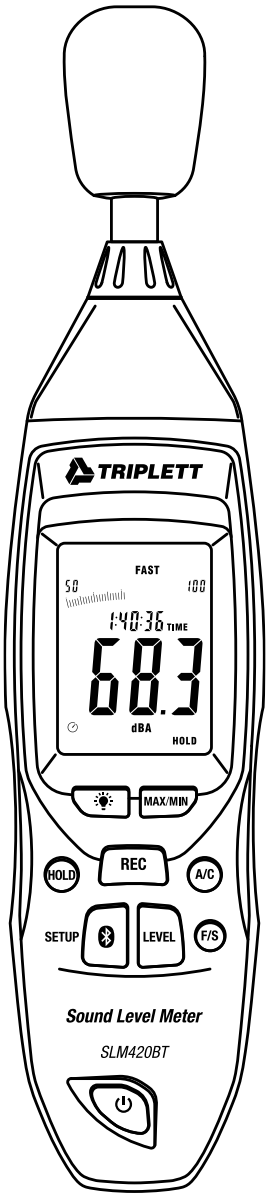
TRIPLETT
Test Equipment & Tools

USER MANUAL

SLM420BT

Datalogging Sound Level Meter with Bluetooth



Introduction

Welcome, and congratulations on your purchase of the Triplett SLM420BT. Engineered for professional accuracy and reliability, the SLM420BT is designed to measure and monitor noise levels in industrial, commercial, and environmental applications. Ideal for workplace noise assessment, HVAC and machinery testing, environmental sound studies, and general acoustic monitoring, this instrument delivers fast, stable, and precise results.
The SLM420BT features A/C frequency weighting, FAST/SLOW response modes, MAX/MIN capture, and a wide dynamic measurement range to ensure accurate readings across varied noise environments. Equipped with Bluetooth® wireless technology, the SLM420BT allows real-time data viewing, recording, and analysis through the supported mobile app for enhanced reporting and field efficiency.
Please read this manual carefully before operating the meter to ensure proper use, safety, and long-term reliability.

What's in the box:

(1) SLM420BT
(1) User Manual
(1) USB Interface Cable
(1) Wind Screen
(1) 9V Battery
(1) Calibration Pot Screwdriver

Stay updated:

For the most recent version of the user manual, always visit the official Triplett website:
www.triplett.com and search for **SLM420BT**.

⚠ Safety Information

- Read the following safety information carefully before attempting to operate or service the meter.
- Use the meter only as specified in this manual:

Environmental Conditions
Altitude is lower than 2000 meters
Relatively humidity <90%RH
Operation Ambient 0 to 40°

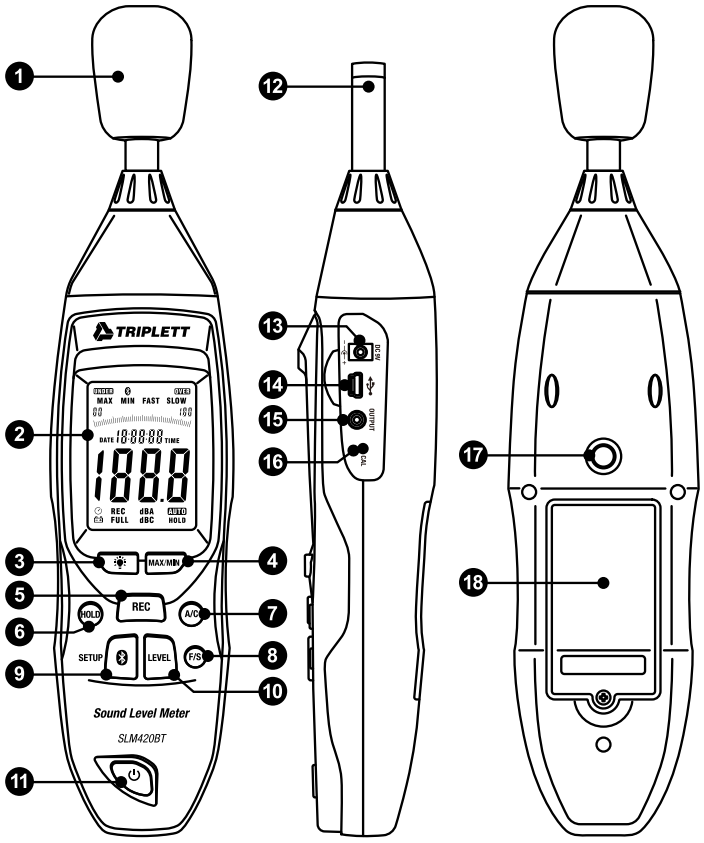
FEATURES

- Thermistor sensor provides stable and accurate temperature compensation
- This unit confirms to the IEC61672-1 CLASS2 for Sound Level Meters
- MAX & MIN measurements
- Over range display
- Under range display
- Weighting A & C
- FAST & SLOW response
- Analog AC/DC outputs for connection to frequency analyzer or X-Y shaft recorder

