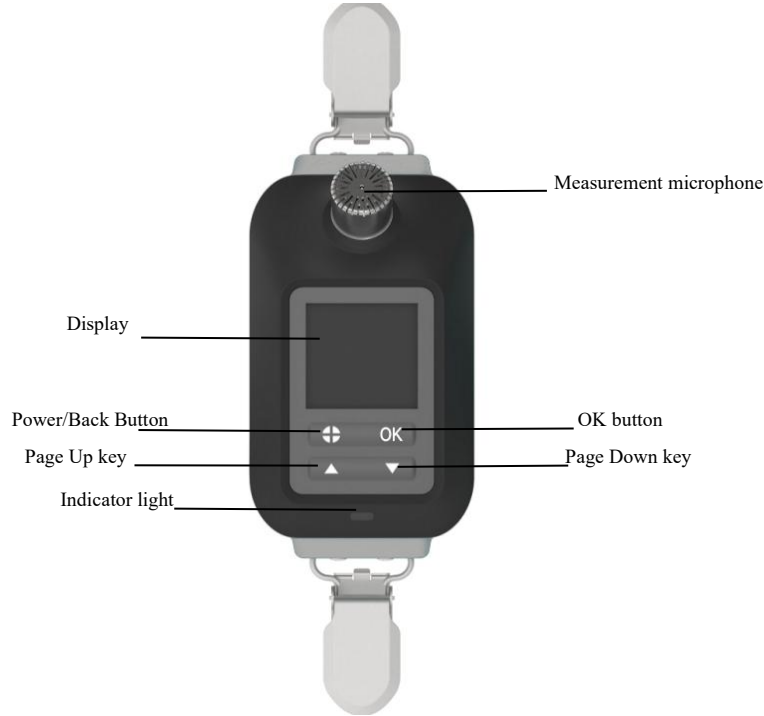


Figure 4-1 Front view of the instrument

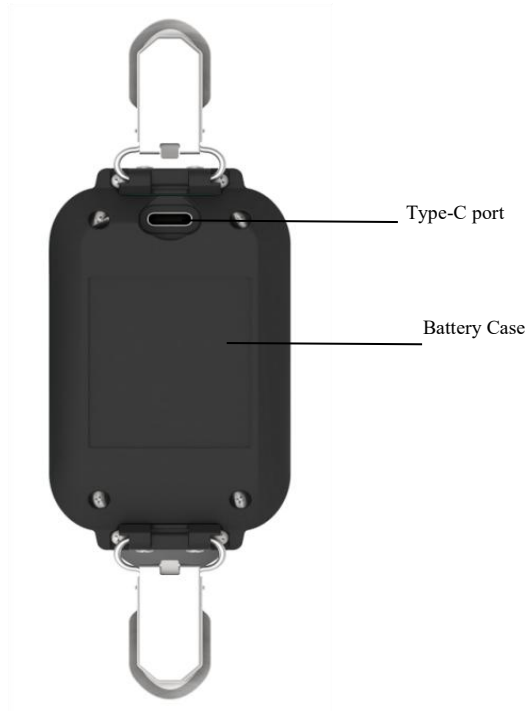


Figure 4-2 Rear view of the instrument

(1) Type-C port: Supports connection to an external 5V, 1A power supply; allows the instrument to function as a USB flash drive when connected to a computer;

(2) Power/Back button: Press and hold for 3 seconds to power on/off; press briefly to return to the previous screen;

(3) OK button: Enters the next menu level or confirms an operation; press and hold in the data review interface to delete data;

(4) Page Up button: Selects items on the interface; moves up by one position with each press;

(5) Page Down button: Selects items on the interface; moves down by one position with each press;

Note: The above describes the primary functions of the buttons; specific functions may vary depending on the interface—please refer to actual operation.

(6) Type-C port description:

Figure 4-3 shows the pinout of the instrument's USB port. There are 24 pins in total, designated A01–A12 and B01–B12. The table below describes each pin; "A" and "B" in the table refer to the corresponding top and bottom pins.

A01	GND (Ground wire)	B12	GND (Ground wire)
A02	/	B11	/
A03	/	B10	/
A04	VBUS (Power supply)	B09	VBUS (Power supply)
A05	/	B08	/
A06	USB D+	B07	USBD-
A07	USB D-	B06	USB D+
A08	/	B05	/
A09	VBUS (Power supply)	B04	VBUS (Power supply)
A10	/	B03	/
A11	/	B02	/
A12	GND (Ground wire)	B01	GND (Ground wire)

Note: / indicates that the pin has no special function

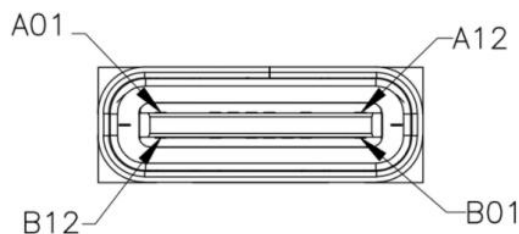


Figure 4-3 Type-C interface pins

(7) The LED indicator control logic is as follows:

Charging and measuring — Rapid flashing, longer ON duration;

Charging, not measuring — Steady on;

Not charging, measuring — Rapid flashing, longer OFF duration;

Not charging, not measuring — Slow flashing;

During charging, automatically changes from steady on to slow flashing to indicate a full charge.

5. Definitions of Symbols and Abbreviations

Ts	Preset measurement time
Tm	Measurement time
Tl	Remaining measurement time
F	"Fast" time weighting (time constant: 125 ms)
S	"Slow" time weighting (time constant: 1000 ms)
I	"Impulse" time weighting (rise time constant: 35 ms; decay time constant: 1500 ms)
LAeq,T	A-weighted equivalent sound level (T = integration/averaging time)
LCeq,T	C-weighted equivalent sound level (T = integration/averaging time)
LZeq,T	Z-weighted equivalent sound level (T = integration/averaging time)
Linst	Instantaneous sound pressure level
SEL	Sound exposure level
E	Personal sound exposure (unit: Pa ² h)
LEX,8h	8-hour equivalent sound pressure level
LAVG	Average sound pressure level
TWA	Time-weighted average sound pressure level
DOSE	Noise dose (values exceeding 100% indicate an exceedance)
Dosi	Sound exposure level-related metrics
Exchange rate	Reduction (or increase) in the noise limit allowed when the noise exposure duration is doubled (or halved)
Threshold level	Sound pressure levels below this value are excluded from TWA and LAVG calculations
Criterion sound level	Exceeding this value indicates that the TWA limit has been surpassed
Delay	Time to wait before starting integration measurement after activation
Time delay	Measurement starts after the signal exceeds the preset limit for the duration of the delay
Lmax	Maximum sound pressure level
Lmin	Minimum sound pressure level
L5	Sound pressure level exceeded 5% of the time
L10	Sound pressure level exceeded 10% of the time
L50	Sound pressure level exceeded 50% of the time
L90	Sound pressure level exceeded 90% of the time
L95	Sound pressure level exceeded 95% of the time
SD	Standard deviation
LAfp	Maximum A-weighted sound level within 0.5 s measured in F mode
LAfp	Maximum A-weighted sound level within 0.5 s measured in S mode
LAfp	Maximum A-weighted sound level within 0.5 s measured in I mode
LAeq,t	A-weighted equivalent sound level over 0.5 s

LCEq,t	C-weighted equivalent sound level over 0.5 s
LZeq,t	Z-weighted equivalent sound level over 0.5 s
LCFp	Maximum C-weighted sound level within 0.5 s measured in F mode
LCSp	Maximum C-weighted sound level within 0.5 s measured in S mode
LCIp	Maximum C-weighted sound level within 0.5 s measured in I mode
LZFp	Maximum Z-weighted sound level within 0.5 s measured in F mode
LZSp	Maximum Z-weighted sound level within 0.5 s measured in S mode
LZIp	Maximum Z-weighted sound level within 0.5 s measured in I mode
NLApeak>120	Number of occurrences where peak A-weighted level exceeds 120 dB
NLApeak>130	Number of occurrences where peak A-weighted level exceeds 130 dB
NLApeak>140	Number of occurrences where peak A-weighted level exceeds 140 dB
gravityX	Gravitational acceleration along the X-axis
gravityY	Gravitational acceleration along the Y-axis
gravityZ	Gravitational acceleration along the Z-axis
LApeak	Peak A-weighted sound level
LCpeak	Peak C-weighted sound level
LZpeak	Peak Z-weighted sound level
Max@	Point of highest sound pressure level across filter center frequencies
OCT	Octave band filter analysis
1/3OCT	1/3-octave band filter analysis
	Battery Level Display
	Mobile Network
↓	Under-range Indicator
↑	Overload Indicator
	Bluetooth Connection
	Data Logging
	Audio Recording
	Overload Self-locking Indicator
	Keypad Lock (Press and hold Up and Down buttons simultaneously for 3 seconds to lock/unlock)

6.Preparation

6.1 Pre-use Preparation

- (1) Check that the measurement microphone is properly installed;
- (2) Calibrate the instrument using a sound calibrator before measurement (refer to 7.3.4 for the calibration procedure);
- (3) The instrument should be sent to a metrology department for periodic verification (e.g., annually) to ensure its accuracy.

6.2 Use of Windscreen

A windscreen may be used to reduce the impact of wind noise when taking measurements in windy conditions.

