Module WPT

Precise & Comprehensive Testing (3 kHz – 10 MHz)

What is DASY8 Module WPT?

DASY8 Module WPT is the MAGPy system integrated with DASY8. It is the most precise and comprehensive solution for testing wireless power transfer (WPT) systems between 3 kHz – 10 MHz and for demonstration of compliance with the basic restrictions between 3 kHz – 4 MHz (Clauses 5.2.3 and 5.2.5 of IEC PAS 63184:2021). Module WPT is also available for DASY6.

The module complements our stand-alone handheld MAGPy V1.0 device that is optimized for *in situ* evaluations (Clauses 5.2.3 and 5.2.4 of IEC PAS 63184:2021). Both systems are optimized for maximum precision and conservative assessments with minimized overestimation, much better than 40 dB compared to other devices.

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DASY8 Module WPT – Advanced Compliance Testing of WPT devices

Description

DASY8 Module WPT combines our high-resolution, high-precision DASY8 near-field scanning platform with the the **M**agnetic **A**mplitude and **G**radient **P**robe **S**ystem (MAGPy) probe system for comprehensive compliance testing. The induced electric (E-) fields, current density (*j*) and specific absorption rate (SAR) inside the human are determined by the postprocessor using measured data only. In addition, the measurement fields can be imported into Sim4Life[1] for more advanced evaluations in anatomical models.

Applications

DASY8 Module WPT is optimized for laboratory evaluations of WPT systems and any other local electromagnetic source:

- evaluation of the magnetic (H-) field (3 kHz – 10 MHz)
- evaluation of all basic restriction quantities E, *j* and SAR (3 kHz – 4 MHz)
- demonstration of compliance according to IEC PAS 63184:2021

Compliance

DASY8 Module WPT is fully compliant with IEC PAS 63184:2021 (Clauses 5.2.3 and 5.2.5): ICNIRP 2020, ICNIRP 1998, IEEE 2005/2019, FCC 2020, HC Code 6

Features	Benefits
Isotropic H-field sensor (loop: 1 cm^2)	Improved isotropy High spatial resolution (<1 cm^3)
Frequency and time domain analyses	Sampling rate: 25 MHz
Broad Frequency Range	3 kHz –10 MHz
Large dynamic range	H-field: 0.12 µT – 4.0 mT
Scanning Volume	2000 × 1000 × 1500 mm
Grid precision	<0.2 mm
Integrated H-field volume scan and Sim4Life plug-In	Direct comparison with the basic restrictions without overestimation and without the need of a device model
Reduced interference	Negligible interaction with measured fields
All-in-one compliance solution with basic restrictions	Evaluation of induced fields (E, *j*, SAR); comparison with various national and international standards (3kHz – 4 MHz)
Calibration	ISO17025 (coming soon)

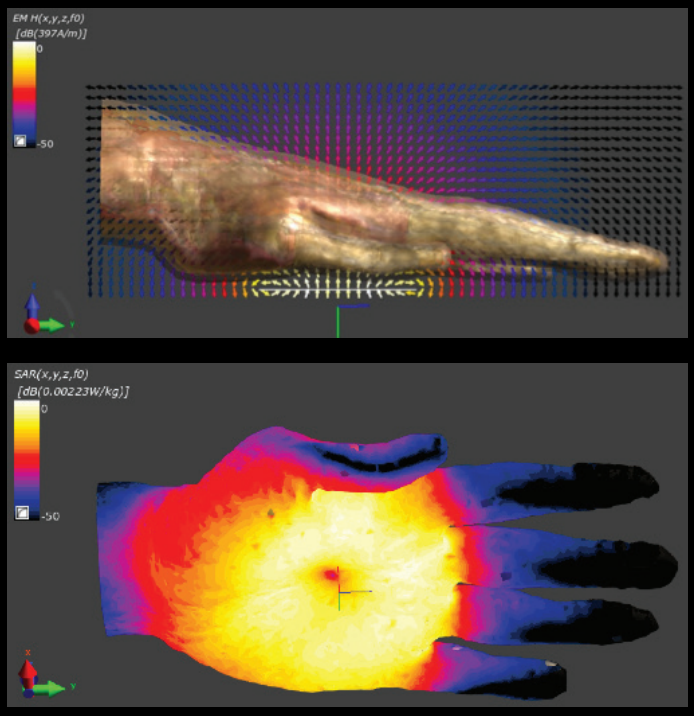
[1] Sim4life is a product of SPEAG's sister company ZMT Zurich MedTech AG: zmt.swiss/sim4Life

Typical Workflow for Compliance Testing with Basic Restrictions

- Probe alignment
- Teaching the device under test position
- Select compliance frequency/signal from the initial spectrum analysis
- 3D scan with automated grid optimization
- Postprocessor will perform vector potential reconstruction and determine the compliance value and propose coverage factor if needed
- Only for R&D purposes: perform more advanced evaluations in various posed Sim4Life Virtual Population (ViP) phantoms

Advanced Evaluations

The Sim4Life upgrade package includes all software components required to perform a comprehensive, device-specific evaluation of any user scenario; the H-field measurement file can be directly imported into Sim4Life and a magneto-quasi-static simulation can be automatically setup, enabling to change the model or material parameters.



Example of the advanced evaluations: (top) reconstructed vector potential A of the imported measured H-field, (bottom) SAR distribution at the surface of the hand for the intended use case of picking up a mobile phone from a WPT charging station

MAGPy V1.0 for *In Situ* Compliance Testing

DASY8 Module WPT contains SPEAG's smart MAGPy probe that is optimized for *in situ* exposure and compliance evaluations at any location, For more information on the easy-to-use, handheld device visit speag.swiss/products/magpy.

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