Description

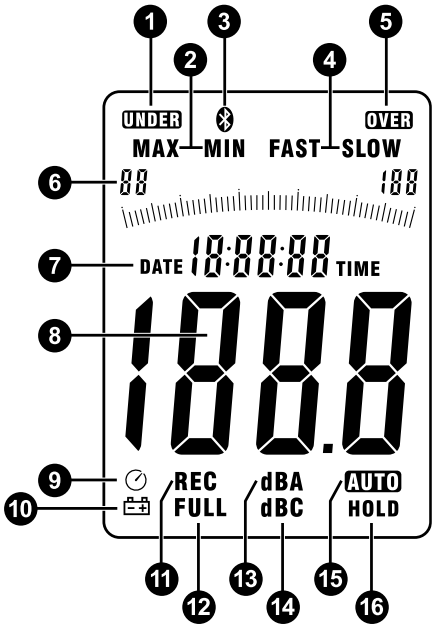
Product Description

1. Windscreen
2. LCD Display
3. Backlight Button
4. MAX/MIN Button
5. REC Button
6. HOLD Button
7. A/C Frequency Weighting Select Button
8. FAST/SLOW Button
9. Bluetooth Button/SETUP
10. LEVEL Button
11. Power Button
12. Microphone
13. External DC 9V Power Supply Jack
14. USB Interface
15. AC/DC Signal Output
16. Calibration Potentiometer
17. Tripod Mount
18. Battery Cover



LCD Display Description

1. Under Range Indicator
2. Maximum Hold/ Minimum Hold Indicators
3. Bluetooth Icon
4. Fast/Slow Response Indicators
5. Over Range Indicator
6. Range Indicator
7. Date/Time Indicator
8. Display Digits
9. APO (Auto Power Off) Indicator
10. Low Battery Indicator
11. Recording Indicator
12. Memory FULL Indicator
13. A-Weighting Indicator
14. C- Weighting Indicator
15. Auto Range Indicator
16. Data Hold Function



Operation

Buttons and Functions

Backlight Button

- Turn the backlight ON/OFF.
- Datalogger Setup for **Sample "Int" (Interval) Rates:**

1.With the meter **OFF** press and **HOLD** the **Backlight** Button continuously and **Power ON** the meter until **"Int"** symbol appears.

2.Press the **LEVEL** Button to set up to adjust the "Int" sample rate.

3.Then press the **HOLD** Button to save the setting and exit back to normal measure mode.

MAX/MIN BUTTON

Maximum/Minimum Hold Function:

• Press the **MAX/MIN** button once to activate the MAX/MIN measurement mode. The display will show **“MAX”**, and the meter will capture and hold the maximum sound level detected. If a higher sound level is measured, the display will automatically update to the new maximum value.

• Press the **MAX/MIN** button again to switch to **“MIN”** mode. The meter will now capture and hold the minimum sound level detected. If a lower sound level is measured, the display will update to the new minimum value.

• Press the **MAX/MIN** button a third time to exit the MAX/MIN measurement mode and return to normal operation.

REC BUTTON

Datalogger Function

• Press the **REC** button after powering on the meter to start data recording. The display will show **“REC”** to indicate that the data logging function is active.

• Press the **REC** button again to stop data recording.

Note:
To prevent data errors, do **not** power off the instrument while the **REC** function is active. Only turn off the meter after data recording has stopped and the “REC” icon is no longer displayed.

Adjusting Datalogger Sampling Rate Time

• To access the datalogger response time setting, **press and hold the Backlight button** before turning on the meter. While holding the Backlight button, **press the Power button** to enter the datalogger setup mode.

• Press the **LEVEL** button to adjust the memory (sampling) time interval.

• Press the **HOLD** button to save and confirm the setting.

Clearing all Datalogger Memory

• To clear all stored data from the datalogger, **press and hold the REC button** before turning on the meter.
• While holding the button, power on the meter.
• When **“CLR”** appears on the display, release the button. This indicates that all data in the datalogger memory has been successfully deleted.

