ATO

# INSTRUCTION MANUAL

# SOUND LEVEL METER

# MODEL AWA6292

## PRECAUTION

1. Please read this manual carefully before using the instrument for the first time;

2. Do not subject the measurement microphone to impact;

3. Damage to the measurement microphone diaphragm is not covered by the warranty;

4. Other damage caused by improper use is not covered by the warranty;

5. The battery is covered by warranty for six months from the date of purchase; damage occurring after this period is not covered by the warranty;

6. Please bring the warranty card when the instrument requires repair;

7. The sound level meter is a precision measuring instrument designed to meet Class C standards for resistance to electrostatic interference. To ensure stable measurements, please use it in an environment free from strong electrostatic interference and with appropriate humidity. It is recommended to discharge any static electricity from your body before operation;

8. The microphone is a precision acoustic sensor; direct use in environments with extreme temperature fluctuations is strictly prohibited. When moving from a high-temperature environment to a cold or freezing environment, the microphone diaphragm is prone to condensation and icing, which can increase calibration deviations. Before use, allow the instrument to acclimate to the ambient temperature, and ensure the microphone diaphragm is dry and clean before calibrating and taking measurements.

## 1. General Introduction:

The AWA6292 Multifunctional Sound Level Meter is a new-generation noise measurement instrument that utilizes digital signal processing and network technology. It can simultaneously measure multiple evaluation parameters and features a modular design, allowing users to select the appropriate modules according to their needs. The instrument offers functions such as large-capacity storage, audio recording, USB support, and a card reader. It also incorporates wireless data transmission modules—including 4G, Wi-Fi, and Bluetooth—as well as a positioning system, providing location information while measuring noise. An external mini-printer (optional) allows for on-site printing of measurement results. This instrument is widely applicable in fields such as environmental protection, occupational health, industrial enterprises, and scientific research and education, and can be used for environmental noise measurement, occupational noise measurement, and machinery and equipment noise measurement.

## 2. Key Features

(1) Ultra-wide dynamic range of 123 dB, eliminating the need to switch measurement ranges;

(2) Frequency weighting, time weighting, and detection are all implemented using digital signal processing technology;

(3) 4.3-inch capacitive touchscreen for easy operation, capable of simultaneously measuring and displaying multiple parameters;

(4) 16 GB of internal storage reliably saves measurement results, with expandable storage via a TF card supporting up to 64 GB;

(5) Powerful functionality, including options for total integration, statistical integration, 24-hour measurement, 1/1 OCT analysis, 1/3 OCT analysis, FFT analysis, indoor measurement, reverberation measurement, STI, sound exposure level, stationary vehicle noise measurement, airport noise measurement, and residential noise measurement;

(6) Embedded Wi-Fi, 4G, and Bluetooth communication modules;

(7) Built-in GPS positioning system, allowing for accurate location data acquisition while measuring noise;

(8) Connects to an external micro-printer for on-site printing of measurement results (optional);

(9) High-precision audio recording capability; recorded audio can be transferred to a computer for playback.

## 3. Key Performance Specifications

### 3.1 Basic Performance Specifications

(1) Measurement Microphone: AWA14425 measurement microphone, reference sensitivity level: -28 dB (with 1 V/Pa as the 0 dB reference); the following parameters are based on a sensitivity level of -28 dB;

(2) Preamplifier: AWA14601L, LEMO connector;

(3) Frequency Range: 10 Hz to 20 kHz;

(4) A/D Bit Depth: 24 bits;

(5) Sampling Frequency: 48 kHz;

(6) Intrinsic Noise: Less than 10 dBA, 15 dBC, 20 dBZ;

Self-generated Noise: Less than 18 dBA

(7) 1000 Hz measurement range: A-weighted sound level 20 dB–143 dB;

C-weighted sound level 25 dB–143 dB;

Z-weighted sound level 30 dB–143 dB;

C-weighted peak sound level 60 dB–146 dB.

(8) Linear range at other frequencies:

31.5 Hz: 20 dB to 103 dB (A);

4 kHz: 20 dB to 144 dB (A);

8 kHz: 20 dB to 142 dB (A);

12.5 kHz: 20 dB to 139 dB (A).

(9) Time weighting: Parallel (simultaneous) F, S, I;

(10) Frequency weighting: Parallel (simultaneous) F, S, I;

(11) Detection characteristics: True RMS digital detection;

(12) Compliance standards:

The sound level meter complies with IEC 61672-1:2013 Class 1;

The filter complies with IEC 61260-1:2014 Class 1;

The personal sound level meter complies with IEC 61252:2025;

(13) Display: 4.3-inch capacitive touchscreen;

(14) Main Display Content: Real-time measurement and display of more than 9 measurement parameters, statistical distribution graphs, cumulative distribution graphs, 24-hour distribution graphs, etc.;

(15) Main Measurement Functions: Total integration, statistical integration, 24-hour automatic monitoring, 1/1 OCT analysis, 1/3 OCT analysis, FFT analysis (number of lines: 8192), sound exposure level, etc.;

(16) Main Measurement Parameters: Lxyp, Lxeq,T, Lxeq,t, Lxmax, Lxmin, LxN, SD, SEL, Lxpeak, etc.;

Note: x represents A, C, or Z; y represents F, S, or I; N represents 5, 10, 50, 90, or 95.

(17) Data storage: 16 GB internal storage (part of which is occupied by the system, leaving approximately 11 GB available), supports 64 GB TF cards;

(18) Output interfaces: AC (alternating current), DC (direct current), IO expansion port, USB port, 4G, Wi-Fi, Bluetooth;

(19) Calendar clock: Monthly error less than 1 minute; the clock will lose time when the lithium battery is removed;

(20) Power Supply: 1 × 3.7 V 10,000 mAh lithium battery; 9 VDC external power supply (20 W fast charging); fully charges within 4 hours;

(21) Measurement Interval: Adjustable from 1 s to 96 h;

(22) Operating Temperature: -20 ℃ to 60 ℃;

(23) Relative Humidity: 20 % to 90 %;

(24) Dimensions (mm): 288 × 95 × 40;

(25) Weight: Approximately 510 g;

(26) Dust and Water Resistance Rating: IP65.

**3.2 Other Performance Characteristics**

(1) Positioning Function:

Measures longitude and latitude, which can be recorded along with noise measurement results; positioning information can also be used to calculate the direction of movement and the straight-line distance between two points.

(2) High-Capacity TF Card Storage:

a) Measurement results are saved on the TF card in text file format; these files can be opened directly using Notepad on a PC (files that have been modified externally will not be recognized by the instrument);

b) When connected to a computer via the USB port, the instrument functions as a USB flash drive.

(3) Audio Recording Function:

a) Recording format: Selectable sampling rates of 24,000 or 48,000, 24-bit precision;

b) File format: WAV;

c) Recording time: Unlimited, until memory is full (during continuous recording, the audio file is split into separate files every hour);

d) Playback: Can be played back using the instrument or a PC.

### 3.3 Optional Features

(1) Statistical Integration Function:

a) Statistical distribution and cumulative distribution of noise;

b) Frequent and time weighting can be selected as desired;

c) In addition to common indicators such as L5, L10, L50, L90, and L95, up to 10 additional cumulative percentage sound level indicators can be set.

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

(3) 1/3 OCT Analysis 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 1 | |
| Nominal center frequency | 8 Hz、16 Hz、31.5 Hz、63 Hz、125 Hz、250 Hz、500 Hz、1 kHz、2 kHz、4 kHz、8 kHz、16 kHz | 5 Hz、6.3 Hz、8 Hz、10 Hz、12.5 Hz、16 Hz、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、16 kHz、20 kHz |
| Real-time analysis speed | Perform all center frequency analyses along with A-weighted, C-weighted, and Z-weighted analyses simultaneously | |
| Linear range | Over 90 dB | |
| Main | Graphical interface, list interface | |

| | |
|---|---|
| Measurement Interface | |
| Key Performance Indicators | Lp、Lmax、Lmin、Leq,T |

(4) FFT Analysis Features:

a) Frequency range: 23.4 Hz to 19,998.0 Hz, bandwidth 5.9 Hz;

b) Window functions: Rectangular, Hanning, Blackman, and Flat-top (selectable);

c) Real-time analysis speed: Simultaneously performs band-specific analysis and A-weighted, C-weighted, and Z-weighted analysis;

d) Main measurement interfaces: list view and graphical interface;

e) Dynamic range: 70 dB or higher;

f) Main measurement parameters: band-specific instantaneous sound pressure level (Lp), band-specific maximum sound pressure level (Lmax), band-specific minimum sound pressure level (Lmin), and band-specific equivalent continuous sound pressure level (Leq,T).

(5) Indoor Measurement Functions:

| | |
|---|---|
| Complies with Standards | GB 12348—2008/GB 22337—2008 |
| Nominal Center Frequencies | 31.5 Hz、63 Hz、125 Hz、250 Hz、500 Hz |
| Real-time Analysis Speed | Simultaneously performs analysis for all center frequencies with A-weighting and Z-weighting |
| Dynamic Range | 90 dB or higher |
| Room Types and Limits | Set according to GB 12348—2008 and GB 22337—2008 standards |
| Main | |

| | |
|---|---|
| Measurement Interface | List view |
| Main Measurement Parameters | Band-specific instantaneous sound pressure level (Lp), band-specific maximum sound pressure level (Lmax), band-specific minimum sound pressure level (Lmin), band-specific equivalent continuous sound pressure level (Leq,T) |

(6) 24-Hour Measurement Function:

a) Hours: 00 h–23 h; intuitively displays measurement values for each hour;

b) Key measurement parameters: Lmax, Lmin, Leq,T, L5, L10, L50, L90, L95, SD, Ld, Ln, Ldn;

c) Start modes: automatic, manual, timed;

d) Measurement cycle: Repeated, single;

e) Measurement interface: List view, graph view, full screen view.

(7) Reverberation Measurement Function:

a) Complies with standards: ISO 3382-2:2008

b) Main functions: Reverberation time, EDT measurement;

c) Key Measurement Parameters: T20, T30, EDT;

d) Filter Bandwidth: 1/1 OCT or 1/3 OCT;

e) Impulse Response Recording Time: 10 seconds or 20 seconds.

(8) STI Function:

a) Complies with Standards: IEC 60268-16, ISO 3382-1, ISO 3382-2, ISO 3382-3, ISO 1996;

b) Main measurement parameters: Leq, MTI, STI;

c) Single recording duration: 15 s;

d) Recording accuracy: 48 kHz sampling frequency, 32-bit;

e) Frequency points: 125 Hz, 250 Hz, 500 Hz, 1000 Hz, 2000 Hz, 4000 Hz, 8000 Hz.

(9) Sound exposure level function:

a) Complies with standards: IEC 61672-1:2013 Class 1, IEC 61252:2025;

b) Noise dose measurement range: 0%–999.99%;

c) Exchange rate: Selectable from 3, 4, 5, or 6;

d) Threshold level: 40 dB–90 dB;

e) Evaluation sound level: 70 dB–90 dB;

f) Main measurement parameters: Lp, Lmax, TWA, LEX,8h, LCpeak, LZpeak, Lmin, Leq,T, LAVG, DOSE, E, BT, L´EX,8h, NLApeak > 120 dB, NLApeak > 130 dB, NLApeak > 140 dB;

g) Measurement interface: List view.

## 4. Structural Characteristics


Figure 4-1: Front View


Figure 4-2: Rear View

The instrument's appearance is shown in Figures 4-1 and 4-2. It consists of a measurement microphone, a preamplifier, and a main unit. The preamplifier is mounted on the instrument; during normal operation, the measurement microphone should be attached to the preamplifier. The top of the sound level meter is tapered to minimize reflections of sound waves. The nominal effects of reflections caused by the sound level meter's housing and the instrument's directional characteristics at different incident angles are provided in the appendix. The housing is injection-molded from ABS+PC, and the battery is a 3.7 V/10,000 mAh lithium battery housed in the battery compartment. The instrument features a capacitive touchscreen with a resolution of 480×800; all operations except powering on and off can be performed via touch. The power indicator flashes once every 3 seconds after the instrument is turned on. Press and hold the power button for 3 seconds to turn the instrument on or off; press and hold it for 10 seconds to force a shutdown.

The camera is optional and is located above the mounting hole; see Section 6.7.7, "Taking Photos," for detailed usage instructions.

The front-panel interface consists of a 7-pin LEMO signal input connector for connecting to a preamplifier. The pin layout of the connector is shown in Figure 4-3, and the bottom-panel interfaces are shown in Figure 4-4.

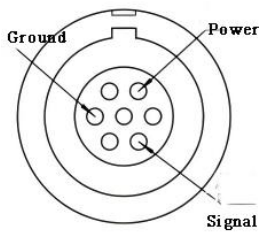



Figure 4-3 Socket pins

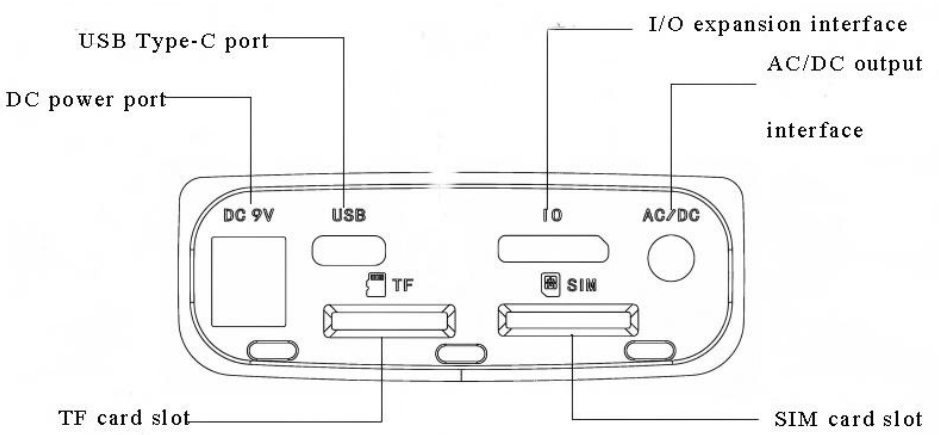



Figure 4-4 Bottom interface

(1) DC Power Port: Used for fast charging of the instrument, with a maximum charging power of 20 W;

(2) USB Type-C Port: When connected to a computer, the instrument can be used as a USB flash drive; it can also be used to charge the instrument;

(3) IO Expansion Port: When connected to a serial adapter cable, it enables RS-232 data communication; when connected to a computer, it allows real-time transmission of measurement data; when connected to a mini-printer, it prints measurement results and related charts; when connected to a multifunction expander, it provides additional RS-232, LAN, and USB ports;

(4) AC/DC Output Interface: This socket uses a stereo output jack. When paired with a plug, the pin assignments are as shown in Figure 4-5. The AC output amplitude is adjustable in two steps, with a 100-fold difference between each step. “9.5 mV/Pa” indicates that when a sound pressure of 1 Pa is applied to the instrument’s measurement microphone, the AC output pin will produce an AC signal of approximately 9.5 mV. When the AC output amplitude is set to 950 mV/Pa, the AC output amplitude increases under the same sound pressure; however, when the sound pressure applied to the measurement microphone is high, the AC output may become distorted. DC output ratio: 20 mV/dB. At 100 dB, the output voltage is 2 V; the maximum output voltage is 3.1 V.

Note: The reference sensitivity level is -28 dB.

| AC Output Amplitude | 9.5 mV/Pa | 950 mV/Pa |
|---|---|---|
| Maximum sound pressure level at maximum distortion-free output | 100 Pa | 1 Pa |

(6) TF card slot: The device supports TF card storage expansion, with a maximum capacity of 64 GB;

(7) SIM Card Slot: The instrument supports SIM cards from all three major networks; once a SIM card is installed, remote data transmission is enabled;

(8) The insertion methods for the TF card and SIM card are shown in Figure 4-6 below; in both cases, the gold contacts should face upward.

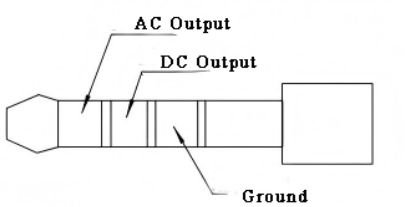



Figure 4-5 Stereo Plug Pins

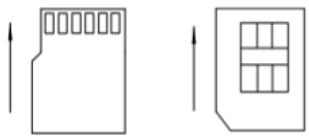


Figure 4-6: How to Insert a TF Card and a SIM Card

(9) Interface Description

a) USB: Figure 4-7 shows the instrument's USB serial port pins. There are a total of 24 pins, labeled A01–A12 and B01–B12. The table below describes each pin; in the table, A and B indicate the corresponding upper and lower pins.

| | | | |
|---|---|---|---|
| A01 | GND（Ground wire） | B12 | GND（Ground wire） |
| A02 | / | B11 | / |
| A03 | / | B10 | / |
| A04 | VBUS（Power cable ） | B09 | VBUS（Power cable） |
| A05 | / | B08 | / |
| A06 | USB D+ | B07 | USBD- |
| A07 | USB D- | B06 | USB D+ |
| A08 | / | B05 | / |
| A09 | VBUS（Power cable） | B04 | VBUS（Power cable） |
| A10 | / | B03 | / |
| A11 | / | B02 | / |
| A12 | GND（Ground wire） | B01 | GND（Ground wire） |
| Note: / indicates that the pin has no special function | | | |

b) Figure 4-8 shows the instrument's IO serial port pins. The table below describes the five main pins.

| | |
|---|---|
| ① | Serial In |
| ② | Serial Out |
| ③ | / |
| ④ | GND (Ground) |
| ⑤ | VCC (Power) |

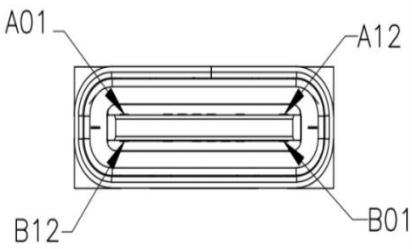



Figure 4-7 USB Port Pins

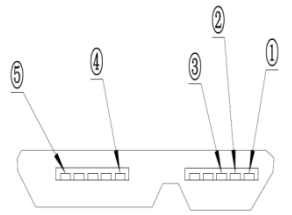



Figure 4-8 IO Serial Port Pins

## 5. Symbols and Abbreviation Definitions

| Symbol | Definition |
|---|---|
| Ts | Set integration measurement time |
| Tm | Actual elapsed measurement time |
| Tl | Remaining integration measurement time |
| Zs | Voice Notes |
| 24H | 24-hour automatic monitoring mode |
| F | Time-weighted Fast mode, time constant 125 ms |
| S | Time-weighted Slow mode, time constant 1000 ms |
| I | Time-weighted Impulse mode, rise time constant 35 ms, decay time constant 1500 ms |

| Symbol | Definition |
|---|---|
| LAeq,T | A-weighted equivalent sound level |
| LCeq,T | C-weighted equivalent sound level |
| LZeq,T | Z-weighted equivalent sound level |
| SEL | Sound exposure level = Leq + 10Lg(T) |
| 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 |
| LASp | Maximum A-weighted sound level within 0.5 s measured in S mode |
| LAIp | 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 |
| LAFi | Instantaneous A-weighted sound level measured in F mode |
| LASi | Instantaneous A-weighted sound level measured in S mode |
| LAIi | Instantaneous A-weighted sound level measured in I mode |

| Symbol | Definition |
|---|---|
| LCFi | Instantaneous C-weighted sound level measured in F mode |
| LCSi | Instantaneous C-weighted sound level measured in S mode |
| LCIi | Instantaneous C-weighted sound level measured in I mode |
| LZFi | Instantaneous Z-weighted sound level measured in F mode |
| LZSi | Instantaneous Z-weighted sound level measured in S mode |
| LZIi | Instantaneous Z-weighted sound level measured in I mode |
| Ld | Daytime equivalent sound level, time period 06:00 to 22:00 |
| Ln | Nighttime equivalent sound level, time period 22:00 to 06:00 |
| Ldn | Day-night equivalent sound level |
| LApeak | Peak A-weighted sound level |
| LCpeak | Peak C-weighted sound level |
| LZpeak | Peak Z-weighted sound level |
| SPL(A),L | Values synthesized using low-frequency A-weighted readings |
| Exchange Rate | The amount by which the permissible noise limit decreases (or increases) when noise exposure time doubles (or halves) |
| Threshold Level | When the time-weighted sound pressure level falls below this value, it is excluded from TWA and LAVG calculations |
| Criterion Level | When TWA exceeds this value, it indicates a limit exceedance |
| E | Personal sound exposure, in units of $Pa^2 \cdot h$ |
| LEX,8h | 8-hour equivalent sound pressure level |
| Bj | Peakness in the 60-second time window |
| LAVG | Average sound pressure level |
| TWA | Time-weighted average sound pressure level |
| DOSE | Noise dose; exceeding 100% indicates overexposure |
| DOSi | Instantaneous noise dose measured |
| Linst | Instantaneous sound pressure level |
| NLApeak>120dB | Number of occurrences where peak A-weighted level exceeds 120 dB |

| Symbol | Definition |
|---|---|
| NLApeak>130dB | Number of occurrences where peak A-weighted level exceeds 130 dB |
| NLApeak>140dB | Number of occurrences where peak A-weighted level exceeds 140 dB |
| OCT | Octave band filter analysis |
| U-weighting | User-defined frequency weighting |
| T-weighting | User-defined frequency weighting |
| T20 | The reverberation time corresponding to a 60 dB decay in sound pressure level is obtained by linear extrapolation from the (-5 to -25) dB range of the decay curve. |
| T30 | The reverberation time corresponding to a 60 dB decay in sound pressure level is obtained by linear extrapolation from the (-5 to -35) dB range of the decay curve. |
| EDT | Early decay time |
| STI | Speech Transmission Index |
| mi1 | Modulation Transfer Ratio at the first modulation frequency |
| mi2 | Modulation Transfer Ratio at the second modulation frequency |
| TI1 | Transmission Index at the first modulation frequency |
| TI2 | Transmission Index at the second modulation frequency |
| MTI | Modulation Transfer Index |
| Rank | Nominal STI rating |
| M1/M2/M3 | 1st/2nd/3rd measurements |
| AVG | Arithmetic mean of M1–M3 in stationary vehicle noise |
| Lepn | Effective Perceived Noise Level, a metric used to assess the impact of aircraft noise on the surrounding environment |
| Td | The number of seconds between the first 10 dB rise in the maximum A-weighted sound level and the last 10 dB fall in the maximum A-weighted sound level |
| IOT | Internet of Things |

| Symbol | Definition |
| --- | --- |
| Delay | In the button-triggered mode, the time elapsed from the moment the button is pressed until the start of the integration measurement |
| Latency | In the recording-exceedance-triggered mode, the measurement is initiated after the signal exceeds the preset threshold for a duration equal to the delay time |
|  | 4G network connection |
|  | Locating (icon turns blue when latitude/longitude is acquired) |
|  | Overload indicator |
|  | Under-range indicator |
|  | Battery level display |
|  | External power connected |
|  | Low battery |
|  | Recording |
| ↑ | TF card storage |
|  | Bluetooth (icon turns blue when connected successfully) |
|  | Connected to a computer |
|  | Scheduled startup is enabled |

## 6. Instructions for Use

### 6.1 Preparations Before Use

(1) Remove the sound level meter from its carrying case;

(2) Fully charge the sound level meter in advance using the included charger to ensure the instrument can operate continuously for the specified duration;

(3) Screw the measurement microphone onto the preamplifier, then align the preamplifier's LEMO connector with the slot on the front of the sound level meter and insert it into the main unit;

(4) If necessary, attach the windscreen to the measurement microphone.

**6.2 Powering On**

When the device is not charging, press and hold the power button below the sound level meter's screen for 3 seconds. If charging is in progress, press and hold the power button for 15 seconds. The function menu will appear on the screen, as shown in Figure 6-2-1. Check the battery icon in the upper-right corner to confirm that the battery is fully charged.

The function menu displays submenus such as "Noise Measurement," "Instrument Calibration," "Data Review," "Instrument Settings," "After-Sales Support," and "More Functions."

From the home screen carousel, you can access the Glossary, User Manual, and Frequently Asked Questions by tapping the corresponding images.

**6.3 Noise Measurement**

Tap "Noise Measurement" to enter the noise measurement interface, as shown in Figure 6-3-1. On this screen, you can select options such as "Total Integration," "Statistical Integration," "1/1 OCT Analysis," "1/3 OCT Analysis," "FFT Analysis," "24-Hour Measurement," "Indoor Measurement," "Reverberation Measurement," "STI," "Sound Exposure Level," "Stationary Vehicle Noise Measurement," "Airport Noise Measurement," and "Residential Measurement." Below these options is the "Synchronous Measurement" option.

Note: "Synchronized Measurement" refers to performing measurements simultaneously for all selected options.

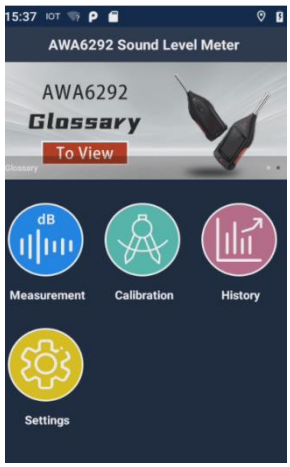



Figure 6-2-1 Main Menu

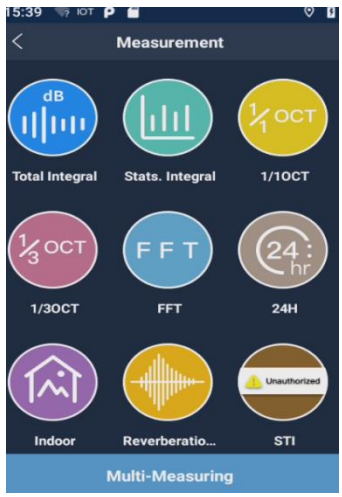



Figure 6-3-1-1: Main Noise Measurement Interface

### 6.3.1 Total Integral

6.3.1.1Total Integral Interface

Click “Total Integral” to access the Total Points interface. By default, the simplified Total Integral interface is displayed, as shown in Figure 6-3-3-1.

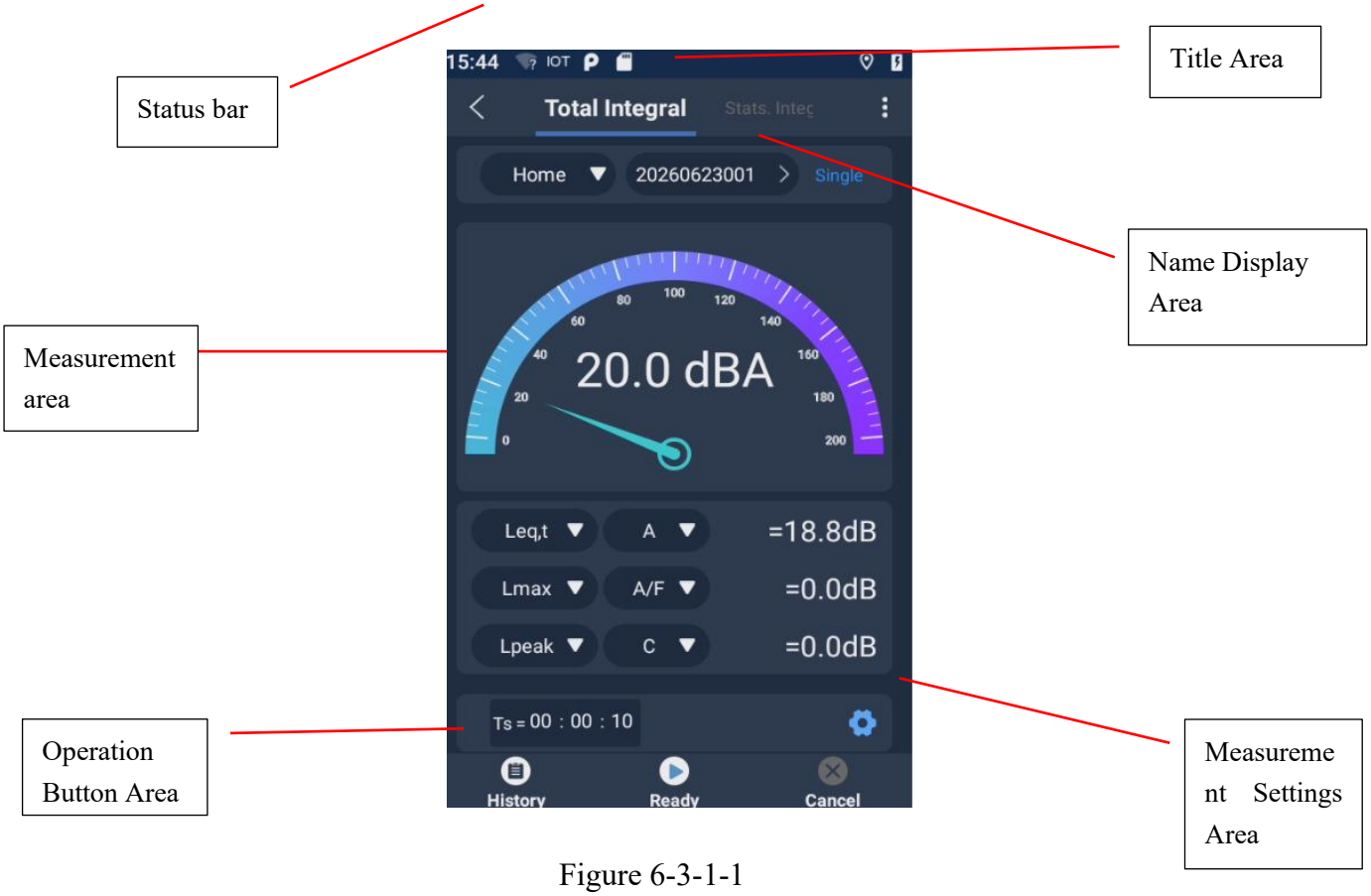



Figure 6-3-1-1

(1) Status Bar: Time, overload status "↑", positioning status " ", Bluetooth status " ", 4G network status " ", Wifi status " ", battery status " ", etc. Specific statuses are displayed based on the corresponding configuration.

(2) Title Area:

a) Title: By default, "Total Value Integral" is displayed and highlighted when clicked from the main measurement page.

b) Back: Clicking the "<" button returns you to the "Noise Measurement" main page. If the measurement status is paused or in progress, a prompt appears: "Measurement in progress. Are you sure you want to end the measurement and save the data?" If you select "OK," the measurement ends and you return to the "Noise Measurement" main page; if you select "Cancel," you remain on the current page.

c) Help: Click the " " button in the upper-right corner to open the Help interface (see Figure 6-7-1-1). Help options include: Location, User Manual, Glossary, Voice Notes, Recording, and Photo. Clicking a specific help option opens the corresponding help interface; see Section 6.7 for detailed instructions.

(3) Name Display Area:

a) Page Name: Displays the name of the current page; defaults to "Home."

b) Group Name: A text box displaying the measurement point name. By default, the group name is automatically generated as the year, month, and day of the measurement plus a 3-digit serial number (e.g., 20210113000). A digit is automatically added after each measurement, and this change applies to all modules simultaneously. If the serial number reaches the 3-digit limit, a new digit is automatically appended. Click the group name control to edit the group name. The editing page is shown in Figure 6-3-1-2, with two modes available: automatic group naming and manual group naming:

① When “Automatic” mode is selected, the “Group Name Prefix” field becomes available. By default, the group name prefix is empty. The group name prefix input box only allows Chinese characters, letters, and numbers up to 20 characters in length. After saving, the group name will be “Prefix + Group Name.”

② When “Manual” is selected, the group name can be modified. The group name input field only allows Chinese characters, letters, and numbers up to 20 characters in length. After saving, the group name will be the manually set text and will remain unchanged throughout the measurement process.

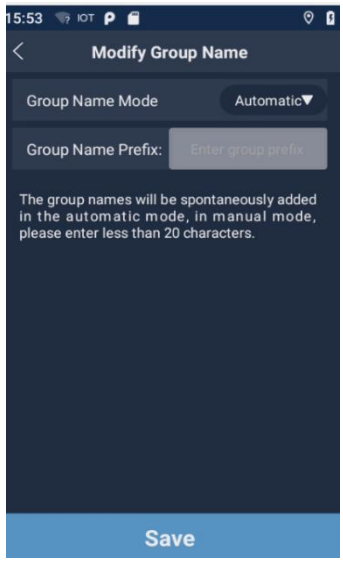



Figure 6-3-1-2: Group Name Editing Interface

(4) Measurement Area:

a) Real-time Graph Display: The range is 0.0 dB–200.0 dB. Displays the LAFp dynamic bar graph and instantaneous measurement values, refreshed every 0.5 s.

b) List of Selectable Metrics: Drop-down options include Leq,t, Lmax, Lmin, Lp, Lpeak, Leq,T, and SEL; the three default metrics are “LAeq,T, LAFmax, and LCpeak.”

Note: The page displays the parameters Lmax, Lmin, Lpeak, Leq,T, and SEL as 0.0 before starting a measurement, or displays the results from the previous measurement without change.

c) List Weighting Selection:

When the list parameters are “Leq,t, Lpeak, Leq,T, or SEL,” the “Frequency Weighting” options are “A, C, Z,” which are independent of time weighting.

When the list parameters are Lmax, Lmin, and Lp, the options are “A/F, A/S, A/I, C/F, C/S, C/I, Z/F, Z/S, Z/I.”

(5) Operation Button Area:

a) Start Measurement: The initial status is “Preparing” ( , displayed in blue). After clicking “ ”, the status changes to “Measuring” ( , displayed in blue). Clicking again pauses the measurement, and the status changes to “Paused” (icon ■, displayed in orange). Once the measurement is complete, the status becomes “Finished” (icon , displayed in red).

b) When you click “Start,” the system evaluates the settings as follows:

① Ts Evaluation: When starting a measurement, the system calculates the corresponding integration value based on the actual integration time.

② Synchronization Evaluation: When you click “Start,” the system determines whether it is a “Synchronized Measurement.” If it is a “Synchronized Measurement,” clicking the “Start and Pause” button affects all synchronized modules (see 6.3.9 Synchronized Measurement). If it is not a “Synchronized Measurement,” clicking the Start/Pause button applies only to the current measurement module.

③ Start Mode Check:

When “Start Mode = Button,” clicking Start prompts the system to evaluate the voice annotation and delay duration. If “both the voice annotation and delay duration are greater than 0,” the system first records a voice annotation and then starts the measurement only after the delay countdown has completed; If only “Voice Comment is greater than 0,” the system records a voice comment before starting the measurement; if only “Delay Duration is greater than 0,” the measurement starts only after the delay countdown is complete.

When “Start Mode = Out-of-Limit,” “Voice Comment” is disabled, and manual measurement initiation is not allowed. Measurement starts automatically only when the corresponding parameter value exceeds the limit. No further checks are performed during the measurement time Ts; the system reassesses the condition after the measurement cycle ends.

When “Trigger Mode = Fixed Interval,” “Voice Annotation” is disabled. Refer to Section 6.3.1.5 for the trigger method.

When “Trigger Mode = Timed,” “Voice Annotation” is disabled, and manual triggering is not allowed; the system automatically triggers the measurement at the scheduled time according to the timing rules.

④ Recording Check:

If recording has been enabled in the recording settings of the auxiliary functions interface, and when “Trigger Method = Out-of-Limit,” regardless of whether a measurement has been initiated, recording will start if the instantaneous value exceeds the out-of-limit threshold. The recording duration equals the set “Recording Duration.” If the measurement interface is

exited after out-of-limit recording has started, the recording will stop and be saved; the recording file is saved directly to the designated folder.

When “Trigger Method = Synchronized,” recording is automatically synchronized upon “Starting Measurement,” and the recording file is saved in the corresponding folder.

⑤ Digital Logger Check:

When starting a measurement, the system checks whether the digital logger is active. If active, it saves the corresponding values based on the configured parameters.

c) Cancel:

① When “Measurement Status = Ready,” the button is grayed out and cannot be clicked.

② When “Measurement Status = Paused or Measuring,” clicking the “Cancel” button displays the prompt: “Measurement in progress. Are you sure you want to end the measurement and save the data?” If “OK” is selected, the data is saved and the measurement ends; the measurement status changes to “Ready,” and the blue “Ready” button changes to a red “End” button. If “Cancel” is selected, the current measurement continues.

③ For “Synchronized Measurements,” the “Cancel” function applies to all synchronized modules; for non-synchronized measurements, clicking the “Cancel” button applies only to the current measurement module.

(6) History:

Navigates to the data review interface, automatically filtering data by type based on “Source” in addition to the standard data review functionality.

(7) Measurement Settings Area:

a) Measurement Time Toggle:

The default is Ts (the Ts value from the Total Value Integration settings). When "Measurement Status = Measuring/Paused," Tm (measurement duration) is displayed. Clicking it switches to Tl (remaining measurement time), where Tl = (Ts – Tm); clicking again switches back to Ts.

b) Settings Button:

Click to enter the Total Integration Settings page. Here, you can configure Ts, the start mode, the digital recorder, and other settings; for details, see 6.3.1.5 Total Value Integration Settings. When "Status = Measuring," clicking the "Settings" button displays the prompt: "Measurement in progress. Entering the settings screen will end this measurement. Do you wish to continue with settings?" If you select "OK," the measurement ends and you are taken to the settings page; if you select "Cancel," you remain on the current screen.

6.3.1.2 Starting the Integration

After entering the "Total Integral" module page for the measurement, the initial status is "Ready" (icon ▶, displayed in blue). All parameters displayed on the page, except for Lp and Leq,t, show 0.0 dB or the value from the previous measurement. After setting the measurement time, start mode, frequency weighting, time weighting, group name, voice notes, recording, and other parameters as required by the standard or as needed, click "▶" to start the measurement. The instrument's status changes to "Measuring" (icon ⏸, displayed in blue), and the instrument simultaneously calculates all measurement parameters. When the preset time Ts is reached, the integration measurement ends, the displayed parameters stop changing, and the data is automatically saved. Swipe up or down on the indicators to view individual measurement values; saved data can be accessed by clicking "History."

If you wish to pause the measurement during the process, click "⏸" to pause it; the instrument's status will change to "Paused" (icon ■, displayed in orange). At this point, the displayed instantaneous values will continue to change with the measured noise, while the rest of the measurement data will stop updating. If you wish to stop the measurement and save the current results, you can use the "Cancel" button on the measurement page to stop and save the data. Alternatively, you can use the "<" back button in the upper-left corner of the page or the force-return button at the bottom of the device (press the power button—note

that this method does not save data) to stop the measurement and return to the main noise measurement page. To resume the measurement, simply press the s rt button again; once the measurement is complete, the status will change to “Ended” (icon , displayed in red).

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

If, during a measurement, the remaining storage space falls below 10%, the measurement will stop and the device will return to the home screen. When a measurement has not been started, if the remaining storage space falls below 10%, access to any module on the noise measurement interface will be restricted; clicking on a module will display a relevant prompt. You must delete data to ensure the remaining storage space is greater than 10% before you can access the modules.

6.3.1.3 Overload Indication

When the measured noise exceeds the instrument’s measurement range, “Overload” (↑) will appear at the top of the display. The overload indication lasts as long as the overload condition persists, with a minimum duration of 1 s. The overload indication is based on the signal’s peak value; when the signal’s peak factor is relatively high, an overload may occur even if the sound pressure level displayed by the instrument is below the measurement upper limit.

6.3.1.4 Time History Graph Interface

Select “Time History” from the Total Value Integration interface’s switch button to switch to the time history interface. After starting the measurement, the interface appears as shown in Figure 6-3-1-3. The time history interface displays the variation of the measured instantaneous sound level over time.

(1) Vertical Axis: The sound pressure level range is 0.0 dB to 150.0 dB.

(2) Horizontal Axis: Time axis, displayed continuously; when the integration time exceeds 10 min, the display refreshes every 10 min.