6.3 External Power Supply

The charger must not be used in environments containing explosive gases! Use only in safe areas.

A USB power port is located at the bottom of the instrument for connecting an external power supply (voltage range: DC 5 V to DC 5.5 V). It is recommended to use an external power supply for prolonged continuous operation. The instrument will draw power from the external source whenever the external voltage exceeds the internal battery voltage.

7. Operation

7.1 Power On

Press and hold the power button located below the screen for 3 seconds to enter the Sound Exposure Level interface. Briefly press the power button twice to return to the main interface (as shown in Figure 7-1-1) and check the battery icon in the top-right corner to ensure the battery is fully charged. The main interface displays the following sub-menus: "Measure," "Calibrate," "Review," and "Settings."



Figure 7-1-1 Main Interface



Figure 7-2-1-1 Measurement Interface

7.2 Noise Measurement

7.2.1 Sound Exposure Level

7.2.1.1 Sound Exposure Level Interface

On the measurement interface, use the Up/Down keys to select "SEL" (as shown in Figure 7-2-1-1) and press the OK key to enter the Sound Exposure Level interface (as shown in Figure 7-2-1-2).

(1) Status bar:

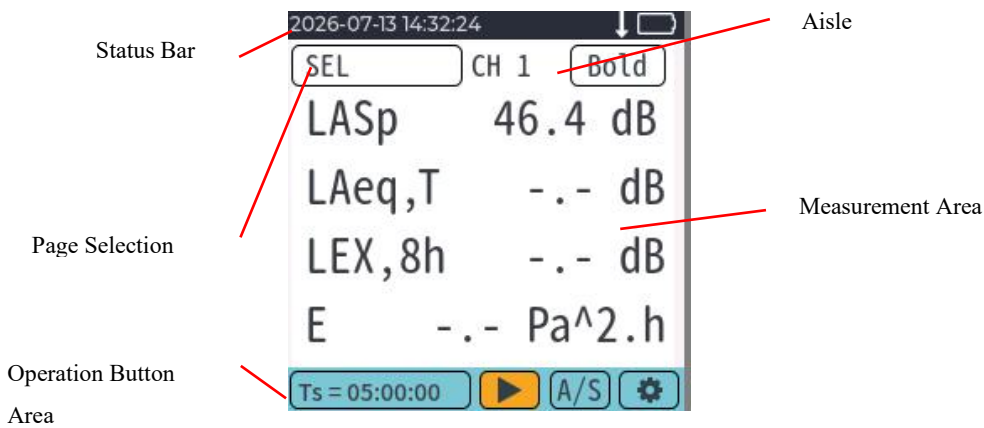


Figure 7-2-1-2 Sound Exposure Level Interface

Displays include time, overload status ("↑"), Bluetooth status (📶), mobile network status (📶), battery status (🔋), etc.; specific indicators appear based on the current configuration.

(2) Page Selection:

The default view upon entering the main measurement screen is "Sel." Press the Up/Down keys to select "SEL," then press the OK key to open the page selection menu (as shown in Figure 7-2-1-3). The available options are: "SEL," "Integral," "1/1 OCT," and "1/3 OCT"; selecting an item opens its corresponding interface. Tapping the "Bold" box toggles between the "Large " and "List" interfaces (as shown in Figures 7-2-1-4 and 7-2-1-5).

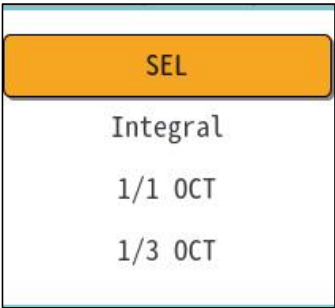


Figure 7-2-1-3 Page Selection

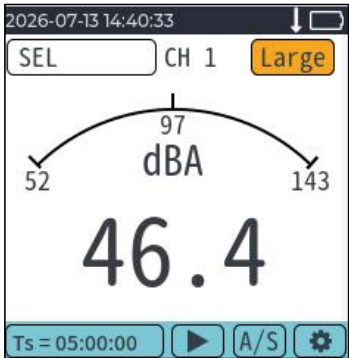


Figure 7-2-1-4 Large-font interface



Figure 7-2-1-5 List interface

(3) Channels: Dual-channel is disabled in Settings - Function Settings, defaulting to displaying Channel 1.

Enabling dual-channel in Settings - Function Settings allows switching between Channel 1 and Channel 2.

(4) Large Font: Clicking this option switches between Large Font/Highlight/List interfaces.

(5) Sound Exposure Level Measurement Indicators: LAFp, LAeq,t, LAeq,T, LAFmax, LAFmin, LApeak, gravityX, gravityY, gravityZ, E, SEL, LEX,8h, LAVG, TWA, DOSE, NLApeak. These can be viewed using the up or down arrow keys. In the list and large interfaces, selecting any indicator among LAFp, LAeq,t, LAeq,T, LAFmax, LAFmin, LApeak, and NLApeak and clicking the OK button expands the display to show values for

other weighting methods.

(6) Button Operation Area

a) Measurement Time Mode Switching: The default is T_s (the T_s value in the settings). When "Measurement Status = Measurement in Progress/Paused", T_m (measurement duration) is displayed. Press the up/down keys to select T_s , and press the OK key to switch to T_l (remaining measurement time). $T_l = (T_s - T_m)$. Press the OK key again to switch to T_m .

b) Start Measurement: The initial status is "Preparing" (icon ). Press the up/down keys to select the status and press the OK key. The status changes to "Measurement in Progress" (icon ). Press the OK key again to pause the measurement. The status changes to "Paused" (icon ). The status changes to "Ended" (icon ) after the measurement is completed.

c) When the instrument starts, the system needs to make judgments based on the settings, as follows:

① T_s Judgment: When starting measurement, the system calculates the corresponding integral value based on the actual integration time.

② Synchronization Judgment: When the instrument starts, it judges whether it is "Synchronous Measurement". If it is "Synchronous Measurement", "Start and Pause" will take effect on all synchronized modules (see 7.2.5 Synchronous Measurement). If it is not "Synchronous Measurement", "Start and Pause" will only be effective on the current measurement module.

③ Startup Mode Judgment:

When "Startup Mode = Manual", the system determines the delay time upon startup. If the delay time is greater than 0, the measurement will start after the countdown is complete.

When "Startup Mode = Over-Limit", manual measurement is not allowed. Measurement will only start automatically when the corresponding value of the indicator exceeds the limit. No further judgment is made within the measurement time T_s , and a judgment is made again after each measurement.

When "Startup Mode = Equal Interval", the system will start the first measurement at the exact minute mark, and will test once every ΔT . The interval time ΔT has drop-down options: "10 s, 30 s, 1 min, 2 min, 5 min, 10 min, 20 min, 30 min, 1 h". 1 min means starting at the exact minute mark, and 5 min means starting at the exact 5-minute mark (i.e., when the clock is "**:*0:00" or "**:*5:00").

Note: When the set measurement time T_s is greater than this interval, the instrument's actual measurement time will be based on T_s . The actual start interval is extended. For example, if

the interval is set to 5 minutes and T_s is set to 6 minutes, the instrument begins measurement when the clock hits a 5-minute mark (e.g., 08:00:00). After measuring for 6 minutes, it saves the result and starts the next measurement at 08:10:00; thus, the effective start interval has been extended to 10 minutes.

When "Start Mode" is set to "Timed," manual starting is disabled; the system automatically initiates measurement at the scheduled time based on the timing rules.

④ Audio recording logic:

If audio recording is enabled under Settings > Record Settings > Audio Recording:

When "Start Mode" is set to "Threshold," recording triggers if the instantaneous value exceeds the limit, regardless of whether a formal measurement is in progress. The recording duration matches the preset "Recording Duration." If the user exits the measurement interface after threshold-triggered recording begins, the recording stops and is saved; the audio file is saved directly to the folder.

When "Start Mode" is set to "Synchronous," audio recording starts automatically when the measurement begins, and the audio file is saved in the corresponding audio module folder.

⑤ Digital data recording logic:

If digital data recording is enabled under Settings > Record Settings > Data Recording, select the content to be recorded and the sampling interval. Based on the configured parameters, the corresponding values are saved in the review folder.

d) Weighting selection:

The default is A/S. Use the Up/Down keys to select the weighting setting and press OK to display the selection options. The available options are: A/F, C/F, Z/F, A/S, C/S, Z/S, A/I, C/I, and Z/I.

e) Settings button:

Use the Up/Down keys to select "Settings" and press OK to enter the Sound Exposure Level settings page. Here, you can configure parameters such as Group Name, T_s , Exchange Rate, Threshold Level, Criterion Sound Level, TWA Weighting, and Start Mode. For details, refer to section 7.2.1.4, "Sound Exposure Level Settings." While a measurement is in progress or paused, select the "Settings" button and press OK; the screen will display a prompt: "Measurement in progress. Entering the settings menu will end the current measurement. Continue?" Select "Confirm" and press OK to end the measurement, save the results, and enter the settings page; select "Cancel" and press OK to return to the current screen.