HOLD BUTTON

• Press the **HOLD** button to freeze the current reading on the display.
• Press the **HOLD** button again to release the hold function and resume normal measurement.

FREQUENCY WEIGHTING SELECT BUTTON

• **A:** Selects **A-weighting**, which simulates the frequency response of the human ear and is commonly used for general sound level measurements.
• **C:** Selects **C-weighting**, which measures a wider frequency range and is typically used for evaluating peak or low-frequency noise levels.

FAST/SLOW BUTTON

Time Weighting Selection:
• **FAST:** Fast response mode; sampling occurs once every **125 ms**, suitable for measuring rapidly changing noise levels.
• **SLOW:** Slow response mode; sampling occurs once every **1 second**, ideal for monitoring steady or continuous noise levels.

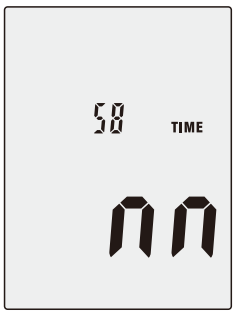
Internal Clock (Date and Time) Setting and Bluetooth Switch

The **SETUP** button is used to adjust the internal real-time clock and to initialize or switch the Bluetooth connection.

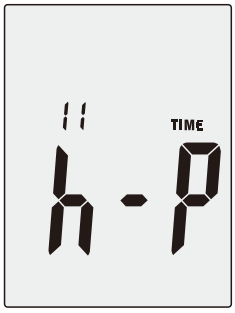
Adjusting the Date and Time

1. **Press and hold the SETUP button**, then power on the meter.
   When the **"TIME"** symbol appears on the display, release the button. The meter will enter **time adjustment mode**, and the current date will appear.

2. **Press the SETUP button again** to enter the **minute** adjustment mode.
    - Press the **LEVEL button** to change the minute value.
    - Press the **HOLD button** to confirm and save.

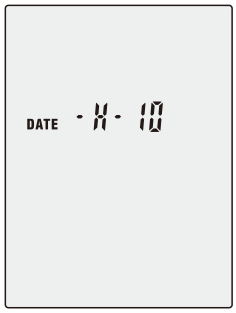


3. **Press the SETUP button again** to enter the **hour** adjustment mode.
    - The display shows **h-P** for PM and **h-A** for AM.
    - Press the **LEVEL button** to change the hourly value.
    - Press the **HOLD button** to confirm and save.



4. **Press the SETUP button again** to enter the **day** adjustment mode.
    - Press the **LEVEL button** to change the day.
    - Press the **HOLD button** to confirm and save.

5. **Press the SETUP button again** to enter the **month** adjustment mode.
    - Press the **LEVEL button** to change the month.
    - Press the **HOLD button** to confirm and save.



6. **Press the SETUP button again** to enter the **year** adjustment mode.
    - Press the **LEVEL button** to change the year.
    - Press the **HOLD button** to confirm and save.

7. **Press the SETUP button one final time** to enter **time-chip initialization** mode.
    - Press the **HOLD button** to confirm initialization.
    - The clock and date will return to their factory default values.
    - If the date or time cannot be adjusted after battery replacement, perform the initialization before resetting the clock.

USB COMMUNICATIONS SETTING

• Power on the meter and connect it to a computer using the supplied **USB cable**.
• Open the accompanying PC software and select the correct COM port (for example, **COM3** or **COM4**).
• Press the **SETUP** button once. The **Auto Power Off** icon will disappear from the display, indicating that **auto power-off is disabled** and that **USB data transmission** is active.

BLUETOOTH COMMUNICATIONS SETTING

• When Bluetooth communication is active, pressing the **SETUP** or **REC** button will cause the **Auto Power Off** icon to disappear.
• This indicates that **auto power-off is disabled** and the meter is currently **transmitting data via Bluetooth**.

Note:
When data transmission is complete, auto power-off will resume automatically after the preset timeout period.

LEVEL BUTTON — LEVEL RANGE SELECTION

Each press of the **LEVEL** button cycles through the available measurement ranges in the following order:
Low (Lo) → **Medium (Med)** → **High (Hi)** → **Auto** → **Low (Lo)**

In **Auto** mode, the meter automatically selects the optimal range based on the detected sound level.

POWER BUTTON

• Press the **Power** button to **turn the meter ON or OFF**.
• The last used settings are retained when the unit is powered back on.