(3) Index Selection: Drop-down options include “LAFp, LASp, LAIp, LCFp, LCSp, LCIp, LZFp, LZSp, LZIp.” This screen has been added to the Time History List interface and essentially serves as the digital record details screen.

(4) When Ts exceeds 10 min, users can scroll through completed time histories.

(5) Time history is only available in button mode.

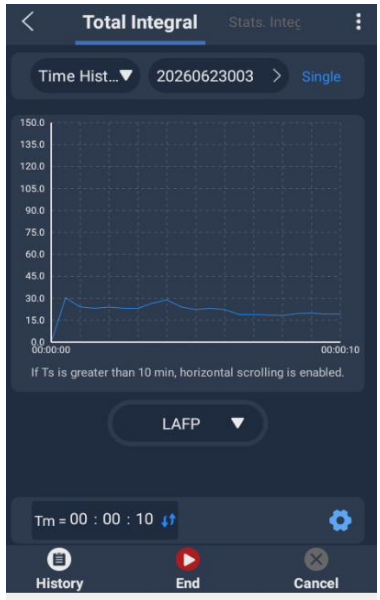



Figure 6-3-1-3: Time History Interface

6.3.1.4 Time History Graph Interface

Select “Time History” from the “Total Value Integration” interface’s toggle button to switch to the time history interface. After starting the measurement, the interface appears as shown in Figure 6-3-1-3. The time history interface displays the variation of the measured instantaneous sound level over time.

(1) Y-axis: The sound pressure level range is 0.0 dB to 150.0 dB.

(2) Horizontal Axis: The time axis is displayed continuously; when the integration time exceeds 10 min, the display refreshes every 10 min.

(3) Index Selection: The drop-down menu includes “LAFp, LASp, LAIp, LCFp, LCSp, LCIp, LZFp, LZSp, LZIp.” This screen is added to the Time History List interface and essentially serves as the digital record details screen.

(4) When Ts exceeds 10 min, users can scroll through completed time-history records.

(5) Time-history recording is only enabled in button mode.

6.3.1.5 Total Value Integration Settings

Click the “Settings” ( ) button to enter the total integral settings interface, as shown in Figure 6-3-1-4.

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

(1) Ts Setting: A time selection control with a default value of 10 s. The range is 00 h:00 m:01 s to 96 h:59 m:59 s. If set to 00:00:00 (supported only in button-start mode), it indicates continuous operation until the measurement is manually stopped.

(2) Start Mode Setting: The drop-down options are “Button, Out-Limit, Equispaced , and Timing.” The default is “Button,” as shown in Figure 6-3-1-5. Selecting different modes reveals different options.

a) When “Start Mode = Button,” as shown in Figure 6-3-1-6. Click the “Start” button to begin the measurement, and you can set a “Delay” using the numeric keypad, allowing input of positive integers between 0 s and 99 s.

b) When “Start Mode = Limit Exceeded,” as shown in Figure 6-3-1-7, the system automatically starts when the measured value exceeds the set indicators and limit values.

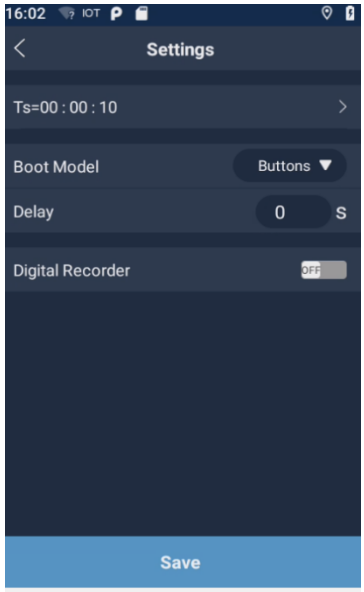



Figure 6-3-1-4
Settings interface

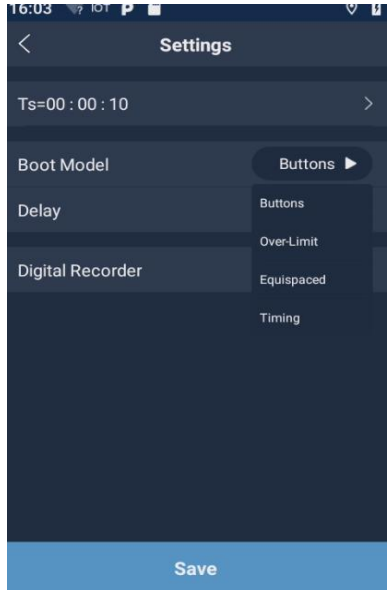



Figure 6-3-1-5 Startup Mode

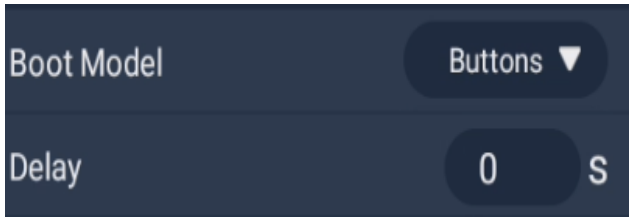



Figure 6-3-1-6 Push-button start mode

Parameters: The drop-down options include “LAFp, LASp, LAIp, LCFp, LCSp, LCIp, LZFp, LZSp, LZIp.”

Limit: Default is 100; enter a positive integer between 10 and 140 (dB).

c) When “Start Mode = Equal Intervals,” as shown in Figure 6-3-1-8, click to start the system and begin the first measurement at the whole-minute mark, with one test performed every △T.

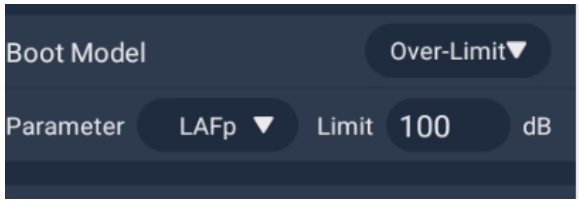



Figure 6-3-1-7 Over-limit startup mode

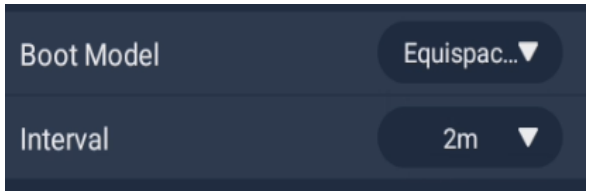



Figure 6-3-1-8 Equal-interval startup mode

Interval △T: The drop-down options are “10 s, 30 s, 1 min, 2 min, 5 min, 10 min, 20 min, 30 min, 1 h.” “1 min” means the device starts at every full minute; “5 min” means the device starts at every full 5 minutes (i.e., when the clock reads “**:*0:00” or “**:*5:00”).

Note: When the set measurement time (Ts) is longer than this interval, the instrument's actual measurement time follows Ts, and the actual start interval is extended. For example, if the interval is set to 5 min and Ts is set to 6 min, the instrument will start the measurement when the clock first reaches a full 5 minutes. For instance, if the clock reads 08:00:00, it will save the measurement results after 6 minutes and start the next measurement when the clock reads 08:10:00—meaning the start interval has been extended to 10 minutes.

d) When "Start Mode = Timed":

① If the number of repetitions is set to "Once Only," as shown in Figure 6-3-1-9, the measurement will start only at the set start time (year, month, day, hour, minute, second) and end after Ts.

② If the number of repetitions is set to "Every Hour," as shown in Figure 6-3-1-10, the instrument will automatically measure every hour based on the set start time (year, month, day, hour, minute, second) and will stop repeating at the set end time (year, month, day, hour, minute, second).

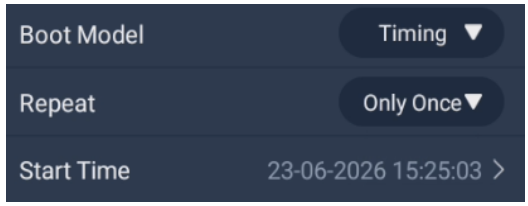



Figure 6-3-1-9 One-time timer

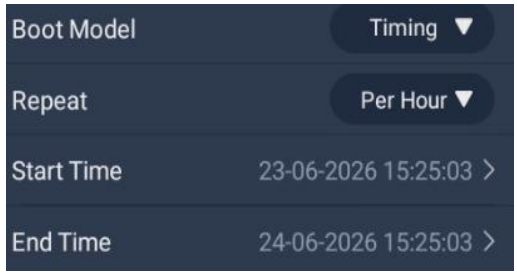



Figure 6-3-1-10 Per Hour Schedule

③ If the repeat frequency is set to “Daily,” as shown in Figure 6-3-1-11, measurements will be taken automatically every day at the set start time (year, month, day, hour, minute, second) and will continue until the set end time (year, month, day, hour, minute, second), at which point the repetition will stop.

④ If the repeat frequency is set to “Monthly,” as shown in Figure 6-3-1-12, measurements will be taken automatically each month starting at the set start time (year, month, day, hour, minute, second) and will continue until the set end time (year, month, day, hour, minute, second), at which point the repetition will stop.

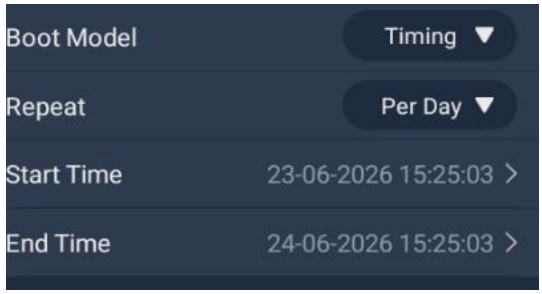



Figure 6-3-1-11 Daily Schedule

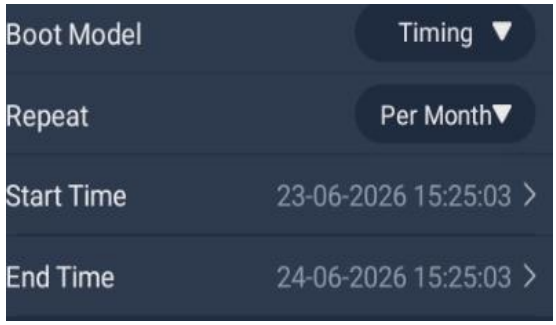



Figure 6-3-1-12 Monthly Schedule

(3) Digital Recording Settings

Digital Logger: Disabled by default. When enabled, as shown in Figure 6-3-1-13, the system records data based on the configured parameters and intervals and saves it to the history.

Parameters: The drop-down menu offers the following options: “All, LAFi, LASi, LAIi, LAeq,t, LCFi, LCSi, LCIi, LCEq,t, LZFi, LZSi, LZIi, LZeq,t.” You may select any one of these options; Interval: 20 ms to 5000 ms, with options in multiples of 20.

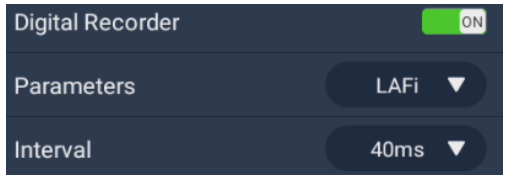



Figure 6-3-1-13 Digital Recording Settings

6.3.1.6 Viewing Total Integral Data

Click the “History” button to enter the data viewing interface, as shown in Figure 6-3-1-14. This interface displays the stored historical total integral data; the time shown is the start time of the measurement for that data set, the set name corresponds to the configured set name, and the source is “Total Integral.” Click to select a single set, multiple sets, or all sets to perform operations such as deleting or printing. Click any file to enter the historical measurement view interface, as shown in Figure 6-3-1-15. Select a single group, multiple groups, or all groups to perform operations such as printing and deleting. For details on the delete and print functions, see Section 6.5.

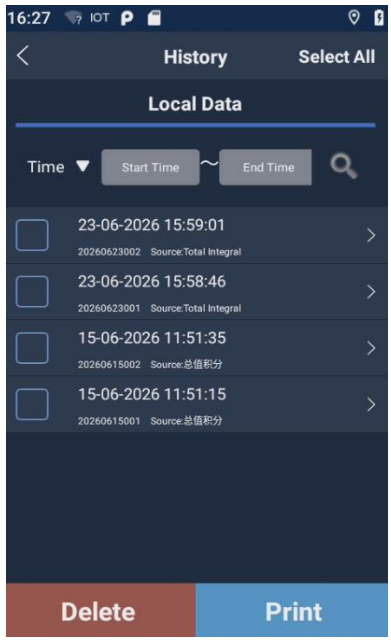



Figure 6-3-1-14 Total Integral History Interface

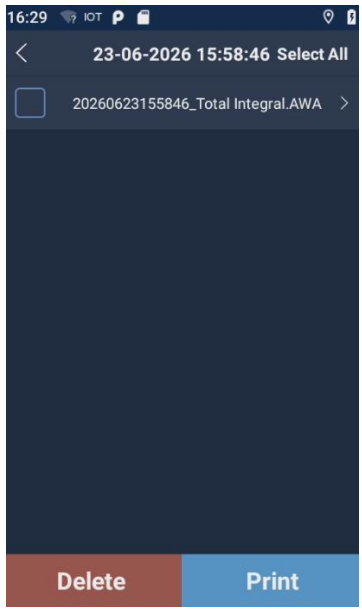



Figure 6-3-1-15 Historical Measurement View Interface

6.3.1.6 Viewing Total Integral Data

Click the “History” button to enter the data viewing interface, as shown in Figure 6-3-1-14. This interface displays the stored historical data for total value integration; the time shown is the start time of the measurement for that data set, the group name corresponds to the configured group name, and the source is “Total Value Integration.” Click to select a single group, multiple groups, or all groups to perform operations such as deleting or printing. Click any file to enter the historical measurement view interface, as shown in Figure 6-3-1-15. Click to select a single group, multiple groups, or all groups to perform actions such as printing or deleting. For details on the delete and print functions, see Section 6.5.

6.3.1.6.1 Data Retrieval Interface Description

(1) Back: Click “<” to return to the total integration measurement interface.

(2) Select All: Click to select all items in the list; click again to deselect all.

(3) Search: Click “▼” to search by “Time” or “Group Name.”

a) Time Search, as shown in Figure 6-3-1-16:

Select appropriate start and end times. The start time must be earlier than the end time and earlier than the current time.

b) Group Name Search, as shown in Figure 6-3-1-17:

① The group name search box only allows Chinese characters, letters, and numbers up to 20 characters in length.

② Filter Search Button ( ): Click to search for data matching the time range or group name. If no data is found, the message “0 results found” will appear.

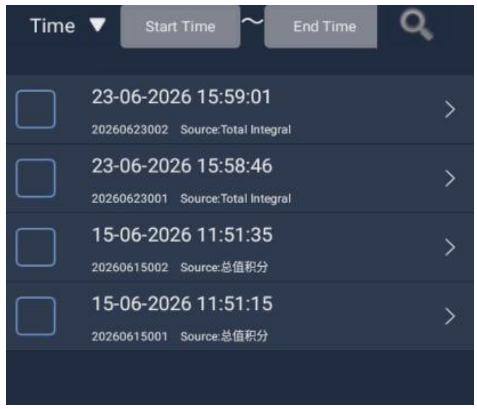



Figure 6-3-1-16 Time Search Interface

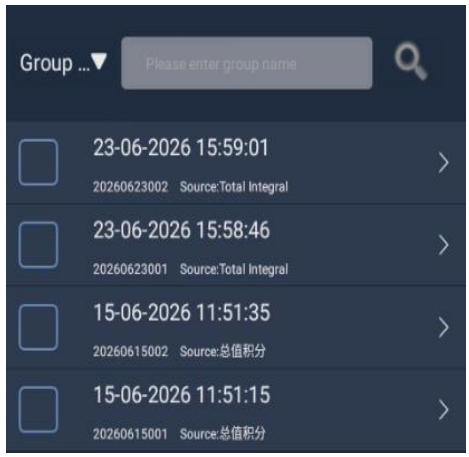



Figure 6-3-1-17 Group Name Search Interface

(4) List: The list is sorted in reverse chronological order. Swipe up to load and display more items. You can select a single item, multiple items, or all items.

(5) “Delete” button: Tap the “Delete” button to delete the selected data. For specific instructions, see 6.5.2.2.

(6) “Print” button: Tap the “Print” button to print the selected data. For specific instructions, see 6.5.3.

6.3.1.6.2 Total Integral History Details

Tap the “Total Integral.AWA” file to enter the Total Value Integration History Details screen, as shown in Figure 6-3-1-18.

(1) Measurement Details: Measurement point name, measurement method, measurement start time, Ts, Tm, instrument model, serial number, calibration date, sensitivity class, calibration sound pressure level, latitude and longitude, units, and measurement range. These can be expanded or collapsed using the controls in the lower-right corner.

(2) List Metrics: LAFmax, LCFmax, LZFmax, LASmax, LCSmax, LZSmax, LAImax, LCImax, LZImax, LAFmin, LCFmin, LZFmin, LASmin, LCSmin, LZSmin, LAImin, LCImin, LZImin, LAeq,T, LCeq, T, LZeq,T, LApeak, LCpeak, LZpeak, SELA, SELC, SELZ. The list of metrics can be expanded or collapsed using the controls to the right of "List."

Note: Measuring latitude and longitude requires the device to be connected to the network; otherwise, latitude and longitude values will not be displayed in the history records.

6.3.1.6.3 Total Integral Digital Record Details

Click the "Total Value Integration Digital Record.AWA" file to open the Total Value Integration Digital Record Details interface, as shown in Figure 6-3-1-19.

(1) Measurement Details: Measurement Point Name, Measurement Method, Measurement Start Time, Ts, Instrument Model, Serial Number, Calibration Date, Sensitivity Level, Calibration Sound Pressure Level, Latitude and Longitude, Units, Sampling Interval, and Measurement Range can be expanded or collapsed using the controls in the lower right corner.

(2) List Metrics: Displayed according to the settings of the total value integration digital recorder; swipe up to view more. List metrics can be expanded or collapsed using the controls on the "List" side.

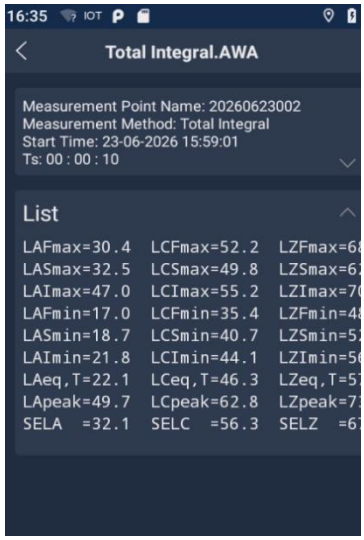



Figure 6-3-1-18 Historical Details of Total Integral

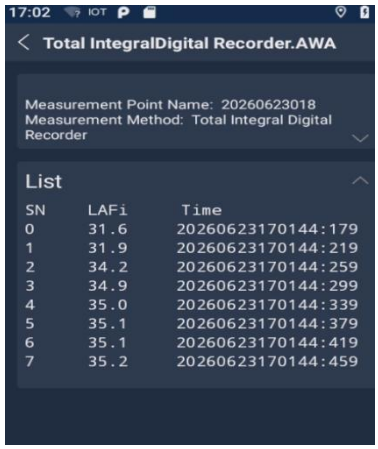



Figure 6-3-1-19 Details of Total Integral Digital Records

6.3.1.6.4 Total Integral Recording

Click any “Total Value Integration Recording.wav” file to start playing the recording; the interface is shown in Figure 6-3-1-20.

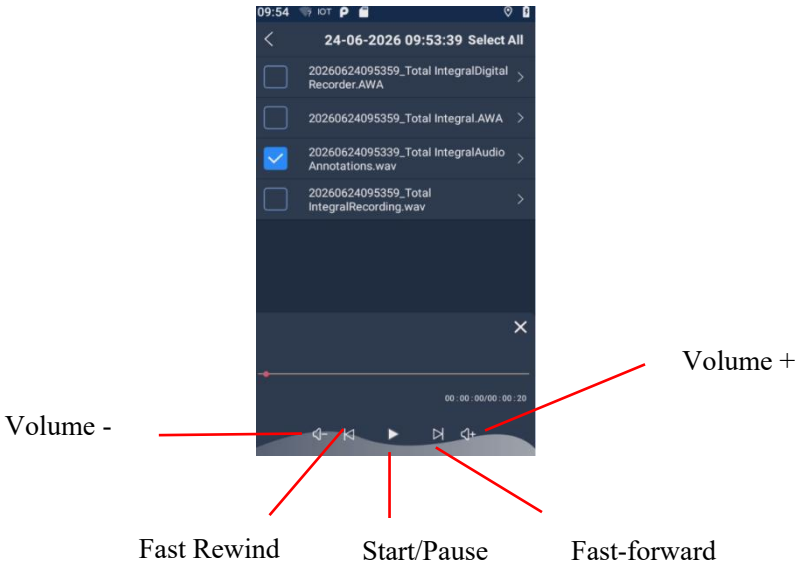



Figure 6-3-1-20 Total Integral Recording Playback Interface

Plug the monitoring headphones into the AC output jack on the bottom of the instrument. Locate the audio file you want to play; click to start playing the recording. Audio is played only through the left channel. Click the “Volume +” or “Volume -” buttons to adjust the recording volume. Click the “Fast Forward” or “Rewind” buttons to control the playback progress, or drag the playback progress bar directly to adjust the playback position.

6.3.1.6.5 Voice Annotations

See 6.7.5 Voice Annotations for details.

6.3.1.6.6 Total Score Photo

See 6.7.7 Taking Photos for details.

### 6.3.2 Stats. Integral

6.3.2.1 Stats. Integral List Interface

Tap “Stats. Integral” to enter the statistics integral interface. The stats. statistics list interface is displayed by default, as shown in Figure 6-3-2-1.

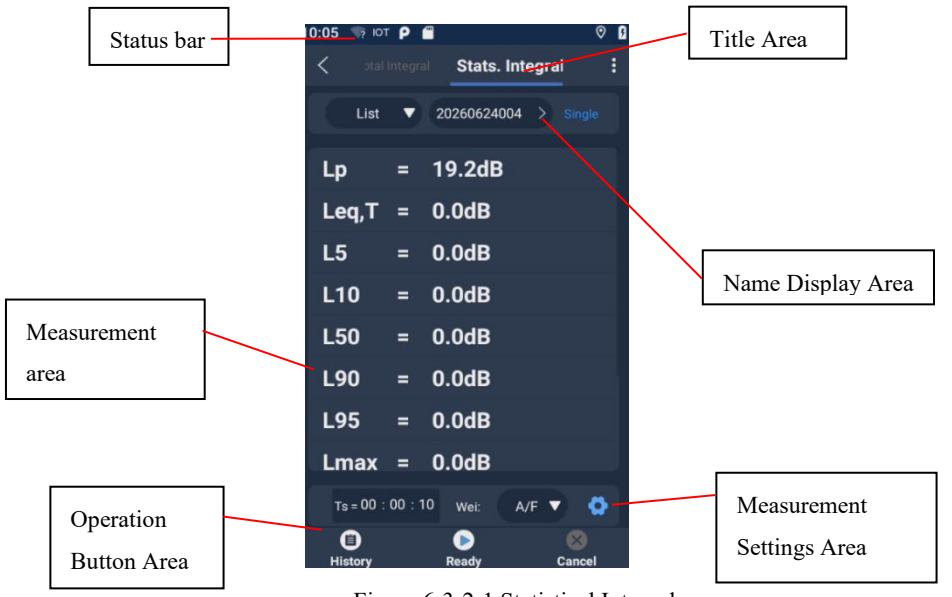



Figure 6-3-2-1 Statistical Integral List Interface

The meanings and operations of the status bar, title bar, name display area, and action button area shown in the figure are the same as those in the “Total Value Integration Interface.”

The measurement area displays statistical integration measurements. Measurement parameters include: Lp, Leq, T, L5, L10, L50, L90, L95, Lmax, Lmin, SEL, and SD. You can swipe up or down to view the display. Time-weighting and frequency-weighting are selected via the weighting button; the default is A/F weighting. Ts calculation and display are configured via the “Settings” button.

Starting, pausing, and ending the integration measurement process are the same as in the “Total Value Integration Measurement.”

Tap the “Settings” button to enter the statistical integration settings interface, where you can configure Ts, start mode, digital recorder, etc. (Note: You cannot access parameter settings while a measurement is in progress.)

Weighting: The default is A/F. The drop-down menu includes A/F, A/S, A/I, C/F, C/S, C/I, Z/F, Z/S, and Z/I.

Select “Additional Metrics” using the toggle button on the statistical integration interface to switch to the additional metrics settings interface, as shown in Figure 6-3-2-2. Additional metrics are used to calculate and display the values of other cumulative percentage sound levels (LN) beyond the common cumulative percentage sound levels shown in the list interface in Figure 6-3-2-1. Additional metrics must be enabled in “Settings” to view them; refer to Section 6.3.2.4 for specific enablement procedures.

6.3.2.2 Stats. Integral Chart Interface

From the Statistical Integration List interface, select “Statistical Distribution Chart” using the toggle button to switch to the statistical distribution chart interface, as shown in Figure 6-3-2-3. The statistical distribution chart is primarily designed to provide a visual overview of the proportion of each sound pressure level during the current measurement.

The vertical axis in the graph is expressed as a percentage, ranging from 0.0% to 100.0%.

The horizontal axis represents sound pressure level, ranging from 0.0 dB to 150.0 dB; you can manually slide the axis to zoom in or out on the horizontal values.

The data on the graph is calculated based on the frequency weighting, time weighting, and Tm selected for the statistical integration measurement, allowing you to view the percentage of each sound pressure level during the measurement period.

Sound pressure levels can be selected by sliding the slider within the range of 0 dB to 150 dB. Once selected, the system calculates the percentage of the current sound pressure level in each time interval during the integration process, as shown in the bottom three rows of Figure 6-3-2-3.

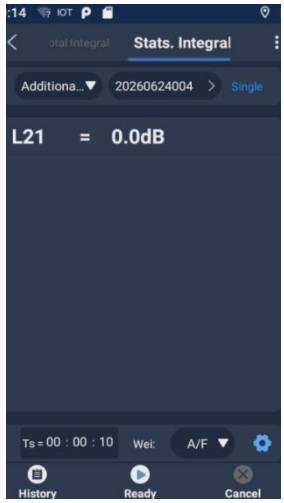



Figure 6-3-2-2 Additional Parameters Interface

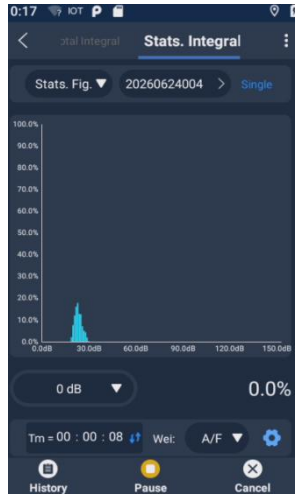



Figure 6-3-2-3 Statistical Distribution Plot Interface

6.3.2.3 Cumulative Distribution Chart Interface

On the Statistical Integration interface, select “Cumulative Distribution Chart” using the radio button to switch to the cumulative distribution chart interface, as shown in Figure 6-3-2-4. The cumulative distribution graph is used to calculate and display the cumulative

percentage sound level distribution. L5 = 70.4 dB indicates that 5% of the sound pressure levels exceeded 70.4 dB during the integration measurement, while L90 = 51.8 dB indicates that 90% of the sound pressure levels exceeded 51.8 dB during the integration measurement.

The vertical axis in the graph is expressed as a percentage, ranging from 0% to 100%, corresponding to L0 through L100, respectively.

The horizontal axis represents sound pressure level, ranging from 0.0 dB to 150.0 dB; the values on the horizontal axis can be manually zoomed in or out.

Based on the frequency weighting, time weighting, and Tm selected in the statistical integration measurement settings, the cumulative percentage for each sound pressure level is calculated and displayed on the graph.

The sound pressure level can be selected using a slider within the range of 0 dB to 150 dB. Once selected, the cumulative percentage at the current sound pressure level during the integration process is calculated, as shown in Figure 6-3-2-4.

Click the “Settings” button to enter the statistical integration settings interface (see Figure 6-3-2-5), where you can configure Ts, the start mode, digital logging, and additional metrics (note: you cannot access parameter settings while a measurement is in progress). For specific functions and operations, refer to the settings for “Total Value Integration Measurement.”

Click the “History” button to enter the history interface; for the interface display and operation, see 6.3.2.5 “Viewing Statistical Integration Data.” You can view the details of the statistical integration history and the digital records of statistical integration. The rules for selecting all, deleting, and printing are the same as those in the total integration history interface.

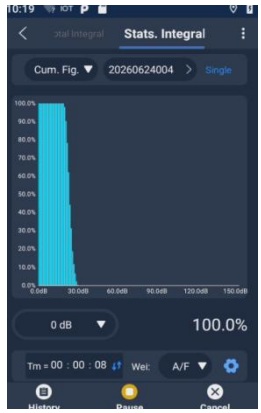



Figure 6-3-2-4 Cumulative Distribution Plot Interface

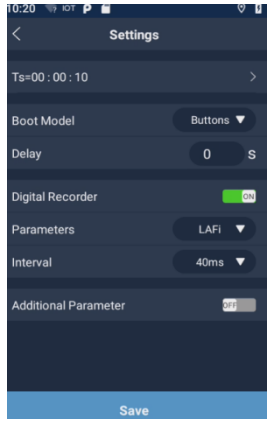



Figure 6-3-2-5 Statistical Integral Settings

### 6.3.2.4 Additional Metrics

In the statistical scoring settings interface, additional metrics are disabled by default. When disabled, additional metrics do not appear in the feature list. Click “Enable,” then enter a positive integer between 1 and 99 (excluding 5, 10, 50, 90, and 95) in the text input fields labeled “Additional 1” through “Additional 10.” These correspond to L1 through L99. Additional metrics cannot be duplicated. The interface is shown in Figure 6-3-2-6; the fields are empty by default and must be filled in by the user. Once enabled, additional metrics can be selected from the function list in the Statistics and Scoring interface, as shown in Figure 6-3-2-7.


Figure 6-3-2-6 Additional parameters

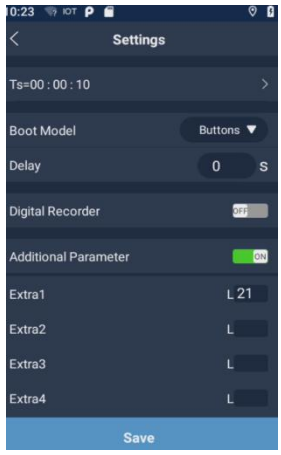



Figure 6-3-2-7 Additional Indicator

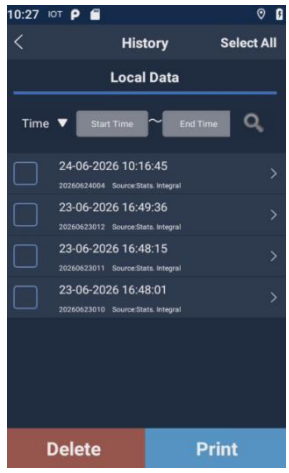



Figure 6-3-2-8 Stats. Integral History Interface

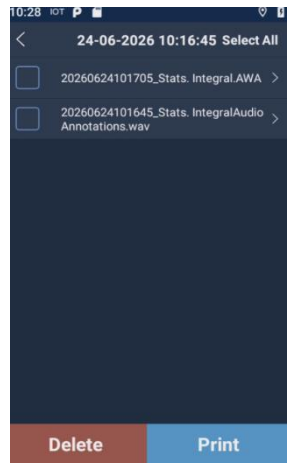



Figure 6-3-2-9 Historical Measurement View Interface

6.3.2.5 Viewing Cumulative Integration Data

Click the “History” button to enter the data viewing interface, as shown in Figure 6-3-2-8. This interface displays the stored historical data for cumulative integration. The time shown is the start time of the measurement for that data set; the set name corresponds to the configured name; and the source is “Cumulative Integration.” Click to select a single set, multiple sets, or all sets to perform operations such as deleting or printing. Click any file to enter the historical measurement view interface, as shown in Figure 6-3-2-9. Select a single group, multiple groups, or all groups to enable printing and deletion. For details on the delete and print functions, see Section 6.5.

6.3.2.5.1 Statistical Integration History Details

Click the “Statistical Integration.AWA” file to enter the statistical integration history details interface, as shown in Figure 6-3-2-10.

(1) Measurement Details: Measurement point name, measurement method, measurement start time, Ts, Tm, instrument model, serial number, calibration date, sensitivity class,

calibration sound pressure level, weighting, latitude and longitude, units, and measurement range. Click the controls to expand or collapse these fields.

(2) List Metrics: L5, L10, L50, L90, L95, SD, Lmax, Lmin, SEL, Leq. If additional metrics are available, they will be displayed accordingly. The list metrics can be expanded or collapsed using the controls to the right of “List.”

(3) Graphical Metrics: Statistical distribution plots and cumulative distribution plots. Swipe on the right side of the screen to view the corresponding graphs. Graphical metrics can be expanded or collapsed using the control next to “Graphs.”

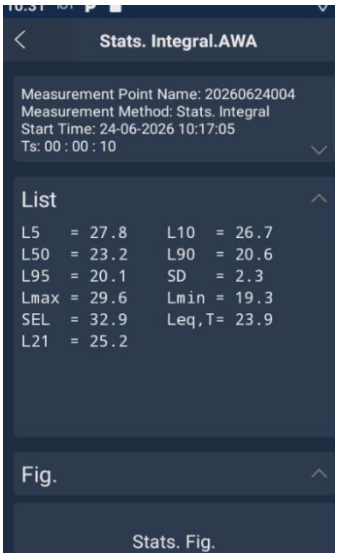



Figure 6-3-2-10 Stats. Integral History Details 1


Figure 6-3-2-10 Stats. Integral History Details 1

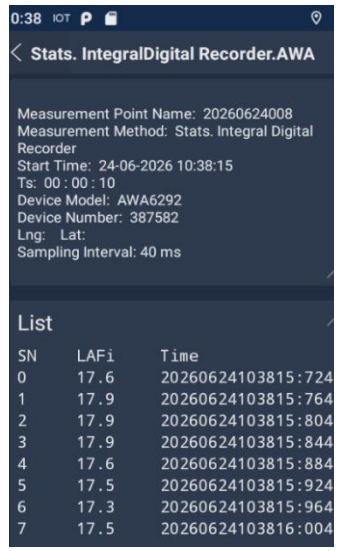



Figure 6-3-2-11 Stats. Integral Record Interface

6.3.2.5.2 Statistical Integration Digital Record Details

Click the “Statistical Integration Digital Record.AWA” file to access the statistical integration digital record details; the interface is shown in Figure 6-3-2-11.

(1) Measurement Details: Measurement point name, measurement method, measurement start time, Ts, Tm, instrument model, serial number, calibration date, sensitivity class, calibration sound pressure level, weighting, latitude and longitude, units, sampling interval, and measurement range. These can be expanded or collapsed using the controls in the lower right corner.

(2) Detailed Metrics: Displayed according to the statistical integration settings; swipe up to view more. The list of metrics can be expanded or collapsed using the controls to the right of "List."

6.3.2.5.3 Statistical Integration Audio Recording

Click any .wav file to start playing the recording. The interface and operations are the same as for "Total Value Integration Measurement."

6.3.2.5.4 Voice Annotations

See Section 6.7.5, "Voice Annotations," for details.

6.3.2.5.5 Photo Capture

See Section 6.6.7, "Photo Capture," for details.

**6.3.3 1/1 OCT Analysis**

6.3.3.1 1/1 OCT Analysis List Interface

Tap "1/1 OCT Analysis" to enter the 1/1 OCT analysis interface, as shown in Figure 6-3-3-1.

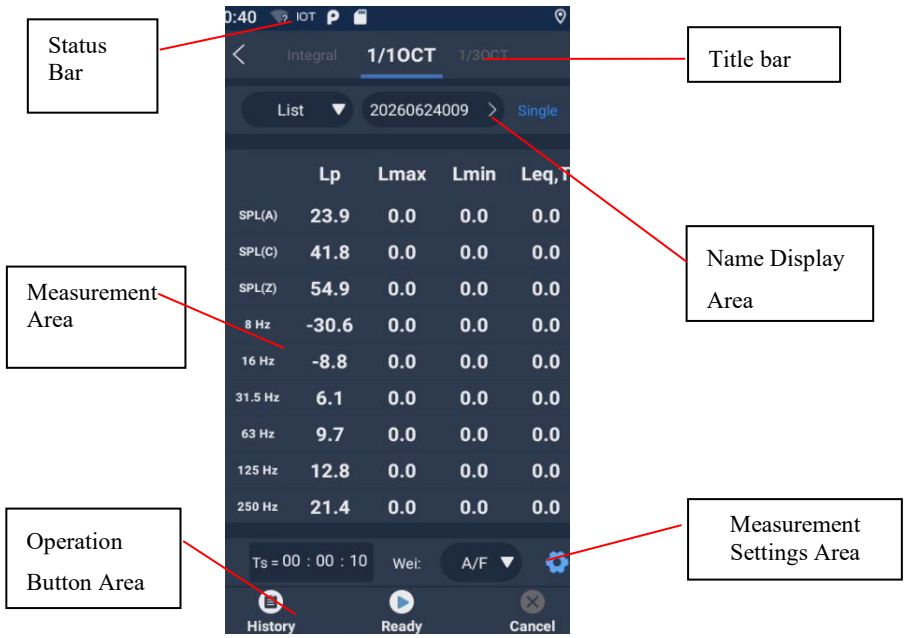



Figure 6-3-3-1 1/1 OCT Analysis List Interface

The meanings and operations of the status bar, title bar, name display area, action button area, and measurement settings area shown in the figure are the same as those in the “Total Integral Interface.”

The measurement area displays 1/1 OCT analysis measurements. The vertical axis shows SPL(A), SPL(C), SPL(Z), and the center frequencies of the 1/1 OCT (8 Hz, 16 Hz, 31.5 Hz, 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, 16 kHz). The horizontal axis displays measurement metrics: Lp, Lmax, Lmin, and Leq,T, calculated based on the set time weighting, frequency weighting, and Ts.

Starting, pausing, and ending the measurement procedure are the same as for “Total Value Integration Measurement.”

Click the “Settings” button to enter the 1/1 OCT Analysis Settings interface, where you can configure Ts, the start mode, the digital recorder, and more. (Note: You cannot access parameter settings while a measurement is in progress.) For specific functions and operations, refer to the settings for “Total Integral.”

Weighting: The default is Z/F. The drop-down menu includes A/F, A/S, C/F, C/S, Z/F, and Z/S.

Click any record to open a dialog box displaying its values, as shown in Figure 6-3-3-2. Click “OK” to close the dialog box.

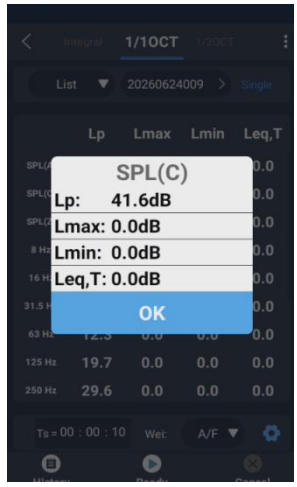



Figure 6-3-3-2 Indicator Pop-up

6.3.3.2 1/1 OCT Analysis Graph Interface

Select “Graph” from the 1/1 OCT Analysis List interface’s toggle button to switch to the 1/1 OCT Analysis Graph interface, as shown in Figure 6-3-3-3. The 1/1 OCT Analysis Graph displays the sound pressure levels for each 1/1 OCT frequency band during the measurement.

The vertical axis represents sound pressure level, with a range of 0.0 dB to 150.0 dB.

The horizontal axis displays the center frequencies of each 1/1 OCT band and the A-, C-, and Z-weighted sound levels; the horizontal scale for each center frequency can be manually zoomed.

Frequency weighting and time weighting can be selected via the “Weighting” option.