7.2.1.2 Starting points

After entering the "Sound Exposure Level" module page, the initial status is "Preparing" (icon), and the indicators displayed on the page except L_p , $L_{eq,t}$, gravityX, gravityY, gravityZ are all displayed - dB or the last measured value. After setting the measurement time, startup mode, frequency weighting, time weighting, group name and other parameters according to the standard requirements or as needed, press the up or down key to select ""

with the cursor and press the OK key to start measurement. The instrument status changes to "Measuring" (icon ) . The instrument calculates all measurement indicators at the same time. When the preset time T_s is reached, this integral measurement is terminated, the instrument status changes to "End" (icon ) , and the displayed indicators stop changing and are automatically saved. Each measurement value can be viewed by pressing the up or down key, and the saved data can be viewed by entering the retrieval interface.

If you want to pause the measurement during the measurement process, select "" with the cursor and press OK to pause the measurement. The status of the instrument changes to "Pause" (icon ) . At this time, the instantaneous value displayed will still change with the measured noise, and the remaining measurement data will stop refreshing. If the user wants to stop the measurement and save the current measurement results, he can stop the measurement by short pressing the power button under the instrument and return to the main page of noise measurement; if he wants to continue the measurement, select "■" with the cursor and press the OK key to start the measurement again. After the measurement, the status will be "Ended" (icon ) .

Users can switch between different measurement modules and display modes on the top control without affecting the measurement.

7.2.1.3 Overload indication

When the measured noise exceeds the measurement range of the instrument, the "overload" (↑) mark will be displayed above the instrument. The overload indication time is as long as the overload state exists and the minimum is 1 s. The overload indication is to judge the peak value of the signal. When the crest factor of the signal is relatively large, although the sound pressure level displayed by the instrument is less than the upper limit of measurement, overload may also occur.

7.2.1.4 Sound exposure level settings

Press the up/down keys to select "Settings" () , and press the OK key to enter the sound exposure level setting interface, as shown in Figure 7-2-1-6.

Note: Parameter settings cannot be accessed while a measurement is in progress.

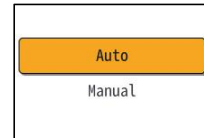
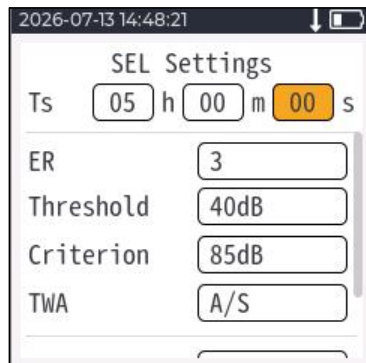


Figure 7-2-1-6 Sound Exposure Level Settings Figure 7-2-1-7 Group Name Settings

(1) Group Name: Defaults to an automatic name consisting of the measurement date (YYYYMMDD) plus a 3-digit sequence number; this applies to all modules simultaneously. Use the Up/Down keys to select the group name and the OK key to edit it. Two modes are available: automatic and manual (see Figure 7-2-1-7):

a) In "Automatic" mode, the group name consists of the current system date plus the cumulative count of measurement groups for that day. For example, if the system date is November 17, 2022, the name for the first measurement is "20221117001," with the number incrementing by 1 for subsequent measurements. On the following day, the last three digits reset to "001" and begin incrementing again.

Note: The suffix resets to "001" only when the instrument's date/time is changed.

b) In "Manual" mode, the group name can be customized. The input field accepts up to 20 alphanumeric characters. Once saved, the name remains fixed as the user-defined string throughout the measurement process.

Note: The on-screen keyboard accepts only letters and numbers. Pressing "Return" or "x" cancels without saving; pressing "√" saves the input. The cursor supports cyclic movement (moving left from the beginning wraps to the end; moving right from the end wraps to the beginning).

(2) Ts Setting: Time selection control; default is 02:00:00; range is 00 h:00 m:01 s to 99 h:59 m:59 s.

(3) Exchange Rate: Default is "3"; dropdown options are "2, 3, 4, 5, 6".

(4) Threshold Level: Default is "40"; dropdown options range from 40 dB to 90 dB.

(5) Criterion Sound Level: Default is "85"; dropdown options range from 70 dB to 90 dB.

(6) TWA Weighting: Default is "A/S"; dropdown options are "A, C, Z / F, S, I".

(7) Start Mode: Default is "Manual"; options include "Manual," "Interval," "Over-limit," and "Start timer." Selecting a specific mode reveals corresponding options.



Figure 7-2-1-8 Manual Mode

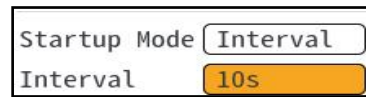


Figure 7-2-1-9 Interval mode



Figure 7-2-1-10 Over-limit Mode



Figure 7-2-1-11 Timer Mode

a) When "Start Mode = Manual" (as shown in Figure 7-2-1-8): On the measurement screen, use the Up/Down keys to select the start icon and press OK to begin. A "Delay" time can also be set, with a selectable range of 0 s to 99 s.

b) When "Start Mode = Interval" (as shown in Figure 7-2-1-9): On the measurement screen, use the Up/Down keys to select the start icon and press OK. The system begins the first measurement at the start of the next full minute and performs a test every ΔT .

Interval time ΔT : Options include "10 s, 30 s, 1 min, 2 min, 5 min, 10 min, 20 min, 30 min, 1 h". "1 min" means starting at the beginning of every minute; "5 min" means starting at the beginning of every 5-minute interval (i.e., when the clock reads "***:*0:00" or "***:*5:00").

Note: If the set measurement duration (T_s) exceeds this interval, the instrument's actual measurement time follows T_s , and the actual start interval is extended. For example, if the interval is set to 5 min and T_s is set to 6 min, the instrument starts measuring at the first 5-minute mark (e.g., 08:00:00). After measuring for 6 minutes and saving the result, it starts the next measurement at 08:10:00, effectively extending the start interval to 10 minutes.

c) When "Start Mode = Over-limit" (as shown in Figure 7-2-1-10): Measurement starts automatically when the measured value exceeds the set parameter and limit.

Limit: Default is 50; the value is a positive integer between 50 and 140 (dB).

Parameter: Drop-down options include "LAFp, LCFp, LZFP, LASp, LCSp, LZSp, LAIp, LCIp, LZIp".

Delay: Default is 0; the value is a positive integer between 0 s and 5 s. A delay setting of 5 s means measurement starts only if the value exceeds the limit and remains above it for 5 seconds.

d) When "Start Mode = Start timer" (as shown in Figure 7-2-1-11): Specific date and time (year, month, day, hour, minute, second) can be set to trigger the start. For example, if the scheduled time is 2022-10-10 13:01:00, it means the instrument will start measuring at 13:01 on October 10, 2022.

7.2.2 Integral

7.2.2.1 Integral Interface

On the noise measurement interface, use the Up/Down keys to select "Integral" and press the OK key to enter the integral interface, as shown in Figure 7-2-2-1.

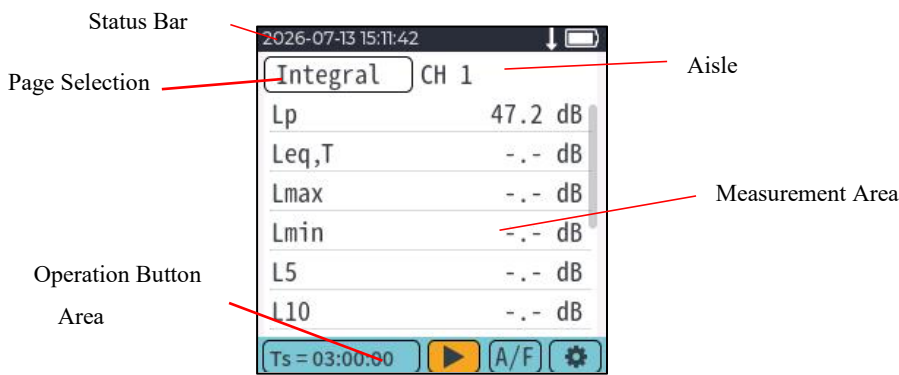


Figure 7-2-2-1 Integral Interface

The functions and operations of the status bar, page selector, channels, and button control area in this view are identical to those in the "Sound Exposure Level" interface.

The measurement area displays statistical integration measurement values, including the following metrics: Lp, Leq,T, Lmax, Lmin, L5, L10, L50, L90, L95, SEL, and SD; the display can be navigated using the Up and Down keys. Time and frequency weightings are selected via the weighting controls, with A-weighting and F-weighting set as the defaults. Ts calculation and display settings are configured using the "Settings" button.

The procedures for starting, pausing, and ending the integration measurement are the same as those for the "Sound Exposure Level" function.

7.2.2.2 Integral Settings

Use the Up/Down keys to select "Settings" (), then press the OK key to enter the integral settings interface, as shown in Figure 7-2-2-2.

Note: Parameter settings cannot be accessed while a measurement is in progress.

The stats. integral settings interface allows for the configuration of the group name, Ts, additional metrics, and the start mode. For details on the functions and operation of the group name, Ts, and start mode, please refer to the settings for "Sound Exposure Level."