EXTERNAL DC 9 V POWER SUPPLY TERMINAL

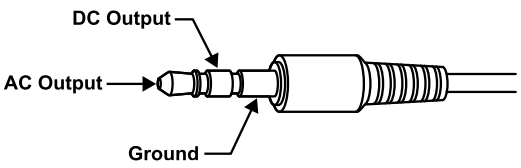
• Allows connection to an external **DC 9 V power source** for continuous operation.
• Connector dimensions: **Outer diameter 3.5 mm**, **Inner diameter 1.35 mm**.

USB INTERFACE

The USB signal output operates as a **9600-bps serial interface**, allowing direct communication with PC software for real-time data transfer and analysis.

AC/DC SIGNAL OUTPUT (3.5mm OUTLET)

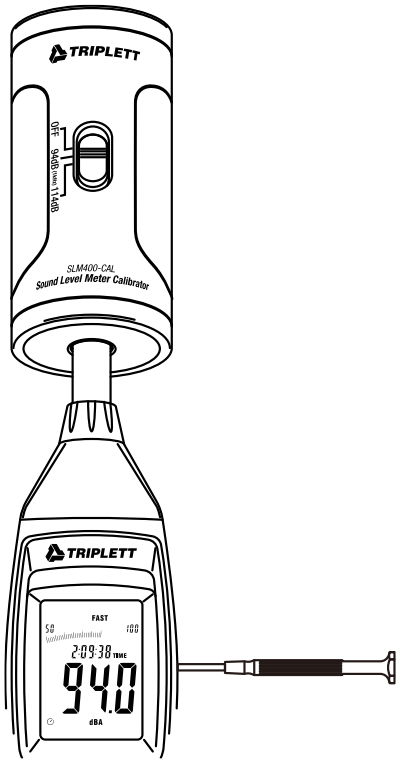
- **AC Output Voltage:** 1 Vrms corresponding to each measurement range
- **AC Output Impedance:** 100 Ω
- **DC Output Voltage:** 10 mV per dB
- **DC Output Impedance:** 1 kΩ



Tip:
The AC/DC outputs can be connected to external recording devices or analyzers for advanced signal monitoring and verification.

CALIBRATION PROCEDURE

1. **Set the following parameters before calibration:**
   - **Frequency Weighting:** A-weighting
   - **Time Weighting:** FAST
   - **Level Range:** 50 to 100 dB
2. **Insert the microphone** carefully into the **½-inch (12.7 mm)** cavity of a sound calibrator (set to **94 dB at 1 kHz**).
3. **Turn on the calibrator** and adjust the **CAL potentiometer** on the meter until the display reads **94.0 dB**.



Note:
All units are **factory-calibrated prior to shipment**. For best performance and accuracy, it is **recommended to recalibrate the instrument annually** or whenever sensor drift is suspected.

MEASUREMENT PREPARATION

1. Remove the **battery cover** on the back of the meter and insert **one 9 V battery** (type 6F22 or equivalent).
2. Replace the back cover securely.
3. When the **low battery symbol ( )** appears on the display, the operating voltage is low and the battery should be **replaced**.
4. To use an external power source, insert the plug of a **DC 9 V adapter (Ø3.5 mm)** into the **DC 9 V connector** on the side panel of the instrument.

OPERATING PROCEDURE

1. **Turn on** the meter using the Power button.
2. Press the **LEVEL** button to select the desired measurement range. Ensure that neither **"UNDER"** nor **"OVER"** appears on the display.
3. Select **"dBA"** weighting for general environmental noise measurements, or **"dBC"** weighting when measuring acoustic materials or low-frequency noise.
4. Select **FAST** for instantaneous sound level measurements or **SLOW** for averaged sound levels.
5. Press the **MAX/MIN** button to record and display the maximum and minimum noise levels.
6. Hold the instrument comfortably in your hand or mount it on a **tripod**, and measure the sound level at approximately **1 to 1.5 meters (3 to 5 feet)** from the sound source.

INSTALLING THE SOFTWARE

1. **Start Windows.**
   Make sure all other programs are closed before installation.
2. **Insert the installation CD** into your computer's CD drive.
3. **Open the installation directory.**
   Locate and run the file **SETUP.exe** in the **DISK1** folder.
   Follow the on-screen instructions to install the software in your preferred directory.
4. **Install the USB Driver (CP210X).**
   - Connect the meter to your computer using the **USB cable**.