The displayed graph metrics can be selected via a drop-down menu from Lp, Lmax, Leq, T, Lmin, or All. The graph displays different colors based on the selected metric. If “All” is selected, the values corresponding to each center frequency point are displayed in overlapping colors, as shown in Figure 6-3-3-4.

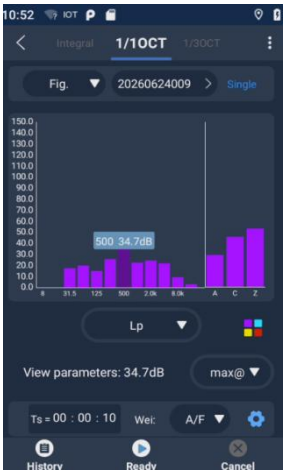



Figure 6-3-3-3 1/1 OCT graphical interface

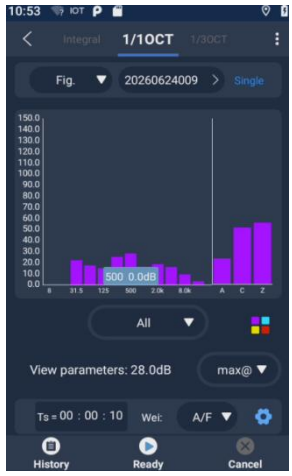



Figure 6-3-3-4 Effect of selecting all indicators

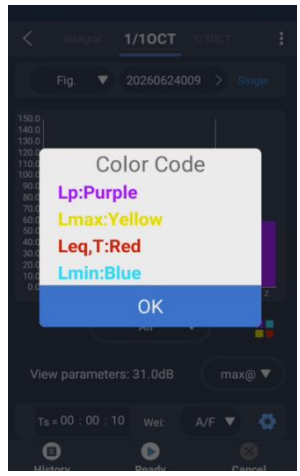



Figure 6-3-3-5 Color Specifications

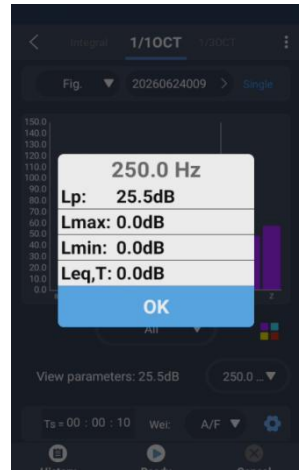



Figure 6-3-3-6 Indicator Pop-up

Click the ( ) icon to view the metrics associated with that color, as shown in Figure 6-3-3-5. Click “OK” to close the dialog box.

To view the weighted sound pressure level and frequency-band sound pressure level metrics, use the slider to select max@, SPL(A), SPL(C), SPL(Z), and each 1/1 OCT center frequency. After selecting and clicking, a dialog box will pop up displaying the values for that entry, as shown in Figure 6-3-3-6. Click “OK” to close the dialog box.

Note: max@ refers to the maximum values of Lp, Lmax, Lmin, Leq, and T corresponding to each center frequency point.

### 6.3.3.4 Viewing 1/1 OCT Analysis Data

Click the “History” button to enter the data viewing interface, as shown in Figure 6-3-3-9. This interface displays the stored historical data for total value integration; the time shown is the start time of the measurement for that data set, the set name is the name that was configured, and the source is 1/1 OCT. Click to select a single group, multiple groups, or all groups to perform operations such as deletion or printing. Click any file to enter the historical measurement view interface, as shown in Figure 6-3-3-10. Click to select a single group, multiple groups, or all groups to enable printing or deletion; see Section 6.5 for details on the delete and print functions.

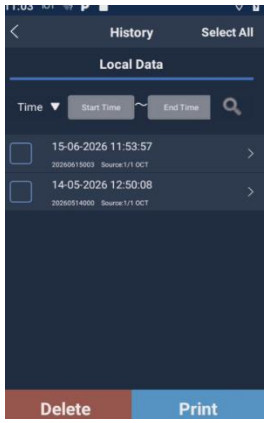



Figure 6-3-3-9 1/1 OCT History Interface

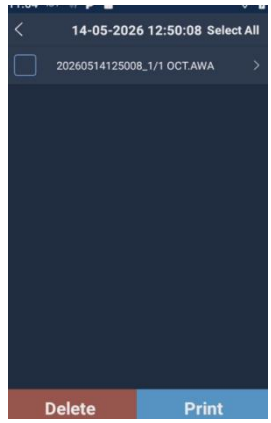



Figure 6-3-3-10 Historical Measurement View Interface

6.3.3.4.1 1/1 OCT Analysis History Details

Click the “1/1 OCT.AWA” file to access the 1/1 OCT analysis history details interface, as shown in Figure 6-3-3-11.

(1) Measurement Details: Measurement point name, measurement method, measurement start time, Ts, Tm, instrument model, serial number, calibration date, sensitivity level, calibration sound pressure level, weighting, latitude and longitude, units, and measurement range. Click the controls to expand or collapse the details.

(2) List Metrics: SPL(A), SPL(C), SPL(Z), and Lmax, Lmin, Leq,T for each frequency point in the 1/1 OCT. Swipe up to view more. The list metrics can be expanded or collapsed using the controls next to “List.”

(3) Graphical Metrics: 1/1 OCT analysis graphs; swipe on the right side of the screen to view the corresponding graphs. The graphical metrics can be expanded or collapsed using the control next to “Graphs.”


Figure 6-3-3-11 1/1 OCT history details 1


Figure 6-3-3-11 1/1 OCT history details 2

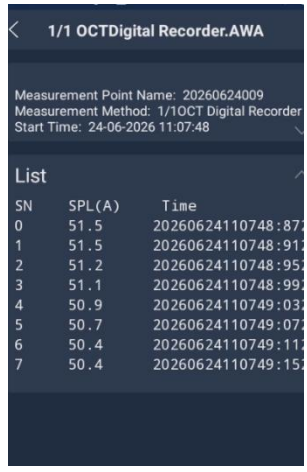



Figure 6-3-3-12 1/1 OCT digital recording details

6.3.3.4.2 1/1 OCT Analysis Digital Record Details

Click the “1/1 OCT Digital Record.AWA” file to open the 1/1 OCT Digital Record Details interface, as shown in Figure 6-3-3-12.

(1) Measurement Details: Measurement point name, measurement method, measurement start time, Ts, Tm, instrument model, serial number, calibration date, sensitivity level, calibration sound pressure level, weighting, latitude and longitude, units, sampling interval, and measurement range. Click the control to expand or collapse the details.

(2) List Metrics: Displayed according to the 1/1 OCT analysis settings; swipe up to view more. List metrics can be expanded or collapsed using the controls to the right of “List.”

6.3.3.3.3 1/1 OCT Analysis Audio Recording

Click any .wav file to start playing the recording. The interface and operations are the same as for “Total Integral Measurement.”

6.3.3.3.4 Voice Annotations

See Section 6.7.5, “Voice Annotations,” for details.

### 6.3.4 1/3 OCT Analysis

6.3.4.1 1/3 OCT Analysis List Interface

Click “1/3 OCT Analysis” to enter the 1/3 OCT analysis list interface, which is shown in Figure 6-3-4-1:

The meanings and operations of the status bar, title area, name display area, operation button area, and measurement settings area shown in the figure are the same as those in the “Total Integral Interface.”

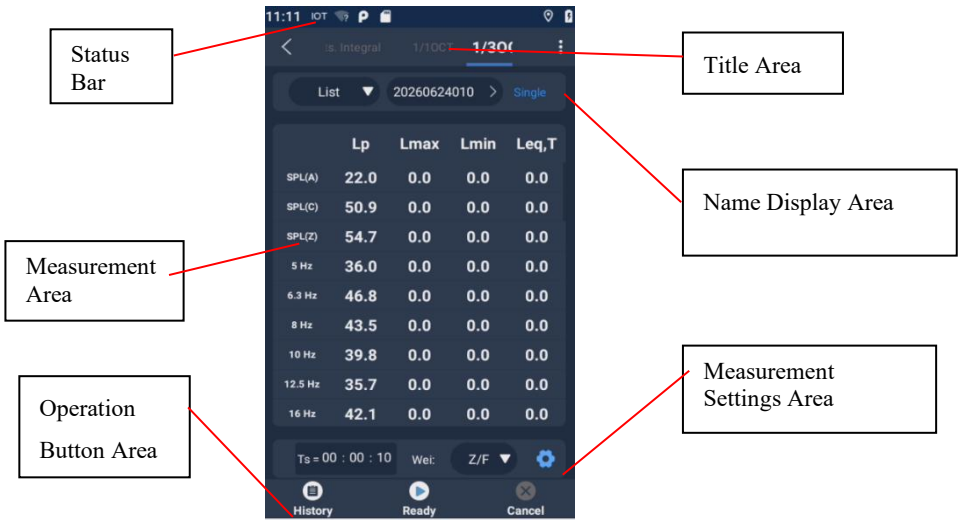



Figure 6-3-4-1 1/3 OCT analysis list interface

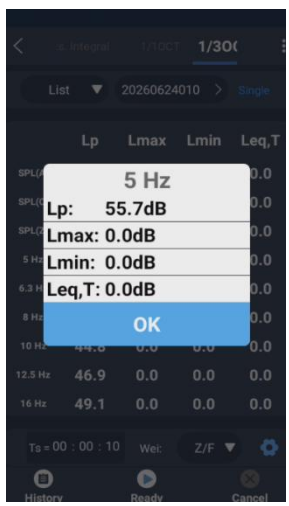



Figure 6-3-4-2 Indicator Pop-up

The measurement area displays the 1/3 OCT analysis measurements. The columns in the table represent SPL(A), SPL(C), SPL(Z), SPL(T), SPL(U), and the center frequencies of the 1/3 OCT (5 Hz, 6.3 Hz, 8 Hz, 10 Hz, 12.5 Hz, 16 Hz, 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, 16 kHz, 20 kHz).

Note: SPL(T) and SPL(U) represent user-defined frequency weighting results; see Section 6.3.4.3 for custom weighting.

The horizontal axis shows measurement parameters: Lp, Lmax, Lmin, and Leq,T, which are calculated based on the time weighting, frequency weighting, and Ts specified in the integral measurement settings.

The procedures for starting, pausing, and ending the integral measurement are the same as for “Total Value Integral Measurement.”

Click the “Settings” button to access the 1/3 OCT analysis settings interface, where you can configure Ts, the start mode, the digital recorder, custom weighting, and more. (Note: You cannot access the parameter settings while a measurement is in progress.) For specific functions and operations, refer to the settings for “Total Value Integral Measurement.”

Weighting: The default is Z/F. The drop-down menu includes A/F, A/S, C/F, C/S, Z/F, and Z/S.

Click any record to open a dialog box displaying its value, as shown in Figure 6-3-4-2. Click “OK” to close the dialog box.

6.3.4.2 1/3 OCT Analysis Graph Interface

On the 1/3 OCT Distribution List interface, select “Graph” from the page display toggle button to switch to the 1/3 OCT analysis graph interface, as shown in Figure 6-3-4-3. The 1/3 OCT distribution graph displays the sound pressure levels for each 1/3 OCT frequency band during the measurement.

The vertical axis represents sound pressure level, with a range of 0.0 dB to 150.0 dB.

The horizontal axis displays the center frequencies of each 1/3 OCT band and the total values for SPL(A), SPL(C), SPL(Z), SPL(T), and SPL(U). The horizontal scale for each center frequency can be manually adjusted.

Frequency weighting and time weighting can be selected via the “Weighting” option.

The displayed graphical metrics can be selected from the drop-down options: Lp, Lmax, Leq, T, Lmin, and All. The graph displays different colors based on the selected metric; if “All” is selected, the values corresponding to each center frequency point are displayed in overlapping colors, as shown in Figure 6-3-4-4.

Click the color ( ) icon to view the metric corresponding to each color, as shown in Figure 6-3-4-5. Click “OK” to close the dialog box.

To view the various weighted sound pressure level and frequency-band sound pressure level metrics, use the slider to select max@, SPL(A), SPL(C), SPL(Z), SPL(T), SPL(U), and the respective 1/3 OCT frequencies. After selecting and clicking, a dialog box will pop up displaying the values for that entry, as shown in Figure 6-3-4-6. Click “OK” to close the dialog box.

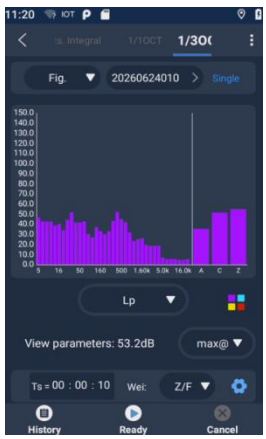



Figure 6-3-4-3 1/3-Octave graphical interface

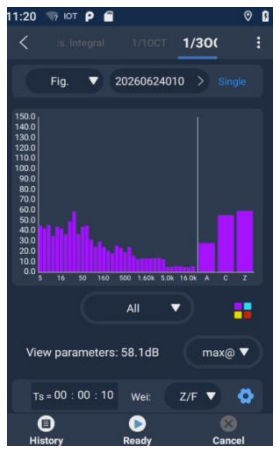



Figure 6-3-4-4 Effect of selecting all indicators

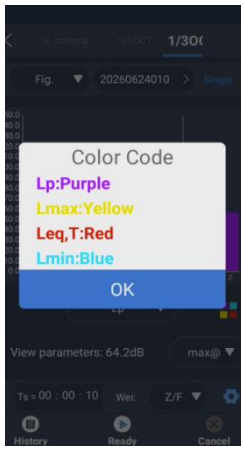



Figure 6-3-4-5
Color Specifications

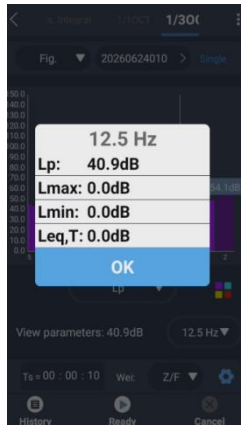



Figure 6-3-4-6
Indicator Pop-up

6.3.4.3 Custom Weighting for 1/3 OCT Analysis

Click the “Settings” ( ) button to access the 1/3 OCT analysis settings interface, where you can configure custom weighting, as shown in Figure 6-3-4-7.

Note: You cannot access the parameter settings while a measurement is in progress.

After enabling custom weighting, the interface appears as shown in Figure 6-3-4-8. The U and T weighting values for custom weighting can be adjusted at 37 center frequency points ranging from 5 Hz to 20 kHz. The factory default weighting values for these two frequency components are listed in Table 2.

You can set the U and T weightings corresponding to the 1/3 OCT center frequencies based on actual conditions. These values represent the difference between the measured level at that frequency and the unweighted level; a negative weighting value indicates attenuation, while a positive weighting value indicates amplification. After configuration, the 1/3 OCT analysis list and graphical interface display the Lp, Lmax, Lmin, and Leq,T values for SPL(T) and SPL(U) under the current frequency and time weightings.

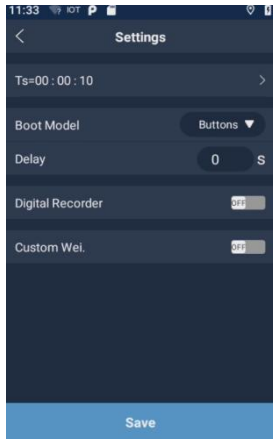



Figure 6-3-4-7 Custom Weighting

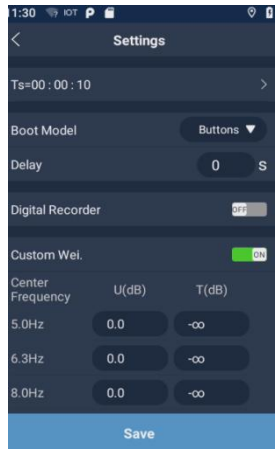



Figure 6-3-4-8 Enabling custom weighting

Table 2: Factory Default Values for Custom Frequency Weighting

| Center Frequency (Hz) | U-weighted (dB) | T-weighted(dB) | Center Frequency (Hz) | U-weighted (dB) | T-weighted (dB) |
|---|---|---|---|---|---|
| 5 | 0.0 | -∞ | 400 | 0.0 | -∞ |
| 6.3 | 0.0 | -∞ | 500 | 0.0 | -∞ |
| 8 | 0.0 | -∞ | 630 | 0.0 | -∞ |
| 10 | 0.0 | -∞ | 800 | 0.0 | -∞ |
| 12.5 | 0.0 | -∞ | 1000 | 0.0 | -∞ |
| 16 | 0.0 | -56.7 | 1250 | 0.0 | -∞ |
| 20 | 0.0 | -50.5 | 1600 | 0.0 | -∞ |
| 25 | 0.0 | -44.7 | 2000 | 0.0 | -∞ |

| | | | | | |
|---|---|---|---|---|---|
| 31.5 | 0.0 | -39.4 | 2500 | 0.0 | -∞ |
| 40 | 0.0 | -34.6 | 3150 | 0.0 | -∞ |
| 50 | 0.0 | -30.2 | 4000 | 0.0 | -∞ |
| 63 | 0.0 | -26.2 | 5000 | 0.0 | -∞ |
| 80 | 0.0 | -22.5 | 6300 | 0.0 | -∞ |
| 100 | 0.0 | -19.1 | 8000 | 0.0 | -∞ |
| 125 | 0.0 | -16.1 | 10000 | 0.0 | -∞ |
| 160 | 0.0 | -13.4 | 12500 | 0.0 | -∞ |
| 200 | 0.0 | -10.9 | 16000 | 0.0 | -∞ |
| 250 | 0.0 | -∞ | 20000 | 0.0 | -∞ |
| 315 | 0.0 | -∞ | \ | \ | \ |

Note: The factory default value for the custom T-frequency weighting is the A-weighted value in the range of 16 Hz to 200 Hz, which is used for evaluating low-frequency noise in Taiwan.

6.3.4.4 Viewing 1/3 OCT Analysis Data

Click the “History” button to enter the data viewing interface, as shown in Figure 6-3-4-9. This interface displays stored historical 1/3 OCT analysis data; the time shown is the start time of the measurement for that data set, the set name is the name that was configured, and the source is 1/3 OCT. Click to select a single set, multiple sets, or all sets to perform operations such as deleting or printing. Click any file to enter the historical measurement view interface, as shown in Figure 6-3-4-10. Click to select a single set, multiple sets, or all sets to enable printing or deleting; see Section 6.5 for details on the delete and print functions.

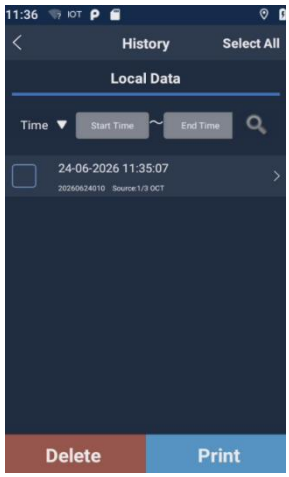



Figure 6-3-4-9 1/3-Octave Analysis History Interface

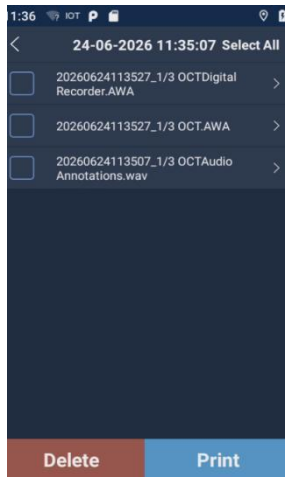



Figure 6-3-4-10 Historical Measurement View Interface

### History Details

Click the “1/3 OCT.AWA” file to access the 1/3 OCT analysis history details interface, as shown in Figure 6-3-4-11.

(1) Measurement Details: Measurement point name, measurement method, measurement start time, Ts, Tm, instrument model, serial number, calibration date, sensitivity class, calibration sound pressure level, weighting, latitude and longitude, units, and measurement range. Click the controls to expand or collapse the details.

(2) List Metrics: SPL(A), SPL(C), SPL(Z), SPL(T), SPL(U), and Lmax, Lmin, Leq,T for each frequency point in the 1/3 OCT. Swipe up to view more. The list metrics can be expanded or collapsed using the controls next to “List.”

(3) Graphical Metrics: 1/3 OCT analysis graphs; swipe on the right side of the screen to view the corresponding graphs. The graphical metrics can be expanded or collapsed using the control next to “Graph.”

6.3.4.4.2 1/3 OCT Analysis Digital Record Details

Click the “1/3 OCT Digital Record.AWA” file to enter the 1/3 OCT digital record details interface, as shown in Figure 6-3-4-12.

(1) Measurement Details: Measurement point name, measurement method, measurement start time, Ts, Tm, instrument model, serial number, calibration date, sensitivity level, calibration sound pressure level, weighting, latitude and longitude, units, sampling interval, and measurement range. Click the control to expand or collapse these details.

(2) List Metrics: Displayed according to the 1/3 OCT analysis settings. Swipe up to view more. List metrics can be expanded or collapsed using the controls to the right of “List.”

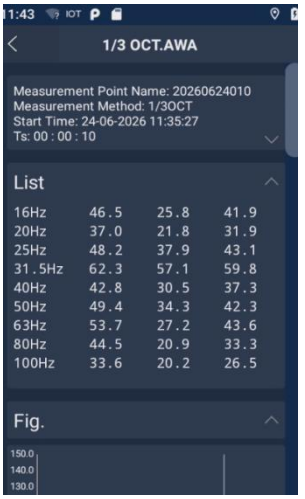



Figure 6-3-4-11 1/3 OCT Historical Details 1 Interface

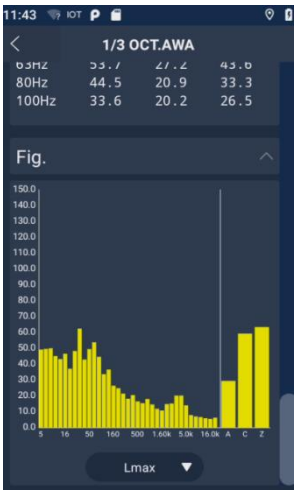



Figure 6-3-4-11 1/3 OCT Historical Details 2 Interface

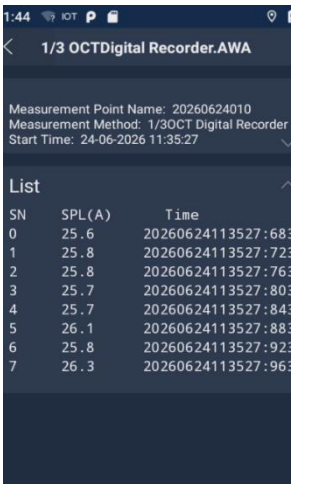



Figure 6-3-4-12 1/3-Octave digital recording details Interface

6.3.4.4.3 1/3 OCT Analysis of Recordings

Click any .wav file to start playing the recording; the interface and operations are the same as for “Total Integral Measurement.”

6.3.4.4.4 Voice Annotations

See Section 6.7.5, “Voice Annotations,” for details.

**6.3.5 FFT Analysis**

6.3.5.1 FFT Analysis List Interface

Click “FFT Analysis” to enter the FFT analysis interface. By default, the FFT analysis list interface is displayed, as shown in Figure 6-3-5-1.

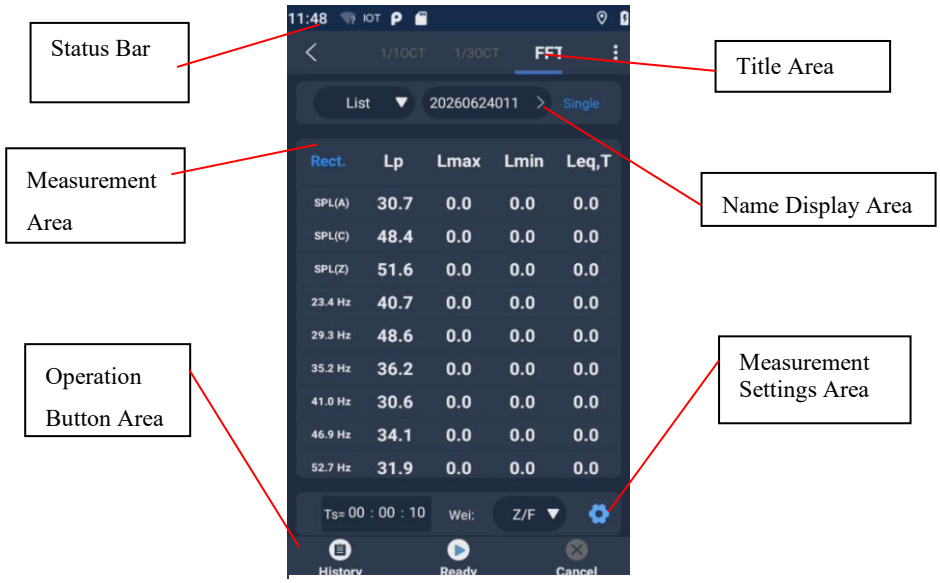



Figure 6-3-5-1 FFT Analysis List Interface

The meanings and operations of the status bar, title bar, name display area, action button area, and measurement settings area shown in the figure are the same as those in the “Total Integral Interface.”

The measurement area displays FFT measurement values, with vertical parameter indicators including SPL(A), SPL(C), SPL(Z), and 23.4 Hz–19998.0 Hz.

The horizontal axis shows measurement metrics: Lp, Lmax, Lmin, and Leq,T, calculated based on the set time weighting, frequency weighting, and Ts.

The procedures for starting, pausing, and ending the measurement are the same as in the “Total Value Integration Measurement.”

Click the “Settings” button to access the FFT analysis settings interface, where you can configure Ts, the start mode, window functions, frequency limits, and more. (Note: You cannot access the parameter settings while a measurement is in progress.) For specific functions and operations, refer to the settings for “Total Value Integration Measurement.”

Weighting: The default is Z/F. The drop-down menu includes A/F, A/S, C/F, C/S, Z/F, and Z/S.

Click any record to open a dialog box displaying its values, as shown in Figure 6-3-5-2. Click “OK” to close the dialog box.

6.3.5.2 FFT Analysis Graph Interface

On the FFT Analysis List page, select “Graph” from the page display toggle button to switch to the FFT Analysis Graph interface, as shown in Figure 6-3-5-3. The FFT Analysis Graph is primarily designed to provide a visual overview of the sound pressure level analysis for each narrowband frequency band during the current measurement.

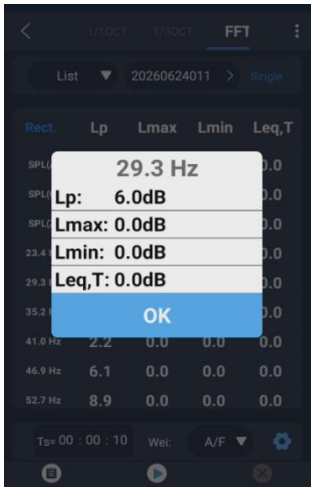



Figure 6-3-5-2
Indicator Pop-up

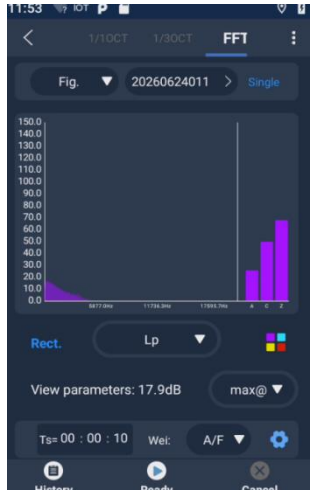



Figure 6-3-5-3 FFT Analysis Graphical Interface

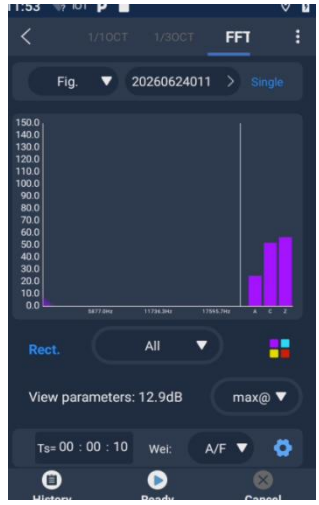



Figure 6-3-5-4 Effect of selecting all indicators

The vertical axis of the graph represents sound pressure level, with a range of 0.0 dB to 150.0 dB.

The horizontal axis shows the center frequencies (23.4 Hz to 19,998.0 Hz) and the total values (SPL(A), SPL(C), SPL(Z)); the horizontal scale for each center frequency can be manually adjusted.

Frequency and time weighting can be selected via the “Weighting” option.

The displayed graph metrics can be selected from the drop-down options: Lp, Lmax, Lmin, Leq, T, and All. The graph displays different colors based on the selected metric. If “All” is selected, the values corresponding to each center frequency point are displayed in overlapping colors, as shown in Figure 6-3-5-4.

Click the color ( ) icon to view the metric corresponding to each color, as shown in Figure 6-3-5-5. Click “OK” to close the dialog box.

To view the weighted sound pressure level and frequency-band sound pressure level metrics, scroll through the selection box (23.4 Hz–19998.0 Hz, SPL(A), SPL(C), SPL(Z)). After selecting an item, a dialog box will pop up displaying the value for that entry, as shown in Figure 6-3-5-6. Click “OK” to close the dialog box.

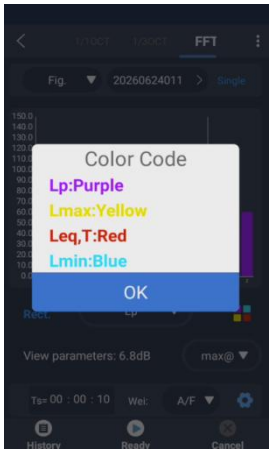



Figure 6-3-5-5 Color Specifications

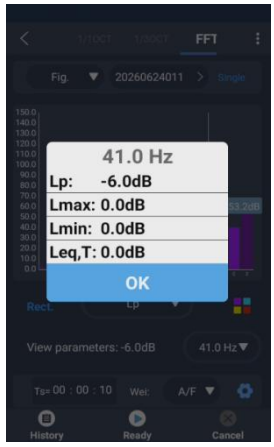



Figure 6-3-5-6 Indicator Pop-up

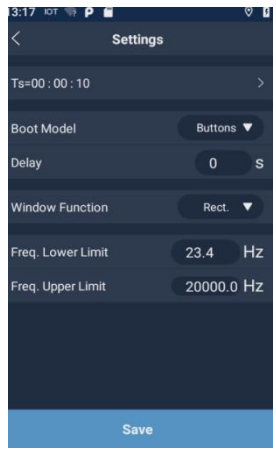



Figure 6-3-5-7 FFT setup interface

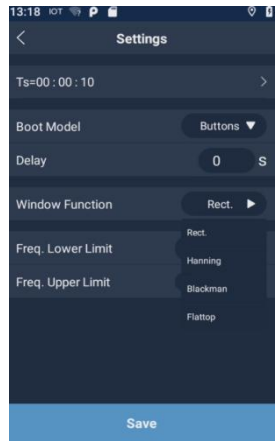



Figure 6-3-5-8 FFT window functions

### 6.3.5.3 FFT Window Function Settings

Click the “Settings” button to access the FFT settings interface, as shown in Figure 6-3-5-7. The window function can be selected from the drop-down menu: “Rectangular,” “Hanning,” “Blackman,” or “Flat-top,” as shown in Figure 6-3-5-8. After setting the upper and lower frequency limits, only the measured values of frequency points within this range can be read on the list and graph pages. The remaining settings are the same as for “Total Integral Measurement.” Similarly, you cannot access the parameter settings while a measurement is in progress.

Since the FFT can only transform time-domain data of finite length, spectral leakage occurs. To minimize this leakage error, a window function must be used. The characteristics of the various window functions are as follows:

Rectangular window: The main lobe is relatively concentrated, but the drawback is that the side lobes are relatively high.

Hanning window: An improved version of the raised-cosine window, it has a slightly wider main lobe but features smaller side lobes and a steeper decay rate, making it a preferred choice. The Hanning window can be viewed as the sum of the spectra of three rectangular time windows, allowing side lobes to cancel each other out and eliminating high-frequency interference and energy leakage.

Flat-top window: Its performance in the frequency domain, as its name suggests, exhibits very small fluctuations in the passband.

Blackman window: It has a narrow main lobe, small side lobes, and high frequency resolution.

6.3.5.4 Viewing FFT Analysis Data

Click the “History” button to enter the data viewing interface, as shown in Figure 6-3-5-9. This interface displays stored historical FFT analysis data; the time shown is the start time of the measurement for that data set, the group name corresponds to the configured group name, and the source is FFT analysis. Click to select a single group, multiple groups, or all groups to perform operations such as deleting or printing. Click any file to enter the historical measurement view interface, as shown in Figure 6-3-5-10. Click to select a single group, multiple groups, or all groups to perform actions such as printing or deleting. For details on the delete and print functions, see Section 6.5.

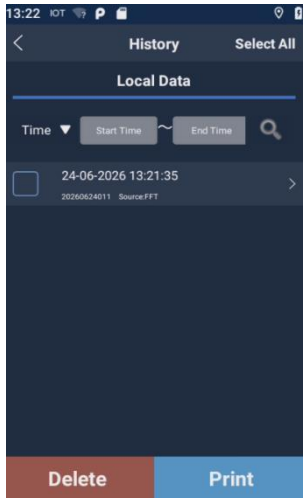



Figure 6-3-5-9 FFT Analysis History

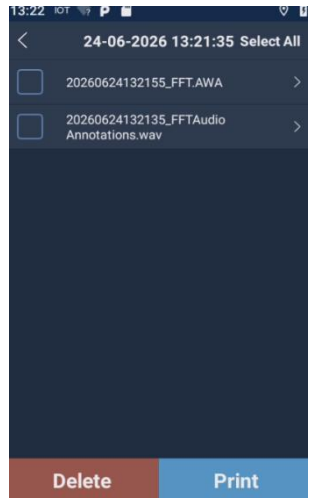



Figure 6-3-5-10 Historical Measurement View Interface

6.3.5.4.1 FFT Analysis History Details

Click the “FFT.AWA” file to access the FFT analysis history details interface, as shown in Figure 6-3-5-11.

(1) Measurement Details: Measurement point name, measurement method, measurement start time, Ts, Tm, instrument model, serial number, calibration date, sensitivity class, calibration sound pressure level, weighting, latitude and longitude, units, sampling frequency, window type, number of lines in window analysis, and measurement range. Click the control to expand or collapse fields.

(2) List Metrics: SPL(A), SPL(C), SPL(Z), and Lmax, Lmin, Leq,T at each frequency point in the FFT. Swipe up to view more. List metrics can be expanded or collapsed using the control next to “List.”

(3) Graph Metrics: FFT analysis graph. Swipe on the right side of the screen to view the corresponding graph. Graph metrics can be expanded or collapsed using the control next to "Graph."

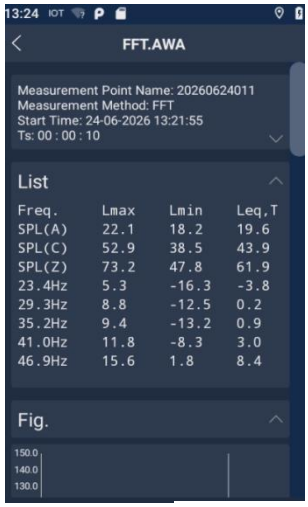



Figure 6-3-5-11 I
History D


Figure 6-3-5-11 FFT Segment History Details 2

6.3.5.4.2 FFT Analysis and Recording Playback

Click any .wav file to start playing the recording. The interface and operations are the same as those for "Total Value Integration Measurement."

6.3.5.4.3 Voice Annotations

See Section 6.7.5, "Voice Annotations," for details.

**6.3.6 24-Hour Measurement**

6.3.6.1 24-Hour List Interface

Click "24-Hour Measurement" to enter the 24-hour list interface, as shown in Figure 6-3-6-1.

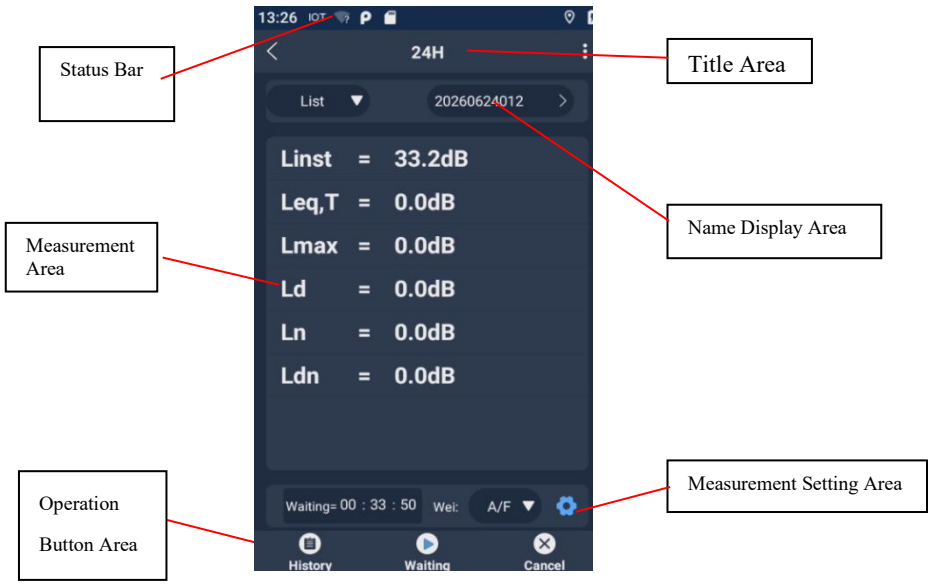



Figure 6-3-6-1 24-Hour List Interface

The meanings and operations of the status bar, title bar, and name display area in the figure are the same as those in the “Total Value Integration Interface.”

The measurement area displays the current measurement value for the 24-hour period. The measurement parameters—Linst, Leq,T, Lmax, Ld, Ln, and Ldn—are calculated based on the set time weighting, frequency weighting, and Ts.

When the 24-hour measurement is launched, it defaults to automatic mode, displaying the prompt “Started, Automatic Mode, Measurement starts automatically on the hour,” with the status showing as “Waiting” (icon , displayed in blue); in manual mode, the initial status is “Preparing” (icon , displayed in blue); in timed mode, the initial status is “Preparing” (icon , displayed in blue). After “Starting” the measurement, the status changes to “Measuring” (icon displayed in blue). Clicking again brings up a pop-up prompt asking, “Measurement in progress. Are you sure you want to end the measurement and save the

ıta?" If you select "OK," the measurement ends and the status changes to "Preparing" (icon displayed in blue); if you select "Cancel," the measurement continues.

During measurement, the battery level is checked. If the battery level is less than 80% and the device is not charging, a prompt appears: "Battery level must be greater than 80%."

Click the "Settings" button to enter the settings interface, where you can configure Ts, the trigger mode, and the measurement cycle (note: you cannot access parameter settings while a measurement is in progress). To access parameter settings while in standby mode, you must first "Cancel" the measurement, then click the Settings button to enter.

Weighting: Default is A/F. The drop-down menu includes A/F, A/S, A/I, C/F, C/S, C/I, Z/F, Z/S, and Z/I.