The default value for additional metrics is "00," indicating that they are neither displayed on the measurement screen nor listed in the function menu. Use the Up/Down keys to select a specific additional metric and press the OK key to open the selection options. From the selection boxes labeled "Additional N1" through "N7," choose a positive integer between 1 and 99 (corresponding to L1 through L99); the interface is shown in Figure 7-2-2-3. Once a value between 1 and 99 is selected and saved, the corresponding metric will be visible on the

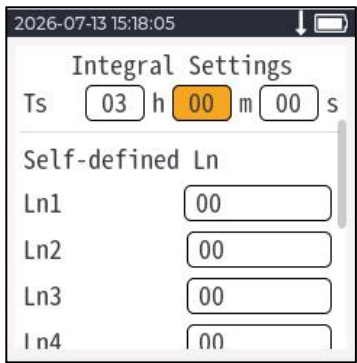


Figure 7-2-2-2 Integral Settings



Figure 7-2-2-3 Value-added options

7.2.3 1/1 OCT

7.2.3.1 1/1 OCT Graphical Interface

On the noise measurement screen, use the Up/Down keys to select "1/1 OCT" and press the OK key to enter the 1/1 OCT interface, as shown in Figure 7-2-3-1.

The functions and operations of the status bar, page selection, channel, and button operation areas in this figure are the same as those for the "Sound Exposure Level Interface."

The 1/1 OCT analysis graph displays the sound pressure level for each 1/1 OCT frequency band during the measurement process. The vertical axis represents the sound pressure level, ranging from 0.0 dB to 160.0 dB.

The horizontal axis represents the center frequencies of the 1/1 OCT bands. Time weighting and frequency weighting are selected via the weighting controls; the default setting is Z/F weighting.

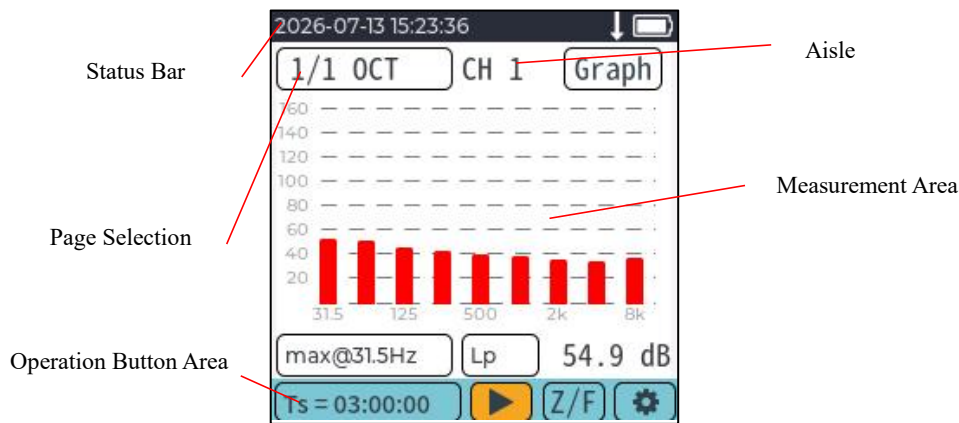


Figure 7-2-3-1 1/1 OCT Interface

To select the graphical indicators to be displayed, use the Up/Down keys to highlight the indicator and press OK to access the selection options: Lp, Lmax, Lmin, and Leq,T.

To view sound pressure level metrics for specific frequency bands, use the Up/Down keys to highlight the desired band and press OK to access the selection options: max@frequency point, SPL(A), SPL(C), SPL(Z), and the center frequencies for each 1/1 octave band; then, select the specific metric to display for that band, as shown in Figure 7-2-3-2.

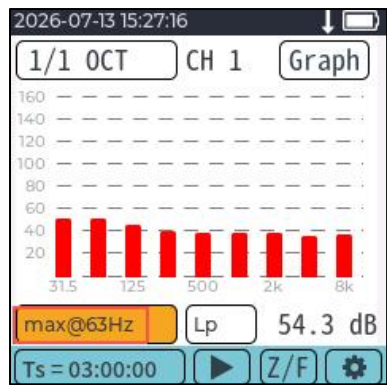


Figure 7-2-3-2 Viewing indicator values

Note: "max@" for a frequency point refers to the maximum value among Lp, Lmax, Lmin, and Leq,T corresponding to that center frequency point.

The procedures for starting, pausing, and ending the integration measurement are the same as those for "Sound Exposure Level."

Use the Up/Down keys to select the setting and the OK key to enter the 1/1 OCT settings interface, where you can configure the group name, Ts, start mode, etc. (Note: Parameter settings cannot be accessed while a measurement is in progress.) For specific functions and operations, please refer to the settings for "Sound Exposure Level."

Weighting: Default is Z/F; dropdown options include A/F, C/F, Z/F, A/S, C/S, Z/S, A/I, C/I, and Z/I.

7.2.3.2 1/1 OCT List Interface

In the 1/1 OCT analysis graphical interface, use the Up/Down keys to select "Graph" and press the OK key to switch to the 1/1 OCT analysis list interface, as shown in Figure 7-2-3-3. The measurement area displays 1/1 OCT analysis values. The vertical axis lists SPL(A), SPL(C), SPL(Z), and the 1/1 OCT center frequencies (31.5 Hz, 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz). The horizontal axis lists the measurement metrics—Lp, Lmax, Lmin, and Leq,T—calculated based on the configured time weighting, frequency weighting, and Ts.

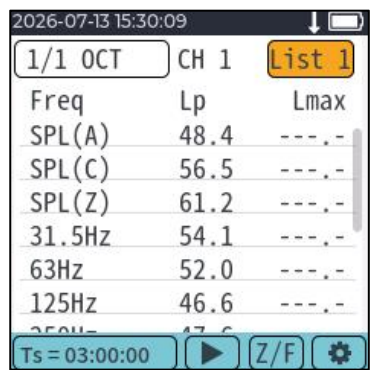


Figure 7-2-3-3 1/1 OCT List Interface

7.2.4 1/3 OCT

7.2.4.1 1/3 OCT Graphical Interface

On the noise measurement screen, use the Up/Down keys to select "1/3 OCT" and press the OK key to enter the 1/3 OCT interface, as shown in Figure 7-2-4-1.

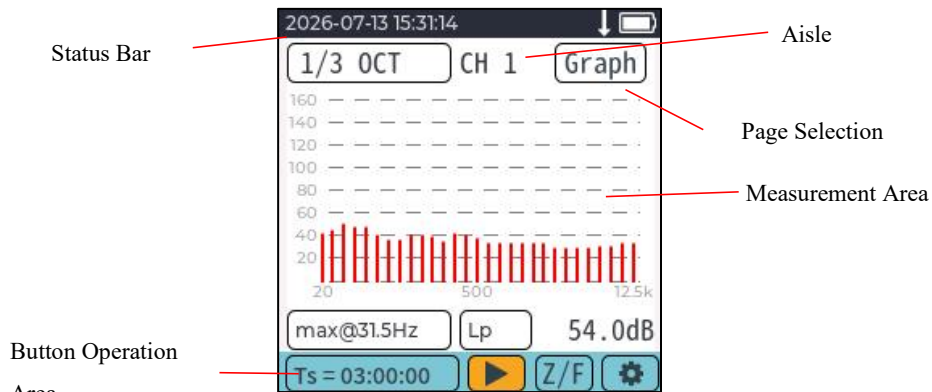


Figure 7-2-4-1 1/3 OCT interface

The functions and operations of the status bar, page selection, channels, and button control area in the figure are the same as those in the "Sound Exposure Level Interface."

The 1/3-octave analysis graph displays the sound pressure levels for each 1/3-octave frequency band during the measurement. The vertical axis represents the sound pressure level, ranging from 0.0 dB to 160.0 dB.

The horizontal axis represents the center frequencies of the 1/3-octave bands as well as the A-, C-, and Z-weighted sound levels. Time and frequency weighting settings are selected via the weighting controls; the default is Z/F weighting. Ts calculation and display parameters are configured using the "Settings" button.

To select a graph metric, use the Up/Down keys to highlight the metric and press the OK key to open the selection menu (options include Lp, Lmax, Lmin, and Leq,T); the graph is displayed in different colors based on the selected metric.

To view specific sound pressure level metrics for each frequency band, use the Up/Down keys to highlight the band and press the OK key to open the selection menu (options include max@frequency point, SPL(A), SPL(C), SPL(Z), and individual 1/3-octave center frequencies) to display the value of the corresponding metric, as shown in Figure 7-2-4-2.

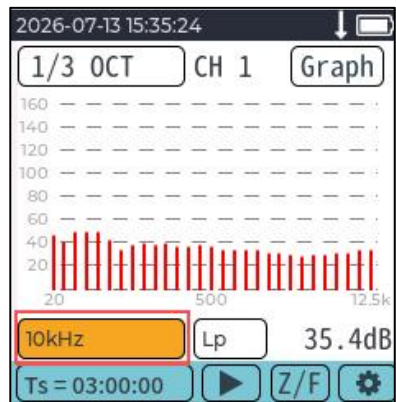


Figure 7-2-4-2 Viewing indicator values

Note: "max@" refers to the maximum value among Lp, Lmax, Lmin, and Leq,T for each center frequency point.

The procedures for starting, pausing, and ending the integration measurement are the same as those for "Sound Exposure Level."

Use the Up/Down keys to select the setting and the OK key to enter the 1/3 OCT settings interface, where you can configure options such as the group name, Ts, and start mode (note: parameter settings cannot be accessed while a measurement is in progress). For specific functions and operations, please refer to the settings for "Sound Exposure Level."

Weighting: Default is Z/F; dropdown options include A/F, C/F, Z/F, A/S, C/S, Z/S, A/I, C/I, and Z/I.