- When prompted, install the **CP210X** driver.
- If Windows requests a location for the driver, browse to:
  My Computer → Properties → Hardware → Device Manager → Ports (COM & LPT)
  and confirm that **CP210X USB to UART Bridge** appears under Ports.

USB Driver Installation (Manual Method)

• Copy the **CP210X WIN Drivers** to a directory such as:
C:\usb_driver

• Connect the meter to your computer using the USB cable.
When Windows displays *"New Hardware Found"*, select **Install from a specific location**, then browse to:
C:\usb_driver

• After successful installation, a new **COM port** (such as **COM3** or **COM4**) will appear in the **Device Manager**.

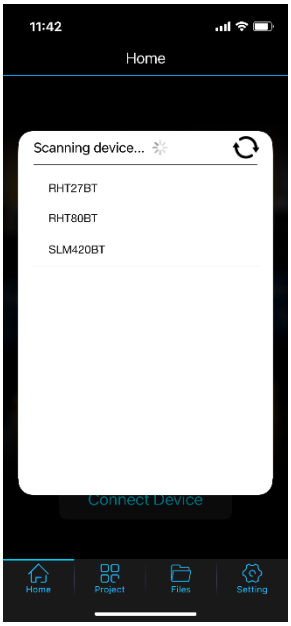
Connecting the Meter

1. Once the driver installation is complete, launch the installed application software.
2. Connect the meter to your computer via the USB interface.
3. In the software, select the **COM port** corresponding to the CP210X driver (for example, **COM3** or **COM4**).
4. Press the **SETUP** button on the meter.
   The **Auto Power Off** icon will disappear, indicating that the meter is actively **transmitting data** to the computer.

Note:
For additional information about data logging, exporting, or graphing functions, refer to the **Help** section within the installed software.

MeterRead App

- You can easily view the measurement data through the APP “MeterRead” (IOS/Android APP) installed on the
- terminal.
- Install the “MeterRead” (IOS/Android App) App.
- Activate Bluetooth on the device.
- Open APP. The meter will scan and populate a list of Bluetooth Devices.
- Find the **SLM420BT** and click **“Connect Device”**



- Once connected, the app will enter **Normal Measuring Mode.**

- Clicking the Back arrow will bring your **“Settings”** menu.
- Refer to the **“Help”** section for in depth MeterRead application functionality.

Specifications

Feature	Description
Standard Applied	IEC 61672-1 Class 2
Accuracy	±1.4 dB
Frequency Range	31.5 Hz to 8 kHz
Dynamic Range	50 dB
Level Ranges	Lo: 30 to 80 dB / Med: 50 to 100 dB / Hi: 80 to 130 dB / Auto: 30 to 130 dB
Frequency Weighting	A / C
Time Weighting	FAST (125 ms) / SLOW (1 s)
Microphone	½ in. (12.7 mm) electret condenser microphone
Display	4-digit LCD display with 0.1 dB resolution
Display Update Rate	2 times per second
MAX Hold	Captures and displays maximum reading
MIN Hold	Captures and displays minimum reading
Data Hold	Freezes the current reading on display
Alarm Function	“OVER” indicates input above range limit; “UNDER” indicates input below range limit
Analog Output	AC = 1 Vrms (approx.) / DC = 10 mV per dB; AC output impedance 100 Ω; DC output impedance 1 kΩ
Data Output	USB interface (9600 bps) and Bluetooth wireless communication
Auto Power Off	Meter automatically shuts down after approximately 15 minutes of inactivity (can be disabled)
Power Supply	One 9 V battery (006P, NEDA 1604, or IEC 6F22) or DC 9 V adapter (Ø 3.5 mm plug)
Operating Temperature	32 °F to 104 °F (0 °C to 40 °C)
Operating Humidity	10 % RH to 90 % RH
Storage Temperature	14 °F to 140 °F (–10 °C to 60 °C)
Storage Humidity	10 % RH to 75 % RH
Dimensions (L × W × H)	10.9 × 3.0 × 2.0 in (278 × 76 × 50 mm)
Weight	12.3 oz (350 g) including battery

Warranty Statement

Triplett Test Equipment offers a two-year warranty to the original purchaser of its products. We guarantee that our products will be free from defects in workmanship and materials for two (2) years from the purchase date.

This warranty does not cover:

- Products purchased from unauthorized distributors.
- Items that have been repaired or altered by unauthorized individuals.
- Damage from misuse, abuse, misapplication, negligence, or accidents.
- Products with altered, defaced, or removed serial numbers.
- Accessories, including batteries.