

# User's Manual

**EXTECH**  
**INSTRUMENTS**

## Model 407744 and 407766 Sound Level Calibrators



## Introduction

Congratulations on your purchase of Extech's Sound Level Calibrator. Sound Level Meters with 0.5" and 1" microphones can be calibrated with this device. The Calibrator's housing is made from die-cast aluminum for ruggedness and durability. The 407744 provides a 94dB calibration output signal while the 407766 provides both 94dB and 114dB outputs. This professional calibrator, with proper care, will provide years of safe reliable service.

## Specifications

Output signals	407744: 94dB 407766: 94dB and 114dB
Output signal accuracy	407744: $\pm 0.8$ dB; 407766: $\pm 0.8$ dB (94dB), $\pm 1$ dB (114dB)
Frequency of output signal	1KHz sine wave
Accuracy of output signal frequency	$\pm 5\%$
Compatible microphones sizes	0.5" and 1" microphones
Total Harmonic Distortion (THD)	< 2%
Operating temperature	32 to 122°F (0 to 50°C)
Power supply	Two 9V batteries
Power consumption	Approx. 10mA DC
Battery check	Status LED
Dimensions	2.2" diameter x 3.2" length (50 x 82mm)
Weight	0.75 lbs. (340g)

## Description

Note that only the 407744 is pictured; the 407766 has an additional LED for power-on indication and a 94/114dB selector switch.

- 1 ½" Microphone adaptor\*
- 2 ON/OFF/Battery-test function switch
- 3 Battery status LED
- 4 Battery compartment cap

\* To remove the ½" adaptor, pull straight down as shown in diagram below.



## ***Operation***

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### **Theory of Operation**

The 407744 sound level calibrator generates a 94dB sine wave at 1KHz. The 407766 can generate a 94dB or a 114dB sine wave at 1kHz. When a microphone from a sound level meter is inserted into the calibrator, the sound level meter picks up the signal and displays it in dB (decibel) units. The sound level meter should be adjusted (if necessary) to match the calibrator's output signal as closely as possible.

### **Procedure**

1. Insert the microphone under test into the calibrator's microphone cavity; ensure that it is fully inserted. Use the ½" microphone adaptor (supplied attached to the calibrator) for ½" microphones. Remove the adaptor (pull down as shown in the diagram on previous page) for 1" microphones.
2. On the 407744, slide the function switch to the 'I' (Power On) position. As soon as the unit is powered, the calibration tone is generated. On the 407766, slide the function switch to the 94dB or the 114dB position as desired. The calibrator generates its signal as soon as the switch is set.
3. Read the sound level meter's display. The sound level meter should read 94dB or 114dB depending on the calibrator's signal level. If the sound level meter does not match the calibrator's signal (within specification), adjust it as explained in the sound level meter's operating instructions (typically a front or side-panel pot adjustment).
4. Slide the function switch to the '0' or 'OFF' position, depending on model, and remove the microphone.

### **Battery Check**

On the 407744, check the condition of the battery by moving the function switch to the 'Battery test' position. The Battery status LED should illuminate if the battery is OK. If it does not light, replace the 9V battery. On the 407766, a low battery status LED alerts the user that battery power is low.

## ***Battery Replacement***

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Twist off battery compartment cap (shown in the diagram on the previous page) to access the two 9V batteries. Remove the batteries and replace with new heavy duty, alkaline 9V batteries. Replace the cap.

## **Calibration and Repair Services**

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Extech offers complete repair and calibration services for all of its products. For periodic calibration, NIST certification or repair of any Extech product, call customer service for details on services available. Extech recommends that calibration be performed on an annual basis to insure calibration integrity.

## **Warranty**

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EXTECH INSTRUMENTS CORPORATION warrants this instrument to be free of defects in parts and workmanship for one year from date of shipment (a six month limited warranty applies on sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization or visit our website at [www.extech.com](http://www.extech.com) (click on 'Contact Extech' and go to 'Service Department' to request an RA number). A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.



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