Siemens PLM Software

Simcenter Soundbrush

From sound to source in minutes

siemens.com/simcenter
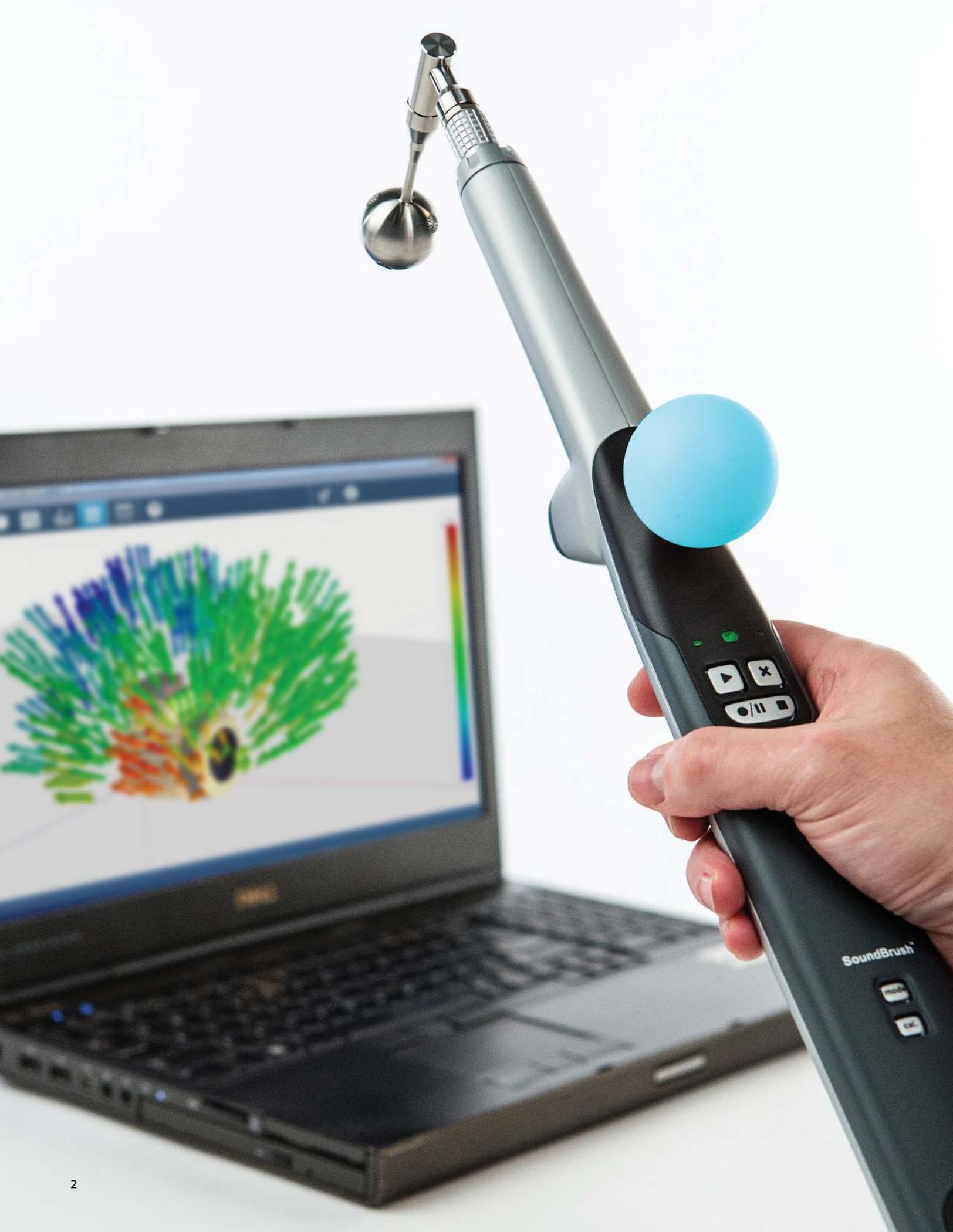
See what you hear

Acoustic troubleshooting is a challenging yet essential process for many types of industries. The Simcenter Soundbrush™ system is a revolutionary, easy-to-use and complete tool that helps you see what you hear. Simcenter Soundbrush is the first ever technology to visualize sound fields in 3D while measuring.