7.2.4.2 1/3 OCT list interface

In the 1/3 OCT analysis graphic interface, press the up/down keys to select "Graphics", and press the OK key to switch to the 1/3 OCT analysis list interface, as shown in Figure 7-2-4-3.



Figure 7-2-4-3 1/3 OCT Interface

The measurement area displays 1/3-octave analysis values. The vertical axis lists SPL(A),

SPL(C), SPL(Z), and the 1/3-octave center frequencies (20 Hz, 25 Hz, 31.5 Hz, 40 Hz, 50 Hz, 63 Hz, 80 Hz, 100 Hz, 125 Hz, 160 Hz, 200 Hz, 250 Hz, 315 Hz, 400 Hz, 500 Hz, 630 Hz, 800 Hz, 1 kHz, 1.25 kHz, 1.6 kHz, 2 kHz, 2.5 kHz, 3.15 kHz, 4 kHz, 5 kHz, 6.3 kHz, 8 kHz, 10 kHz, 12.5 kHz). The horizontal axis lists measurement metrics: Lp, Lmax, Lmin, and Leq,T, calculated based on the configured time weighting, frequency weighting, and Ts.

7.2.5 Run Multiple Modules

On the noise measurement interface, use the Up/Down keys to select "Run Multiple Modules" and press OK to enter the multiple modules interface (see Figure 7-2-5-1). Synchronous measurement is primarily used to trigger simultaneous measurement across multiple function modules, facilitating concurrent data analysis. Once activated, the settings on the run multiple modules interface apply simultaneously to all enabled modules.

The group naming rules are the same as those for Sound Exposure Level measurement; once a group name is generated or modified and saved, it applies to all modules simultaneously. The synchronous measurement group name can only be modified within the synchronous measurement interface and cannot be changed within any of the individual modules involved in the synchronous measurement.

In the function area, use the Up/Down keys to select a module and press OK to enable synchronous measurement. Authorized function modules—such as Sound Exposure Level, Integral, 1/1 OCT Analysis, and 1/3 OCT Analysis—can be enabled. Enabled modules utilize the "Ts" and "Start Mode" defined in the synchronization settings; operations for Ts and Start Mode are identical to those for Sound Exposure Level. Select the "Run Multiple Modules" control using the Up/Down keys and press OK to enter the measurement interface; the "Parameters" defined for synchronous measurement are applied to the settings of each enabled module.

After entering synchronous measurement mode, if you select "Settings" for any module and press OK, the system displays the prompt: "Setting unavailable during Multiple Modules model " You can initiate a synchronized integration measurement from the page used for the synchronized measurement of any module; the operation is the same as the measurement performed on the individual module pages.

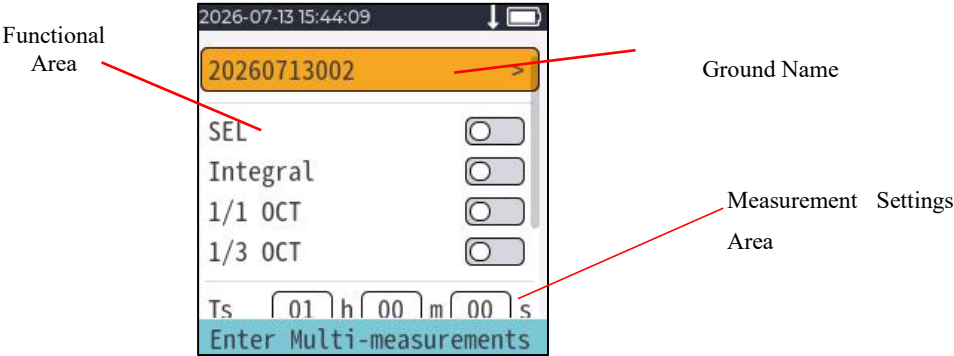


Figure 7-2-5-1 Multi-measurements interface

The procedures for starting, pausing, and ending the integral measurement are the same as those for "Sound Exposure Level"; see 7.2.1.2.

7.3 Calibration

7.3.1 Calibration Interface

On the main interface, use the Up/Down keys to select "Calibration," then press the OK key to enter the sound calibration interface, as shown in Figure 7-3-1-1.

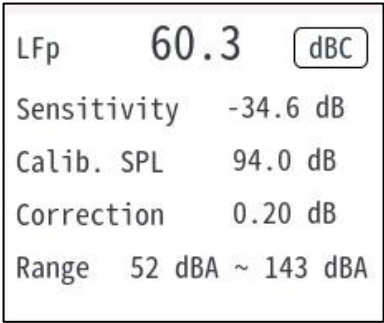


Figure 7-3-1-1 Instrument calibration interface

- (1) LFP: Read-only; displays the current ambient noise sound pressure level. The default unit is dBC; select it using the Up/Down keys and toggle to dBA by pressing the OK key.
- (2) Sensitivity Level: The measurement microphone sensitivity level saved from the last calibration; unit: dB (referenced to 1 V/Pa at 0 dB; -33.0 dB corresponds to a sensitivity of 22.4 mV/Pa). During calibration, the new sensitivity level is automatically calculated based on the calibration data.
- (3) Calibrator Sound Pressure Level: Default is 94.0 dB; the setting range is 80.0–130.0 dB.
- (4) Correction: The correction value representing the difference between the measurement

microphone's free-field sensitivity at the calibration frequency and its pressure-field sensitivity relative to the calibrator. The default is 0.2 dB (the correction for a 1/2-inch free-field response measurement microphone at 1 kHz in a coupler cavity is 0.20 dB); the adjustment range is 0.00–2.00 dB.

(5) Range: Default is 51.0 dB–142.0 dB; the upper and lower limits vary according to changes in the measurement microphone sensitivity level.

(6) Calibration Status: Defaults to "Ready" (icon). Upon starting calibration, a countdown is displayed (calibration duration is 10 seconds). When the countdown ends, a prompt to save the calibration appears, and the status reverts to "Ready" (icon).

(7) Save Calibration: After calibration, a prompt appears; select "Confirm" and press the OK key to save the current calibration record. Note: The difference between the newly calibrated sensitivity level and the previously saved sensitivity level must be within ±3.0 dB.

Note: The instrument is calibrated before leaving the factory; the data shown represents the factory calibration or the calibration saved during the last use. If required by measurement standards or after a period of time, the instrument should undergo acoustic recalibration before use. Acoustic calibration requires the use of a Class 2 or higher sound calibrator that meets the requirements of the IEC 60942 standard—such as the Model AWA6022A sound calibrator—operating at a frequency of 1000 Hz.

7.3.2 Calibration Settings

The Calibration Settings function allows for manual calibration of the instrument; the interface is shown in Figure 7-3-2-1. Select the desired items (sensitivity level, free-field correction value, or calibrator sound pressure level) manually based on actual requirements. After selecting an item (indicated by a checkmark ✓), press the OK key to save the new parameters and generate a calibration record; subsequent measurements and calibrations will be based on this calibrated sensitivity level.

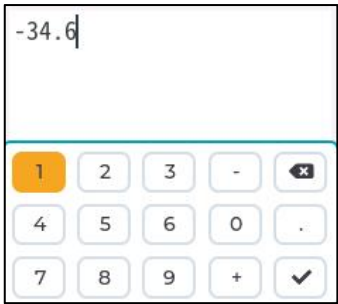


Figure 7-3-2-1 Manually adjusting sensitivity

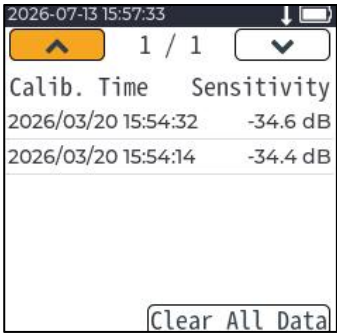


Figure 7-3-3-1 Calibration Record

Note: If a calibrator is not used during the calibration process, the calibration sound pressure level will not be 93.8 dB; please proceed with caution.

7.3.3 Calibration Records

On the calibration interface, use the Up/Down keys to select the relevant option and press "⏏" to enter the calibration records interface; the instrument's calibration history can be viewed here (see Figure 7-3-3-1).

(1) List Sorting: The list is sorted in reverse chronological order based on the calibration start time.

(2) Page Navigation: If there are many calibration records, use the Up/Down keys to select "⏶" and press "OK" to switch to the previous page, or select "⏷" and press "OK" to switch to the next page.

(3) Clear All Data: Use the Up/Down keys to select the "Clear All Data" option and press "OK"; a prompt asking "Are you sure you want to clear all data?" will appear (see Figure 7-3-3-2). Select "Confirm" and press "OK" to delete all calibration record data (see Figure 7-3-3-3). Select "Cancel" and press "OK" to return to the calibration list interface.

Calibration Details: On the calibration records interface, use the Up/Down keys to select a specific record and press "OK" to enter the details interface (see Figure 7-3-3-4). The details page includes the calibration time, microphone model, sensitivity level, calibrator sound pressure level, free-field correction value, calibrated sound pressure level, calibration method, and measurement range.

(4) Calibration Details: On the calibration records screen, use the Up/Down keys to select a record and press the OK key to enter the details screen, as shown in Figure 7-3-3-4. The details page includes the calibration time, microphone model, sensitivity level, calibrator sound pressure level, free-field correction value, calibrated sound pressure level, calibration method, and measurement range.