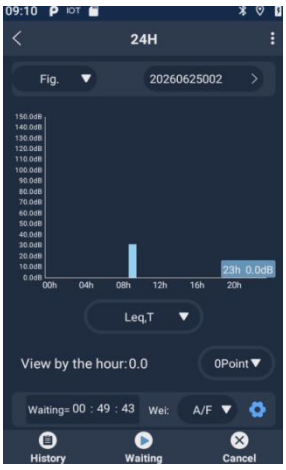



Figure 6-3-6-2 24-hour graphical interface

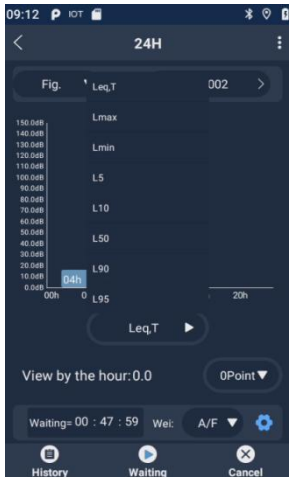



Figure 6-3-6-3 24-Hour Indicators

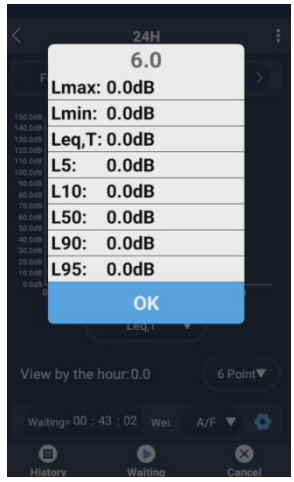



Figure 6-3-6-4 Hourly view pop-up

6.3.6.2 24-Hour Measurement Graph Interface

Select “Graph” from the 24-hour list interface drop-down menu to switch to the 24-hour measurement graph interface. This interface displays a 24-hour sound pressure level distribution graph, with sound pressure level on the vertical axis and hour on the horizontal axis, consisting of 24 columns, as shown in Figure 6-3-6-2.

(1) Vertical Axis: Sound pressure level; the default range is 0.0 dB–150.0 dB.

(2) Horizontal Axis: Hourly time; there are 24 columns (00 h–23 h). The coordinate data is calculated and displayed based on the selected “Ts, frequency weighting, time weighting, and indicators.”

(3) Indicators: The drop-down options include Leq,T, Lmax, Lmin, L5, L10, L50, L90, and L95, as shown in Figure 6-3-6-3.

(4) View by Hour: Use the scroll selection box (00 h–23 h). After selecting “Hour,” a dialog box pops up displaying the value for that entry, as shown in Figure 6-3-6-4. Click “OK” to close the dialog box.

6.3.6.3 24-Hour Measurement Overview Interface

Select “All” from the 24-Hour List interface toggle button to enter the 24-Hour All interface. This interface is designed to provide a clear, intuitive display of the measurement values for each hour, as shown in Figure 6-3-6-5.

Horizontal Metrics: Time, Leq,T, Lmax, L5, L10, L50, L90, L95, Lmin, SD. You can swipe left or right to view these metrics.

Vertical indicators: A total of 24 rows represent the calendar clock (00:00–23:00); swipe up or down to view the vertical indicators.

Pop-up dialog: Click any clock entry to open a dialog box displaying the value for that time, as shown in Figure 6-3-6-6. Click “OK” to close the dialog box.

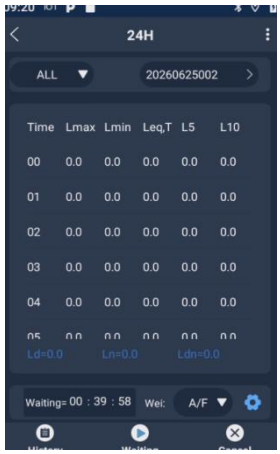



Figure 6-3-6-5 24-Hour Overall Interface

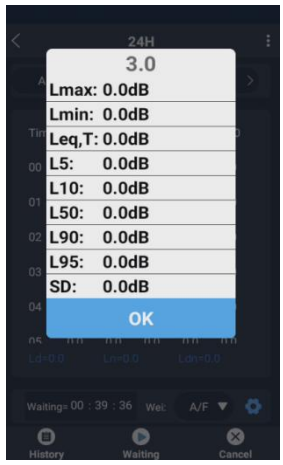



Figure 6-3-6-6 24-Hour Indicator Pop-up

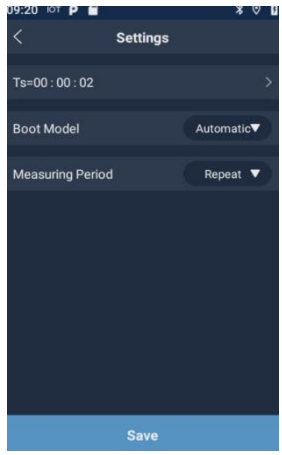



Figure 6-3-6-7 Settings interface

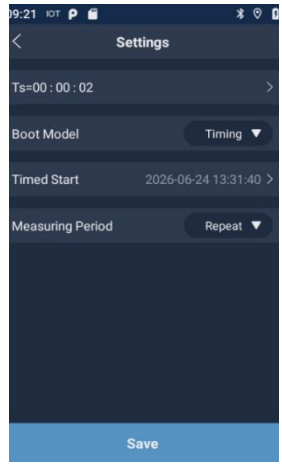



Figure 6-3-6-8 Timer Settings

6.3.6.4 24-Hour Measurement Settings

Click the Settings button to enter the 24-hour statistics settings interface, as shown in Figure 6-3-6-7. You cannot access the parameter settings while a measurement is in progress.

(1) Ts: Time selection control; default is 10 s. The measurement time (Ts) can only be set to a value greater than 00:00:00 and less than or equal to 01:00:00.

(2) Start Mode: Options include “Auto,” “Manual,” and “Scheduled.” Auto: Enables the 24-hour function and enters “Wait” mode; measurement starts automatically at the top of the hour (in Auto mode, saving settings or entering the 24-hour measurement interface will immediately trigger the Wait state); Manual: Click the measurement button to start measurement; Timed: As shown in Figure 6-3-6-8, you can set a 24-hour timed start time; the system will start measurement when the set time is reached.

(3) Measurement Cycle: Options include “Repeat” and “Single.” Repeat: After the previous 24-hour measurement ends, the next 24-hour measurement cycle begins immediately; Single: Measurement will not restart after the 24-hour period ends.

(4) The previous 24-hour measurement data will be cleared when the measurement is started for the first time or when exiting the 24-hour interface.

6.3.6.5 Viewing 24-Hour Data

Tap the “History” button to enter the data viewing interface, as shown in Figure 6-3-6-9. This screen displays stored 24-hour historical data. The time shown is the start time of the measurement for that data set; the set name is the name you configured; and the source is “24-hour.” Tap to select a single set, multiple sets, or all sets to perform operations such as deleting or printing.

Tap any file to enter the historical measurement view screen, as shown in Figure 6-3-6-10. The historical measurement view displays the first 24 data sets (the time shown for each hour is the end time of that hour’s measurement; if measurements were not taken for a full 24 hours, the number of data sets will correspond to the number of hours measured) and a complete 24-hour list. The list is sorted in reverse chronological order, with the complete data list at the top; you can swipe up to view more. Select a single set, multiple sets, or all sets to perform operations such as printing or deleting. For details on the delete and print functions, see Section 6.5.

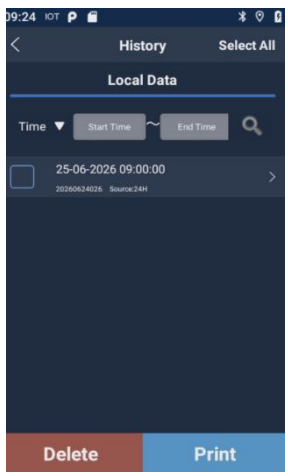



Figure 6-3-6-9 24-Hour History Interface

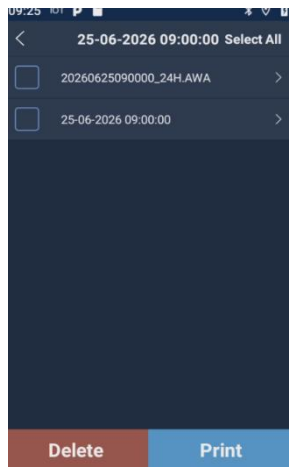



Figure 6-3-6-10 Historical Measurement View Interface

6.3.6.5.1 24-Hour Overall Details

Click the “24 Hours.AWA” file to access the 24-hour overall history details screen, as shown in Figure 6-3-6-11.

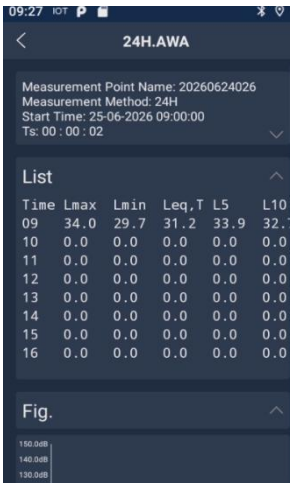



Figure 6-3-6-11 24-Hour Aggregate Details 1


Figure 6-3-6-11 24-Hour Overall Details 2


Figure 6-3-6-12 24-Hour Historical Details

(1) Measurement Details: Measurement point name, measurement method, start time, end time, Ts, instrument model, serial number, calibration date, sensitivity level, calibration sound pressure level, weighting, latitude and longitude, units, measurement range; click the control to expand or collapse.

(2) List: Horizontal indicators include L5, L10, L50, L90, L95, Lmax, Lmin, Leq, T, and SD. The list displays 24 sets of measurement data vertically; swipe up to view more. If no measurement was taken at a specific time, the indicator for that time is displayed as 0.

6.3.6.5.2 24-Hour History Details

Tap any time folder to enter the 24-Hour History Details screen, which appears as shown in Figure 6-3-6-12.

(1) Measurement Details: Monitoring point name, measurement method, measurement start time, measurement end time, Ts, Tm, instrument model, serial number, calibration date, sensitivity level, weighting, latitude and longitude, units, and measurement range. Tap the controls to expand or collapse these sections.

(2) List: Measurement metrics include L5, L10, L50, L90, L95, SD, Lmax, Lmin, leq, and T.

6.3.6.6.3 24-Hour Audio Recording

Click any .wav file to start playing the recording. The interface and operation are the same as for “Total Value Integral Measurement.”

6.3.7 Indoor Measurements

6.3.7.1 Indoor Measurement List Interface

Click “Indoor Measurements” to enter the indoor measurement list interface, as shown in Figure 6-3-7-1:

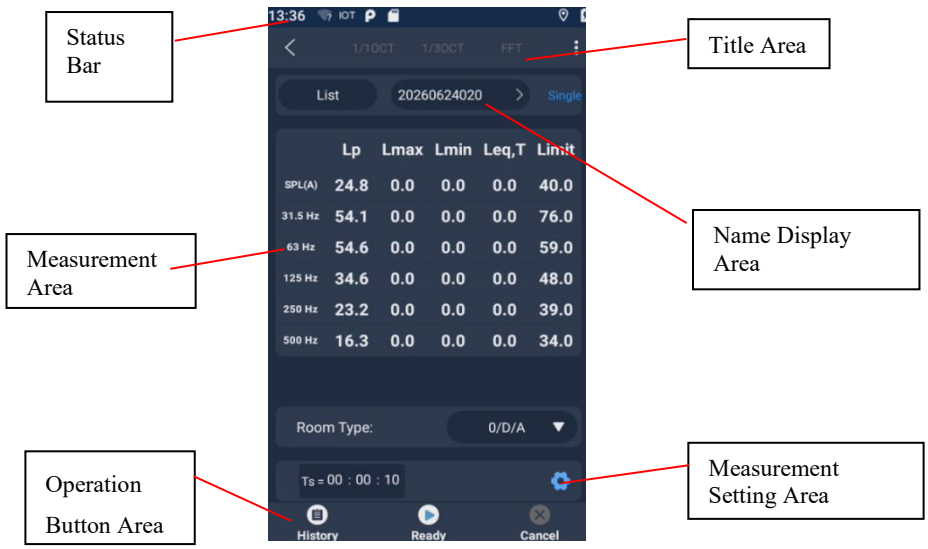



Figure 6-3-7-1 Indoor Measurement List Interface

The meanings and operations of the status bar, title bar, name display area, action button area, and measurement settings area shown in the figure are the same as those in the “Total Value Integration Interface.”

The measurement area displays indoor measurement values; the vertical axis shows SPL(A), 31.5 Hz, 63 Hz, 125 Hz, 250 Hz, and 500 Hz.

Horizontally, the measurement parameters are displayed: Lp, Lmax, Lmin, and Leq,T. Below “Limits,” the standard Leq,T limits for A-weighted measurements at 31.5 Hz, 63 Hz, 125 Hz, 250 Hz, and 500 Hz are shown. When the Leq,T measurement result exceeds the standard limit after integration is complete, the color changes from white to red, indicating that the limit has been exceeded.

Click the control next to the room type to switch rooms, as shown in Figure 6-3-7-2. The room type limits are set in accordance with the requirements of the GB 12348—2008 and GB 22337—2008 standards. The first parameter for room type is the zone code, which can be selected from 0, 1, 2, 3, or 4; the second is the day/night option, denoted by D and N, respectively; the third is the room type option, denoted by A and B. For example, “0/D/A” indicates that the standards applicable to Zone 0, daytime, and Room Type A are currently in effect.

Starting, pausing, and ending the measurement procedure are the same as for “Total Value Integration Measurement.”

Click the “Settings” button to enter the indoor measurement settings interface, where you can configure Ts, the start mode, the digital recorder, and other options (note: you cannot access parameter settings while a measurement is in progress). For specific functions and operations, refer to the settings for “Total Value Integral Measurement.”

Click any record to open a dialog box displaying its values, as shown in Figure 6-3-7-3. Click “OK” to close the dialog box.

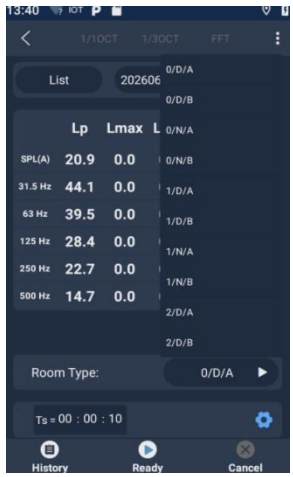



Figure 6-3-7-2 Room Types

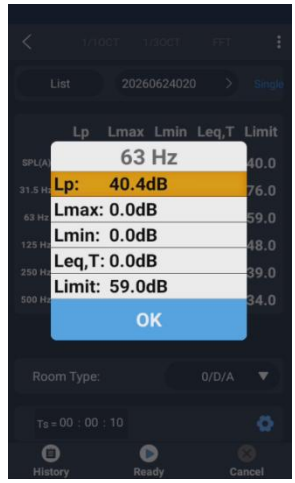



Figure 6-3-7-3 Indicator pop-up box

6.3.7.2 Viewing Indoor Measurement Data

Click the “History” button to enter the data viewing interface, as shown in Figure 6-3-7-4. This interface displays stored historical indoor measurement data; the time shown is the start time of the measurement for that data set, the group name corresponds to the configured group name, and the source is “Indoor Measurement.” Click to select a single group, multiple groups, or all groups to perform operations such as deleting or printing. Click any file to enter the historical measurement viewing interface, as shown in Figure 6-3-7-5. Click to select a single group, multiple groups, or all groups to perform operations such as printing or deleting. For details on the delete and print functions, see Section 6.5.

6.3.7.2.1. Indoor Measurement History Details

Click the “Indoor Measurement.AWA” file to enter the 1/1 OCT analysis history interface, as shown in Figure 6-3-7-6.

(1) Measurement Details: Measurement point name, measurement method, measurement start time, Ts, Tm, instrument model, serial number, calibration date, sensitivity level, calibration sound pressure level, latitude and longitude, units, room type, and measurement range. Click the control to expand or collapse fields.

(2) Listed Metrics: SPL(A), Lmax, Lmin, and Leq,T at 31.5 Hz, 63 Hz, 125 Hz, 250 Hz, and 500 Hz. Swipe left or right to view the values for each of these metrics. The listed metrics can be expanded or collapsed using the controls to the right of “List.”

6.3.7.2.2 Indoor Measurement Digital Record Details

Click the “Indoor Measurement Digital Record.AWA” file to access the indoor measurement digital record details, as shown in Figure 6-3-7-7.

(1) Measurement Details: Measurement point name, measurement method, measurement start time, Ts, instrument model, serial number, calibration date, sensitivity level, calibration sound pressure level, latitude and longitude, units, room type, sampling interval, and measurement range. Click the control to expand or collapse these details.

(2) Listed Metrics: Displayed based on the indoor measurement settings. Swipe up to view more. The listed metrics can be expanded or collapsed using the control next to “List.”

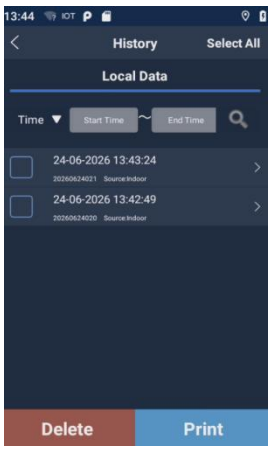



Figure 6-3-7-4 Indoor Measurement History

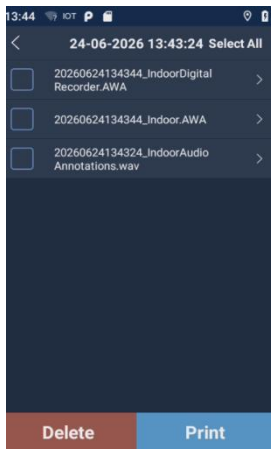



Figure 6-3-7-5 Historical Measurement View Interface

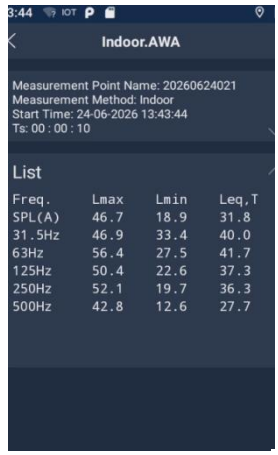



Figure 6-3-7-6 Indoor Measurement History Details

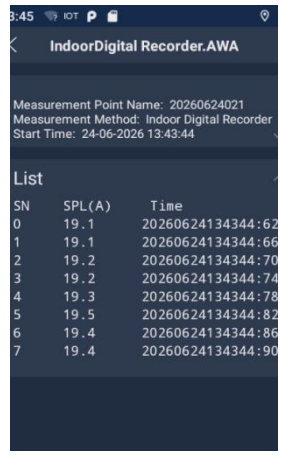



Figure 6-3-7-7 Digital Record History Details

6.3.7.2.3 Indoor Measurement Recordings

Click any .wav file to start playing the recording; the interface and operation are the same as for “Total Value Integration Measurement.”

6.3.7.2.4 Voice Annotations

See Section 6.7.5, “Voice Annotations,” for details.

### 6.3.8 Reverberation Measurement

After installing the reverberation time measurement software, the AWA6292 Multifunctional Sound Level Meter can measure indoor reverberation time using the impulse reverse integration method specified in ISO 3382-2:2008.

The method of obtaining the indoor sound pressure level decay curve by performing a reverse integration of the square of the impulse response is called the impulse reverse integration method. This method utilizes modern digital processing technology and is convenient and fast to use. More importantly, in principle, the pulse reverse integration method offers higher stability and repeatability than the sound source cutoff method, and it is particularly advantageous for measurements in the low-frequency range (below 250 Hz). Therefore, the pulse reverse integration method should be selected for measurements whenever possible. The ISO 3382-2:2008 standard states that the measurement accuracy of a single pulse reverse integration measurement is equivalent to the average of 10 sound source cutoff measurements. Furthermore, it requires only a pulsed sound source—such as a balloon, firecracker, or starting pistol—which is compact, lightweight, easy to use, and highly efficient for testing.

6.3.8.1 Key Performance Indicators

(1) Main Functions: Measurement of reverberation time and EDT;

(2) Compliance with Standards:

ISO 3382-2:2008, IEC 61672-1:2013 Class 1;

IEC 61260-1:2014 Class 1.

(3) Key measurement parameters: T20, T30, EDT;

(4) Impulse response recording time: 10 s or 20 s;

(5) Impulse response recording accuracy: 48 kHz sampling frequency, 32-bit;

(6) Measurement duration: 10 s, 20 s;

(7) Filter bandwidth: 1/1 OCT or 1/3 OCT;

(8) Center frequencies:

63 Hz, 125 Hz, 250 Hz, 500 Hz, 1000 Hz, 2000 Hz, 4000 Hz, 8000 Hz, 16000 Hz for 1/1 OCT;

For 1/3 OCT: 40 Hz, 50 Hz, 63 Hz, 80 Hz, 100 Hz, 125 Hz, 160 Hz, 200 Hz, 250 Hz, 315 Hz, 400 Hz, 500 Hz, 800 Hz, 1000 Hz, 1250 Hz, 1600 Hz, 2000 Hz, 2500 kHz, 3150 Hz, 4000 Hz, 5000 Hz, 6300 Hz, 8000 Hz, 10000 Hz, 12500 Hz, 16000 Hz.

Note: Frequencies below 100 Hz are extended frequencies and are provided for reference only.

(9) Measuring reverberation time using the pulse reverse integration method:

The AWA6292 uses the pulse reverse integration method to measure the reverberation time of a room. Users only need to provide a pulse sound source to perform the measurement. Pulse sounds can be generated by a balloon, firecracker, or starting pistol. The device is compact, lightweight, easy to use, and offers high testing efficiency.

(10) Setting the Measurement Point Location:

In accordance with the requirements for measurement point locations specified in ISO 3382, place the AWA6292's measurement microphone at the designated measurement point. Generally, it should be positioned 1.2 m above the floor. The minimum spacing between measurement microphones is 2 m, and the distance from the measurement microphone to the nearest reflective surface must be at least 1 m. The measurement microphone should not be placed too close to the sound source.

(11) Other Precautions:

The spectral characteristics of the impulse sound source have a significant impact on the measurement results. The spectrum of the impulse sound source selected by the user should be sufficiently rich to ensure that, within the measured frequency band, the sound pressure level of each frequency band of the emitted signal is at least 35 dB higher than that of the background noise; otherwise, the reverberation time for some frequency bands may not be measured correctly. A reverberation time of 0.0 indicates that the reverberation time at that center frequency cannot be measured.

When fitting the decay curve using the least squares method, the instrument automatically determines whether the error between the fitted straight line and the decay curve is too large; if it is too large, the reverberation time cannot be estimated.

6.3.8.2 Impulse Response

Click “Reverberation Measurement” to enter the reverberation measurement impulse response interface, which is shown in Figure 6-3-8-1:


Figure 6-3-8-1 Impulse response interface

The initial status is “Preparing” (icon , displayed in blue). On the reverb measurement page, the page-switching button does not work, and a prompt appears stating, “You must complete the measurement before switching.” At this point, you can either start a measurement directly or select a recording file:

(1) Start a measurement directly: Select the recording duration. The default waveform recording time is 20 seconds; you can choose between 10 and 20 seconds. Prepare the pulsed sound source. After clicking “Start,” the status changes to “Measuring” (icon , displayed in blue). At this point, light a firecracker, pop a balloon, or activate the pulsed sound source, and wait for the measurement to complete. Pausing is not supported. When the “Status = Measuring,” the “Recording Duration” cannot be changed. Once the measurement reaches the set duration, the measurement completes and the status changes to “Analysis in Progress.” After a 1-second wait, the analysis ends, and the system automatically navigates to the 1/1 OCT list with the status “Analysis Complete” (icon displayed in red), as shown in Figure 6-3-8-2.


Figure 6-3-8-2 1/1 OCT List

(2) Selecting a recording file: Navigate to the files sourced from reverberation measurements in the data review section. Long-press the corresponding .wav file for three seconds. A prompt stating “Please wait...” will appear. After three seconds, the analysis will complete, and the system will automatically navigate to the 1/1 OCT list, with the status showing as “Analysis Complete” (icon displayed in red), as shown in Figure 6-3-8-2.

After analysis is complete, the “Recording Duration” option cannot be toggled; use the navigation buttons on the page to switch to the “Pulse Response,” “1/1 OCT Graph,” “1/3 OCT Graph,” “1/3 OCT List,” or “Decay Curve” pages.

Clicking the “Analysis Complete” button automatically resets the screen to the “Preparing” page for the impulse response. You can adjust the recording duration to perform the next measurement.

6.3.8.3 1/1 OCT List

After analysis is complete, the system automatically navigates to the 1/1 OCT list interface. Alternatively, you can use the page navigation buttons to select “1/1 OCT List” to switch to this interface. As shown in Figure 6-3-8-2, the screen displays the Tr20, Tr30, and EDT values analyzed for frequencies of 16,000 Hz, 8,000 Hz, 4,000 Hz, 2,000 Hz, 1,000 Hz, 500 Hz, 250 Hz, 125 Hz, and 63 Hz.

Click the “End Analysis” button to automatically return to the “Preparing” page for the impulse response. You can adjust the recording duration for the next measurement.

6.3.8.4 1/1 OCT Graph

On any page of the reverberation measurement interface, select the “1/1 OCT Graph” toggle button to switch to the 1/1 OCT graph interface, as shown in Figure 6-3-8-3.

The horizontal axis represents 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1000 Hz, 2000 Hz, 4000 Hz, 8000 Hz, and 16000 Hz. In the graph, green indicates EDT, red indicates Tr30, and orange indicates Tr20.

To view the metrics for each frequency band, select 16000 Hz, 8000 Hz, 4000 Hz, 2000 Hz, 1000 Hz, 500 Hz, 250 Hz, 125 Hz, or 63 Hz. After selecting a frequency, a dialog box will pop up displaying the value for that band, as shown in Figure 6-3-8-4. Click “OK” to close the dialog box.

Click the “End Analysis” button to automatically return to the “Preparing” page for the impulse response. You can adjust the recording duration to perform the next measurement.

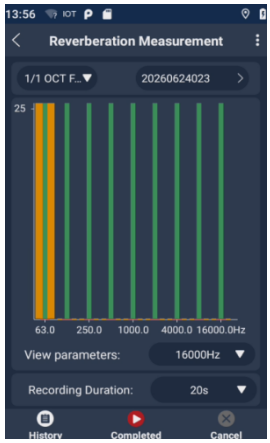



Figure 6-3-8-3 1/1 OCT graphical interface

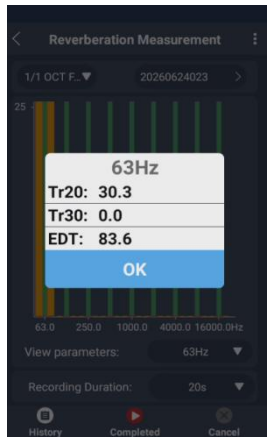



Figure 6-3-8-4 Indicator Pop-up

### 6.3.8.5 1/3 OCT List

On any page of the reverberation measurement interface, select the “1/3 OCT List” toggle button to switch to the 1/3 OCT list interface, as shown in Figure 6-3-8-5. The list displays the following frequencies: 16,000 Hz, 12,500 Hz, 10,000 Hz, 8,000 Hz, 6,300 Hz, 5,000 Hz, 4,000 Hz, 3,150 Hz, 2,500 Hz, 2000 Hz, 1600 Hz, 1250 Hz, 1000 Hz, 800 Hz, 630 Hz, 500 Hz, 400 Hz, 315 Hz, 250 Hz, 200 Hz, 160 Hz, 125 Hz, 100 Hz, 80 Hz, 63 Hz, 50 Hz, and 40 Hz, along with the corresponding Tr20, Tr30, EDT values; swipe up or down to view them.

Tap the “End Analysis” button to automatically return to the “Preparing” page for the impulse response. You can adjust the recording duration for the next measurement.

### 6.3.8.6 1/3 OCT Graph

On any page of the reverberation measurement interface, select the “1/3 OCT Graph” toggle button to switch to the 1/3 OCT graph interface, as shown in Figure 6-3-8-6.

The horizontal axis is labeled 16000 Hz, 12500 Hz, 10000 Hz, 8000 Hz, 6300 Hz, 5000 Hz, 4000 Hz, 3150 Hz, 2500 Hz, 2000 Hz, 1600 Hz, 1250 Hz, 1000 Hz, 800 Hz, 630 Hz, 500 Hz, 400 Hz, 315 Hz, 250 Hz, 200 Hz, 160 Hz, 125 Hz, 100 Hz, 80 Hz, 63 Hz, 50 Hz, and 40 Hz. In the graph, green indicates EDT, red indicates Tr30, and orange indicates Tr20.

To view the metrics for each frequency band, you can scroll to select 16000 Hz, 12500 Hz, 10000 Hz, 8000 Hz, 6300 Hz, 5000 Hz, 4000 Hz, 3150 Hz, 2500 Hz, 2000 Hz, 1600 Hz, 1250 Hz, 1000 Hz, 800 Hz, 630 Hz, 500 Hz, 400 Hz, 315 Hz, 250 Hz, 200 Hz, 160 Hz, 125 Hz, 100 Hz, 80 Hz, 63 Hz, 50 Hz, and 40 Hz. After selecting a frequency, a dialog box pops up displaying the value for that band, as shown in Figure 6-3-8-7. Click “OK” to close the dialog box.


Figure 6-3-8-5 1/3 OCT List

Click the “End Analysis” button to automatically return to the “Preparing” page for the impulse response. You can adjust the recording duration for the next measurement.

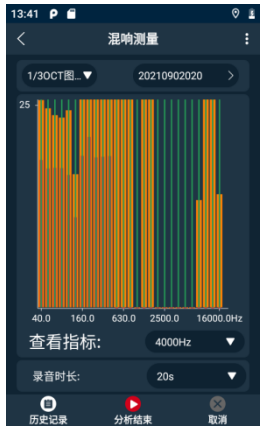



Figure 6-3-8-6 1/3 OCT Graphical Interface


Figure 6-3-8-7 Indicator Pop-up

6.3.8.7 Decay Curve

On any page of the reverberation measurement interface, select “Decay Curve” from the toggle button to switch to the decay curve interface, as shown in Figure 6-3-8-8.

Attenuation: 20 dB, 30 dB; select the required attenuation value based on actual conditions.

Filter Bandwidth: 1/1 OCT, 1/3 OCT; select the required filter bandwidth based on actual conditions.

Frequency: If the filter bandwidth is 1/1 OCT, the corresponding frequency points from Section 6.3.8.3 are displayed; if the filter bandwidth is 1/3 OCT, the corresponding frequency points from Section 6.3.8.5 are displayed. When switching filter bandwidths, the frequency automatically switches to the first frequency point of the current filter bandwidth; you can switch to the desired frequency based on actual conditions.

Curve: Displays the corresponding decay curve based on the set attenuation, filter bandwidth, and frequency.

Reverberation Time: Displays the corresponding reverberation time based on the set attenuation, filter bandwidth, and frequency.

Click the “End Analysis” button to automatically return to the “Preparing” page for the impulse response. You can adjust the recording duration to perform the next measurement.

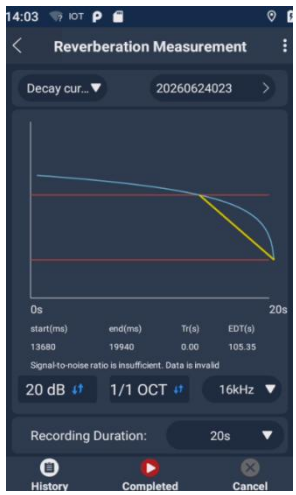



Figure 6-3-8-8 Decay curve interface

6.3.8.8 Viewing Reverberation Measurement Data

Click the “History” button to enter the data viewing interface, as shown in Figure 6-3-8-9. This interface displays stored historical reverberation measurement data; the time shown is the start time of the measurement for that data set, the group name corresponds to the configured group name, and the source is “Reverberation Measurement.” Click to select a single group, multiple groups, or all groups to delete them. Click any file to enter the historical measurement view interface, as shown in Figure 6-3-8-10. Select a single group, multiple groups, or all groups to enable printing or deletion; see Section 6.5 for details on the delete and print functions.

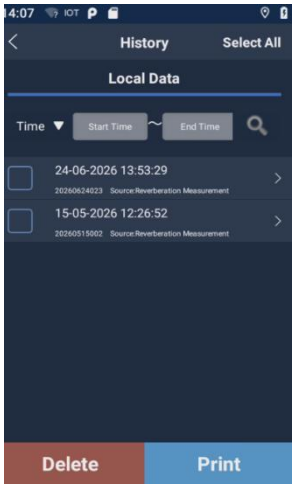



Figure 6-3-8-9 Reverberation Measurement History Interface

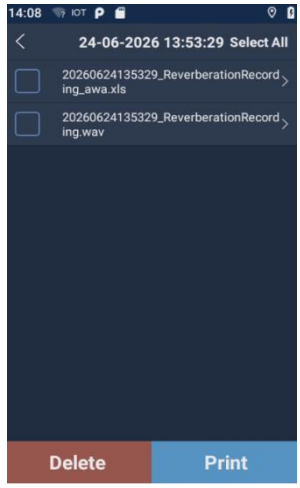



Figure 6-3-8-10 Reverberation measurement details screen

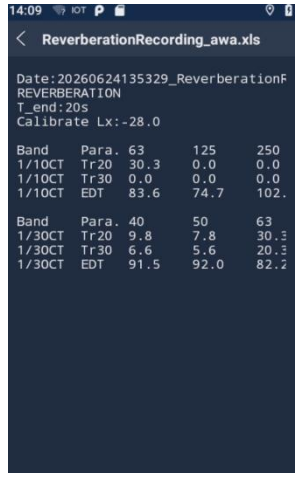



Figure 6-3-8-11 Reverberation measurement results

6.3.8.8.1 Playback of Reverberation Measurement Recordings

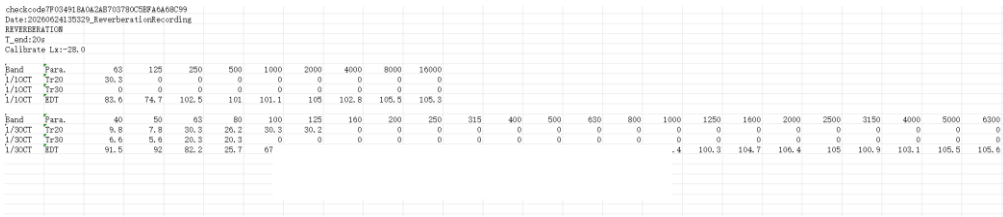
Click any .wav file to start playing the recording. The interface and operation are the same as for “Total Value Integration Measurement.”

6.3.8.8.2 Audio Analysis File

The instrument can record a pulse response of up to 20 s. Once the analysis is complete, the analysis file is saved as “Reverberation Recording_awa.xls.” Users can open the file directly to view it, as shown in Figure 6-3-8-11.

Users can also transfer this file to a computer for viewing. Connect the instrument to the computer via a USB cable, extract the .xls file from the corresponding folder, and open it directly using software such as Excel. The contents are shown in Figure 6-3-8-12:

After deleting this file, you can automatically regenerate the analysis file by reanalyzing the corresponding recording file. To do this, go to the reverberation measurement data view, press and hold the .wav file you want to analyze for 3 seconds, and the recording file will be reanalyzed.



checkcode7F03491BA0A2AB703780C5EFA6A6C99
Date:20260624135329_ReverberationRecording
REVERBERATION
T_end:20s
Calibrate Lx:-28.0

| Band | Para. | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | 16000 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1/10CT | Tr20 | 30.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/10CT | Tr30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/10CT | EDT | 83.6 | 74.7 | 102.5 | 101 | 101.1 | 105 | 102.8 | 105.5 | 105.3 |

| Band | Para. | 40 | 50 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 | 6300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/30CT | Tr20 | 9.8 | 7.8 | 30.3 | 26.2 | 30.3 | 30.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/30CT | Tr30 | 6.6 | 5.6 | 20.3 | 20.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/30CT | EDT | 91.5 | 92 | 82.2 | 25.7 | 67 | | | | | | | | | | .4 | 100.3 | 104.7 | 106.4 | 105 | 100.9 | 103.1 | 105.5 | 105.6 |

Figure 6-3-8-12 Reverberation audio analysis file

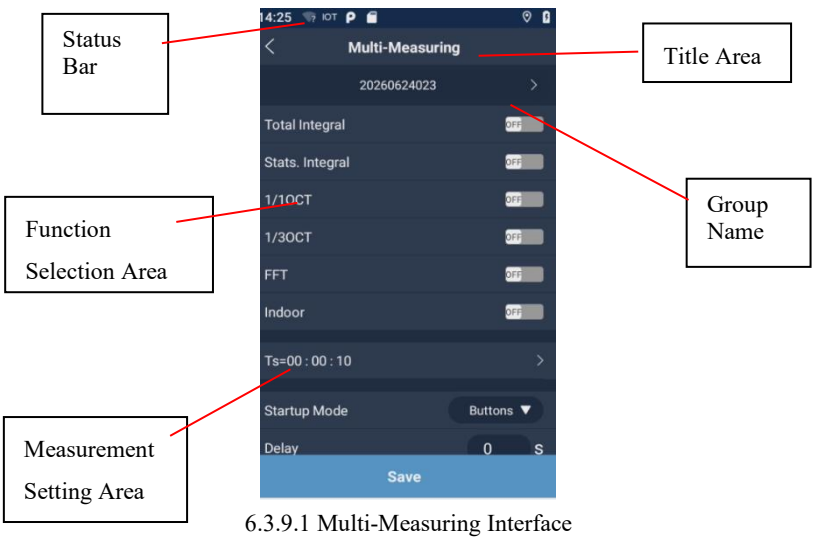
### 6.3.9 Multi-Measuring

6.3.9.1 Multi-Measuring Interface

Tap “Multi-Measuring” to enter the synchronized measurement settings interface, as shown in Figure 6-3-9-1. Synchronized measurement is primarily used to initiate measurements across multiple functional modules simultaneously, facilitating concurrent data analysis. The button functionality in the synchronized measurement interface is the same as in the total value integration measurement; button actions apply simultaneously to all activated modules.

The title bar in the figure displays “Multi-Measuring .” The rules for group names are the same as those for total integral measurements. Once a group name is generated or modified and saved, the change takes effect simultaneously across all modules. Group names for synchronized measurements can only be modified on the Synchronized Measurement interface; they cannot be modified in any module where synchronized measurement has been initiated. If an attempt is made to modify a group name in a module, a prompt will appear stating, “Group names cannot be modified individually during synchronized measurement.”

Click the “Toggle” button in the function area to select authorized function modules such as




6.3.9.1 Multi-Measuring Interface

“Total Value Integration,” “Statistical Integration,” “1/1 OCT Analysis,” “1/3 OCT Analysis,” “FFT Analysis,” “Indoor Measurement,” and “Residential Measurement.” The selected modules will adopt the “Ts” and “Start Mode” settings from the synchronized configuration. The operation of Ts and Start Mode is the same as in “Total Value Integration Measurement.” Click “Save” to enter the measurement interface. The “Parameters” in Synchronized Measurement are transferred to the settings of each enabled module.

After entering Synchronized Measurement, if you click “Settings” for any module, the system will display the prompt: “Parameters cannot be modified individually in Synchronized Measurement,” as shown in Figure 6-3-9-2.

The “Sync” icon in the upper-left corner of the interface indicates synchronization. Each time a measurement is completed, a set of data is saved; upon each save, the data from all synchronized modules is saved to a single folder. Source: Synchronized Measurement. Synchronized measurement data is displayed only in “Data Review” on the home page.

You can start a synchronized integration measurement from the page of any module in the synchronized measurement; the procedure is the same as for measurements on individual module pages.

The initial state of all modules in a synchronized measurement is “Preparing” (icon , displayed in blue). Before starting, all parameters except Lp may display 0.0 dB or the value from the previous measurement. After clicking “Start ,” the status changes to “Measuring” (icon , displayed in blue), and the integration measurement begins. Clicking again pauses the measurement, changing the status to “Paused” (icon ■, displayed in orange); once the measurement is complete, the status becomes “Finished” (icon , displayed in red).

The procedures for starting, pausing, and ending the integration measurement are the same as for “Total Integral Measurement.”