Simcenter Soundbrush is the ideal tool for you to map sound propagation around an object and localize acoustic sources:

- Fast and easy-to-use – from setup to report in minutes
- Detailed, on-the-spot results – what you measure is what you see
- Save time – no need for extensive postprocessing
- Visually communicate results

See what you hear, in full 3D

Simcenter Soundbrush makes sound visible. At the heart of the compact Soundbrush solution is the optical tracking technology, in combination with a sound pressure microphone or 3D intensity sensor. When moving the probe freely around the test object in any orientation or position, the sound field is immediately visualized on your screen in 3D.

Fast, easy, intuitive

Simcenter Soundbrush brings unmatched user comfort and efficiency to acoustic troubleshooting. Plug-and-play connections avoid time loss setting up the system. There is no need for calibration or postprocessing of data either. Supplied with immediate, real-time yet detailed results, you can fully focus on your core task: solving the acoustic problem.

Compact and integrated

Simcenter Soundbrush is a compact, yet truly all-in-one solution: a single system – without the need for additional measurement hardware or analysis software – that neatly fits in a handheld travel case. Easy to take with you and get started!

Plug-and-play acoustic troubleshooting

Simcenter Soundbrush brings unmatched user comfort and efficiency to acoustic troubleshooting and allows you to fully focus on your core task – solving the acoustic problem. The core of this compact solution is the Soundbrush probe combined with either a G.R.A.S. Sound & Vibration sound pressure microphone or a 3D intensity sensor. Simply click the antenna with the acoustic sensor onto the probe, plug the USB probe and the tracking camera into your PC and start measuring.

No settings or adjustments

The Simcenter Soundbrush probe is the heart of the Simcenter Soundbrush system, containing the data-acquisition unit. Automatic position detection gets you started in no time. The probe contains a sphere that is illuminated with a color so its position can be determined by the tracking camera, while an inertial platform provides a 3D orientation of the probe.

Full measurement control

As long as the camera can track the sphere, you can move the probe around the test object in any orientation or position. The system automatically detects position of the acoustical sensors as well as direction of the intensity vector.

The reference positions the test object and probe into the software environment and holds the probe when not in use.

A convenient carrying case safely stores all Simcenter Soundbrush materials for measurements on the go.

[1] Click-on and measure antenna
The system automatically recognizes the antenna type, no calibration needed.

[2] Illuminated sphere
Automatically set to a color that has the highest contrast with the environment, allowing the tracking camera to determine position of the probe.

[3] Onboard electronics
Integrated frontend; integrated sensors for orientation detection.

[4] Probe-controlled measurement
Push buttons allow full control of the measurement process. LEDs provide online feedback on hardware status, measurement levels and position tracking.

[5] Camera shows what you measure
Images of the spot the probe is pointed at are stored with measurement data, so results can be documented and interpreted.

[6] Plug-and-play
A single USB cable connects the probe with your PC.

[7] Ergonomics
The slim, compact design of the probe supports measurements in locations that are otherwise hard to reach.

[8] Tracking camera
Accurate detection of X, Y and Z position of the probe through the illuminated sphere – with tripod for rugged and stable mounting.

Real-time acoustic fields in 3D

Key to accurate and real-time acoustic troubleshooting with Simcenter Soundbrush is its refined software. It supports intuitive and logic handling, from setup to reporting, and offers unmatched visualization of results in 3D. Powerful 3D data representation allows a quick and accurate interpretation of the measured data. The software visualizes the 3D sound field in real time as you measure it and offers the tools you need for efficient troubleshooting, without any postprocessing.

Control what you see
All resulting data can be viewed from any possible angle. Freely rotate the test object and zoom in on a specific hotspot or run a section plane through the data to make an interpolated contour plot. Moreover, you can filter out specific frequency bands for detailed analysis and reporting.

Detailed reporting
An automatically generated report contains the analysis displays and tabular results of each measurement point including position, orientation, overall level and frequency or octave spectrum. Copy-paste any display to the clipboard for reporting in Microsoft Office® software applications.