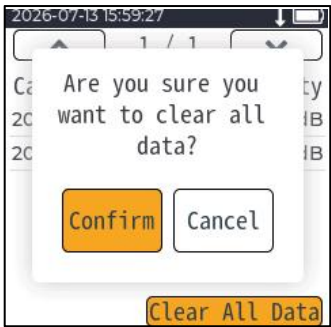


Figure 7-3-3-2 Confirm clearing all data

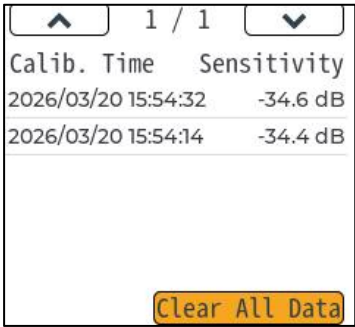


Figure 7-3-3-3 Clear all data

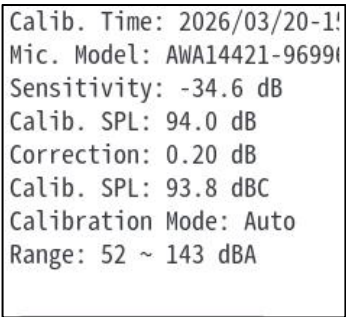


Figure 7-3-3-4 Detailed Content

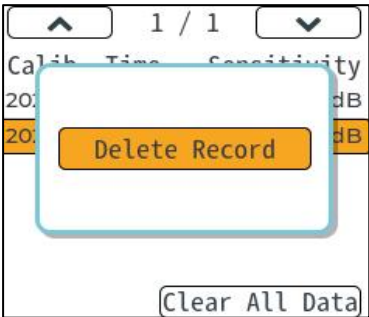


Figure 7-3-3-5 Delete record

(5) Deleting records: Select the record to be deleted on the calibration record screen, then long-press the OK key to delete that specific record directly, as shown in Figure 7-3-3-5.

7.3.4 Acoustic calibration using an acoustic calibrator

To perform calibration, fit the acoustic calibrator onto the measurement microphone and switch on the calibrator. After allowing a few seconds for stabilization (stabilization times vary by calibrator model; refer to actual specifications), use the Up/Down keys to make your selection and press the OK key to start the calibration process. A 10-second countdown will appear on the display; the screen is shown in Figure 7-3-4-1.

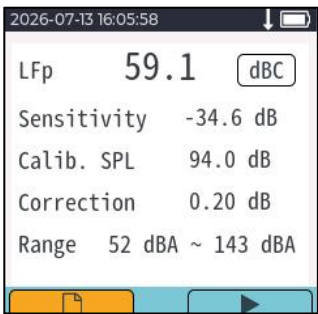


Figure 7-3-4-1 Calibration

The displayed sound pressure level represents the level exerted on the measurement microphone by the sound calibrator; the final reading should be the calibrator's sound pressure level (94.0 dB) plus the free-field correction value (0.20 dB), resulting in 93.8 dB. Upon completion of the countdown, a prompt to save the calibration appears; select "Confirm" and press the OK button to save the new measurement microphone sensitivity level, which will serve as the basis for future measurements and calibrations. If the newly calibrated sensitivity level differs from the previously saved level by no more than ± 3 dB, use the Up/Down keys to select "Confirm" and press the OK button to save the calibration record and return to the ready state. Select "Cancel" and press the OK button to

discard the current calibration record and return to the ready state. If calibration fails because the difference between the newly calibrated sensitivity level and the previously saved level exceeds ± 3 dB, a prompt appears: "Microphone sensitivity has changed significantly; please press the Start button to recalibrate or call 0571-85022700." Press the OK button to return to the ready state.

In the event of a calibration failure, the user should verify that the sound calibrator is properly coupled to the measurement microphone and powered on, and that the measurement microphone is undamaged. If the measurement microphone has been replaced, the sensitivity level of the new microphone must be manually configured in the calibration settings and saved for use in future measurements. If the user chooses not to save the calibration data upon completion, the calibration record is neither saved nor applied, and the original sensitivity level remains in use.

7.4 History

7.4.1 Viewing Measurement History

Select "History" from the main menu to enter the review interface, as shown in Figure 7-4-1-1.

Users can view previously measured data and audio recordings by navigating through folders organized first by date (Year-Month-Day) and then by time (Hour:Minute:Second). Five records are displayed per page; use the page navigation buttons to view other pages. Individual records display details such as measurement time, measurement point name, and measurement mode, as shown in Figure 7-4-1-2. When dual-channel mode is enabled in the settings, the review folder will contain data records for both channels; filenames with the suffix "CH1" indicate Channel 1 data, while "CH2" indicates Channel 2 data.

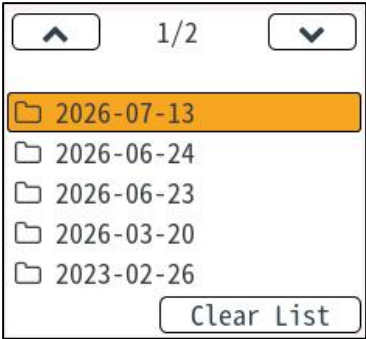


Figure 7-4-1-1 Data Retrieval

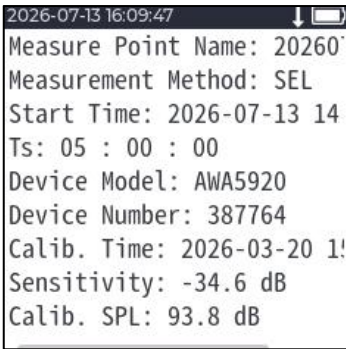


Figure 7-4-1-2 View Details Page

7.4.2 Data Deletion

Retrieved data can be deleted either individually or by selected folder. Long-press the OK button on a selected folder or individual data item to delete the chosen data; select "Clear Current List" to delete all data within the current folder, as shown in Figure 7-4-2-1. Note: Deleted data cannot be recovered; please exercise caution when deleting data.



Figure 7-4-2-1 Data Deletion

7.5 Settings

7.5.1 Interface Overview

Select "Settings" from the main menu and press the OK key to enter the instrument settings interface; the interface is shown in Figure 7-5-1-1 above.

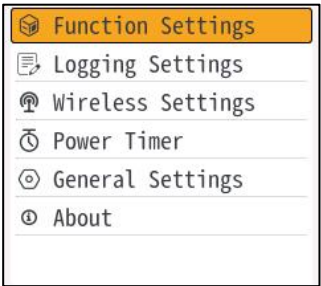


Figure 7-5-1-1 Settings interface

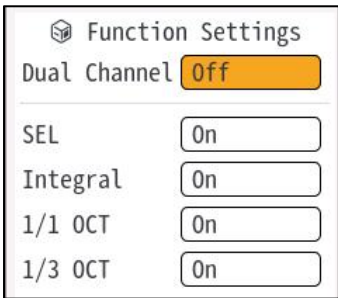


Figure 7-5-2-1 Function Settings Interface

7.5.2 Function Settings

In the settings interface, use the Up/Down keys to select "Function Settings" and press the OK key to enter the function settings interface, as shown in Figure 7-5-2-1 above.

(1) Dual-Channel

Toggle the switch to enable dual-channel mode; this allows you to switch between Channel 1 and Channel 2 within the various modules of the measurement interface. If dual-channel mode is disabled, only data for Channel 1 can be viewed.

(2) Statistical Integration

Toggle the switch to enable or disable the statistical integration function. You can select the statistical integration module for measurement in the measurement interface, provided the function has been authorized.

(3) 1/1 OCT

Toggle the switch to enable or disable the 1/1 OCT function. You can select the 1/1 OCT module for measurement in the measurement interface, provided the function has been authorized.

(4) 1/3 OCT

Toggle the switch to enable or disable the 1/3 OCT function. You can select the 1/3 OCT module for measurement in the measurement interface, provided the function has been authorized.

7.5.3 Logging Settings

7.5.3.1 Data Logging

In the settings interface, use the Up/Down keys to select "Recording Settings" and press the OK key to enter the recording settings interface. Select "Data Recording" and press the OK key; the interface appears as shown in Figure 7-5-3-1.

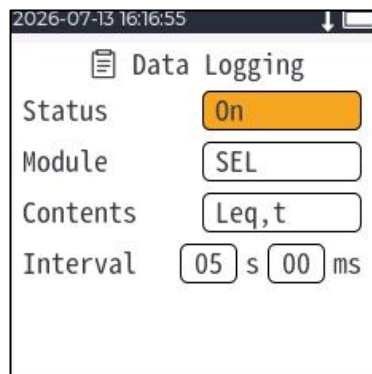


Figure 7-5-3-1 Data Logging interface

(1) Status: Default is "On". Use the Up/Down keys to select this item, then press OK to choose between "Off" and "On". If set to "On", the system stores data upon startup based on the configured "Recording Module," "Recording Metrics," and "Sampling Interval." This data can be viewed directly via the "Review" function or accessed by connecting the device

- (2) Recording Module: Default is the Sound Exposure Level module; options include Statistical Integration, 1/1 OCT, and 1/3 OCT.
- (3) Recording Metrics: Default is Leq,t. Specific recording parameters can be configured based on the selected recording module: for the Sound Exposure Level module, options include ALL, Dosi, Linst, and Leq,t; for the Statistical Integration module, options include ALL, Linst, and Leq,t; for the 1/1 OCT module, options include ALL, SPL(A), SPL(C), SPL(Z), and values for each corresponding 1/1 OCT frequency point; for the 1/3 OCT module, options include ALL, SPL(A), SPL(C), SPL(Z), and values for each corresponding 1/3 OCT frequency point.
- (4) Sampling Interval: Default is 60s; this sets the storage interval for the "Recording Metrics" data. Interval range: 0.01 s to 6.99 s.