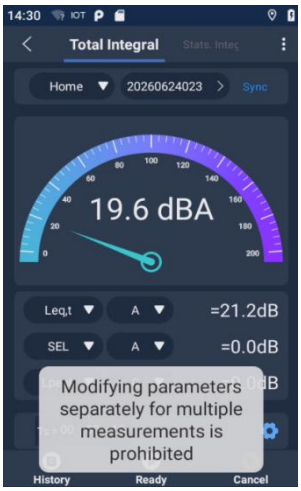



Figure 6-3-9-2 Multi-Measuring interface

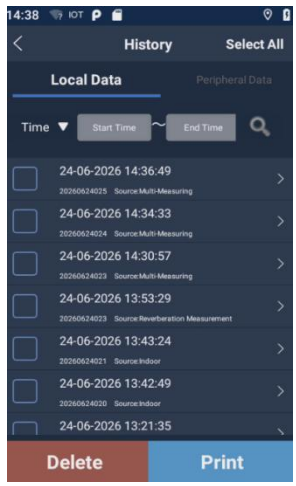



Figure 6-3-9-3 Data Retrieval Interface

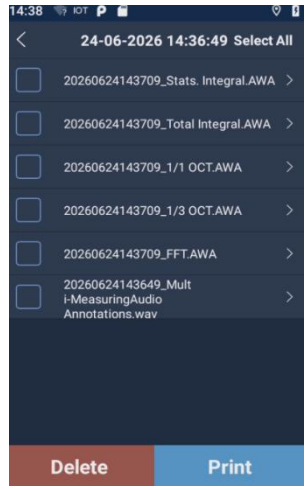



Figure 6-3-9-4 Historical Measurement View Interface

### 6.3.9.2 Viewing Multi-Measuring Data

To view all synchronized measurement data, click the “Data Review” button on the main page to access the data review interface, as shown in Figure 6-3-9-3. The time displayed is the start time of the measurement for that data set; the group name corresponds to the configured group name; and the source is “Synchronized Measurement.” Click to select a single group, multiple groups, or all groups to perform operations such as deleting or printing. Click any file to enter the historical measurement view interface, as shown in Figure 6-3-9-4. This interface displays all synchronized measurement items for this measurement session (only modules with synchronized measurement enabled are shown) as well as audio files (the presence of recording files and voice annotation files depends on whether the corresponding functions are enabled). It allows you to print, select all, delete, and play audio files. For details on the delete and print functions, see Section 6.5.

Click any synchronized measurement item to enter the details interface for that measurement item. For example, clicking “Total Integral.AWA” opens the total integral history details

page; for specific content, refer to the corresponding measurement item in the noise measurement section.

6.3.9.3 Synchronized Measurement Recording Playback

Click any .wav file to start playback of the recording file; the interface and operations are the same as for “Total Integral Measurement.”

### 6.3.10 STI

STI (Speech Transmission Index) is an objective measure that predicts the intelligibility of speech emitted by a speaker after it travels through a transmission path to the listener. It is a rapid, objective measurement method for determining the speech transmission quality of a transmission path. The STI method and its derivatives can determine the speech intelligibility of transmission paths at different locations and under different conditions; in particular, they can predict the effects of changes in the acoustic characteristics of a space.

6.3.10.1 Key Performance Indicators

(1) Main Function: STI measurement;

(2) Compliance with Standards:

IEC 60268-16, ISO 3382-1, ISO 3382-2, ISO 3382-3, ISO 1996;

(3) Primary Measurement Parameter: STI;

(4) Single recording duration: 15 s;

(5) Recording accuracy: 48 kHz sampling frequency, 32-bit;

(6) Frequency points: 125 Hz, 250 Hz, 500 Hz, 1000 Hz, 2000 Hz, 4000 Hz, 8000 Hz.

(7) Other notes: The standard STIPA test signal uses a male speech spectrum.

6.3.10.2 STI

Click “STI” to enter the STI interface, which appears as shown in Figure 6-3-10-1:

The meanings and operations of the status bar, title bar, and name display area in the figure are the same as those in the “Total Integral” interface.

Steps Area: A complete STI measurement requires 6 measurements; the average STI is calculated based on the STI values from these 6 measurements.

Measurement Area: The vertical columns in the table are: 125 Hz, 250 Hz, 500 Hz, 1000 Hz, 2000 Hz, 4000 Hz, and 8000 Hz. The horizontal rows are measurement metrics: Leq (dB), mi1, mi2, TI1, TI2, and MTI, calculated based on the measurement duration.

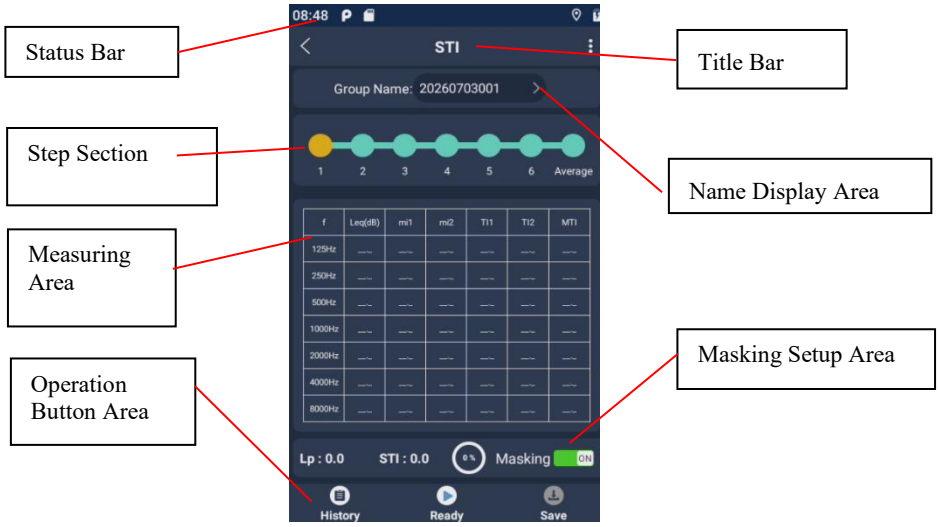



Figure 6-3-10-1 STI Interface

6-3-4-2 Indicator Popup

After entering the “STI” screen for measurement, the initial status is “Ready” (icon ▶, displayed in blue), and all metrics shown on the page are either 0 or the value from the previous measurement. Click “ ▶” to start the measurement; the instrument status changes

to “Measuring” (icon , displayed in blue). After 15 seconds of measurement, the current measurement ends and the screen automatically returns to the next measurement screen with the status “Ready.” After the 6 measurements are complete, the screen will no longer automatically advance, as shown in Figure 6-3-10-2. Manually tap “Average” in the steps section to view the STI, Rank, and average values for the 6 measurements, as shown in Figure 6-3-10-3. You can view the corresponding screen by tapping the number in the steps section.

STI measurements are not automatically saved. After completing all 6 measurements, click “Save” to save this set of STI data. Saved data can be viewed by clicking “History.”

Measurements cannot be paused during the process. To stop the current measurement, click “ ” to end it, or use the “<” back button in the upper-left corner of the page or the force-return button at the bottom of the instrument (press the power button).

Masking: This refers to the phenomenon where, when two sounds are presented simultaneously, one sound is attenuated due to the influence of the other. When masking is enabled, if the human ear hears a louder low-frequency sound, it will mask higher frequencies; if the sound level difference between them exceeds a given threshold, the higher-frequency sounds may become inaudible.

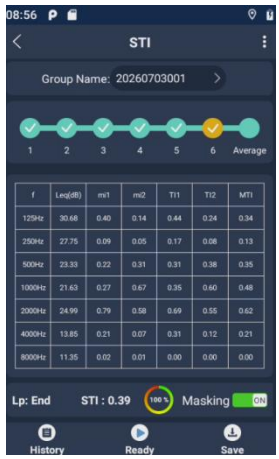



Figure 6-3-10-2 Measurement completion screen

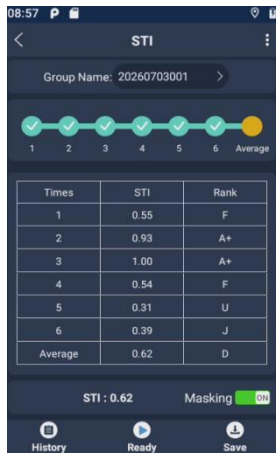



Figure 6-3-10-3 Average interface

### 6.3.10.3 STI Data Retrieval

Click the “History” button to enter the data retrieval interface, as shown in Figure 6-3-10-4. This interface displays stored STI historical data; the time shown is when the data set was saved, the group name corresponds to the configured group name, and the source is STI. Click to select a single group, multiple groups, or all groups to perform operations such as printing or deleting. Click any file to enter the historical measurement viewing interface, as shown in Figure 6-3-10-5. Select a single group, multiple groups, or all groups to perform operations such as printing or deleting. For details on the print and delete functions, see Section 6.5.

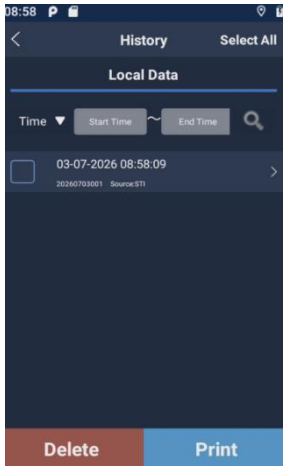



Figure 6-3-10-4 STI History Interface

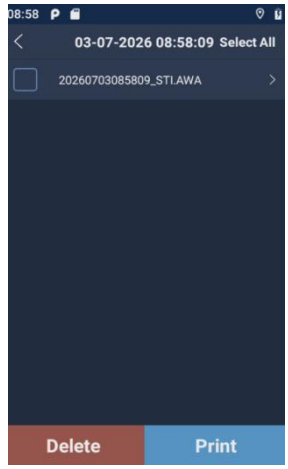



Figure 6-3-10-5 Historical Measurement View Interface

6.3.10.3.1 STI History Details

Click the “STI.AWA” file to open the STI History Details interface, as shown in Figure 6-3-10-6.

(1) Measurement Details: Measurement point name, measurement method, Ts, Tm, instrument model, serial number, calibration date, sensitivity class, calibration sound pressure level, latitude and longitude, and measurement range. Click the controls to expand or collapse these details.

(2) List Metrics: You can view average details and details for the six measurements by scrolling up and down the screen. The list metrics can be expanded or collapsed using the controls to the right of “List.”

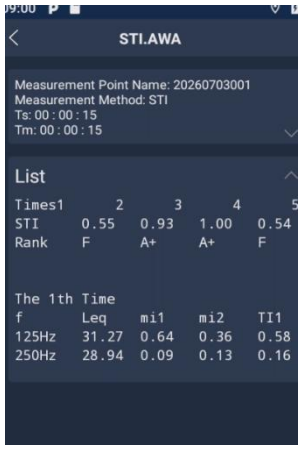



Figure 6-3-10-6 STI Historical Details 1


Figure 6-3-10-6 STI Historical Details 2

### 6.3.11 Sound Exposure Levels

6.3.11.1 Sound Exposure Levels List Screen

Click “Sound Exposure Levels” to access the Sound Exposure Levels list screen, as shown in Figure 6-3-11-1.

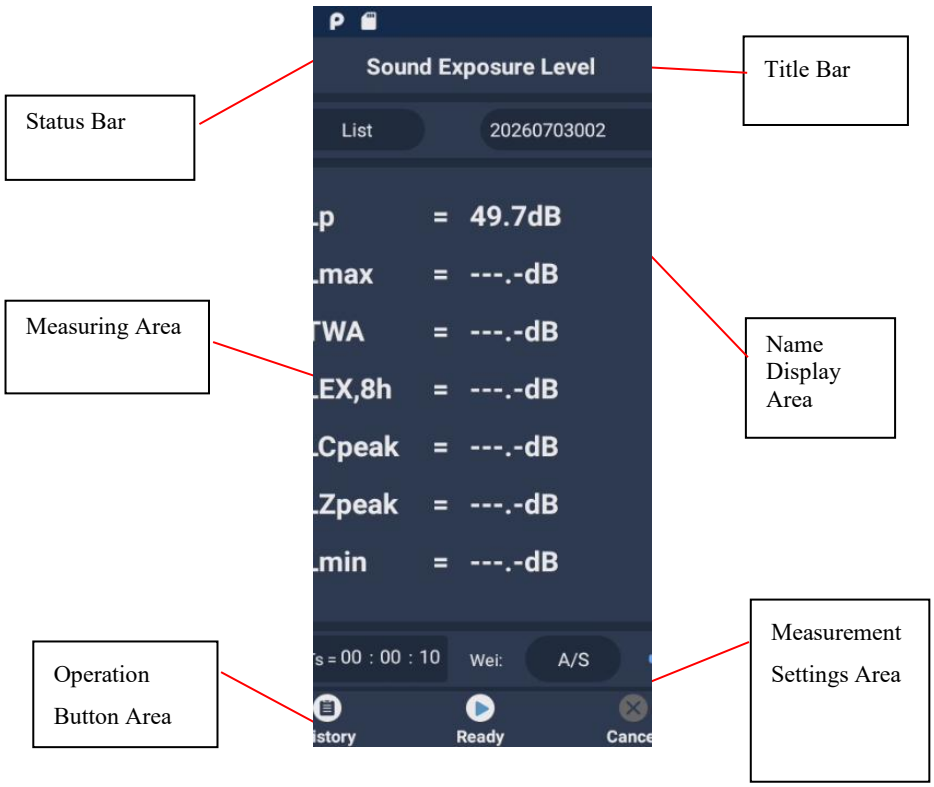



Figure 6-3-11-1 Sound Exposure Level List Interface

The meanings and functions of the status bar, title bar, name display area, and action button area shown in the figure are the same as those in the “Total Value Integration Interface.”

The measurement area displays sound exposure level measurements. Measurement parameters include: Lp, Lmax, TWA, LEX,8h, LCpeak, LZpeak, Lmin, Leq,T, LAVG, DOSE, E, BT, L´EX,8h, $NL_{Apeak}$>120dB, $NL_{Apeak}$>130dB, and $NL_{Apeak}$>140dB. You can swipe up or down to view the display. Ts calculation and display are configured via the “Settings” button.

Starting, pausing (except for automatic pause), and ending the integration measurement procedure are the same as in “Total Value Integration Measurement.”

Weighting: Default is A/S; cannot be modified.

Tap “Settings” to enter the sound exposure level settings interface, where you can configure Ts, start mode, threshold levels, exchange rate, evaluation criteria sound level, auto-pause, digital recorder, and more (Note: You cannot access parameter settings while a measurement is in progress).

6.3.11.2 Sound Exposure Level Settings Interface

Click “Settings” ( ) to enter the sound exposure level settings interface, as shown in Figure 6-3-11-2. The settings for Ts and start mode are the same as those for total integration.

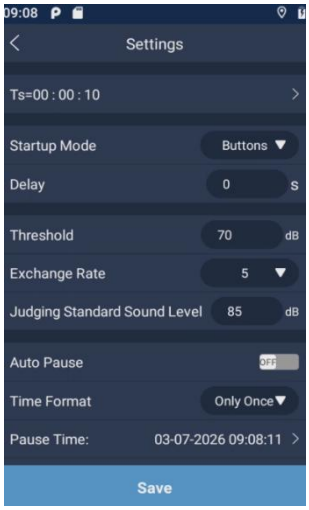



Figure 6-3-11-2 Settings Interface 1

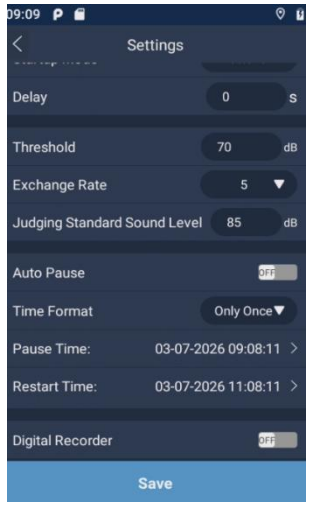



Figure 6-3-11-2 Settings Interface 2

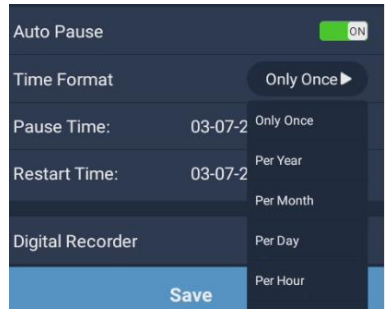



Figure 6-3-11-3 Auto-pause settings

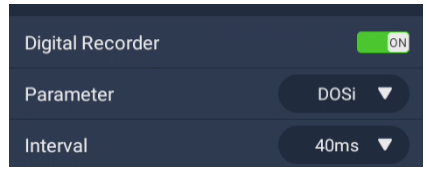



Figure 6-3-11-4 Digital Recording Settings

(1) Threshold Level: Range 40 dB to 90 dB. Time-weighted sound pressure levels below this value are not included in the calculation of TWA and LAVG.

(2) Sampling Rate: Selectable options: “3, 4, 5, 6.”

(3) Threshold Sound Level: Range 70 dB to 90 dB. If the TWA exceeds this value, it indicates a violation of the standard.

(4) Auto-Pause: Disabled by default. When auto-pause is enabled, you can set the time format, pause duration, and resume time, as shown in Figure 6-3-11-3:

Time Format: Selectable options include “One-time only, By year, By month, By day, By hour, By minute.” Automatic pause takes effect only when the startup mode is set to “Button”; it is not available in non-button modes.

Pause Duration: Measurement pauses at the set time; Resume Time: Measurement resumes at the set time (automatic resumption occurs only while in pause mode; if the sound exposure level is not in pause mode, resumption is not possible).

a) If the time format is set to “One-time only,” measurement is paused only at the set pause time (year, month, day, hour, minute, second) and resumes at the set restart time (year, month, day, hour, minute, second);

b) If the time format is set to “By year,” measurement is paused annually at the set start time (month, day, hour, minute, second) and resumes at the set restart time (month, day, hour, minute, second);

c) If the time format is set to “By Year,” measurement is paused monthly at the set start time (month, day, hour, minute, second) and resumes at the set restart time (month, day, hour, minute, second);

d) If the time format is set to “By Month,” measurement is paused monthly at the set start time (day, hour, minute, second) and resumes at the set restart time (day, hour, minute, second);

e) If the time format is set to “By the hour,” measurement is paused every hour based on the set start time (minutes, seconds) and resumes at the set restart time (minutes, seconds);

f) If the time format is set to “By the minute,” measurement is paused every minute based on the set start time (seconds) and resumes at the set restart time (seconds).

(5) Digital Logging Settings

Digital Logger: Disabled by default. When enabled, as shown in Figure 6-3-11-4, the system records data based on the set parameters and interval and saves it to the history.

Parameters: From the drop-down menu “DOSi, Linst, Leq,t, Li&Leq, Bj,” select any one option; Interval: 20 ms to 5000 ms, with options in multiples of 20.

Note: For “Bj,” only 60,000 ms can be selected.

6.3.11.3 Viewing Sound Exposure Level Data

Click the “History” button to enter the data viewing interface, as shown in Figure 6-3-11-5. This interface displays stored historical sound exposure level data; the time shown is the start time of the measurement for that data set, the group name corresponds to the configured group name, and the source is “Sound Exposure Level.” Click to select a single group, multiple groups, or all groups to delete them. Click any file to enter the historical measurement view interface, as shown in Figure 6-3-11-6. Click to select a single group, multiple groups, or all groups to print or delete them; see Section 6.5 for details on the delete and print functions.

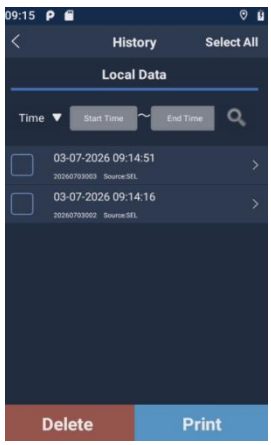



Figure 6-3-11-5 Sound Exposure Level History Interface

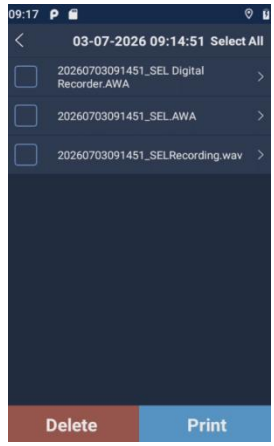



Figure 6-3-11-6 Historical Measurement View Interface

6.3.11.3.1 Sound Exposure Level History Details

Click the “Sound Exposure Level.AWA” file to open the sound exposure level history interface, which appears as shown in Figure 6-3-11-7.

(1) Measurement Details: Measurement Point Name, Measurement Method, Measurement Start Time, Ts, Tm, Instrument Model, Serial Number, Calibration Date, Sensitivity Level, Calibration Sound Pressure Level, Weighting, Latitude and Longitude, Overload Status, Threshold Level, Sampling Rate, Evaluation Standard Sound Level, Units, Measurement Range. Click the controls to expand or collapse fields.

(2) List Metrics: Lmax, TWA, LEX,8h, LCpeak, LZpeak, Lmin, Leq,T, LAVG, DOSE, E, BT, L´EX,8h, $NL_{Apeak}$>120dB, $NL_{Apeak}$>130dB, $NL_{Apeak}$>140dB. You can scroll up and down to view the values of the aforementioned metrics. The list metrics can be expanded or collapsed using the control to the right of “List.”

6.3.11.3.2 Details of Digital Sound Exposure Level Records

Click the “Digital Sound Exposure Level Records.AWA” file to access the details of the digital sound exposure level records, as shown in Figure 6-3-11-8.

(1) Measurement Details: Measurement Point Name, Measurement Method, Measurement Start Time, Ts, Instrument Model, Serial Number, Calibration Date, Sensitivity Level, Calibration Sound Pressure Level, Weighting, Latitude and Longitude, Overload Status, Threshold Level, Exchange Rate, Evaluation Standard Sound Level, Units, Sampling Interval, Measurement Range. Click the control to expand or collapse these details.

(2) List metrics are displayed based on the sound exposure level settings. Swipe up to view more. The list metrics can be expanded or collapsed using the control to the right of “List.”

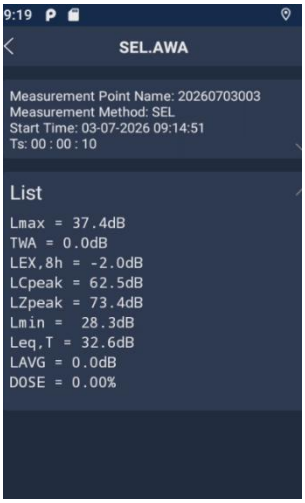



Figure 6-3-11-7
Sound Exposure Level History Details

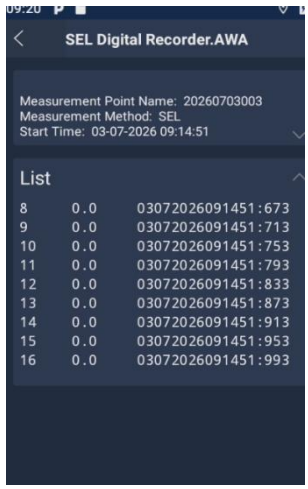



Figure 6-3-11-8
Details of digital recording of sound exposure level

### 6.3.11.3.3 Sound Exposure Level Recording

Click any .wav file to start playing the recording; the interface and operation are the same as for “Total Value Integration Measurement.”

### 6.3.11.3.4 Voice Annotations

See Section 6.7.5, “Voice Annotations,” for details.

## 6.4 Instrument Calibration

### 6.4.1 Calibration Interface

Tap “Instrument Calibration” on the main menu to enter the calibration interface, as shown in Figure 6-4-1-1:

(1) Current Sound Pressure Level: Read-only; displays the sound pressure level of the current ambient noise. The default unit is dBC; select dBA from the drop-down menu.

(2) Sensitivity Level: The sensitivity level of the measurement microphone saved after the last calibration. Unit: dB (with 1 V/Pa as the reference 0 dB; -28.0 dB corresponds to a sensitivity of 39.8 mV/Pa).

(3) Free-field correction: Refers to the correction value for the measurement microphone’s free-field (or diffuse-field) sensitivity at the calibration frequency relative to the calibrator’s pressure field. The default is the value from the last modification (e.g., the correction value for a 1/2-inch free-field response measurement microphone at 1 kHz is 0.20 dB). The adjustment range is (0.00–2.00) dB.

(4) Calibrator Sound Pressure Level: The default is 94.0 dB, with a range of (70.0–130.0) dB.

(5) Measurement Range: The default is 20.0 dB to 143.0 dB; the upper and lower limits vary depending on the sensitivity level of the measurement microphone.

(6) “Click to Start Calibration” button: The default state is “Ready” (icon ▶). Clicking it starts a countdown in seconds; the calibration time is 10 s. When the countdown ends, the button changes to the “End” state. Clicking the “End” button returns the state to “Ready” (icon ▶).

(7) “Click to Save” button: Click to save the current calibration record.

Note: The instrument has been calibrated before leaving the factory; the figure shows the calibration data saved from the factory calibration or the last calibration performed. If required by measurement standards or after a period of time has elapsed, the instrument should be recalibrated before use. Acoustic calibration requires the use of a Class 1 acoustic calibrator that meets the requirements of the IEC 60942 standard, such as the AWA6021A acoustic calibrator, which operates at a frequency of 1000 Hz; alternatively, a piston sound generator operating at a frequency of 250 Hz may be used for calibration.

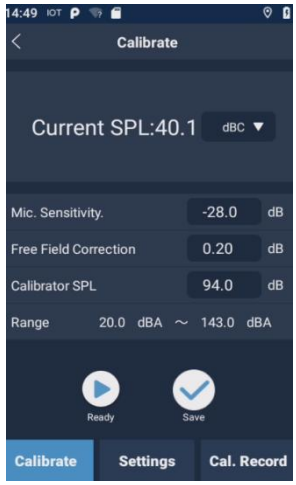



Figure 6-4-1-1
Instrument calibration interface

### 6.4.2 Settings

Click “Settings” below “Instrument Calibration” to enter the “Settings” interface, where you can manually calibrate the instrument. The interface is shown in Figure 6-4-2-1. Based on your actual needs, manually adjust the sensitivity level, free-field correction, and sound pressure level of the calibrator. Click the “Save” button to save the new measurement microphone sensitivity level and generate a calibration record. Future measurements and calibrations will be based on this calibrated sensitivity level. The newly calibrated sensitivity level may differ by more than ±3 dB from the last saved sensitivity level.

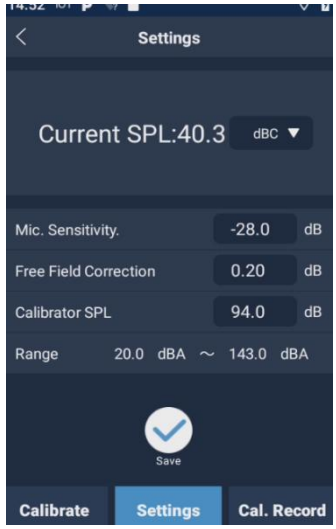



Figure 6-4-2-1 Settings interface

### 6.4.3 Calibration Records

Click “Calibration Records” in the lower-right corner of “Instrument Calibration” to access the “Calibration Records” interface, where you can view the instrument’s calibration history, as shown in Figure 6-4-3-1.

(1) List Sorting: The list is sorted in reverse chronological order by calibration start time; swipe up to load and display more entries.

(2) Selection: You can select a single entry, multiple entries, or all entries.

(3) Delete Button:

a) If you have selected a single, multiple, or all data records, press the “Delete” button. A prompt asking “Do you want to delete the selected items?” will appear, as shown in Figure 6-4-3-2. Click “OK” to delete the data, or click “Cancel” to return to the list page.

b) If no data records are selected, a prompt stating “Please select at least one item” will appear.

(4) Print Button: For the print function, refer to the instructions for printing measurement records.

(5) Details Page:

Click a record on the list page to enter the details interface, as shown in Figure 6-4-3-3. The details page includes calibration time, free-field correction factor, microphone sensitivity class, measurement range, sound calibrator sound pressure level, and calibration sound pressure level.

(4) Exit: Press the “Exit <” button to exit the calibration interface step by step.

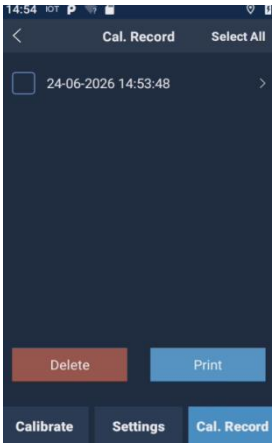



Figure 6-4-3-1 Calibration Record Interface

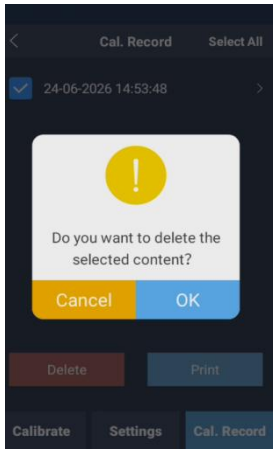



Figure 6-4-3-2 Record Deletion Interface

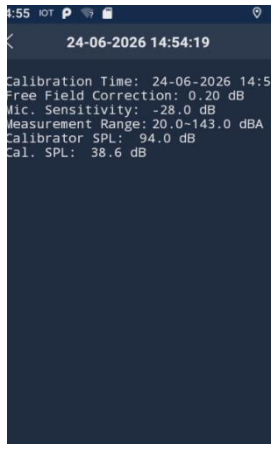



Figure 6-4-3-3 Calibration Details Screen

### 6.4.4 Acoustic Calibration Using an Acoustic Calibrator

During calibration, place the acoustic calibrator over the measurement microphone, turn on the calibrator's power, and wait a few seconds for it to stabilize (after the calibrator's output has stabilized; stabilization times vary by calibrator model, so refer to the actual device). Click the "Start" button to begin calibration; a 10-second countdown will begin, as shown in Figure 6-4-4-1. The current sound pressure level displays the sound pressure level generated by the acoustic calibrator as it acts on the measurement microphone. It should ultimately display the calibrator's sound pressure level (94.0 dB) plus the free-field correction (0.20 dB), resulting in 93.8 dB, as shown in Figure 6-4-4-2. Once the countdown ends, the button changes to an "End" state. At this point, click the "Save" button to save the new measurement microphone sensitivity level; future measurements and calibrations will be based on this calibrated sensitivity level. If the sound pressure level X at the end of

calibration does not equal 94.0 dB minus the correction value, the system will display a pop-up window stating “Calibration sound pressure level is X dB,” as shown in Figure 6-4-4-3. Click “Recalibrate” to return to the instrument calibration interface and recalibrate; click “Save” to save the calibration data from this session.

If the newly calibrated sensitivity level differs by less than ±3 dB from the last saved sensitivity level, clicking “Save” will display the message “Save complete”; If the difference between the newly calibrated sensitivity level and the last saved sensitivity level exceeds ±3 dB, clicking “Save” will display the message: “The difference between the two sensitivity levels exceeds 3 dB; cannot save. Please verify that the calibration is correct.” The user should check whether the acoustic calibrator is properly attached to the measurement microphone and turned on. Has the measurement microphone suffered any noticeable impact or damage? If the measurement microphone has been replaced, the new sensitivity level must be entered manually. Click the sensitivity level input field to enter the new value for the measurement microphone’s sensitivity level, then click the “Save” button to save the calibration data. The new sensitivity level will be saved, and the instrument will use this value the next time it is used. If you exit the instrument calibration page without clicking the “Save” button after calibration is complete, the calibration record will not be saved and the calibration will not take effect; the original measurement microphone sensitivity level will continue to be used.

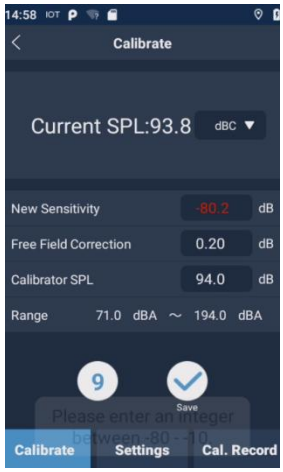



Figure 6-4-4-1 Calibration countdown screen

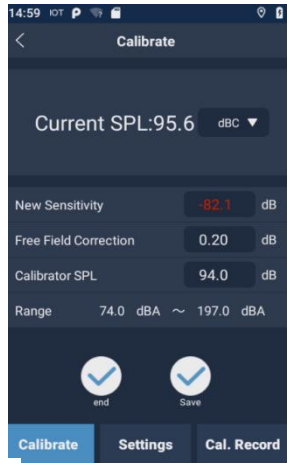



Figure 6-4-4-2 Calibration completion screen


Figure 6-4-4-3 Pop-up notification

### 6.4.5 Acoustic Calibration Using a Piston Sound Source

When calibrating with a piston sound source—since the standard calibration sound pressure level for such sources is typically 124 dB at a frequency of 250 Hz—the sound pressure level setting for the calibrator on the interface should be adjusted to 124.0 dB, with the unit set to dBC, and the free-field correction factor should be set to 0 dB (the correction value for a free-field measurement microphone at 250 Hz is 0 dB). The remaining calibration procedures are the same as those described in Section 6.4.1 for calibration using a sound calibrator.

## 6.5 Data Retrieval

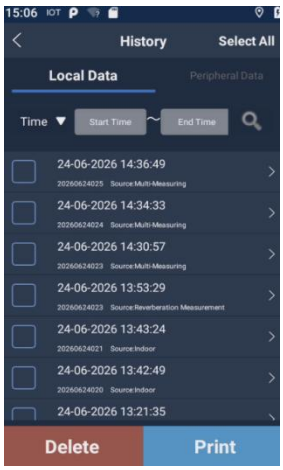
### 6.5.1 Device Data

6.5.1.1 Viewing Measurement History

Click “Data Review” on the main menu to enter the data review interface, as shown in Figure 6-5-1-1.

You can view historical measurement data either on the Data Review page or by clicking the “History” button in each measurement module. The difference is that the “History” button displays only the historical information for that specific module, while “Data Review” displays all historical information; synchronized measurement history can only be viewed in Data Review. Up to 200 data records are displayed per page; swipe up to load more. Each data record displays information such as the measurement time, group name, and measurement method. Tap any record to view details.

6.5.1.2 Data Deletion




From the Data Review screen or the Details screen, you can delete records by single group, multiple groups, or all. If no data is present, the message “Please select at least one data item!” will appear; if data is present, you can proceed with the deletion.

Figure 6-5-1-1 Data Retrieval Interface

(1) Deleting a Single Group:

On the data review or details screen, select any record (see Figure 6-5-1-2), then click “Delete.” A prompt will appear: “Data deletion is irreversible. Do you want to permanently delete this data?” Click “OK” to delete the data, or click “Cancel” to return to the list page.

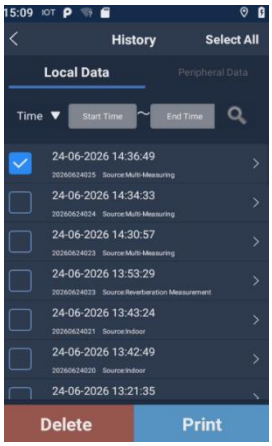



Figure 6-5-1-2 Single-group selection interface

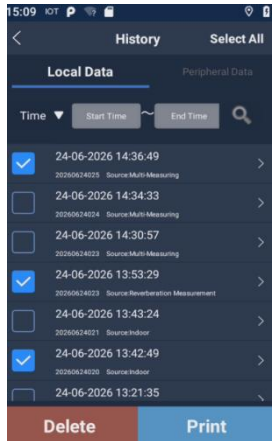



Figure 6-5-1-3 Multiple-group selection interface

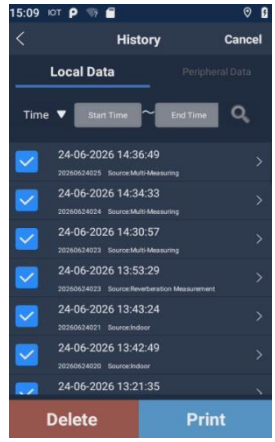



Figure 6-5-1-4 Select All Interface

(2) Deleting Multiple Groups:

On the data view or details screen, select any group of records (see Figure 6-5-1-3), then click “Delete.” A prompt will appear: “Deleted data cannot be recovered. Do you want to permanently delete this data?” Click “OK” to delete the data, or click “Cancel” to return to the list page.

(3) Delete All:

On the data review or detail screen, click the “Select All” button in the upper-right corner to select all records (see Figure 6-5-1-4). Click “Delete.” A prompt will appear: “Deleted data

cannot be recovered. Do you want to permanently delete this data?" Click "OK" to delete the data, or click "Cancel" to return to the list page.

### 6.5.2 Peripheral Data

6.5.2.1 Viewing Peripheral Data

Click the "Peripheral Data" tab on the data viewing page to view peripheral data, as shown in Figure 6-5-2-1. When the external device function is enabled in the instrument settings, the noise measurement module saves data from connected external devices to the peripheral data during integration measurements. Up to 200 data records are displayed per page; swipe up to load more. Information such as the measurement time is displayed on each individual data record; click any record to view details.

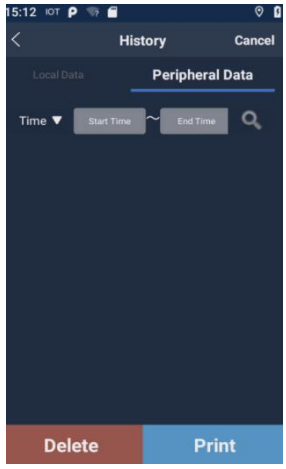



Figure 6-5-2-1 Peripheral Data Interface

6.5.2.2 Deleting Data

In the peripheral data interface, you can delete data by a single group, multiple groups, or all groups; the rules are the same as for local data.

### 6.5.3 Data Printing

6.5.3.1 Connecting a Printer

The instrument's measurement results and calibration records can be printed using a microprinter. Before printing, connect the AH73R microprinter to the instrument, turn on the printer's power, and ensure the "Connected" indicator is lit.

When you click "Print," the system automatically detects whether a printer is connected. If a printer is connected, the output fields are determined based on the "Print Template" in the printer settings. If no printer is connected, the message "Printer not found. Please check if the printer is connected correctly!" will appear, as shown in Figure 6-5-3-1.

Note: Only AWA files can be printed; other file types are not supported. If the folder contains other file types, they will be automatically filtered out during printing.

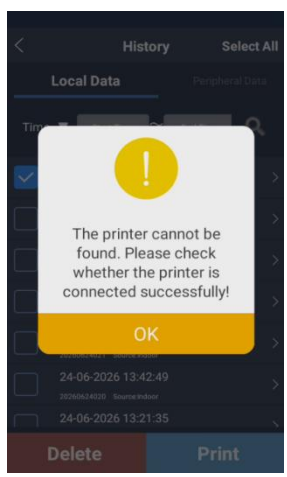



Figure 6-5-3-1 Print Prompt

6.5.3.2 Printing Connection Methods

(1) Bluetooth Connection

Go to Instrument Settings > Printer, and select Bluetooth as the printer connection method. The interface is shown in Figure 6-5-3-2. You can access the interface shown in Figure 6-5-3-3 via Instrument Settings > Bluetooth or by clicking the “Settings” button on the page shown in Figure 6-5-3-2 to connect the printer to the AWA6292 via Bluetooth.


Figure 6-5-3-2 Bluetooth printer Interface

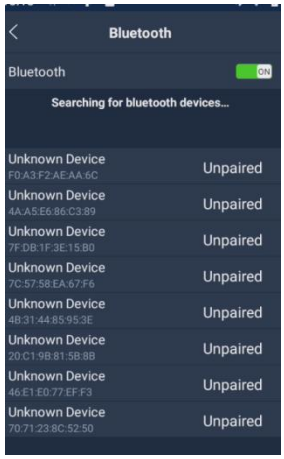



Figure 6-5-3-3 Bluetooth connection interface


Figure 6-5-3-4 RS232 Printing

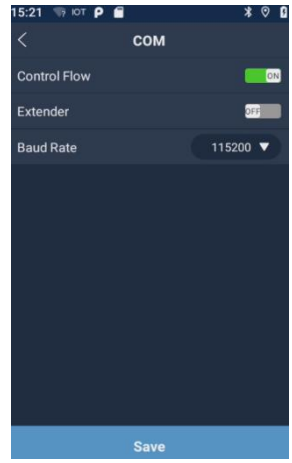



Figure 6-5-3-5 Serial Port Settings

After the Bluetooth connection is established, return to the Data Review or any Record Details page, select a record to print, and click “Print.” The system will automatically check whether a printer is connected. If no printer is connected or the connection fails, the message “Printer not found. Please check if the printer is connected successfully!” will appear, as shown in Figure 6-5-3-1. If a printer is connected, the system will print according to the configured print template.

