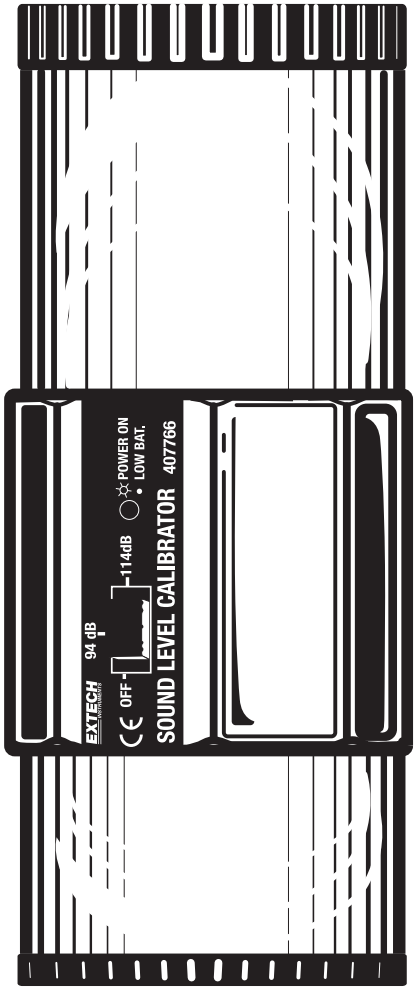
User's Manual

EXTECH INSTRUMENTS
A FLIR COMPANY

Model 407744 and 407766
Sound Level Calibrators



Introduction

Congratulations on your purchase of Extech's Sound Level Calibrator. Extech Calibrators accommodate Sound Level Meters with 0.5" and 1" microphones. The Calibrator's die-cast aluminum housing is built 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: ± 0.5dB;
407766: ± 0.5dB (94dB), ±1.0dB (114dB)	
Output signal frequency	1KHz sine wave
Accuracy of output signal frequency	± 5%
Compatible microphones sizes	0.5" and 1" microphones
Total Harmonic Distortion (THD)	<2%@94dB, <5%@114dB (407766)
Operating temperature	32 to 122^{o}F (0 to 50^{o}C)
Power supply	Two (2) 9V batteries
Power consumption	Approx. 10mA DC
Battery check	Status LED
Dimensions	2.2" diameter x 5.6" length (50 x 127mm)
Weight	0.75 lbs. (340g)
Standards meets	IEC 60942 1997-11 class 2
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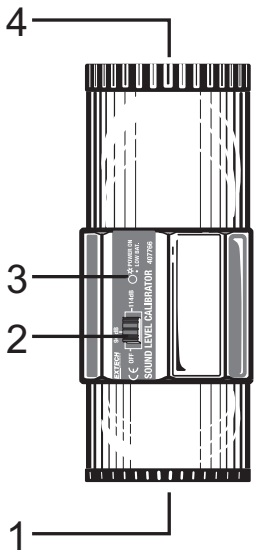
Description

Note that only the 407766 is pictured.

1. ½" Microphone adaptor *
2. 407766: OFF-94dB-114dB switch

   407744: OFF-BATTERY TEST-94dB switch
3. 407766: POWER-ON / LOW-BATTERY status LED

   407744: BATTERY OK LED
4. Battery compartment cap



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



Operation

Theory of Operation

The 407744 sound level calibrator generates a 94dB sine wave at 1 KHz. The 407766 generates a 94dB and 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 the signal in dB (decibel) units. The sound level meter should be adjusted (if necessary) to match the calibrator's output signal as closely as possible (see diagram).

Procedure



1. Insert the microphone into the calibrator's microphone cavity as shown; ensure that it is fully inserted. Use the ½" microphone adaptor (supplied attached to the calibrator) for ½" microphones. Remove the adaptor (remove as shown in the Description section) 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 setting. If the sound level meter does not match the calibrator's signal (within specification), adjust it as explained in the Operation section (typically a front or side-panel pot adjustment). Refer to diagram at right.

4. Slide function switch to the OFF position, 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, the POWER-ON / LOW-BATTERY LED glows brightly when the battery is fresh and dimly when the battery is weak.

Battery Replacement

Lift off battery compartment cap (shown in the Description section) to access the two (2) 9V batteries. Remove the batteries and replace with new alkaline 9V batteries. Replace the cap.

Warranty

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 to 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 www.extech.com for contact information. 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.

Calibration and Repair Services

Extech offers repair and calibration services for the products we sell. Extech also provides NIST certification for most products. Call the Customer Service Department for information on calibration services available for this product. Extech recommends that annual calibrations be performed to verify meter performance and accuracy.



Support line (781) 890-7440

Technical Support: Extension 200; E-mail: support@extech.com

Repair & Returns: Extension 210; E-mail: repair@extech.com

Product specifications subject to change without notice

For the latest version of this User Guide, Software updates, and other up-to-the-minute product information, visit our website: www.extech.com

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