7.5.3.2 Audio Recording

In the recording settings interface, use the Up/Down keys to select "Audio Recording" and press OK to enter the audio recording interface (shown in Figure 7-5-3-2).



Figure 7-5-3-2 Recording settings interface

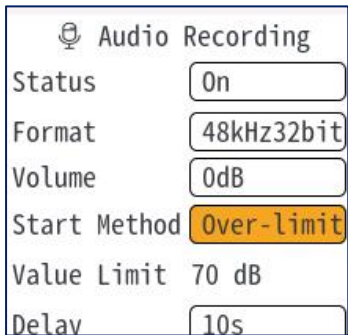


Figure 7-5-3-3 Enabling Over-limit recording

- (1) Status: Default is "Off". Press the Up/Down keys to select the recording option, then press OK to choose between "Off" and "On". If set to "On", the system initiates recording via the recording module based on the configured start mode when integration begins.
- (2) Format: Recording format; options include 12 kHz/16-bit, 24 kHz/16-bit, and 48 kHz/32-bit.
- (3) Volume: Recording gain/amplification level; options include 0 dB, 6 dB, 12 dB, 18 dB, 24 dB, 30 dB, 36 dB, 42 dB, and 48 dB. When the format is set to 48 kHz/32-bit, the volume is fixed at 0 dB and cannot be changed.
- (4) Start Mode: Synchronous or Threshold-based.
- a) When "Start Method = Sync": Recording starts automatically when integration begins. You can select the recording module (Sound Exposure Level, Integral, 1/1 OCT, 1/3 OCT, or Multi-Mode), and the file is saved in the corresponding folder.

b) When "Start Method = Over-limit": The limit value, delay time, and recording duration are displayed (see Figure 7-5-3-3). After configuring these parameters, recording starts if the instantaneous value exceeds the set limit and the duration of the exceedance reaches the set delay time. The recording lasts for the configured "Recording Duration." Recording stops automatically when this duration elapses, and the file is saved in the corresponding folder.

Regarding automatic file splitting: For the 48 kHz/12-bit format, recordings exceeding 1 hour are split, with each hour saved as a separate file; for 24 kHz/16-bit, recordings exceeding 2 hours are split, with every 2 hours saved as a separate file; for 12 kHz/16-bit, recordings exceeding 4 hours are split, with every 4 hours saved as a separate file.

7.5.4 Wireless Settings

7.5.4.1 Mobile Network

In the settings menu, use the Up/Down keys to highlight "Wireless Settings," press the OK key to enter the Wireless Settings interface, select "Mobile Network," and press the OK key. See Figure 7-5-4-1. Mobile network functionality is optional; if the module is not installed, an error message indicating an abnormal module status will appear when attempting to enable the mobile network.

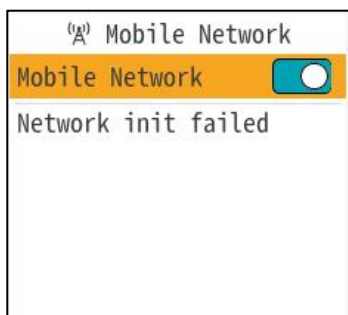


Figure 7-5-4-1 Mobile Network Interface

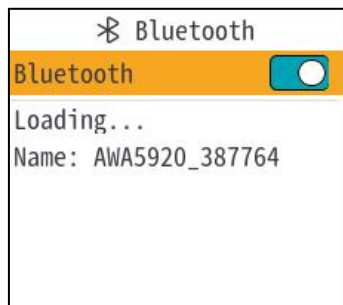


Figure 7-5-4-2 Bluetooth Interface

7.5.4.2 Bluetooth

In the wireless settings interface, use the Up/Down keys to select "Bluetooth" and press the OK key to enter the Bluetooth interface (see Figure 7-5-4-2). Once Bluetooth is enabled, the instrument's Bluetooth name is displayed; you can then locate and connect to it using a mobile phone with Bluetooth turned on. Data uploads and measurement results can be viewed via the Aihua Acoustic Analysis App. Bluetooth is an optional feature; if the module is not installed, an error message indicating an abnormal module status will appear when

7.5.4.3 Upload Settings

In the wireless settings interface, use the Up/Down keys to select "Upload Settings" and press the OK key to enter the upload settings interface.

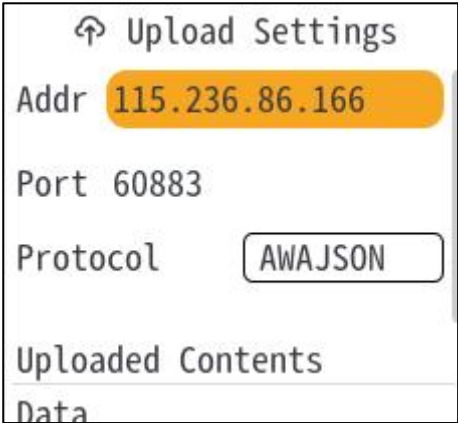


Figure 7-5-4-3 Upload Settings

As shown in Figure 7-5-4-3, the default server address is 115.236.86.166, the default server port is 60883, and the default transmission protocol is AWAJSON (switchable to HJ212). Users generally do not need to change these default values. Once the device is connected to the network and this function is enabled, data can be uploaded to the Aihua noise monitoring system platform for real-time viewing.

7.5.5 Power Timer Settings

7.5.5.1 Auto-Pause Settings

On the schedule settings screen, use the Up/Down keys to select " Auto- Pause Settings" and press the OK key to enter the pause settings interface (see Figure 7-5-5-1). Configuring the pause and restart times allows control over the instrument's measurement status. If "Auto Pause" is set to "Off," the time and date cannot be modified, and the instrument will not pause during measurement. If "Auto Pause" is set to "On," the instrument will automatically pause when its internal clock reaches the time specified on the screen. It will resume measurement at the designated restart time. The cursor can be moved to the year, month, day, hour, minute, or second fields to adjust the corresponding values. When a setting reaches its limit, "***" is displayed, indicating that this specific field is excluded from the comparison

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logic during pause or restart operations. This enables scheduled pausing or restarting on an hourly, daily, or monthly basis.

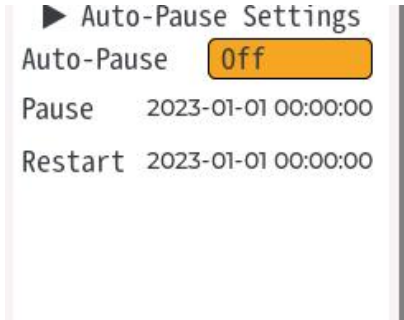


Figure 7-5-5-1 Auto-Pause Settings

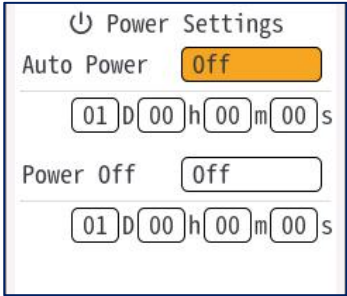


Figure 7-5-5-2 Power Settings

7.5.5.2 Power Settings

On the timer settings screen, use the Up/Down keys to select "Power Settings" and press the OK key to enter the Power Settings screen (see Figure 7-5-5-2).

Select "Auto Power On" and press the OK key to enable the function; you can configure the automatic power-on time by specifying the day, hour, minute, and second. To schedule power-on for a specific time, set the fields preceding that specific time to "***". For example, to schedule automatic power-on daily at 6:00, the setting would be ***-**-**-6:00:00. The same logic applies to "Auto Power Off."

7.5.6 General Settings

On the settings screen, use the Up/Down keys to select "General Settings" and press the OK key to enter the General Settings screen (see Figure 7-5-6-1).