(2) Serial Port Connection

Connect the instrument to a printer that supports serial printing via the serial port. Go to Instrument Settings > Printer, and select “COM” as the printer connection method. The

interface is shown in Figure 6-5-3-4. You can access the interface shown in Figure 6-5-3-5 via Instrument Settings > Serial Port Settings or by clicking the “Settings” button on the page shown in Figure 6-5-3-4. There, configure the connection between the printer and the AWA6292’s serial port, enable flow control, and set the baud rate to 115200.

After establishing the serial connection, return to the Data Review or any Record Details page, select a record to print, and click “Print.” The system will automatically detect whether a printer is connected. If no printer is connected or the connection fails, the message “Printer not found. Please check if the printer is connected successfully!” will appear, as shown in Figure 6-5-3-1; if a printer is connected, printing will proceed according to the configured print template.

Note 1: When using serial port mode to view and print data, there will be a delay of approximately 5 seconds when printing graphs. Printing large amounts of data may result in garbled characters. This occurs because data transmitted via the serial port overflows the printer’s capacity when the data volume is large. In such cases, it is recommended to use Bluetooth mode for printing, such as for FFT and digital data logger measurements.

Note 2: When printing via the serial port, the baud rate must be set to 115200; otherwise, an error message will appear during printing, and the printout may contain garbled characters.

6.5.3.3 Group Printing

(1) Single Print:

Go to the details page of any measurement item, select the single detail item to be printed (as shown in Figure 6-5-3-6), and click the Print button.

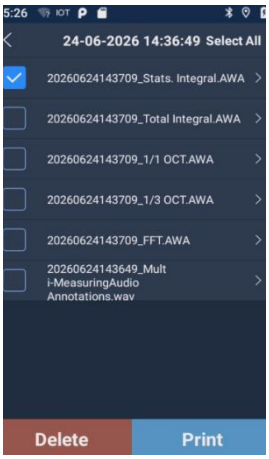



Figure 6-5-3-6 Single selection

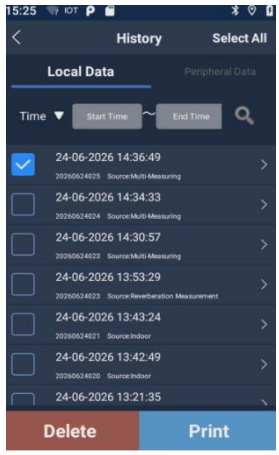



Figure 6-5-3-7 Single-group selection

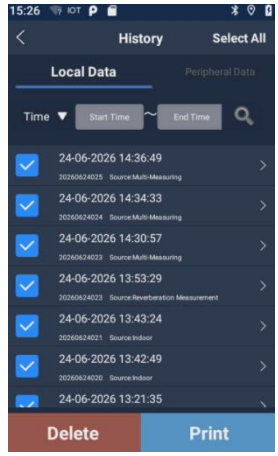



Figure 6-5-3-8 Multiple-group selection

2) Printing a Single Set of Data:

Go to the data review interface, select any single set of data to print (this data set may contain one or more detailed items), as shown in Figure 6-5-3-7, and click the Print button.

(3) Printing Multiple Sets of Data:

Go to the data review interface, select the multiple sets of data to print, as shown in Figure 6-5-3-8, and click the Print button to print.

6.5.3.4 Print Results

(1) Total Points Print:

Go to the data viewing menu, select the total points records you want to print, and click Print.

a) Total Points History Print:

The print result is shown in Figure 6-5-3-9.

b) Total Points Numeric Records Print:

The print result is shown in Figure 6-5-3-10.


Figure 6-5-3-9 Total Integral Printout

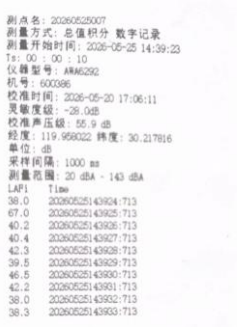



Figure 6-5-3-10 Digital Record Printout

(2) Printing Statistical Integration Data:

Go to the Data Review menu, select the statistical integration records you want to print, and click Print.

a) Printing Statistical Integration History:

The printout is shown in Figure 6-5-3-11.

b) Printing Statistical Integration History (with Graphs):

To print historical records with graphs, you must go to the Statistical Integration History Measurement View interface; otherwise, the printout will not include graphs. The printout is shown in Figure 6-5-3-12.

c) Printing Statistical Integration Numerical Records:

The printout is shown in Figure 6-5-3-13.

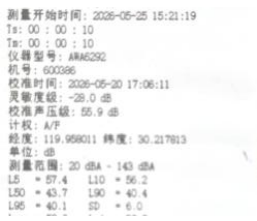



Figure 6-5-3-11 Statistical Integration Printout

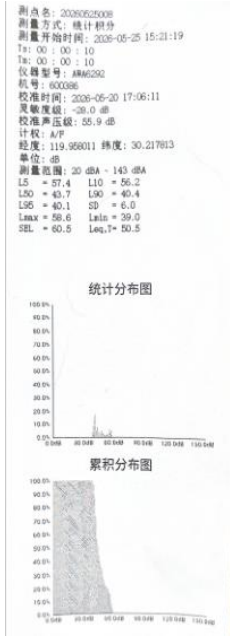



Figure 6-5-3-12 Statistical Integral Printout (with Graph)


Figure 6-5-3-13 Digital record printing

(3) Printing 1/1 OCT Analysis:

Go to the Data Retrieval menu, select the 1/1 OCT analysis record you want to print, and click Print.

a) Printing 1/1 OCT Analysis History:

The printout is shown in Figure 6-5-3-14.

b) 1/1 OCT Analysis History Printout (with Graphs):

To print the history record with graphs, you must navigate to the 1/1 OCT Analysis History Measurement View interface; otherwise, the printout will not include graphs. The printout is shown in Figure 6-5-3-15.

c) 1/1 OCT Analysis Numerical Record Printout:

The printout is shown in Figure 6-5-3-16.

测点名：20260525015
测量方式：1/1OCT分析
测量开始时间：2026-05-25 16:42:29
Ts：00 ：00 ：10
Tm：00 ：00 ：10
仪器型号：AWA6292
机号：600386
校准时间：2026-05-20 17:06:11
灵敏度级：-28.0 dB
校准声压级：55.9 dB
计权：Z/F
经度：119.958000 纬度：30.217766
单位：dB
测量范围：20 dBA ~ 143 dBA

| 频率 | Lmax | Lmin | Leq,T |
|---|---|---|---|
| SPL(A) | 58.0 | 34.2 | 44.9 |
| SPL(C) | 60.8 | 44.9 | 49.8 |
| SPL(Z) | 71.6 | 48.8 | 61.7 |
| 8Hz | 63.1 | 31.5 | 52.0 |
| 16Hz | 55.3 | 33.0 | 47.4 |
| 31.5Hz | 51.4 | 34.0 | 41.6 |
| 63Hz | 50.4 | 33.3 | 40.2 |
| 125Hz | 54.2 | 38.5 | 43.8 |
| 250Hz | 51.8 | 37.1 | 41.5 |
| 500Hz | 58.6 | 29.9 | 42.8 |
| 1000Hz | 53.4 | 27.9 | 41.4 |
| 2000Hz | 51.3 | 21.9 | 37.8 |
| 4000Hz | 41.4 | 15.2 | 28.8 |
| 8000Hz | 43.1 | 12.0 | 27.8 |
| 16000Hz | 32.3 | 13.6 | 21.5 |

Figure 6-5-3-14 1/1 OCT Printout

测点名：20260525015
测量方式：1/1OCT分析
测量开始时间：2026-05-25 16:42:29
Ts：00 ：00 ：10
Tm：00 ：00 ：10
仪器型号：AWA6292
机号：600386
校准时间：2026-05-20 17:06:11
灵敏度级：-28.0 dB
校准声压级：55.9 dB
计权：Z/F
经度：119.958000 纬度：30.217766
单位：dB
测量范围：20 dBA ~ 143 dBA

| 频率 | Lmax | Lmin | Leq,T |
|---|---|---|---|
| SPL(A) | 58.0 | 34.2 | 44.9 |
| SPL(C) | 60.8 | 44.9 | 49.8 |
| SPL(Z) | 71.6 | 48.8 | 61.7 |
| 8Hz | 63.1 | 31.5 | 52.0 |
| 16Hz | 55.3 | 33.0 | 47.4 |
| 31.5Hz | 51.4 | 34.0 | 41.6 |
| 63Hz | 50.4 | 33.3 | 40.2 |
| 125Hz | 54.2 | 38.5 | 43.8 |
| 250Hz | 51.8 | 37.1 | 41.5 |
| 500Hz | 58.6 | 29.9 | 42.8 |
| 1000Hz | 53.4 | 27.9 | 41.4 |
| 2000Hz | 51.3 | 21.9 | 37.8 |
| 4000Hz | 41.4 | 15.2 | 28.8 |
| 8000Hz | 43.1 | 12.0 | 27.8 |
| 16000Hz | 32.3 | 13.6 | 21.5 |

Figure 6-5-3-15 1/1 OCT Printout (with graphics)

测点名：20260525015
测量方式：1/1OCT分析 数字记录
测量开始时间：2026-05-25 16:42:29
Ts：00 ：00 ：10
仪器型号：AWA6292
机号：600386
校准时间：2026-05-20 17:06:11
灵敏度级：-28.0 dB
校准声压级：55.9 dB
计权：Z/F
经度：119.958000 纬度：30.217766
单位：dB
采样间隔：1000 ms
测量范围：20 dBA ~ 143 dBA

| SPL(A) | Time |
|---|---|
| 50.3 | 20260525164230:052 |
| 35.8 | 20260525164231:052 |
| 37.5 | 20260525164232:052 |
| 37.5 | 20260525164233:052 |
| 38.1 | 20260525164234:052 |
| 44.2 | 20260525164235:052 |
| 48.9 | 20260525164236:052 |
| 40.0 | 20260525164237:052 |
| 38.2 | 20260525164238:052 |
| 37.6 | 20260525164239:052 |

Figure 6-5-3-16 Digital record printout

(4) Printing 1/3 OCT Analysis:

Go to the “Data Retrieval” menu, select the 1/3 OCT analysis record you wish to print, and then click “Print.”

a) Printing 1/3 OCT Analysis History:

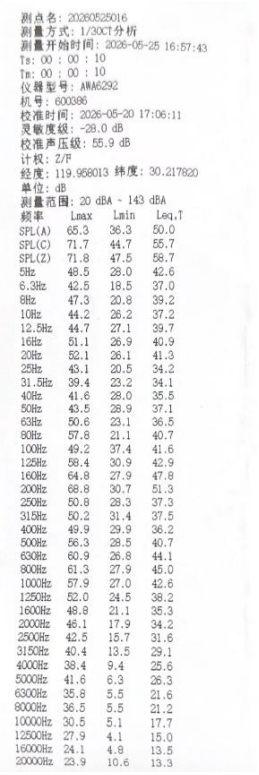
The printout is shown in Figure 6-5-3-17.

b) Printing 1/3 OCT Analysis History (with Graphs):

To print the history with charts, you must first enter the “1/3 OCT Analysis Historical Measurements View” interface; otherwise, the printout will not include charts. The printout is shown in Figure 6-5-3-18.

c) Printing 1/3 OCT Analysis Numerical Records:

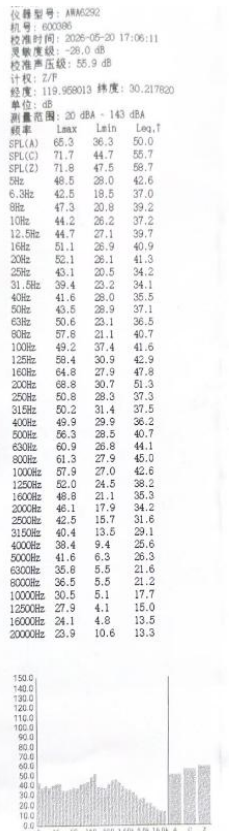
The printout is shown in Figure 6-5-3-19.



测点名：20260525016
测量方式：1/3OCT分析
测量开始时间：2026-05-25 16:57:43
Ts：00 ：00 ：10
Tm：00 ：00 ：10
仪器型号：AWA6292
机号：600386
校准时间：2026-05-20 17:06:11
灵敏度级：-28.0 dB
校准声压级：55.9 dB
计权：Z/F
经度：119.958013 纬度：30.217820
单位：dB
测量范围：20 dBA ~ 143 dBA

| 频率 | Lmax | Lmin | Leq,T |
|---|---|---|---|
| SPL(A) | 65.3 | 36.3 | 50.0 |
| SPL(C) | 71.7 | 44.7 | 55.7 |
| SPL(Z) | 71.8 | 47.5 | 58.7 |
| 5Hz | 48.5 | 28.0 | 42.6 |
| 6.3Hz | 42.5 | 18.5 | 37.0 |
| 8Hz | 47.3 | 20.8 | 39.2 |
| 10Hz | 44.2 | 26.2 | 37.2 |
| 12.5Hz | 44.7 | 27.1 | 39.7 |
| 16Hz | 51.1 | 26.9 | 40.9 |
| 20Hz | 52.1 | 26.1 | 41.3 |
| 25Hz | 43.1 | 20.5 | 34.2 |
| 31.5Hz | 39.4 | 23.2 | 34.1 |
| 40Hz | 41.6 | 28.0 | 35.5 |
| 50Hz | 43.5 | 28.9 | 37.1 |
| 63Hz | 50.6 | 23.1 | 36.5 |
| 80Hz | 57.8 | 21.1 | 40.7 |
| 100Hz | 49.2 | 37.4 | 41.6 |
| 125Hz | 58.4 | 30.9 | 42.9 |
| 160Hz | 64.8 | 27.9 | 47.8 |
| 200Hz | 68.8 | 30.7 | 51.3 |
| 250Hz | 50.8 | 28.3 | 37.3 |
| 315Hz | 50.2 | 31.4 | 37.5 |
| 400Hz | 49.9 | 29.9 | 36.2 |
| 500Hz | 56.3 | 28.5 | 40.7 |
| 630Hz | 60.9 | 26.8 | 44.1 |
| 800Hz | 61.3 | 27.9 | 45.0 |
| 1000Hz | 57.9 | 27.0 | 42.6 |
| 1250Hz | 52.0 | 24.5 | 38.2 |
| 1600Hz | 48.8 | 21.1 | 35.3 |
| 2000Hz | 46.1 | 17.9 | 34.2 |
| 2500Hz | 42.5 | 15.7 | 31.6 |
| 3150Hz | 40.4 | 13.5 | 29.1 |
| 4000Hz | 38.4 | 9.4 | 25.6 |
| 5000Hz | 41.6 | 6.3 | 26.3 |
| 6300Hz | 35.8 | 5.5 | 21.6 |
| 8000Hz | 36.5 | 5.5 | 21.2 |
| 10000Hz | 30.5 | 5.1 | 17.7 |
| 12500Hz | 27.9 | 4.1 | 15.0 |
| 16000Hz | 24.1 | 4.8 | 13.5 |
| 20000Hz | 23.9 | 10.6 | 13.3 |

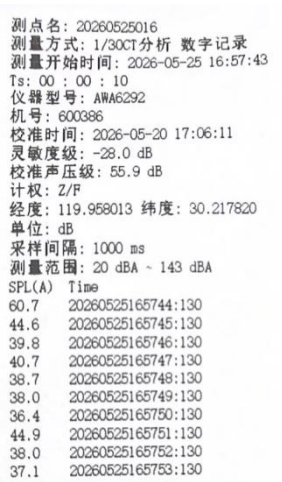
Figure 6-5-3-17 1/3 OCT printout



仪器型号：AWA6292
机号：600386
校准时间：2026-05-20 17:06:11
灵敏度级：-28.0 dB
校准声压级：55.9 dB
计权：Z/F
经度：119.958013 纬度：30.217820
单位：dB
测量范围：20 dBA ~ 143 dBA

| 频率 | Lmax | Lmin | Leq,T |
|---|---|---|---|
| SPL(A) | 65.3 | 36.3 | 50.0 |
| SPL(C) | 71.7 | 44.7 | 55.7 |
| SPL(Z) | 71.8 | 47.5 | 58.7 |
| 5Hz | 48.5 | 28.0 | 42.6 |
| 6.3Hz | 42.5 | 18.5 | 37.0 |
| 8Hz | 47.3 | 20.8 | 39.2 |
| 10Hz | 44.2 | 26.2 | 37.2 |
| 12.5Hz | 44.7 | 27.1 | 39.7 |
| 16Hz | 51.1 | 26.9 | 40.9 |
| 20Hz | 52.1 | 26.1 | 41.3 |
| 25Hz | 43.1 | 20.5 | 34.2 |
| 31.5Hz | 39.4 | 23.2 | 34.1 |
| 40Hz | 41.6 | 28.0 | 35.5 |
| 50Hz | 43.5 | 28.9 | 37.1 |
| 63Hz | 50.6 | 23.1 | 36.5 |
| 80Hz | 57.8 | 21.1 | 40.7 |
| 100Hz | 49.2 | 37.4 | 41.6 |
| 125Hz | 58.4 | 30.9 | 42.9 |
| 160Hz | 64.8 | 27.9 | 47.8 |
| 200Hz | 68.8 | 30.7 | 51.3 |
| 250Hz | 50.8 | 28.3 | 37.3 |
| 315Hz | 50.2 | 31.4 | 37.5 |
| 400Hz | 49.9 | 29.9 | 36.2 |
| 500Hz | 56.3 | 28.5 | 40.7 |
| 630Hz | 60.9 | 26.8 | 44.1 |
| 800Hz | 61.3 | 27.9 | 45.0 |
| 1000Hz | 57.9 | 27.0 | 42.6 |
| 1250Hz | 52.0 | 24.5 | 38.2 |
| 1600Hz | 48.8 | 21.1 | 35.3 |
| 2000Hz | 46.1 | 17.9 | 34.2 |
| 2500Hz | 42.5 | 15.7 | 31.6 |
| 3150Hz | 40.4 | 13.5 | 29.1 |
| 4000Hz | 38.4 | 9.4 | 25.6 |
| 5000Hz | 41.6 | 6.3 | 26.3 |
| 6300Hz | 35.8 | 5.5 | 21.6 |
| 8000Hz | 36.5 | 5.5 | 21.2 |
| 10000Hz | 30.5 | 5.1 | 17.7 |
| 12500Hz | 27.9 | 4.1 | 15.0 |
| 16000Hz | 24.1 | 4.8 | 13.5 |
| 20000Hz | 23.9 | 10.6 | 13.3 |

Figure 6-5-3-18 1/3 OCT Printout (with graphics)



测点名：20260525016
测量方式：1/3OCT分析 数字记录
测量开始时间：2026-05-25 16:57:43
Ts：00 ：00 ：10
仪器型号：AWA6292
机号：600386
校准时间：2026-05-20 17:06:11
灵敏度级：-28.0 dB
校准声压级：55.9 dB
计权：Z/F
经度：119.958013 纬度：30.217820
单位：dB
采样间隔：1000 ms
测量范围：20 dBA ~ 143 dBA

| SPL(A) | Time |
|---|---|
| 60.7 | 20260525165744:130 |
| 44.6 | 20260525165745:130 |
| 39.8 | 20260525165746:130 |
| 40.7 | 20260525165747:130 |
| 38.7 | 20260525165748:130 |
| 38.0 | 20260525165749:130 |
| 36.4 | 20260525165750:130 |
| 44.9 | 20260525165751:130 |
| 38.0 | 20260525165752:130 |
| 37.1 | 20260525165753:130 |

Figure 6-5-3-19 Digital record printout

(5) FFT Analysis Print:

Go to the Data Review menu, select the FFT analysis record you want to print, and click Print.

a) FFT Analysis History Print:

The printout is shown in Figure 6-5-3-20.

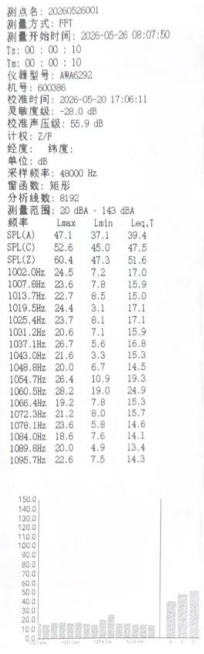
b) Printing FFT Analysis History (with Graphs):

To print historical records with graphs, you must navigate to the FFT Analysis History View interface; otherwise, the printout will not include graphs. The printout is shown in Figure 6-5-3-21.


测点名：20260526001
测量方式：FFT
测量开始时间：2026-05-26 08:07:50
Ts: 00 : 00 : 10
Ts: 00 : 00 : 10
仪器型号：AWA6292
机号：600386
校准时间：2026-05-20 17:06:11
灵敏度级：-28.0 dB
校准声压级：55.9 dB
计权：Z/F
经度： 纬度：
单位：dB
采样频率：48000 Hz
窗函数：矩形
分析线数：8192
测量范围：20 dBA ~ 143 dBA

| 频率 | Lmax | Lmin | Leq,T |
|---|---|---|---|
| SPL(A) | 47.1 | 37.1 | 39.4 |
| SPL(C) | 52.6 | 45.0 | 47.5 |
| SPL(Z) | 60.4 | 47.3 | 51.6 |
| 1002.0Hz | 24.5 | 7.2 | 17.0 |
| 1007.8Hz | 23.6 | 7.8 | 15.9 |
| 1013.7Hz | 22.7 | 8.5 | 15.0 |
| 1019.5Hz | 24.4 | 3.1 | 17.1 |
| 1025.4Hz | 23.7 | 6.1 | 17.1 |
| 1031.2Hz | 20.6 | 7.1 | 15.9 |
| 1037.1Hz | 26.7 | 5.6 | 16.8 |
| 1043.0Hz | 21.6 | 3.3 | 15.3 |
| 1048.8Hz | 20.0 | 6.7 | 14.5 |
| 1054.7Hz | 26.4 | 10.9 | 19.3 |
| 1060.5Hz | 28.2 | 19.0 | 24.9 |
| 1066.4Hz | 19.2 | 7.8 | 15.3 |
| 1072.3Hz | 21.2 | 8.0 | 15.7 |
| 1078.1Hz | 23.6 | 5.8 | 14.6 |
| 1084.0Hz | 18.6 | 7.6 | 14.1 |
| 1089.8Hz | 20.0 | 4.9 | 13.4 |
| 1095.7Hz | 22.6 | 7.5 | 14.3 |

Figure 6-5-3-20 FFT Printout


测点名：20260526001
测量方式：FFT
测量开始时间：2026-05-26 08:07:50
Ts: 00 : 00 : 10
Ts: 00 : 00 : 10
仪器型号：AWA6292
机号：600386
校准时间：2026-05-20 17:06:11
灵敏度级：-28.0 dB
校准声压级：55.9 dB
计权：Z/F
经度： 纬度：
单位：dB
采样频率：48000 Hz
窗函数：矩形
分析线数：8192
测量范围：20 dBA ~ 143 dBA

| 频率 | Lmax | Lmin | Leq,T |
|---|---|---|---|
| SPL(A) | 47.1 | 37.1 | 39.4 |
| SPL(C) | 52.6 | 45.0 | 47.5 |
| SPL(Z) | 60.4 | 47.3 | 51.6 |
| 1002.0Hz | 24.5 | 7.2 | 17.0 |
| 1007.8Hz | 23.6 | 7.8 | 15.9 |
| 1013.7Hz | 22.7 | 8.5 | 15.0 |
| 1019.5Hz | 24.4 | 3.1 | 17.1 |
| 1025.4Hz | 23.7 | 6.1 | 17.1 |
| 1031.2Hz | 20.6 | 7.1 | 15.9 |
| 1037.1Hz | 26.7 | 5.6 | 16.8 |
| 1043.0Hz | 21.6 | 3.3 | 15.3 |
| 1048.8Hz | 20.0 | 6.7 | 14.5 |
| 1054.7Hz | 26.4 | 10.9 | 19.3 |
| 1060.5Hz | 28.2 | 19.0 | 24.9 |
| 1066.4Hz | 19.2 | 7.8 | 15.3 |
| 1072.3Hz | 21.2 | 8.0 | 15.7 |
| 1078.1Hz | 23.6 | 5.8 | 14.6 |
| 1084.0Hz | 18.6 | 7.6 | 14.1 |
| 1089.8Hz | 20.0 | 4.9 | 13.4 |
| 1095.7Hz | 22.6 | 7.5 | 14.3 |

Figure 6-5-3-21 FFT Printout (with Graph)

(6) 24-Hour Measurement Printout:

Enter the Data Retrieval menu, select the 24-hour measurement record you wish to print, and click Print.

a) “All” 24-Hour Measurement History Printout:

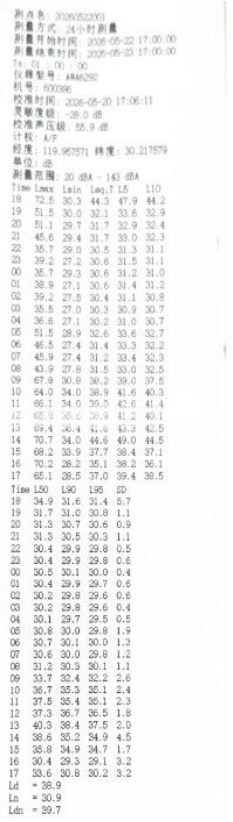
The printout is shown in Figure 6-5-3-22.

b) “All” 24-Hour Measurement Printout (with Graphs):

To print the historical record with graphs, you must enter the FFT Analysis Historical Measurements View interface; otherwise, the printout will not include graphs. The printout is shown in Figure 6-5-3-23.

c) 24-Hour Measurement History Printout:

The printout is shown in Figure 6-5-3-24.

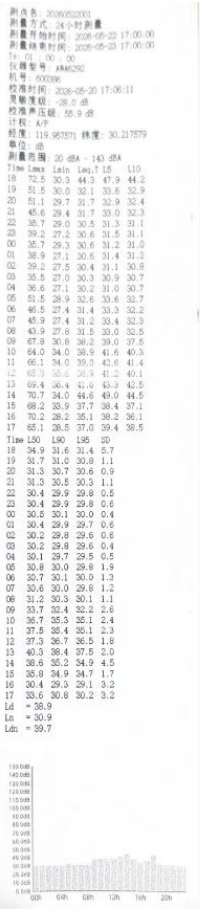

测点名：20260522001
测量方式：24小时测量
测量开始时间：2026-05-22 17:00:00
测量结束时间：2026-05-23 17:00:00
Ts：01 ：00 ：00
仪器型号：ARA6292
机号：600986
校准时间：2026-05-20 17:06:11
灵敏度级：-28.0 dB
校准声压级：55.9 dB
计权：A/F
经度：119.967571 纬度：30.217579
单位：dB
测量范围：20 dBA - 143 dBA

| Time | Lmax | Lmin | Leq,T | L5 | L10 |
|---|---|---|---|---|---|
| 18 | 72.5 | 30.3 | 44.3 | 47.9 | 44.2 |
| 19 | 51.5 | 30.0 | 32.1 | 33.6 | 32.9 |
| 20 | 51.1 | 29.7 | 31.7 | 32.9 | 32.4 |
| 21 | 45.6 | 29.4 | 31.7 | 33.0 | 32.3 |
| 22 | 35.7 | 29.0 | 30.5 | 31.3 | 31.1 |
| 23 | 39.2 | 27.2 | 30.6 | 31.5 | 31.1 |
| 00 | 35.7 | 29.3 | 30.6 | 31.2 | 31.0 |
| 01 | 38.9 | 27.1 | 30.6 | 31.4 | 31.2 |
| 02 | 39.2 | 27.5 | 30.4 | 31.1 | 30.8 |
| 03 | 36.5 | 27.0 | 30.3 | 30.9 | 30.7 |
| 04 | 36.6 | 27.1 | 30.2 | 31.0 | 30.7 |
| 05 | 51.5 | 28.9 | 32.6 | 33.6 | 32.7 |
| 06 | 46.5 | 27.4 | 31.4 | 33.3 | 32.2 |
| 07 | 45.9 | 27.4 | 31.2 | 33.0 | 32.3 |
| 08 | 43.9 | 27.8 | 31.5 | 33.0 | 32.5 |
| 09 | 67.8 | 30.8 | 36.2 | 39.0 | 37.5 |
| 10 | 64.0 | 34.0 | 38.9 | 41.6 | 40.3 |
| 11 | 66.1 | 34.0 | 39.0 | 42.6 | 41.4 |
| 12 | 65.3 | 35.6 | 38.9 | 41.2 | 40.1 |
| 13 | 69.4 | 36.4 | 41.6 | 43.3 | 42.5 |
| 14 | 70.7 | 34.0 | 44.6 | 49.0 | 44.5 |
| 15 | 68.2 | 33.9 | 37.7 | 38.4 | 37.1 |
| 16 | 70.2 | 28.2 | 35.1 | 38.2 | 36.1 |
| 17 | 65.1 | 28.5 | 37.0 | 39.4 | 38.5 |

| Time | L50 | L90 | L95 | SD |
|---|---|---|---|---|
| 18 | 34.9 | 31.6 | 31.4 | 5.7 |
| 19 | 31.7 | 31.0 | 30.8 | 1.1 |
| 20 | 31.3 | 30.7 | 30.6 | 0.9 |
| 21 | 31.3 | 30.5 | 30.3 | 1.1 |
| 22 | 30.4 | 29.9 | 29.8 | 0.5 |
| 23 | 30.4 | 29.9 | 29.8 | 0.6 |
| 00 | 30.5 | 30.1 | 30.0 | 0.4 |
| 01 | 30.4 | 29.9 | 29.7 | 0.6 |
| 02 | 30.2 | 29.8 | 29.6 | 0.6 |
| 03 | 30.2 | 29.8 | 29.6 | 0.4 |
| 04 | 30.1 | 29.7 | 29.5 | 0.5 |
| 05 | 30.8 | 30.0 | 29.8 | 1.9 |
| 06 | 30.7 | 30.1 | 30.0 | 1.3 |
| 07 | 30.6 | 30.0 | 29.8 | 1.2 |
| 08 | 31.2 | 30.3 | 30.1 | 1.1 |
| 09 | 33.7 | 32.4 | 32.2 | 2.6 |
| 10 | 36.7 | 35.3 | 35.1 | 2.4 |
| 11 | 37.5 | 36.4 | 36.1 | 2.3 |
| 12 | 37.3 | 36.7 | 36.5 | 1.8 |
| 13 | 40.3 | 38.4 | 37.5 | 2.0 |
| 14 | 38.6 | 35.2 | 34.9 | 4.5 |
| 15 | 35.8 | 34.9 | 34.7 | 1.7 |
| 16 | 30.4 | 29.3 | 29.1 | 3.2 |
| 17 | 33.6 | 30.8 | 30.2 | 3.2 |

Ld = 38.9
Ln = 30.9
Ldn = 39.7

Figure 6-5-3-22 Print All


测点名：20260522001
测量方式：24小时测量
测量开始时间：2026-05-22 17:00:00
测量结束时间：2026-05-23 17:00:00
Ts：01 ：00 ：00
仪器型号：ARA6292
机号：600986
校准时间：2026-05-20 17:06:11
灵敏度级：-28.0 dB
校准声压级：55.9 dB
计权：A/F
经度：119.967571 纬度：30.217579
单位：dB
测量范围：20 dBA - 143 dBA

| Time | Lmax | Lmin | Leq,T | L5 | L10 |
|---|---|---|---|---|---|
| 18 | 72.5 | 30.3 | 44.3 | 47.9 | 44.2 |
| 19 | 51.5 | 30.0 | 32.1 | 33.6 | 32.9 |
| 20 | 51.1 | 29.7 | 31.7 | 32.9 | 32.4 |
| 21 | 45.6 | 29.4 | 31.7 | 33.0 | 32.3 |
| 22 | 35.7 | 29.0 | 30.5 | 31.3 | 31.1 |
| 23 | 39.2 | 27.2 | 30.6 | 31.5 | 31.1 |
| 00 | 35.7 | 29.3 | 30.6 | 31.2 | 31.0 |
| 01 | 38.9 | 27.1 | 30.6 | 31.4 | 31.2 |
| 02 | 39.2 | 27.5 | 30.4 | 31.1 | 30.8 |
| 03 | 36.5 | 27.0 | 30.3 | 30.9 | 30.7 |
| 04 | 36.6 | 27.1 | 30.2 | 31.0 | 30.7 |
| 05 | 51.5 | 28.9 | 32.6 | 33.6 | 32.7 |
| 06 | 46.5 | 27.4 | 31.4 | 33.3 | 32.2 |
| 07 | 45.9 | 27.4 | 31.2 | 33.0 | 32.3 |
| 08 | 43.9 | 27.8 | 31.5 | 33.0 | 32.5 |
| 09 | 67.8 | 30.8 | 36.2 | 39.0 | 37.5 |
| 10 | 64.0 | 34.0 | 38.9 | 41.6 | 40.3 |
| 11 | 66.1 | 34.0 | 39.0 | 42.6 | 41.4 |
| 12 | 65.3 | 35.6 | 38.9 | 41.2 | 40.1 |
| 13 | 69.4 | 36.4 | 41.6 | 43.3 | 42.5 |
| 14 | 70.7 | 34.0 | 44.6 | 49.0 | 44.5 |
| 15 | 68.2 | 33.9 | 37.7 | 38.4 | 37.1 |
| 16 | 70.2 | 28.2 | 35.1 | 38.2 | 36.1 |
| 17 | 65.1 | 28.5 | 37.0 | 39.4 | 38.5 |

| Time | L50 | L90 | L95 | SD |
|---|---|---|---|---|
| 18 | 34.9 | 31.6 | 31.4 | 5.7 |
| 19 | 31.7 | 31.0 | 30.8 | 1.1 |
| 20 | 31.3 | 30.7 | 30.6 | 0.9 |
| 21 | 31.3 | 30.5 | 30.3 | 1.1 |
| 22 | 30.4 | 29.9 | 29.8 | 0.5 |
| 23 | 30.4 | 29.9 | 29.8 | 0.6 |
| 00 | 30.5 | 30.1 | 30.0 | 0.4 |
| 01 | 30.4 | 29.9 | 29.7 | 0.6 |
| 02 | 30.2 | 29.8 | 29.6 | 0.6 |
| 03 | 30.2 | 29.8 | 29.6 | 0.4 |
| 04 | 30.1 | 29.7 | 29.5 | 0.5 |
| 05 | 30.8 | 30.0 | 29.8 | 1.9 |
| 06 | 30.7 | 30.1 | 30.0 | 1.3 |
| 07 | 30.6 | 30.0 | 29.8 | 1.2 |
| 08 | 31.2 | 30.5 | 30.1 | 1.1 |
| 09 | 33.7 | 32.4 | 32.2 | 2.6 |
| 10 | 36.7 | 35.5 | 35.1 | 2.4 |
| 11 | 37.5 | 36.4 | 36.1 | 2.3 |
| 12 | 37.3 | 36.7 | 36.5 | 1.8 |
| 13 | 40.3 | 38.4 | 37.5 | 2.0 |
| 14 | 38.6 | 35.2 | 34.9 | 4.5 |
| 15 | 35.8 | 34.9 | 34.7 | 1.7 |
| 16 | 30.4 | 29.3 | 29.1 | 3.2 |
| 17 | 33.6 | 30.8 | 30.2 | 3.2 |

Ld = 38.9
Ln = 30.9
Ldn = 39.7

Figure 6-5-3-23 Print All (with graphics)

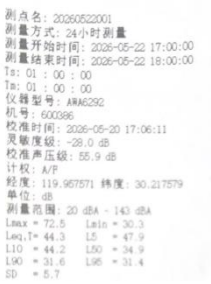

测点名：20260522001
测量方式：24小时测量
测量开始时间：2026-05-22 17:00:00
测量结束时间：2026-05-23 18:00:00
Ts：01 ：00 ：00
仪器型号：ARA6292
机号：600986
校准时间：2026-05-20 17:06:11
灵敏度级：-28.0 dB
校准声压级：55.9 dB
计权：A/F
经度：119.967571 纬度：30.217579
单位：dB
测量范围：20 dBA - 143 dBA
Lmax = 72.5 Lmin = 30.3
Leq,T= 44.3 L5 = 47.9
L10 = 44.2 L50 = 34.9
L90 = 31.6 L95 = 31.4
SD = 5.7

Figure 6-5-3-24 24-Hour History Printout

(7) Printing Indoor Measurement Data:

Go to the Data Review menu, select the indoor measurement records you want to print, and click Print.

a) Printing Indoor Measurement History:

The printout is shown in Figure 6-5-3-25.

b) Printing Digital Indoor Measurement Records:

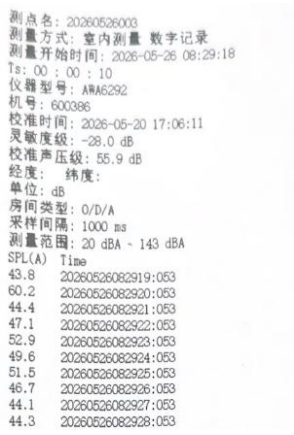
The printout is shown in Figure 6-5-3-26.

(8) Synchronized Measurement Printout:

测点名：20260526003
测量方式：室内测量
测量开始时间：2026-05-26 08:29:18
Ts：00 ：00 ：10
Tm：00 ：00 ：10
仪器型号：AWA6292
机号：600386
校准时间：2026-05-20 17:06:11
灵敏度级：-28.0 dB
校准声压级：55.9 dB
经度：　纬度：
单位：dB
房间类型：O/D/A
测量范围：20 dBA ~ 143 dBA

| 频率 | Lmax | Lmin | Leq,T | 限值 |
|---|---|---|---|---|
| SPL(A) | 74.7 | 43.4 | 56.4 | 40.0 |
| 31.5Hz | 66.3 | 56.1 | 57.9 | 76.0 |
| 63Hz | 65.0 | 46.1 | 50.2 | 59.0 |
| 125Hz | 60.3 | 51.7 | 53.4 | 48.0 |
| 250Hz | 52.9 | 43.0 | 47.0 | 39.0 |
| 500Hz | 54.8 | 39.9 | 46.0 | 34.0 |

Figure 6-5-3-25 Indoor measurement printout



测点名：20260526003
测量方式：室内测量 数字记录
测量开始时间：2026-05-26 08:29:18
Ts：00 ：00 ：10
仪器型号：AWA6292
机号：600386
校准时间：2026-05-20 17:06:11
灵敏度级：-28.0 dB
校准声压级：55.9 dB
经度：　纬度：
单位：dB
房间类型：O/D/A
采样间隔：1000 ms
测量范围：20 dBA ~ 143 dBA

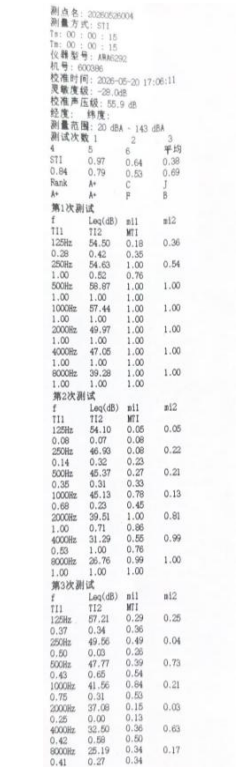
| SPL(A) | Time |
|---|---|
| 43.8 | 20260526082919:053 |
| 60.2 | 20260526082920:053 |
| 44.4 | 20260526082921:053 |
| 47.1 | 20260526082922:053 |
| 52.9 | 20260526082923:053 |
| 49.6 | 20260526082924:053 |
| 51.5 | 20260526082925:053 |
| 46.7 | 20260526082926:053 |
| 44.1 | 20260526082927:053 |
| 44.3 | 20260526082928:053 |

Figure 6-5-3-26 Digital record printout

Go to the Data Review menu, select the synchronized measurement record you want to print, and click Print. The synchronized measurement printout is similar to the printout for the corresponding individual measurement item shown above.

