

Next Generation 3D Compliance SAR System

New
Release Dec 13

cSAR3D

Advanced, Precise,
Efficient, Robust,
User-Friendly



What is cSAR3D?

cSAR3D is our newest and most advanced system for fast, high-precision SAR measurements of wireless devices. It provides full 3D dosimetric information in less than 1s. Its novel algorithms provide accurate 3D reconstruction for any source. The shape, shell thickness, and material parameters are fully compatible with standards and do not require any maintenance. An integrated expert sys-

tem, which includes a sophisticated and flexible report generator, guides the user through the full certification process. The system is fully compatible with the DASy and iSAR systems. For larger systems, such as tablets and laptops, the cSAR3D Quad system is the optimal instrument. Validation sources to meet regulatory requirements are available.

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cSAR3D Next Generation 3D Compliance SAR System

Applications

The cSAR3D system provides all field components within the volume of the body or head phantoms with advanced 3D reconstruction algorithms. High absolute measurement accuracy is achieved with excellent sensor isotropy and broad dynamic range.

The measurement time is very short, and automated software control of the base station simulator makes it very easy to measure several channels, frequency bands, and operating modes of the wireless device within seconds.

The typical system includes a flat phantom for body-worn measurements and the left and right sides of the SAM head phantom. The head phantoms are filled with a head simulating medium compatible with the dielectric parameters specified in IEC 62209-1 and IEEE 1528-2013 within a $\pm 10\%$ tolerance over a 500 MHz–6 GHz frequency range. The flat phantom is filled with either the head simulating medium or body simulating medium. The body simulating medium is compatible with FCC OET Bulletin 65 dielectric parameters over a 500 MHz–6 GHz frequency range.

The cSAR3D Quad system is ideal for the measurement of large devices. The measurement area of 600x400 mm is designed for devices such as laptops and tablet computers.

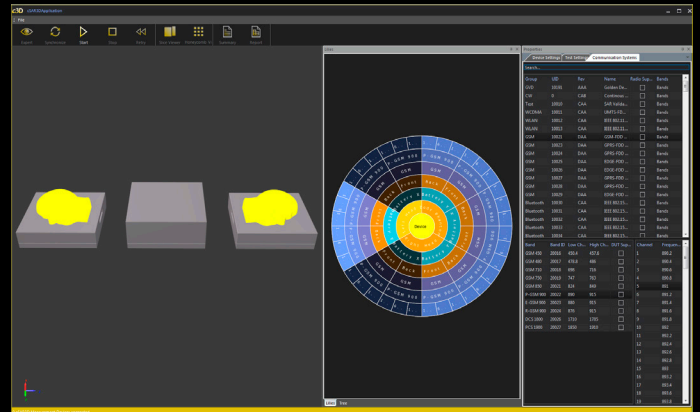
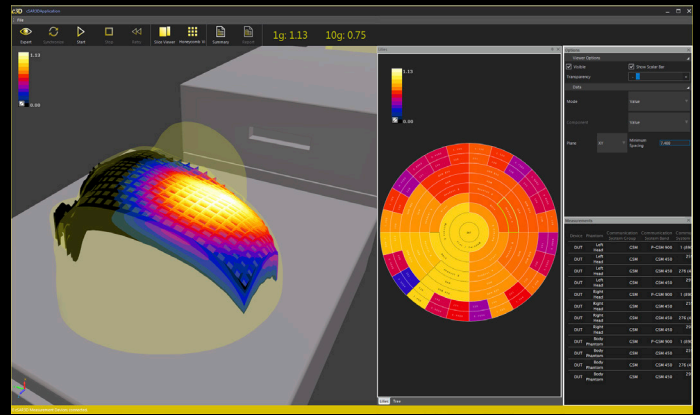
Cameras are integrated into the cSAR3D hardware so that the wireless device location is referenced to the SAR distribution. Several validation sources for compliance testing between 300 MHz–6 GHz are provided.

Special Features

- Automated control: cSAR3D is compatible with all base station simulators available on the market. cSAR3D has a built-in user interface for automatic connection and control of wireless devices through the base station simulator. It also includes a scripting interface to save device settings and automatically run series of tests.
- Flexible report generator: Create documents with tabular and graphical outputs. Software is capable of storing individual measurements in different formats, including Excel. Data can be extracted for statistical evaluation.
- Mounting device: cSAR3D head phantom includes a mounting device to fix the position of the wireless device.
- Portability: cSAR3D is lightweight and portable and can easily be installed in testing environments that comply with all standards and regulatory requirements.

Calibration

For each specific communication system and each frequency range, the sensors are calibrated individually, to allow precise measurements of the E-field and SAR. The calibration file includes all of these parameters plus the validity range. The full list of calibration modes is provided on our website.



cSAR3D interface offers complete SAR overview for all operating modes of the wireless device, plus 3D field distributions.

Preliminary Specifications

Item	Typical (max)
active measurement area	> 10 cm x 20 cm
frequency range	300 MHz – 6 GHz
measurement time	< 1 s
phantom geometry	compliant with IEC 62209 and IEEE 1528
phantom shell	permittivity < 5 loss tangent < 0.05 compliant with IEC 62209 and IEEE 1528
tissue simulating material	Head Simulating Medium Body Simulating Medium within 10 % of targets
dynamic range	< 0.01 W/kg to >100 W/kg
probe isotropy	< ± 0.2 dB
3D reconstruction resolution	< 1 mm
repeatability	< 0.1 dB
positioning accuracy of the mounting device	< 1 mm
weight (per unit)	< 25 kg

For further information and technical specifications, visit www.speag.com

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