No training required
For optimal ease of use and to elim-inate learning curves, the software is extremely intuitive and uses a logical stepped workflow from setup to reporting. You can be operational in no time.
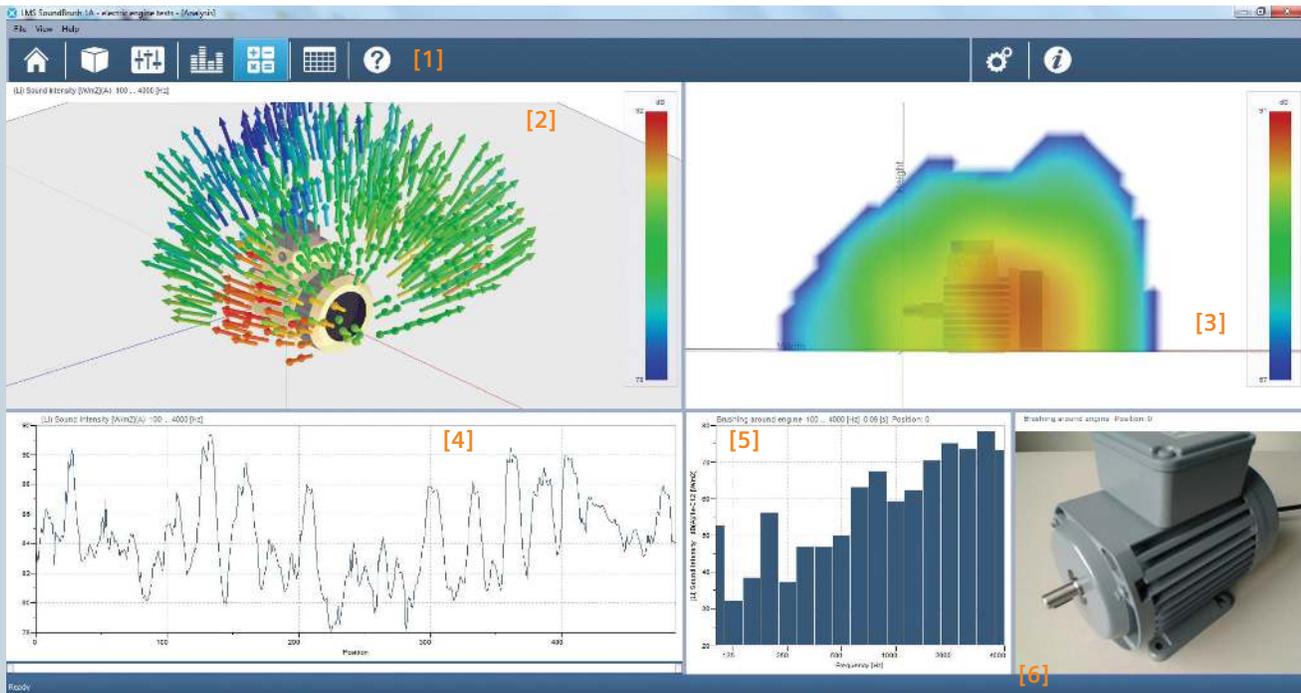
[1] Guided workflow
From setup to reporting – for optimal, intuitive ease-of-use.

[2] Real-time 3D sound field on top of the 3D object
Rotate, zoom in/out, move or adjust transparency to focus on trouble areas. Run a section plane through the data or filter out specific frequency bands for detailed analysis and reporting.

[3] Interpolated results
Activating a section plane in the 3D display automatically shows the interpolated results in a 2D representation together with the test object.

[4] Level overview
The sound pressure or sound intensity level for each position is displayed for the complete measurement run.

[5] Detailed frequency result
Instantaneous sound pressure or sound intensity level octave or narrow band frequencies.

[6] Probe camera image
Images of the probe camera as recorded during the acquisition.

About Siemens PLM Software
Siemens PLM Software, a business unit of the Siemens Digital Factory Division, is a leading global provider of software solutions to drive the digital transformation of industry, creating new opportunities for manufacturers to realize innovation. With headquarters in Plano, Texas, and over 140,000 customers worldwide, Siemens PLM Software works with companies of all sizes to transform the way ideas come to life, the way products are realized, and the way products and assets in operation are used and understood. For more information on Siemens PLM Software products and services, visit www.siemens.com/plm.

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