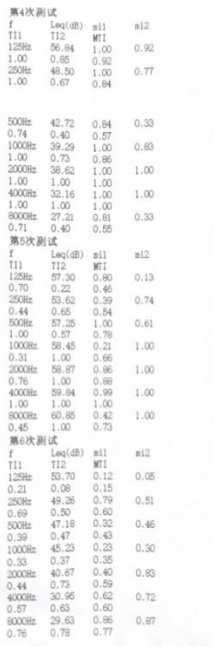
(9) STI Printout:

Go to the Data Review menu, select the STI record you want to print, and click Print. The printout is shown in Figure 6-5-3-27.



测点名：20260526004
测量方式：STI
Ts：00 ：00 ：15
Tm：00 ：00 ：15
仪器型号：AWA6292
机号：600386
校准时间：2026-05-20 17:06:11
灵敏度级：-28.0dB
校准声压级：55.9 dB
经度：  纬度：
测量范围：20 dBA - 143 dBA
测试次数 1 2 3
4 5 6 平均
STI 0.97 0.64 0.38
0.84 0.79 0.53 0.69
Rank A+ C J
A+ A+ F B
第1次测试
f Leq(dB) m11 m12
T11 T12 MTI
125Hz 54.50 0.18 0.36
0.28 0.42 0.35
250Hz 54.63 1.00 0.54
1.00 0.52 0.76
500Hz 58.87 1.00 1.00
1.00 1.00 1.00
1000Hz 57.44 1.00 1.00
1.00 1.00 1.00
2000Hz 49.97 1.00 1.00
1.00 1.00 1.00
4000Hz 47.05 1.00 1.00
1.00 1.00 1.00
8000Hz 39.28 1.00 1.00
1.00 1.00 1.00
第2次测试
f Leq(dB) m11 m12
T11 T12 MTI
125Hz 54.10 0.05 0.05
0.08 0.07 0.08
250Hz 46.90 0.08 0.22
0.14 0.32 0.23
500Hz 45.37 0.27 0.21
0.35 0.31 0.33
1000Hz 45.13 0.78 0.13
0.68 0.23 0.45
2000Hz 39.51 1.00 0.81
1.00 0.71 0.86
4000Hz 31.29 0.55 0.99
0.53 1.00 0.76
8000Hz 26.76 0.99 1.00
1.00 1.00 1.00
第3次测试
f Leq(dB) m11 m12
T11 T12 MTI
125Hz 57.21 0.29 0.25
0.37 0.34 0.36
250Hz 49.56 0.49 0.04
0.50 0.03 0.26
500Hz 47.77 0.39 0.73
0.43 0.65 0.54
1000Hz 41.56 0.84 0.21
0.75 0.31 0.53
2000Hz 37.08 0.15 0.03
0.25 0.00 0.13
4000Hz 32.50 0.36 0.63
0.42 0.59 0.50
8000Hz 25.19 0.34 0.17
0.41 0.27 0.34

Figure 6-5-3-27 STI Printout



第4次测试
f Leq(dB) m11 m12
T11 T12 MTI
125Hz 56.84 1.00 0.92
1.00 0.85 0.92
250Hz 48.50 1.00 0.77
1.00 0.67 0.84
500Hz 42.72 0.84 0.33
0.74 0.40 0.57
1000Hz 39.29 1.00 0.83
1.00 0.73 0.86
2000Hz 38.62 1.00 1.00
1.00 1.00 1.00
4000Hz 32.16 1.00 1.00
1.00 1.00 1.00
8000Hz 27.21 0.81 0.33
0.71 0.40 0.55
第5次测试
f Leq(dB) m11 m12
T11 T12 MTI
125Hz 57.30 0.80 0.13
0.70 0.22 0.46
250Hz 53.62 0.39 0.74
0.44 0.65 0.54
500Hz 57.25 1.00 0.61
1.00 0.57 0.78
1000Hz 58.45 0.21 1.00
0.31 1.00 0.66
2000Hz 58.97 0.86 1.00
0.76 1.00 0.88
4000Hz 59.84 0.99 1.00
1.00 1.00 1.00
8000Hz 60.85 0.42 1.00
0.45 1.00 0.73
第6次测试
f Leq(dB) m11 m12
T11 T12 MTI
125Hz 53.70 0.12 0.05
0.21 0.08 0.15
250Hz 49.26 0.79 0.51
0.69 0.50 0.60
500Hz 47.18 0.32 0.46
0.39 0.47 0.43
1000Hz 45.23 0.23 0.30
0.33 0.37 0.35
2000Hz 40.67 0.40 0.83
0.44 0.73 0.59
4000Hz 30.95 0.62 0.72
0.57 0.63 0.60
8000Hz 29.63 0.86 0.87
0.76 0.78 0.77

Figure 6-5-3-27 (continued) STI printing

(10) Printing Noise Exposure Levels:

Enter the data review menu, select the noise exposure level records you wish to print, and click “Print.”

b) Printing Noise Exposure Level History:

The printout is shown in Figure 6-5-3-28.

b) Printing Digital Records of Noise Exposure Levels:

The printout is shown in Figure 6-5-3-29.


Figure 6-5-3-28 Sound Exposure Level Printout

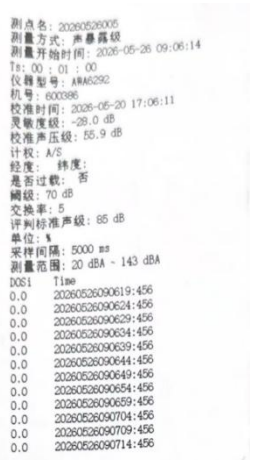



Figure 6-5-3-29 Digital record printout

### 6.5.4 Data Export

Connect the device to the computer using the included Type-C cable. Once connected, the device’s storage drive will appear on the computer, and you can export the data.

## 6.6 Instrument Settings

### 6.6.1 Interface Overview

Click “Instrument Settings” on the main menu to enter the instrument settings interface, as shown in Figure 6-6-1-1.

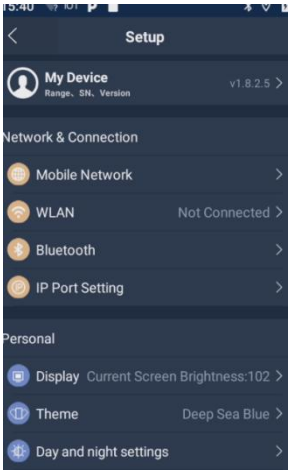



Figure 6-6-1-1 Instrument settings interface

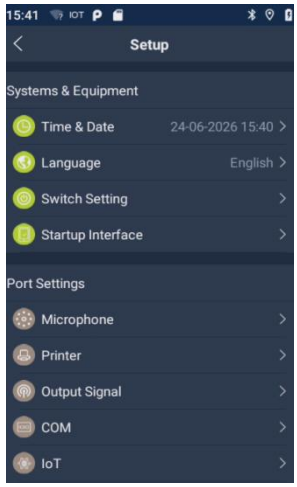



Figure 6-6-1-1 (Attachment 1) Instrument Settings Interface

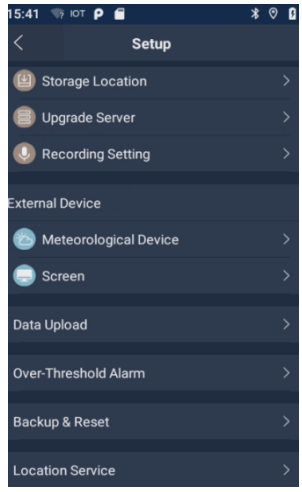



Figure 6-6-1-1 (Attachment 2) Instrument Settings Interface

### 6.6.2 My Devices

Click “My Devices” on the instrument’s system settings screen to access the “My Devices” screen, as shown in Figure 6-6-2-1.

(1) Device Model: The model of the current device: AWA6292;

(2) Device Name: The name of the current device: Multifunctional Sound Level Meter;

(3) Serial Number: The serial number of the current device;

(4) Measurement Range: The measurement range of the current device;

(5) Hardware Version: The hardware version number of the current device;

(6) Software Version: The software version number of the current device; click to view details. If a new version is available, an update prompt will be displayed;

(7) Acquisition Board Version: The acquisition board version of the current device. Click to view details; if the version is inconsistent, an update is required;

(8) Algorithm Version: The version of the built-in sound source recognition algorithm;

(9) Microphone Model: The model of the current device’s measurement microphone;

(10) Microphone ID: The ID of the current device’s measurement microphone;

(11) Microphone Type: The type of the current measurement microphone;

(12) Sampling Frequency: The sampling frequency of the current device;

(13) CPU ID: The CPU ID of the current device;

(14) Total Storage: Reads the storage capacity of this device;

(15) Available Storage: Reads the remaining storage capacity of the current device;

(16) Authentication Information: (Under development).

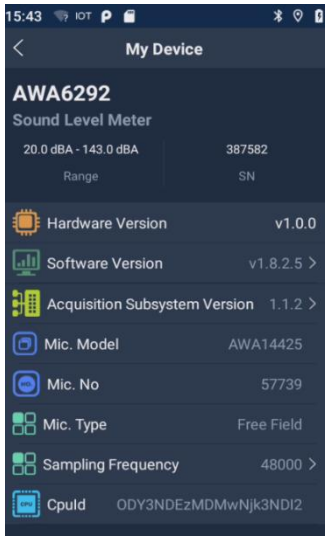



Figure 6-6-2-1 My Devices

### 6.6.3 Network and Connectivity

(1) Mobile Network:

Tap “Mobile Network” to open the mobile network connection screen, as shown in Figure 6-6-3-1. You can enable the mobile network by toggling the switch to establish a connection, as shown in Figure 6-6-3-2. The specific steps are the same as on an Android phone. When the mobile network is not enabled, the APN, MCC, and MNC can be modified freely; Once mobile data is enabled, the system automatically detects and displays the APN, MCC, and MNC, which must be modified within the carrier’s configuration rules.

(2) WLAN:

Tap “WLAN” to access the Wi-Fi connection screen, as shown in Figure 6-6-3-3. Enable the Wi-Fi toggle to establish a Wi-Fi connection, as shown in Figure 6-6-3-4. The specific steps are the same as on an Android phone.

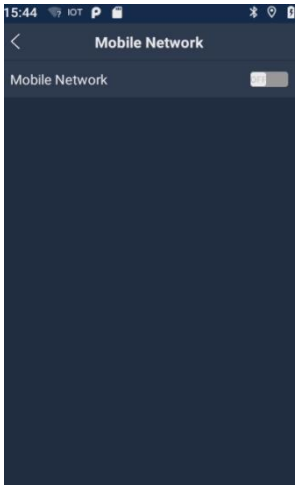



Figure 6-6-3-1 Mobile Network Gateway


Figure 6-6-3-2 Mobile Network Opening

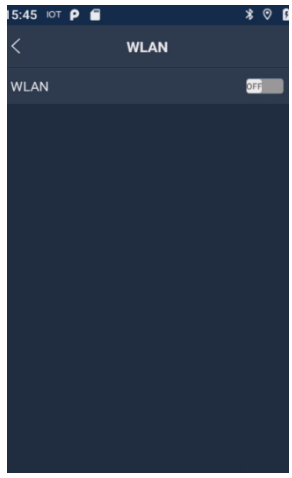



Figure 6-6-3-3 WLAN switch


Figure 6-6-3-4 WLAN On

(3) Bluetooth:

Tap “Bluetooth” to open the Bluetooth interface, as shown in Figure 6-6-3-5. You can toggle the Bluetooth switch and establish a Bluetooth connection, as shown in Figure 6-6-3-6. The specific steps are the same as on an Android phone.

(4) IP Port Settings (Under Development).

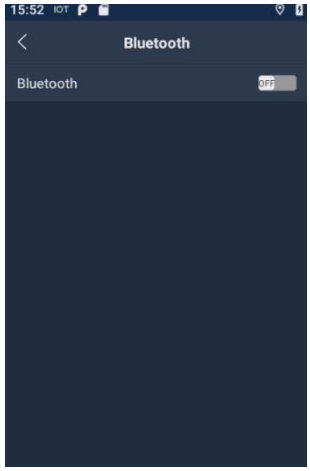



Figure 6-6-3-5 Bluetooth off

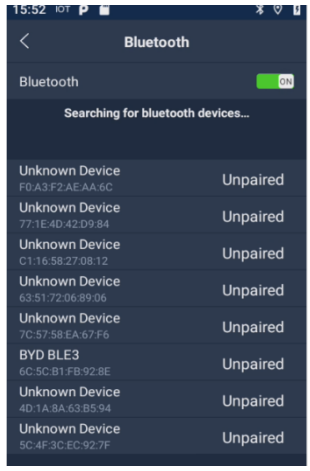



Figure 6-6-3-6 Bluetooth On

### 6.6.4 Personal

(1) Display:

Tap “Display” to access the display settings screen, as shown in Figure 6-6-4-1. Adjust the screen brightness by sliding the brightness bar; changes take effect immediately. If no action is taken, the screen brightness will automatically adjust to 50 after 1 minute.

(2) Theme:

Tap “Theme” to access the theme settings page. The default theme is “Deep Ocean Blue,” as shown in Figure 6-6-4-2. You can choose between “Deep Ocean Blue” and “Serene Ocean Blue.” When switching themes, a prompt appears: “Switching themes will reset all pages and may take about one minute. Are you sure you want to switch?” Click the “OK” button; the switch will be successful after one minute. The home screen for the Deep Ocean Blue theme is shown in Figure 6-6-4-3; the home screen for the Serene Ocean Blue theme is shown in Figure 6-6-4-4.

(3) Day/Night Settings:

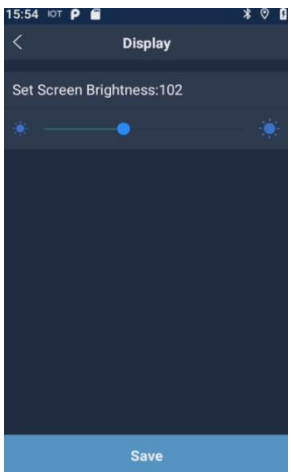



Figure 6-6-4-1 Display settings

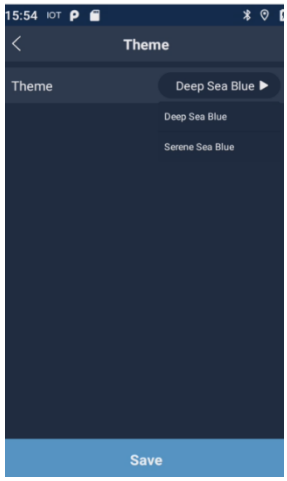



Figure 6-6-4-2 Theme Settings

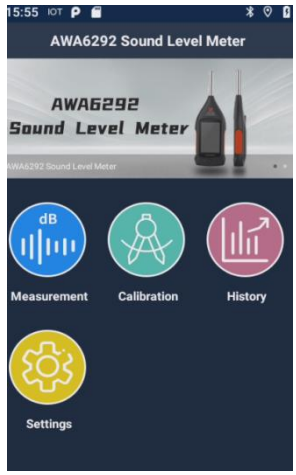



Figure 6-6-4-3 Deep Ocean Blue

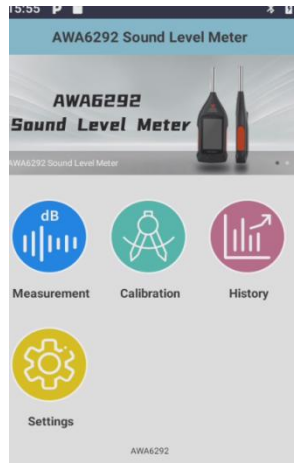



Figure 6-6-4-4 Serene Sea Blue

Click “Day/Night Settings” to access the day/night settings page. By default, daytime is set from 06:00 to 22:00, and nighttime is set from 22:00 to 06:00, as shown in Figure 6-6-4-5. The daytime hours can be adjusted freely between 00:00 and 23:00. After adjustment, the corresponding end time for daytime and the start/end times for nighttime will change accordingly, as shown in Figure 6-6-4-6. Click the “OK” button to save the settings. These day/night settings will affect functions such as 24-hour monitoring, recording beyond limits, and alarms for exceeding thresholds.

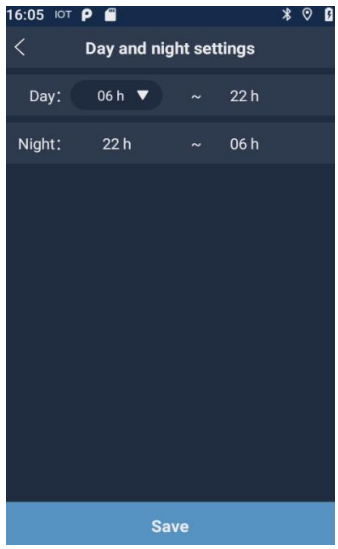



Figure 6-6-4-5 Day/Night Settings

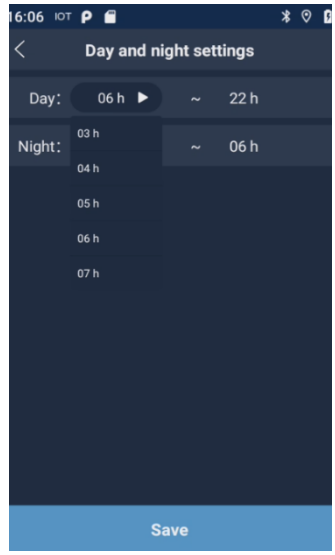



Figure 6-6-4-6 Daytime Selection

### 6.6.5 System and Devices

(1) Time and Date:

Click “Time and Date” to enter the time and date interface, as shown in Figure 6-6-5-1.

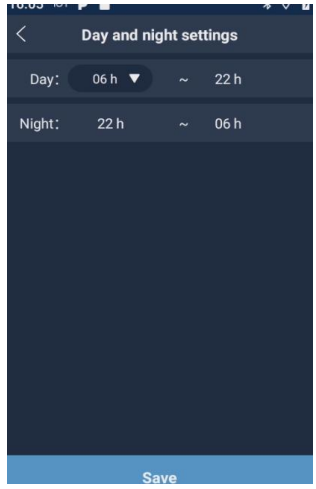



Figure 6-6-5-1 Time and Date

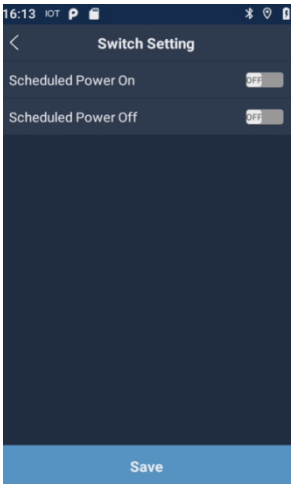



Figure 6-6-5-3 Power On/Off Settings Interface

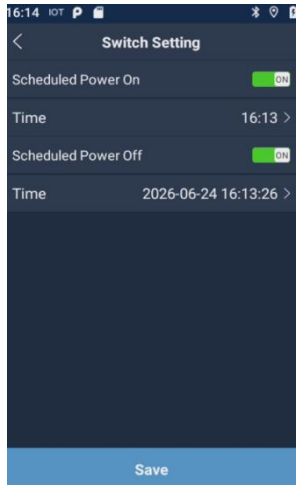



Figure 6-6-5-4 Enabling scheduled power on/off

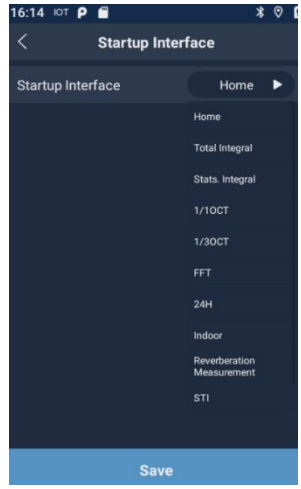



Figure 6-6-5-5 Startup screen

(2) Power On/Off Settings:

Click “Power On/Off Settings” to enter the power on/off settings interface, as shown in Figure 6-6-5-3. Enable the scheduled power-on and scheduled power-off functions, as shown in Figure 6-6-5-4. It is recommended that the scheduled power-on time be set 10 minutes before the measurement start time. Scheduled power-on takes effect only once, and scheduled power-off takes effect only when the device is powered on. If you manually power off and then power on the device, the automatic power-off will no longer take effect.

Note: The scheduled power-on time must be 10 minutes later than the system time, and the scheduled power-off time must be 3 minutes later than the system time; otherwise, the settings cannot be saved successfully.

(3) Power-On Entry Pages:

Click “Power-On Entry Pages” to access the interface shown in Figure 6-6-5-5. The startup screen includes: Home, Total Integral, Statistical Integral, 1/1 OCT Analysis, 1/3 OCT Analysis, FFT Analysis, 24-Hour Measurement, Indoor Measurement, Reverberation Measurement, STI, Sound Exposure Level, Stationary Vehicle Noise Measurement, Airport Noise Measurement, and Residential Measurement. Once the “Startup Screen” is successfully configured, the instrument will enter this screen every time it is turned on. The “Startup Screen” feature, in conjunction with the scheduled startup function and the settings within the “Startup Screen” module, enables the scheduled measurement function of the “Startup Screen” module.

### 6.6.6 Interface Settings

(1) Microphone:

Click “Microphone” to enter the microphone settings page.

(2) Printer:

Click “Printer” to access the printer settings interface, as shown in Figure 6-6-6-2. Available print connection methods include Bluetooth and serial port; refer to Section 6.5.3.2 for specific setup instructions. If you need to print images, you must enable the “Print Graphics” toggle; otherwise, the corresponding graphics will not be printed. Available print templates include: measurement point name, measurement method, measurement start time, measurement end time, Ts, Tm, instrument model, serial number, calibration date, weighting, sensitivity level, calibration sound pressure level, latitude and longitude, measurement range, sampling frequency, window type, number of analysis lines, room type, meteorological conditions, threshold level, exchange rate, evaluation standard sound level, room name, overload status, and units. Printing is based on the selected templates; unselected items will not be printed. You can configure the required templates and types on this screen before printing the data.

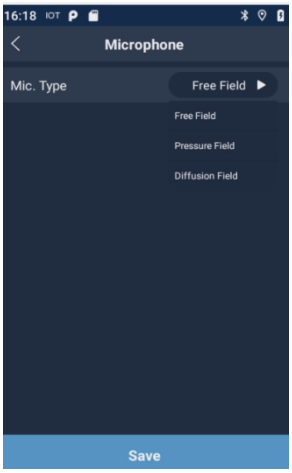



Figure 6-6-6-1 Microphone settings

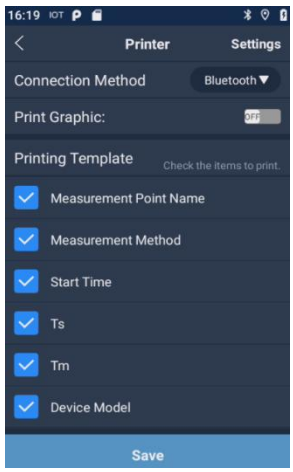



Figure 6-6-6-2 Printer Settings

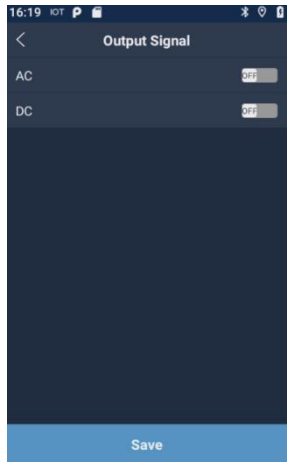



Figure 6-6-6-3 Output signal settings interface

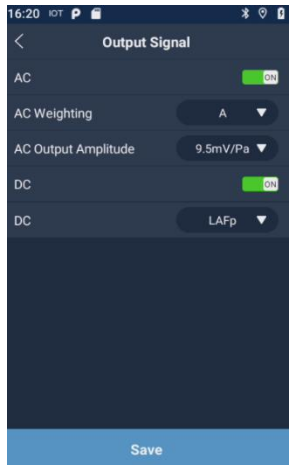



Figure 6-6-6-4 Output signal settings

(3) Output Signal:

Click “Output Signal” to enter the output signal settings interface, as shown in Figure 6-6-6-3. After enabling “AC Signal,” three weighting options—A, C, and Z—are available for the AC output signal; the AC output amplitude can be set to either 9.5 mV/Pa or 950 mV/Pa, as shown in Figure 6-6-6-4. When “DC Signal” is enabled, the available DC output signals include LAFp, LASp, LAIp, LAeq,t, LCFp, LCSp, LCIp, LCEq,t, LZFp, LZSp, LZIp, LZeq,t, 1/1 OCT frequency points, and 1/3 OCT frequency points.

(4) Serial Port:

Click “Serial Port” to enter the serial port settings interface, as shown in Figure 6-6-6-5. After enabling “Control Flow,” you can turn the expander on or off and select the baud rate. Supported baud rates include: 4800, 9600, and 115200, as shown in Figure 6-6-6-6. When the expander function is enabled and

with the expander, a single serial port can communicate with multiple peripheral devices simultaneously, such as meteorological equipment, displays, printers, and more.

(5) IoT:

Click “IoT” to enter the IoT settings interface, as shown in Figure 6-6-6-7. The default server address is 121.196.124.117, and the server port is 1883 by default. Users generally do not need to change these default values. After the device is connected to the network, enable this feature. When used in conjunction with the Noise Monitoring System, data can be uploaded to the platform for real-time viewing.

Note: Enabling the IoT feature results in relatively high power consumption due to data uploads; it is recommended to enable this feature while the device is connected to an external power source.

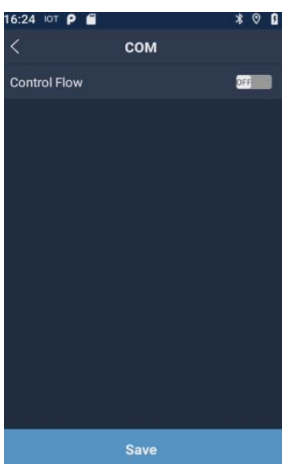



Figure 6-6-6-5 Serial Port Switch

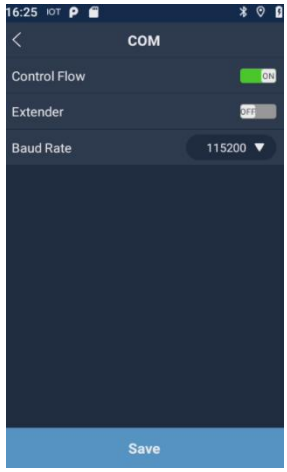



Figure 6-6-6-6 Serial Port Enabled

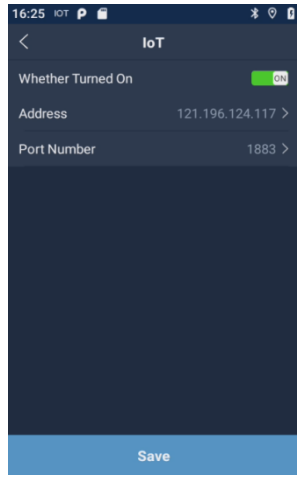



Figure 6-6-6-7 IoT Settings

(6) Storage Location:

Click “Storage Location” to open the storage location screen, as shown in Figure 6-6-6-8. For data, you can choose between the built-in memory card and an external TF card; for recordings, you can choose between the built-in memory card and an external TF card, as shown in Figure 6-6-6-9. Changing the storage location will restart the software.

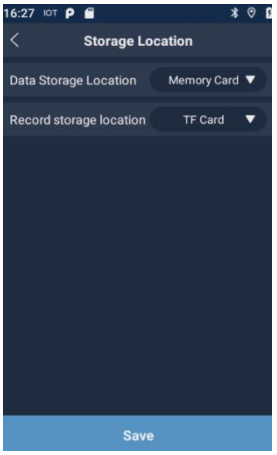



Figure 6-6-6-8 Storage Location Settings

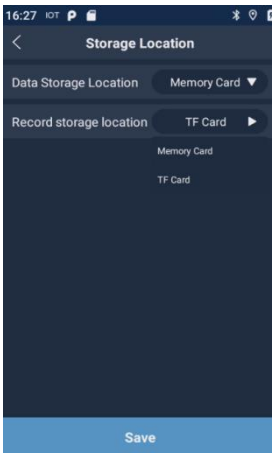



Figure 6-6-6-9 Storage location selection

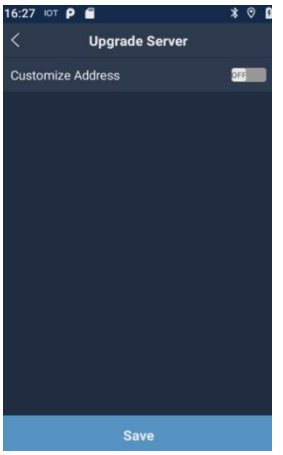



Figure 6-6-6-10 Server Upgrade Interface

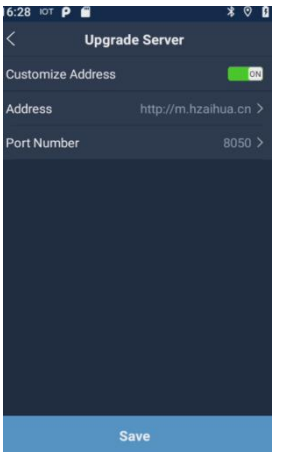



Figure 6-6-6-11 Custom address opening

Internal Memory Card: When no external TF card is inserted, data and recordings can only be stored on the internal memory card.

External TF Card: When a TF card is inserted, you can choose to store data and recordings on the TF card.

When the internal memory card or TF card is full, you can clear the data and recordings using the device’s “Delete Data” function, or connect the device to a computer via a USB cable to delete the data. After restarting the device, storage space will be recovered.

Note: Under the current mechanism, the device does not automatically switch to another storage location once the internal memory card or TF card is full; you must switch manually. For example, if you select the external TF card and the recording storage is full, you can only continue recording and measurement by clearing the recordings on the TF card, replacing the TF card, or switching the storage location to the internal memory card.

(7) Server Update:

Click “Server Update” to enter the server update interface, as shown in Figure 6-6-6-10. The “Custom Address” option is disabled by default; once enabled, the server address is http://m.hzaihua.cn, and the server port is 8050 by default, as shown in Figure 6-6-6-11. You can download the latest update software from the server to update the version; see Section 6.6.2 for software updates. Once enabled, you can modify the server address. Users generally do not need to change the default value; please exercise caution when making changes, as modifying this setting will prevent you from obtaining the latest version.

(8) Recording Settings:

Click “Recording Settings” to enter the recording settings interface, as shown in Figure 6-6-6-12. The default sample rate is 48,000; options include 24,000 and 48,000, as shown in Figure 6-6-6-13. Select a sample rate and save it. When voice annotations, synchronized recording, or over-limit recording are enabled, audio will be captured at the saved sample rate.

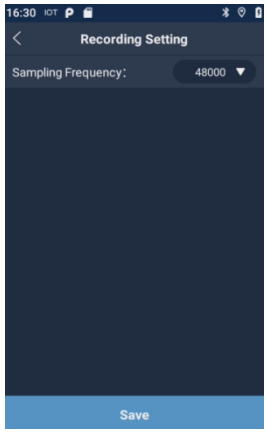



Figure 6-6-6-12 Recording settings interface

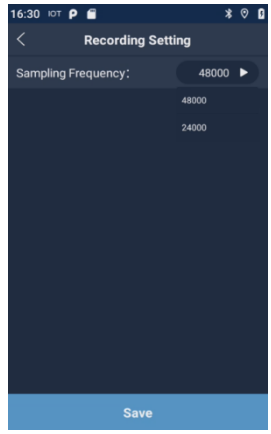



Figure 6-6-6-13 Sampling rate

### 6.6.7 External Devices

External devices are primarily used for integrating with other devices.

(1) Meteorological Equipment:

Click “Meteorological Equipment” to enter the meteorological equipment interface, as shown in Figure 6-6-7-1. Enable the device and select the corresponding model and serial port number, as shown in Figure 6-6-7-2. Once the AWA6292 “Measurement Module” starts measuring, it will save meteorological data to the peripheral device data according to the data acquisition interval, and the meteorological data will also be recorded in the integration details.

Available device models include: WS-6P, AH-6P, and AH-2P. When the AH-2P model is selected, only wind speed and wind direction information is available.

(2) Screen:

Click “Screen” to enter the display interface, as shown in Figure 6-6-7-3. Enable the feature and select the corresponding device model, LED display and display type, as shown in Figure 6-6-7-4. The connected display will show the data specified by the Type,” with data refreshed once every 1 second.

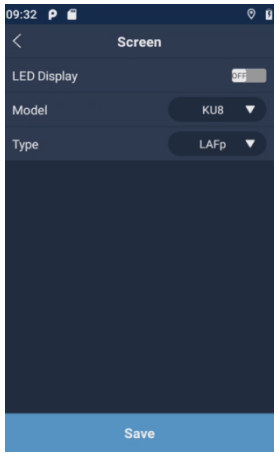



Figure 6-6-7-3 Display screen interface

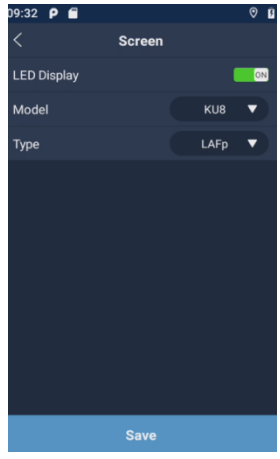



Figure 6-6-7-4 Display Screen Power On

### 6.6.8 Data Upload

Click “Data Upload” to access the data upload interface, as shown in Figure 6-6-8-1. You can perform operations on data, events, peripheral devices, and upload intervals. The specific procedures are as follows:

(1) Data:

Click “Data” to enter the data interface, as shown in Figure 6-6-8-2. This interface is used to enable and disable the data upload module. When used in conjunction with the Noise Monitoring System, it allows the upload of both instantaneous and integrated data from enabled modules to the platform.

(2) Events:

Click “Events” to enter the events interface, as shown in Figure 6-6-8-3, which is used to control the upload of events. When used in conjunction with the Noise Monitoring System, enabling and triggering events will upload them to the platform:

a) Noise Exceeding Threshold: When the noise level exceeds the “noise value entered in the Exceedance Alarm.” For example, if the exceedance value in the Exceedance Alarm is set to 80 dB, an event will be uploaded when the noise level reaches or exceeds 80 dB;

b) External Power Loss: An event is uploaded when external power is lost or restored;

c) Acoustic Calibration: Events are uploaded at the start and end of instrument calibration;

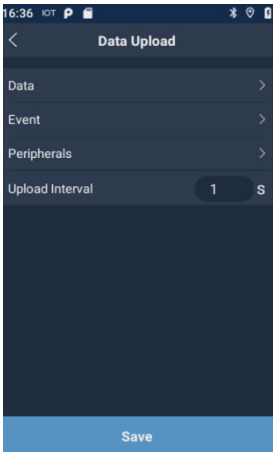



Figure 6-6-8-1 Data Upload Interface

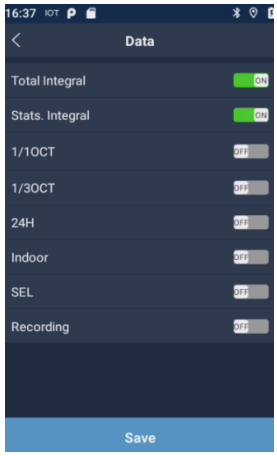



Figure 6-6-8-2 Data Interface

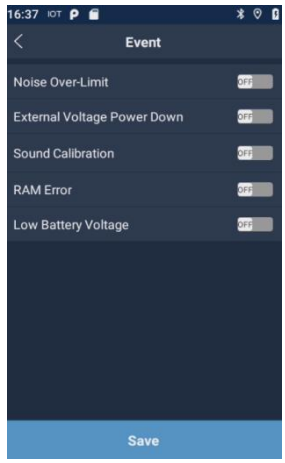



Figure 6-6-8-3 Event Interface

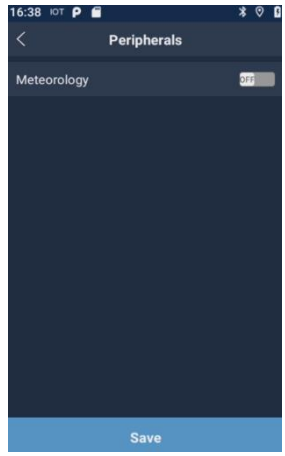



Figure 6-6-8-4 Peripheral Interface

d) Memory Error: An event is uploaded when the device encounters an error saving data;

e) Low Battery Voltage: An event is uploaded when the instrument's battery voltage is low.

(3) Peripherals:

Click "Peripherals" to enter the peripherals interface, as shown in Figure 6-6-8-4. This interface is used to enable and disable the peripheral data upload module. When used in conjunction with the Noise Monitoring System, data from enabled peripheral modules can be uploaded to the platform.

(4) Upload Interval:

Used to control the interval between uploads of instantaneous data and peripheral data.

### 6.6.9 Threshold Exceedance Alarms

Click “Threshold Exceedance Alarms” to enter the threshold exceedance alarm interface, as shown in Figure 6-6-9-1. After enabling threshold exceedance alarms, you can configure daytime limits, nighttime limits, and delay settings, as shown in Figure 6-6-9-2. When used in conjunction with the Noise Monitoring System, if the AWA6292’s LAFp exceeds the set limit, the LAFp data uploaded to the platform will be displayed in red; refer to the Noise Monitoring System manual for details. When event uploading is enabled, if the LAFp remains above the limit for a duration longer than the set “Delay,” a noise exceedance event will be sent to the platform.

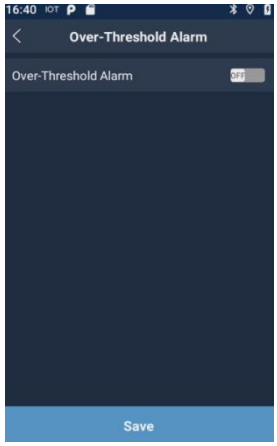



Figure 6-6-9-1 Exceedance Alarm Interface

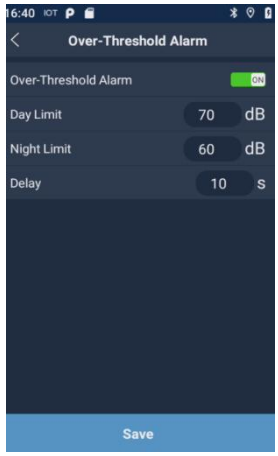



Figure 6-6-9-2 Exceedance alarm enabled

### 6.6.10 Backup and Reset

Click “Backup and Reset” to enter the Backup and Reset interface, as shown in Figure 6-6-10-1. From here, you can back up the system to a USB drive, restore factory settings, delete data, restart the software, or shut down the device. The specific procedures are as follows:

(1) USB Drive Backup (Under Development).

(2) Factory Reset:

Tap “Factory Reset” to enter the factory reset interface, as shown in Figure 6-6-10-2. Tap “OK” to proceed with the reset. This will reset all settings except for sensitivity, measured data, calibration records, the clock, and group names. Please proceed with caution. The system will restart after the factory reset is complete.

