

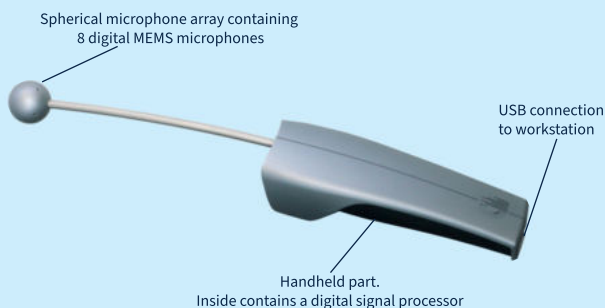
# SonoCat



## Introduction

The SonoCat is a handheld spherical microphone array, designed to measure sound field properties such as 3D sound intensity, sound pressure and in situ sound absorption. Measuring sound absorption in situ has the great advantage that the actual performance of an absorbing material can be measured at the location where it is installed. You do not have to bring the material to a laboratory. You bring the measurement equipment to the actual situation.

The SonoCat offers a complete solution to the acoustic measurement and post processing procedure. This significantly simplifies the way of doing acoustic measurements. The device directly outputs digital audio signals. No data acquisition system is required. A single USB cable between your laptop and the SonoCat suffices to capture all relevant quantities.



## SonoCat specifications

- Sphere radius: 15 mm
- Channels: 8
- Size: 365x65x45 mm (LxWxH)
- Weight: SonoCat 208 g. Full case 5,6 kg
  
- Sampling rate: 48 kHz
- Bit depth: 24 Bits
- Operating frequency range: 50 Hz
- Dynamic range: 29 - 116 dB (A)
- Power supply: 5V DC (USB powerd)
- Operating system requirements: Windows
- Hardware requirements: Dual core processor, >2 GHz 4 GB RAM

## Case contents

- SonoCat
- USB cable
- Tripod stand
- USB stick with software
- Calibration specification
- User manual



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## Hardware

The SonoCat measures sound with 8 digital MEMS microphones, which are distributed inside an aluminium sphere. Using a spherical configuration is beneficial, as the interaction of a spherical object in an acoustic field has an appealing mathematical treatment, which allows to account for the presence of the SonoCat sphere in the sound field. The raw data collected from the microphones is processed by a digital signal processor, which is enclosed inside SonoCat. The processed data is sent over the USB line to a computer, which runs the SonoCat software.

## Measuring with SonoCat

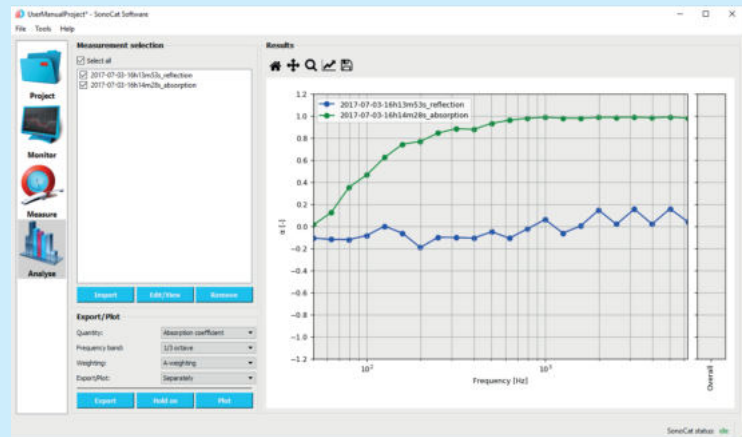
The operator can do two types of measurements, depending on the quantity of interest. The SonoCat can either be used as a stationary measurement system by connecting the SonoCat to the included tripod stand. Or, SonoCat is used as a handheld measurement device. In the latter case the operator makes “scanning” movements with SonoCat to obtain area-averaged results.



- Plug & play
- Portable, hand-held device
- All-in-one measurement solution\*

## Calibration

4Silence has developed its own in-house calibration instrument and procedure to allow calibration of all microphones inside the sphere. SonoCat devices are delivered calibrated.



- Real time sound field monitoring
- Project-oriented GUI
- Intuitive workflow
- Compressed storage of raw data
- Easy comparison of measurement results
- Generation of publication-quality figures
- Waveform generator included

## Software

The SonoCat software is a software package which provides an all-in-one solution to measure with SonoCat, as well as to do the post-processing of the measurement results. The SonoCat software can be used to monitor the sound field in, real time, but also precise measurements can be done with full control over the sampling time, FFT windows, overlap percentage, etc.

## 4Silence

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