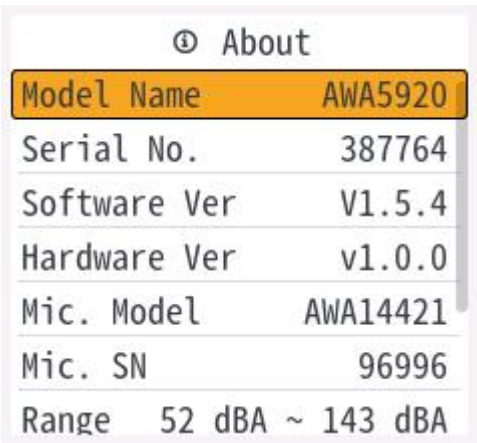


Figure 7-5-6-1 General Settings

- (1) Date: Use the Up/Down keys to select Year, Month, or Day; press OK to open the selection menu and modify the system date.
- (2) Time: Use the Up/Down keys to select Hour, Minute, or Second; press OK to open the selection menu and modify the system time.
- (3) Language: Default is Simplified English; can be switched to Chinese.
- (4) Theme: Use the Up/Down keys to select the theme; press OK to open the selection menu. Options include: Default, Fresh, White, and Black. The system automatically switches to the selected theme.
- (5) Microphone Type: The measurement microphone type defaults to "Free-field" and cannot be changed.
- (6) Display Timeout: Default is 30 s. Options include: Always On, 10 s, 20 s... 80 s, 90 s (increments of 10 s). The screen turns off automatically if there is no operation within the set time; if set to "Always On," the screen remains on.
- (7) Brightness: Default is 10%. Options range from 10% to 100% in 10% increments. Higher values result in higher brightness.
- (8) USB Mode: Default is Serial Port mode. Switch to USB Drive mode when connecting to a computer to view or access files. Options: Off, USB Mode, Port Mode.
- (9) Start Page: The page displayed upon startup. Default is Sound Exposure Level. Options: Home page, SEL, IntegraL, 1/1 OCT, 1/3 OCT.
- (10) Format Storage: Use the Up/Down keys to select "Format Storage" and press OK. A prompt appears: "All data records will be cleared. Are you sure you want to proceed?" Pressing OK again clears all measurement data except for calibration data.
- (11) Factory Reset Settings: Use the Up/Down keys to select "Factory Reset" and press OK. A prompt appears: "Are you sure you want to restore to factory setting?" Pressing OK performs the reset; all settings revert to factory defaults, except for Language and Date. Note: Measurement and calibration data are not cleared.

7.5.7 About Instrument

In the settings interface, use the Up/Down keys to select "About " and press the OK key to enter the "About " screen; the screen is shown in Figure 7-5-7-1.

The image shows a screenshot of a handheld device's 'About' screen. At the top, there is a title bar with an information icon and the word 'About'. Below this is a list of device specifications. The first item, 'Model Name', is highlighted with an orange background and shows the value 'AWA5920'. The other items are 'Serial No.' (387764), 'Software Ver' (V1.5.4), 'Hardware Ver' (v1.0.0), 'Mic. Model' (AWA14421), 'Mic. SN' (96996), and 'Range' (52 dBA ~ 143 dBA).

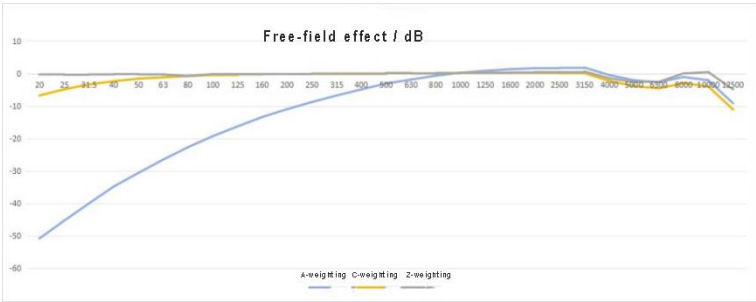
① About	
Model Name	AWA5920
Serial No.	387764
Software Ver	V1.5.4
Hardware Ver	v1.0.0
Mic. Model	AWA14421
Mic. SN	96996
Range	52 dBA ~ 143 dBA

Figure 7-5-7-1 About the Instrument

- (1) Model Name: Model of the current device;
- (2) Serial Number: Serial number of the current device;
- (3) Software Ver: Software version number of the current device;
- (4) Hardware Ver: Hardware version number of the current device;
- (5) Mic. Model: Model of the microphone paired with the device;
- (6) Mic. SN: Serial number of the microphone paired with the device;
- (7) Range: Measurement range of the current device;
- (8) Authorized: Authorized modules;
- (9) Storage: Total storage capacity of the device;
- (10) Remaining : Available storage on the current device.

Appendix A Free-field Response

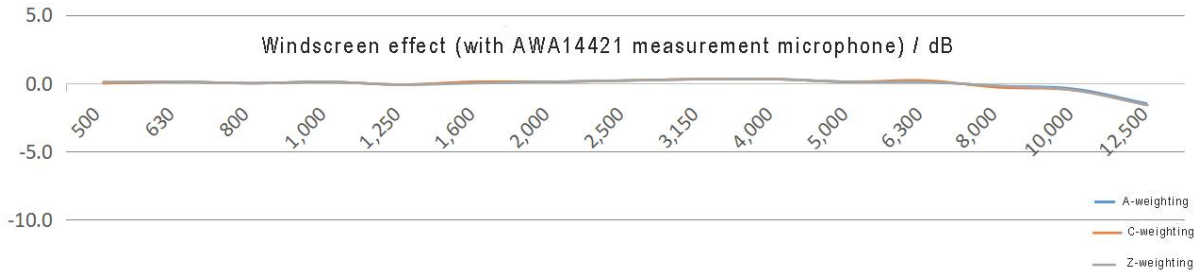
When the AWA5920 personal noise dosimeter is equipped with the AWA14421 measurement microphone and the instrument is positioned horizontally, it exhibits the free-field response characteristics shown in the figure below.



Frequency (Hz)	20	25	31.5	40	50	63	80	100
A-weighting	-50.8	-45.3	-40.0	-34.8	-30.6	-26.5	-22.7	-19.3
C-weighting	-6.8	-4.9	-3.4	-2.4	-1.6	-1.2	-0.8	-0.5
Z-weighting	-0.3	-0.4	-0.3	-0.2	-0.3	-0.3	-0.8	-0.2
Frequency (Hz)	125	160	200	250	315	400	500	630
A-weighting	-16.3	-13.4	-11.0	-8.8	-6.8	-4.9	-3.1	-1.9
C-weighting	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	0.1	0.0
Z-weighting	-0.2	-0.2	-0.2	-0.1	-0.1	-0.1	0.1	0.0
Frequency (Hz)	800	1000	1250	1600	2000	2500	3150	4000
A-weighting	-0.7	0.2	0.8	1.3	1.6	1.7	1.8	-0.5
C-weighting	0.1	0.2	0.2	0.2	0.2	0.1	0.1	-2.3
Z-weighting	0.1	0.2	0.2	0.3	0.4	0.4	0.6	-1.5
Frequency (Hz)	5000	6300	8000	10000	12500	/	/	/
A-weighting	-2.1	-2.7	-1.1	-2.1	-9.2	/	/	/
C-weighting	-3.9	-4.6	-3.0	-4.0	-11.1	/	/	/
Z-weighting	-2.6	-2.6	0.0	0.4	-4.9	/	/	/

Appendix B Effect of Windscreen

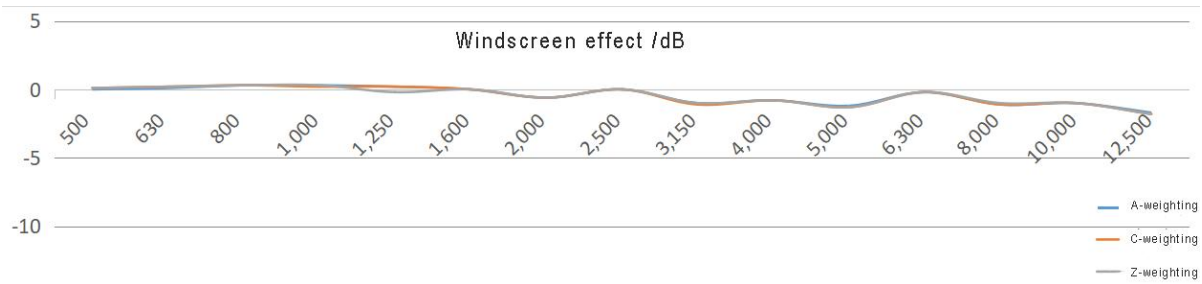
The average effect of the windscreen on the relative frequency-weighted response of the AWA5920 personal noise dosimeter in the reference direction under no-wind conditions.



Frequency (Hz)	500	630	800	1000	1250	1600	2000	2500
A-weighting	0.0	0.1	0.0	0.1	-0.1	0.1	0.1	0.2
C-weighting	0.0	0.1	0.0	0.1	-0.1	0.1	0.1	0.2
Z-weighting	0.1	0.1	0.0	0.1	-0.1	0.0	0.1	0.2
Frequency (Hz)	3150	4000	5000	6300	8000	10000	12500	/
A-weighting	0.3	0.3	0.1	0.1	-0.2	-0.4	-1.5	/
C-weighting	0.3	0.3	0.1	0.2	-0.3	-0.5	-1.6	/
Z-weighting	0.3	0.3	0.1	0.1	-0.2	-0.5	-1.6	/

Appendix C Windscreen Correction

Correction values for the average effect of the windscreen on the relative frequency-weighted response of the AWA5920 personal noise dosimeter in the reference direction.



Frequency (Hz)	500	630	800	1000	1250	1600	2000	2500
A-weighting	0.0	0.1	0.3	0.3	0.2	0.0	-0.6	0.0
C-weighting	0.1	0.2	0.3	0.2	0.2	0.0	-0.6	0.0
Z-weighting	0.1	0.2	0.3	0.3	-0.2	0.0	-0.6	0.0
Frequency (Hz)	3150	4000	5000	6300	8000	10000	12500	/
A-weighting	-1.0	-0.8	-1.2	-0.2	-1.1	-1.0	-1.7	/
C-weighting	-1.1	-0.8	-1.3	-0.2	-1.1	-1.0	-1.8	/
Z-weighting	-1.0	-0.8	-1.3	-0.2	-1.0	-1.0	-1.8	/