(3) Delete Data:

Click “Delete Data” to enter the data deletion interface, as shown in Figure 6-6-10-3. The interface will display the message: “All data will be permanently deleted and cannot be

recovered. Are you sure you want to proceed?" Click "OK" to delete the data. This will delete all measurement data; please proceed with caution.

(4) Restart Software:

Click "Restart Software" to enter the software restart interface, as shown in Figure 6-6-10-4. A message will appear stating, "The software is about to restart. Are you sure you want to proceed?" Click "OK" to restart the software.

(5) Shut Down:

Click "Shut Down" to power off the instrument.

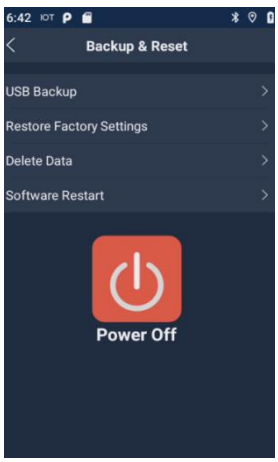



Figure 6-6-10-1 Backup and Reset


Figure 6-6-10-2 Restore factory settings

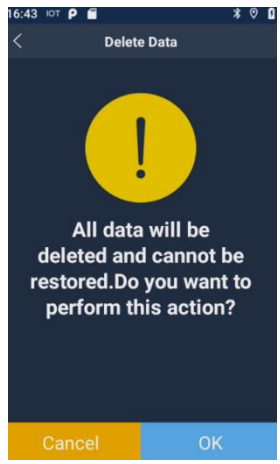



Figure 6-6-10-3 Deleting data

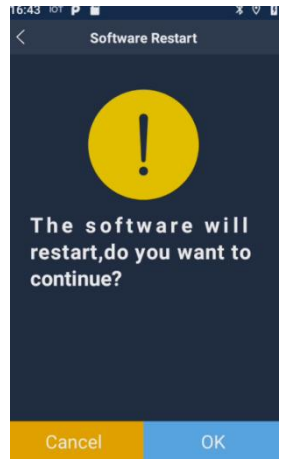



Figure 6-6-10-4 Software restart

### 6.6.11 Location Settings

Click “Location Settings” to enter the location settings interface, as shown in Figure 6-6-11-1. Here, you can configure the system’s location determination method; the default is GPS+ network positioning. If you turn off the location switch, location information will no longer be uploaded to the Noise Monitoring System. The location options are GPS, GPS+ network positioning, and network positioning, as shown in Figure 6-6-11-2.

1) GPS:

Under all circumstances, positioning is performed exclusively through the device’s GPS module.

2) GPS + Network Positioning:

When not connected to the network, GPS positioning is used; once connected to the network, either GPS positioning or network positioning is used (when both are available, the system prioritizes the positioning method that is acquired first).

3) Network Positioning:

Positioning cannot be obtained when not connected to the network; once connected to the network, network positioning is used.

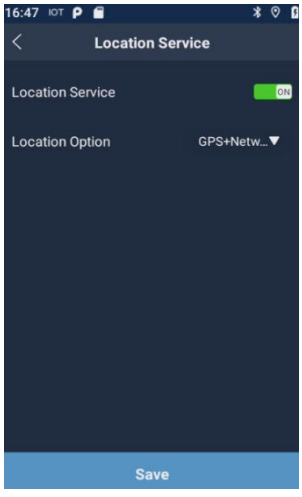



Figure 6-6-11-1 Positioning Settings

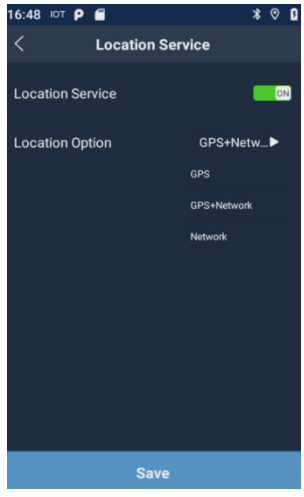



Figure 6-6-11-2 Positioning Options

## 6.7 Auxiliary Functions

### 6.7.1 Introduction

On any measurement page—such as Total Value, Statistical Analysis, 1/1 OCT Analysis, 1/3 OCT Analysis, FFT Analysis, 24-Hour Measurement, Indoor Measurement, Reverberation Measurement, STI, Sound Exposure Level—tap the button in the upper-right corner to open the auxiliary functions interface, as shown in Figure 6-7-1-1.

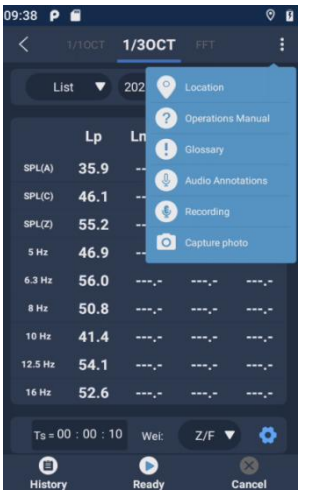



Figure 6-7-1-1 Auxiliary Functions interface

Auxiliary functions include: Location, User Manual, Glossary, Voice Annotation, Audio Recording, and Photo Capture; tapping an item opens the corresponding interface.

Note 1: Voice annotation and audio recording functions are not available for 24-hour measurement, reverberation time measurement, STI, stationary motor vehicle noise measurement, or airport noise measurement.

Note 2: The photo capture function is supported only in button-triggered mode.

Note 3: If the instrument is not equipped with a camera, an error message indicating camera activation failure will appear when attempting to take a photo after an integration measurement is completed.

### 6.7.2 Glossary

Tap “Glossary” to enter the glossary interface, as shown in Figure 6-7-2-1. While using the app, users can look up or search for terms they need on this screen to view their specific meanings

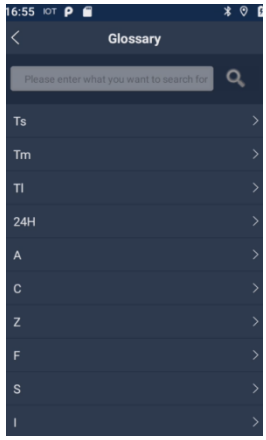



Figure 6-7-2-1 Glossary

### 6.7.3 Audio Annotations

Tap the shown “Audio Annotations” to enter voice annotation settings interface. By default, voice annotations are turned off, as in Figure 6-7-3-1. Click “Duration” to set the recording duration to Off, 10 s, or 20 s, as in Figure 6-7-3-2. Once voice annotations are enabled, they are only active when “Start Mode = Button”; they do not function in other modes.

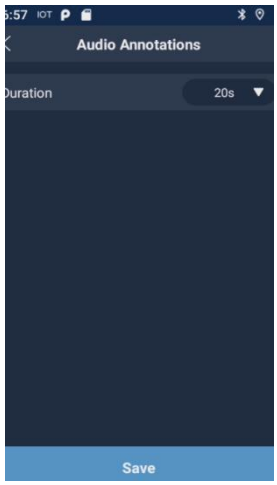



Figure 6-7-3-1 Audio Annotation Interface

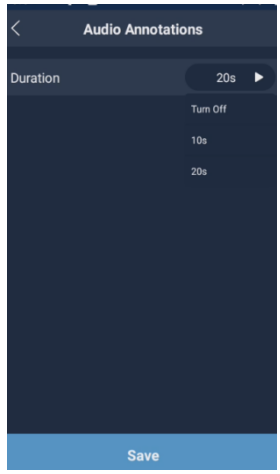



Figure 6-7-3-2 Audio Annotation Settings

When voice annotations are set to “Off,” they are not active; When “Voice Annotation” is set to 10 s, in “Button” activation mode, tapping “Start” causes the system to first record a 10-second voice annotation audio file before beginning the subsequent measurement. After the measurement is complete, a voice annotation file will be generated in the history, and the 10-second voice annotation can be played back in the data review section. When “Voice Annotation” is set to 20 s, the voice annotation duration is 20 seconds.

### 6.7.4 Recording

Click “Recording” to access the recording settings interface, as shown in Figure 6-7-4-1. After enabling the “Recording” toggle, you can configure the recording module and recording trigger mode, as shown in Figure 6-7-4-2. Recording is only enabled for the selected recording module and according to the selected recording trigger mode. Available

modules include: Total Integral, Statistical Integral, 1/1-OCT Analysis, 1/3-OCT Analysis, FFT Analysis, Indoor Measurement, Residential Measurement, and Synchronous Measurement, as shown in Figure 6-7-4-3. Trigger Modes: Synchronous, Out-of-Limit. Recording in the Sound Exposure Level and 24-Hour Measurement modules is handled separately; by default, the Recording Module can only be set to “Sound Exposure Level” or “24-Hour.”

(1) When “Trigger Mode = Synchronous” and synchronous measurement is enabled, the “Recording Module” must be set to “Synchronous Measurement.” When synchronous measurement begins, recording starts automatically. Recording files are saved in the synchronous measurement folder. To view synchronous measurement recordings, click “Data Review” on the main page to access the data review interface.

When synchronized measurement is disabled and the “Recording Module” is set to another interface, the “Recording Module” automatically synchronizes recording when it starts a measurement. The recording files are saved in the corresponding folder and can be viewed via the history or by accessing the data review interface.

(2) When “Start Mode = Exceedance,” the daytime limit, nighttime limit, delay, and recording duration are displayed immediately. As shown in Figure 6-7-6-4, after setting the limit values, delay, and recording duration, if LAFp continuously exceeds the limit for a duration longer than the set “delay” during the “Recording Module” measurement, recording will begin once the “delay” period ends. The recording duration will be equal to the set “recording duration.” If the recording duration has not reached the set “recording duration” by the end of the measurement, recording will continue. When the set time is reached, recording stops automatically, and the recording file is saved to the corresponding folder for that session.

If the recording duration exceeds 1 hour, the recording will be automatically split, with each hour saved as a separate recording file.

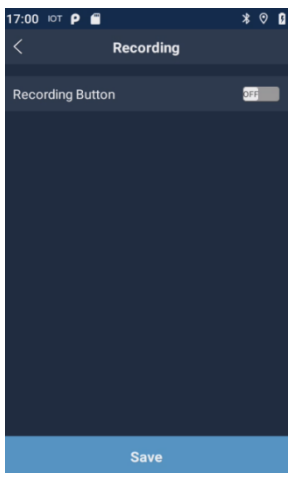



Figure 6-7-4-1 Recording

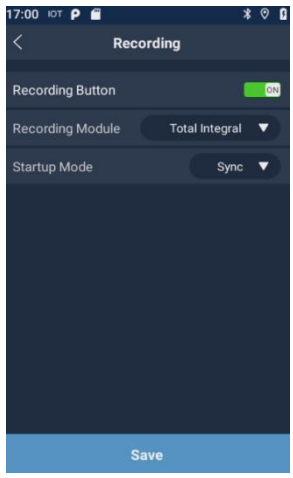



Figure 6-7-4-2 Recording

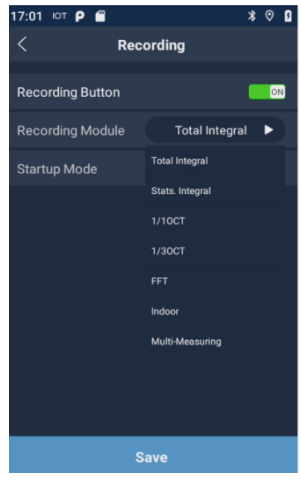



Figure 6-7-4-3 Audio Recording Module Settings

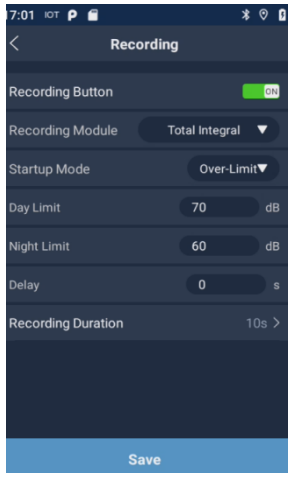



Figure 6-7-4-4 Over-limit startup settings

Note 1: Taking Figure 6-7-4-2 as an example, when the total value integration measurement begins, recording starts simultaneously. When the total value integration measurement ends, the recording also ends and is saved in the total value integration folder. The recording duration matches the total value integration measurement duration Tm.

Note 2: Taking Figure 6-7-4-4 as an example, when LAFp exceeds the limit for 5 seconds, the out-of-limit recording starts. When the recording reaches 10 seconds, it automatically stops and is saved in the total integration folder.

Note 3: Recording files are large; after recording is enabled, approximately 660 MB of data is generated per hour. If recording continues for 15 hours, the system's storage space may become fully occupied. At this point, the device may experience issues such as insufficient memory, poor performance, or data storage failures. In such cases, large files—such as recording files—must be deleted to free up memory. Therefore, exercise caution when enabling the recording function during long-term measurements.

24-hour measurement supports only threshold-exceeding recording, as shown in interface 6-7-6-5. After setting the threshold, delay, and recording duration, when the 24-hour

measurement is started and the status is “Measuring,” if the LAFp continuously exceeds the threshold for a duration longer than the set “delay,” recording will begin at the end of the “delay” period, and the recording duration will be equal to the set “recording duration.” Recording stops automatically when the set time is reached; if the recording duration has not reached the set “Recording Duration” by the end of the measurement, the recording will also end at that point. All recording files are saved in the corresponding folder for that measurement.

Note 1: Because threshold-exceeding recording involves a time-based check, the recording duration range is 10s–3599s.

### 6.7.5 Photo Capture

Tap "Photo Capture" to enter the photo capture settings interface, as shown in Figure 6-7-7-1. The photo capture function is disabled by default; it is supported for both "Total Integral" and "Stats. Integral" modes. This function is active only when the "Start Mode" is set to "Button" and does not function in other modes. Tapping the switch next to "Stats. Integral" enables the photo capture function for that measurement mode. Taking "Stats. Integral" as an example: when a measurement is initiated via the button, a pop-up prompt asking "Stats. Integral take another photo ?" appears after the measurement set is complete (see Figure 6-7-7-2). Tap "Confirm" to enter the photo capture interface, or "Cancel" to abort. Upon entering the photo capture interface (Figure 6-7-7-3), the camera viewfinder appears in the center; tap the camera icon at the bottom to take a photo, and a preview will be displayed (Figure 6-7-7-4). Tapping "Cancel" in Figure 6-7-7-4 discards the photo and exits the capture mode; tapping "Capture" saves the current photo and allows for another shot (up to two photos can be saved per measurement set); tapping "Save" stores the photo and exits the capture mode. Tapping the delete icon removes the photo, allowing the user to take a new one.

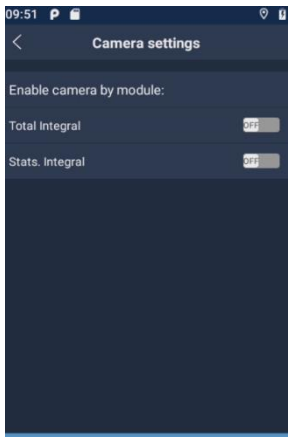



Figure 6-7-7-1

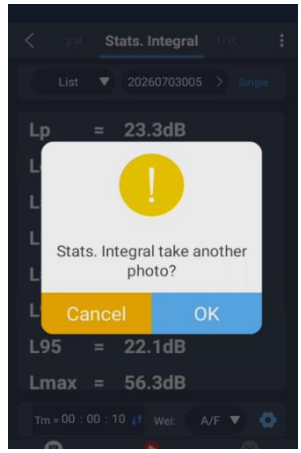



Figure 6-7-7-2 Supplementary photo-taking guide

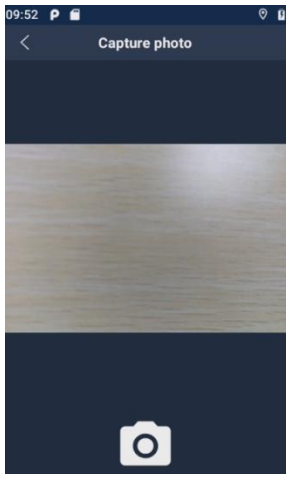



Figure 6-7-7-3 Photo display image

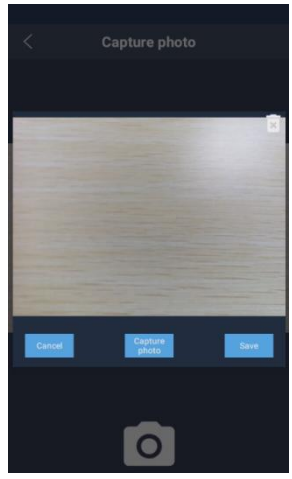



Figure 6-7-7-4 Photo display image

After the photo is taken, a JPG file is generated in the historical data; the photo can be viewed in the data retrieval section, as shown in Figure 6-7-7-5. Clicking the JPG file allows you to view the photo, which appears as shown in Figure 6-7-7-6.

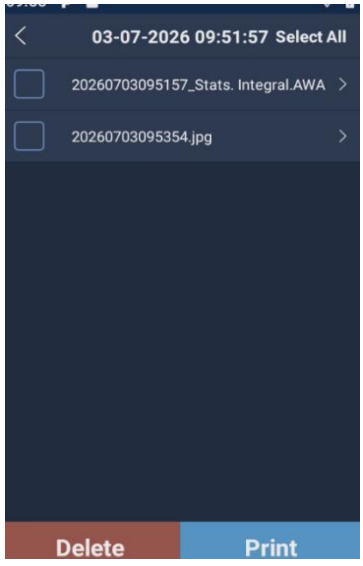



Figure 6-7-7-5 Photo storage location interface

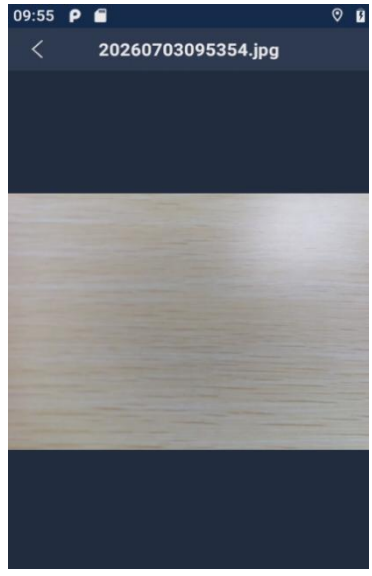



Figure 6-7-7-6 Photo details screen

## Appendix A: Directional Response

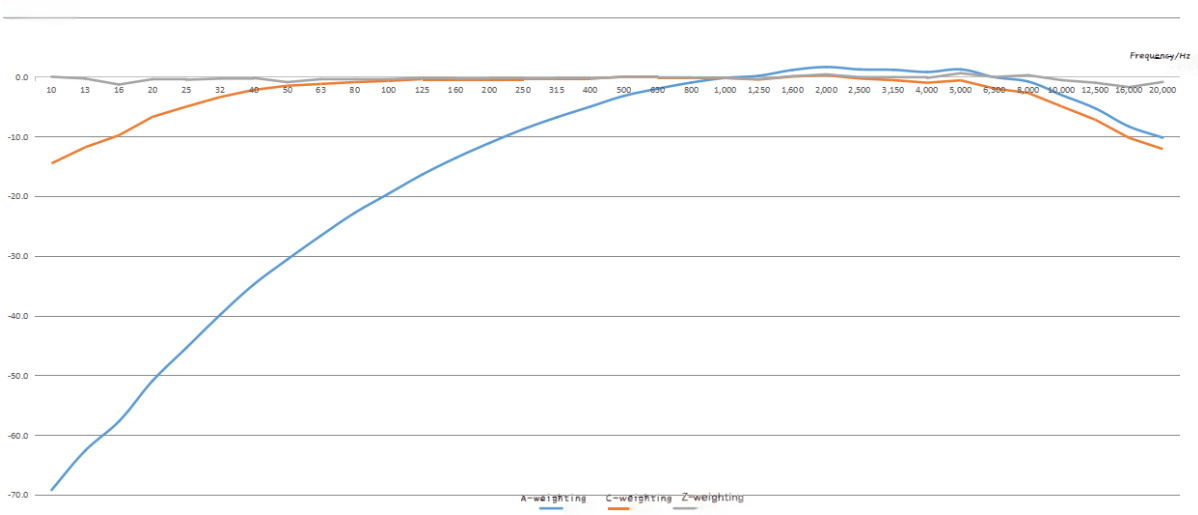
When the AWA6292 multifunction sound level meter is used with the AWA14601L preamplifier, it exhibits the following directional response characteristics.

| Nominal Frequency (Hz) | 30° | | | 90° | | | 150° | | |
|---|---|---|---|---|---|---|---|---|---|
| | A-weighted | C-weighted | Z-weighted | A-weighted | C-weighted | Z-weighted | A-weighted | C-weighted | Z-weighted |
| 250 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.4 |
| 315 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.5 | 0.5 | 0.5 |
| 400 | 0.2 | 0.3 | 0.3 | 0.1 | 0.2 | 0.2 | 0.4 | 0.5 | 0.5 |
| 500 | 0.4 | 0.3 | 0.3 | 0.2 | 0.1 | 0.1 | 0.6 | 0.6 | 0.6 |
| 630 | 0.3 | 0.3 | 0.4 | 0.1 | 0.2 | 0.1 | 0.4 | 0.4 | 0.5 |
| 800 | 0.1 | 0.1 | 0.1 | 0.6 | 0.6 | 0.6 | 0.1 | 0.1 | 0.1 |
| 1000 | 0.3 | 0.3 | 0.3 | 0.1 | 0.0 | 0.0 | 0.8 | 0.7 | 0.7 |
| 1250 | 0.4 | 0.4 | 0.5 | 1.0 | 1.0 | 1.0 | 0.9 | 1.0 | 1.0 |
| 1600 | 0.3 | 0.3 | 0.3 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 |
| 2000 | 0.1 | 0.1 | 0.1 | 0.9 | 0.9 | 0.9 | 2.2 | 2.2 | 2.2 |
| 2239 | 0.1 | 0.0 | 0.0 | 2.1 | 2.1 | 2.1 | 1.4 | 1.4 | 1.5 |
| 2500 | 1.0 | 1.0 | 1.0 | 2.0 | 2.0 | 2.0 | 4.6 | 4.6 | 4.6 |
| 2818 | 0.5 | 0.5 | 0.4 | 3.7 | 3.6 | 3.6 | 4.2 | 4.2 | 4.2 |
| 3150 | 0.1 | 0.2 | 0.2 | 0.4 | 0.4 | 0.4 | 4.6 | 4.6 | 4.5 |
| 3548 | 0.0 | 0.0 | 0.0 | 1.9 | 1.9 | 1.9 | 5.2 | 5.3 | 5.3 |
| 4000 | 0.5 | 0.6 | 0.6 | 2.1 | 2.1 | 2.1 | 5.6 | 5.7 | 5.6 |
| 4467 | 0.4 | 0.4 | 0.5 | 1.8 | 1.8 | 1.8 | 6.8 | 6.8 | 6.8 |
| 5000 | 0.6 | 0.6 | 0.6 | 0.1 | 0.1 | 0.1 | 6.2 | 6.2 | 6.2 |
| 5623 | 0.1 | 0.1 | 0.2 | 3.7 | 3.7 | 3.6 | 8.3 | 8.3 | 8.3 |
| 6300 | 0.8 | 0.0 | 0.1 | 2.5 | 2.5 | 2.6 | 2.7 | 2.7 | 2.8 |
| 7079 | 0.9 | 0.9 | 0.9 | 5.0 | 4.5 | 4.8 | 6.0 | 6.0 | 6.0 |
| 8000 | 0.7 | 0.7 | 0.7 | 4.8 | 4.7 | 4.8 | 3.9 | 4.0 | 3.6 |
| 8414 | 0.4 | 0.5 | 0.4 | 3.1 | 3.1 | 3.1 | 8.8 | 8.8 | 8.8 |
| 8912 | 0.3 | 0.3 | 0.3 | 3.8 | 3.7 | 3.8 | 9.0 | 8.8 | 9.0 |
| 9441 | 0.1 | 0.0 | 0.1 | 3.7 | 3.7 | 3.7 | 10.1 | 10.1 | 10.0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 10000 | 0.2 | 0.2 | 0.2 | 2.8 | 2.8 | 2.8 | 10.0 | 9.9 | 10.0 |
| 10593 | 0.3 | 0.4 | 0.2 | 4.1 | 4.1 | 4.1 | 11.1 | 11.2 | 11.1 |
| 11220 | 0.3 | 0.3 | 0.3 | 4.3 | 4.2 | 4.3 | 11.5 | 11.5 | 12.0 |
| 11885 | 0.5 | 0.6 | 0.5 | 7.0 | 7.0 | 7.0 | 10.5 | 9.9 | 10.3 |
| 12500 | 0.0 | 0.1 | 0.0 | 6.2 | 6.2 | 6.2 | 11.5 | 11.5 | 11.7 |

## Appendix B: Free-Field Response

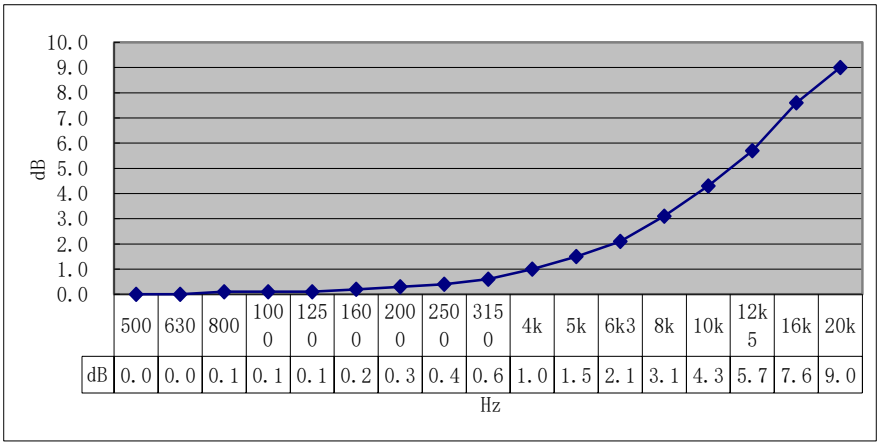
When the AWA6292 multifunction sound level meter is equipped with the AWA14425 1/2-inch measurement microphone and the AWA14601L preamplifier, it exhibits the free-field response characteristics shown in the figure below when sound waves are incident at 0°.



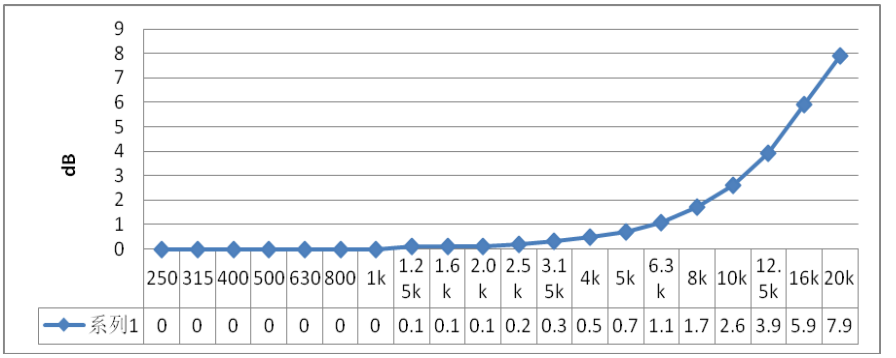

| Frequency /Hz | 10 | 12.5 | 16 | 20 | 25 | 31.5 | 40 | 50 | 63 |
|---|---|---|---|---|---|---|---|---|---|
| A-weighted | -69.2 | -62.6 | -57.7 | -50.9 | -45.4 | -39.9 | -34.8 | -30.6 | -26.6 |
| C-weighted | -14.5 | -11.8 | -9.8 | -6.7 | -5.0 | -3.4 | -2.2 | -1.5 | -1.2 |
| Z-weighted | 0.0 | -0.3 | -1.3 | -0.4 | -0.5 | -0.3 | -0.2 | -0.9 | -0.4 |
| Frequency /Hz | 80 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 500 |
| A-weighted | -22.8 | -19.6 | -16.4 | -13.6 | -11.1 | -8.8 | -6.8 | -5.0 | -3.2 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| C-weighted | -0.9 | -0.7 | -0.4 | -0.4 | -0.4 | -0.3 | -0.2 | -0.3 | 0.0 |
| Z-weighted | -0.4 | -0.4 | -0.2 | -0.3 | -0.2 | -0.3 | -0.2 | -0.3 | 0.0 |
| Frequency /Hz | 630 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 |
| A-weighted | -2.0 | -1.0 | -0.2 | 0.2 | 1.1 | 1.6 | 1.2 | 1.2 | 0.8 |
| C-weighted | -0.1 | -0.2 | -0.2 | -0.5 | 0.0 | 0.3 | -0.3 | -0.6 | -1.0 |
| Z-weighted | -0.1 | -0.1 | -0.2 | -0.4 | 0.1 | 0.4 | -0.1 | -0.1 | -0.2 |
| Frequency /Hz | 5000 | 6300 | 8000 | 10000 | 12500 | 16000 | 20000 | / | / |
| A-weighted | 1.2 | -0.1 | -0.8 | -3.1 | -5.3 | -8.3 | -10.2 | / | / |
| C-weighted | -0.6 | -2.0 | -2.7 | -5.0 | -7.2 | -10.2 | -12.1 | / | / |
| Z-weighted | 0.6 | 0.0 | 0.3 | -0.6 | -1.0 | -1.7 | -0.9 | / | / |

Z-weighted response when the azimuth is set to 90º



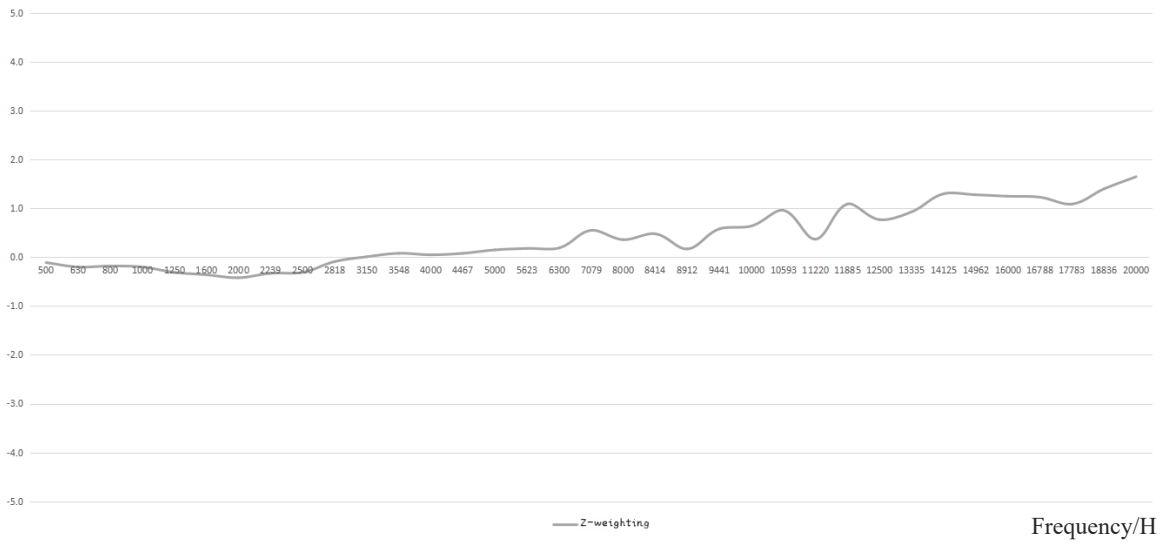

Z-weighted response of the diffusion field




## Appendix C: Windscreen Corrections

Correction values for the average effect of the S80 windscreen on the AWA6292's relative frequency-weighted response in the reference direction when there is no wind.

Correction value (dB)

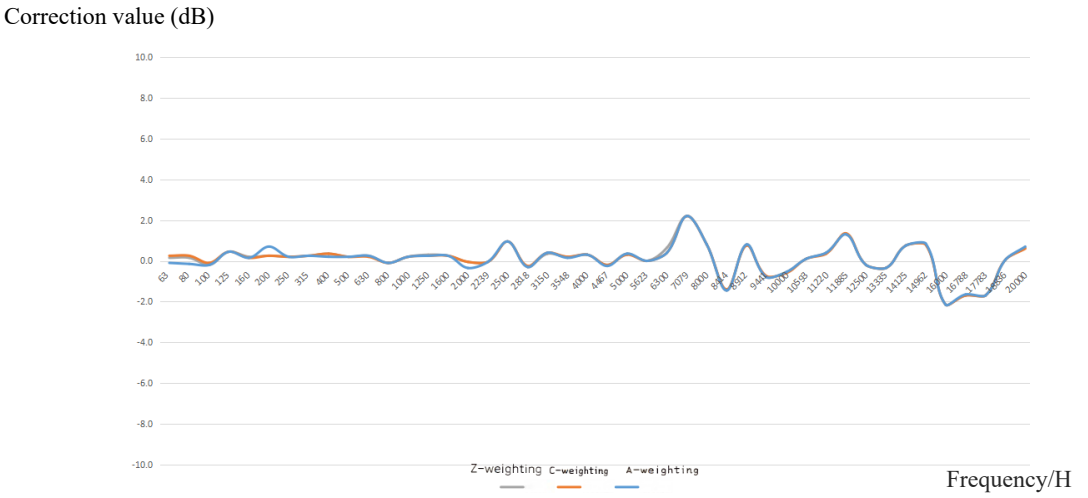



Frequency/H

| Frequency/ Hz | 500 | 630 | 800 | 1000 | 1250 | 1600 | 2000 | 2239 | 2500 |
|---|---|---|---|---|---|---|---|---|---|
| Z-weighted | -0.1 | -0.2 | -0.2 | -0.2 | -0.3 | -0.4 | -0.4 | -0.3 | -0.3 |
| Frequency/ Hz | 2818 | 3150 | 3548 | 4000 | 4467 | 5000 | | 6300 | 7079 |
| Z-weighted | -0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.2 | 0.2 | 0.2 | 0.6 |
| Frequency/ Hz | 8000 | 8414 | 8912 | 9441 | 10000 | 10593 | 11220 | 11885 | 12500 |
| Z-weighted | 0.4 | 0.5 | 0.2 | 0.6 | 0.6 | 1.0 | 0.4 | 1.1 | 0.8 |
| Frequency/ Hz | 13335 | 14125 | 14962 | 16000 | 16788 | 17783 | 18836 | 20000 | / |
| Z-weighted | 0.9 | 1.3 | 1.3 | 1.3 | 1.2 | 1.1 | 1.4 | 1.7 | / |

## Appendix D: Enclosure Influence Correction Factors

Correction factors for the average influence of the AWA6292 on the relative frequency-weighted response in the reference direction when no enclosure is present.




| Frequency/Hz | 63 | 80 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 630 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A-weighted | -0.1 | -0.1 | -0.2 | 0.4 | 0.1 | 0.7 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 |
| C-weighted | 0.3 | 0.3 | -0.1 | 0.5 | 0.2 | 0.3 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 |
| Z-weighted | 0.1 | 0.1 | -0.2 | 0.5 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.3 |
| Frequency/Hz | 800 | 1000 | 1250 | 1600 | 2000 | 2239 | 2500 | 2818 | 3150 | 3548 | 4000 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A-weighted | -0.1 | 0.2 | 0.2 | 0.3 | -0.3 | -0.1 | 0.9 | -0.3 | 0.4 | 0.2 | 0.3 |
| C-weighted | -0.1 | 0.2 | 0.3 | 0.3 | -0.1 | -0.1 | 1.0 | -0.3 | 0.4 | 0.2 | 0.3 |
| Z-weighted | -0.1 | 0.2 | 0.3 | 0.3 | 0.0 | 0.0 | 0.9 | -0.3 | 0.3 | 0.2 | 0.3 |
| Frequency/Hz | 4467 | 5000 | 5623 | 6300 | 7079 | 8000 | 8414 | 8912 | 9441 | 10000 | 10593 |
| A-weighted | -0.3 | 0.4 | 0.0 | 0.4 | 2.2 | 0.8 | -1.5 | 0.8 | -0.8 | -0.5 | 0.1 |
| C-weighted | -0.2 | 0.3 | 0.0 | 0.4 | 2.2 | 0.8 | -1.4 | 0.7 | -0.8 | -0.6 | 0.1 |
| Z-weighted | -0.2 | 0.4 | 0.0 | 0.6 | 2.2 | 0.8 | -1.5 | 0.8 | -0.8 | -0.6 | 0.1 |
| Frequency/Hz | 11220 | 11885 | 12500 | 13335 | 14125 | 14962 | 16000 | 16788 | 17783 | 18836 | 20000 |
| A-weighted | 0.4 | 1.3 | -0.2 | -0.4 | 0.8 | 0.9 | -2.2 | -1.7 | -1.7 | 0.1 | 0.7 |
| C-weighted | 0.4 | 1.4 | -0.2 | -0.4 | 0.8 | 0.8 | -2.2 | -1.7 | -1.7 | 0.0 | 0.6 |
| Z-weighted | 0.4 | 1.3 | -0.2 | -0.4 | 0.8 | 0.8 | -2.2 | -1.7 | -1.7 | 0.0 | 0.6 |

## Appendix E:In-unit mechanical noise in octave bands under Z-weighting

| Frequency /Hz | |
|---|---|
| 8 | <10 |
| 16 | <10 |
| 31.5 | <10 |
| 63 | <8 |
| 125 | <8 |
| 250 | <8 |
| 500 | <5 |
| 1000 | <2 |
| 2000 | <1 |
| 4000 | <1 |
| 8000 | <3 |
| 16000 | <5 |

# Appendix F: Effects of Extension Cords

| Nominal Frequency /Hz | At a nominal sensitivity level with an input signal of 140 dB, the effect of different extension cable lengths in dB | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 5 m | 10 m | 15 m | 20 m | 30 m | 40 m | 50 m | 100 m |
| 250 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 315 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 400 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2 |
| 500 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.4 |
| 630 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | -0.8 |
| 800 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.1 | -0.2 | -1.3 |
| 1000 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2 | -0.4 | -2.0 |
| 1250 | 0.0 | 0.0 | 0.0 | 0.0 | -0.2 | -0.4 | -0.8 | -2.8 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1600 | 0.0 | 0.0 | 0.0 | -0.1 | -0.4 | -0.7 | -1.3 | -3.9 |
| 2000 | 0.0 | 0.0 | -0.1 | -0.2 | -0.7 | -0.9 | -1.9 | -4.9 |
| 2500 | 0.0 | 0.0 | -0.2 | -0.4 | -1.2 | -1.5 | -2.5 | -6.0 |
| 3150 | -0.1 | -0.1 | -0.4 | -0.7 | -1.7 | -2.6 | -3.5 | -7.3 |
| 4000 | 0.0 | -0.2 | -0.7 | -1.1 | -2.4 | -3.4 | -4.4 | -8.6 |
| 5000 | 0.0 | -0.4 | -1.3 | -1.8 | -3.1 | -4.3 | -5.4 | -9.9 |
| 6300 | 0.0 | -0.8 | -1.7 | -2.4 | -3.9 | -5.3 | -6.5 | -11.3 |
| 8000 | -0.2 | -1.3 | -2.4 | -3.3 | -5.0 | -6.5 | -7.9 | -13.2 |
| 10000 | -0.4 | -1.9 | -3.0 | -4.0 | -6.1 | -7.8 | -9.5 | -15.1 |
| 12500 | -0.7 | -2.6 | -4.0 | -5.3 | -7.8 | -9.7 | -11.4 | -17.1 |
| 16000 | -1.1 | -3.4 | -5.2 | -6.8 | -9.5 | -11.4 | -13.1 | -19.0 |
| 20000 | -2.0 | -4.3 | -6.6 | -8.3 | -11.0 | -13.1 | -14.9 | -20.8 |

Note: Signal attenuation for different cable lengths depends on the input voltage; the higher the input voltage, the greater the signal attenuation. The attenuation values provided here are based on an inputof 140 dB at the nominal sound pressure level.