

Test Report

No. 1-0701-25-01-15_TR1-R01

February 26, 2026

Applicant Molex Technologies GmbH

Product Model **Wireless Charger
WCH-PF31d**

Test Standard(s) IEEE Std. C95-3
IEC PAS 63184
IEC TR 62905
Further applied standards are listed in chapter 7 - Test Standards.

Verdict ☒ **PASS**: All of the performed measurements acc. to the standard(s) are PASSED

The test results relate only to devices specified in this document

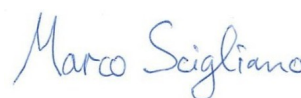
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1 Disclaimer

The test results of this test report relate exclusively to the test item specified in chapter "Test sample information". cetecom advanced does not assume responsibility for any conclusions and generalizations drawn from the test results regarding other specimens or samples of the type of the equipment represented by the test item.

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2 Related cetecom advanced documents

Document	Content	Reference
1-0701-25-01-15_TR1-A101-R01	Photographs of the EUT And Test Positions	External Annex Document A101.
1-0701-25-01-15_TR1-A201-R01	Detailed test Results	External Annex Document A201.
1-0701-25-01-15_TR1-A301-R01	Calibration Parameters	External Annex Document A301.

3 Document history

3.1 Current release

Release No.: R01
Date of release: February 26, 2026
Applied changes: Initial release

3.2 Previous releases

Release No.	Applied changes	Date of release
-	-	-

4 Test laboratory

4.1 Contact information

cetecom advanced GmbH
Untertuerkheimer Str. 6-10
66117 Saarbruecken
Germany

4.2 Involved test locations



Saarbruecken lab

Untertuerkheimer Str. 6-10
66117 Saarbruecken
Germany



Essen lab

Im Teelbruch 116
45219 Essen
Germany

4.3 Subcontracted laboratories

None.

4.4 Common report information

The period is used as a decimal separator and the comma as a thousand separator.

4.5 Abbreviations

DUT	-	Device under Test
EUT	-	Equipment under Test
FCC	-	Federal Communication Commission
FCC ID	-	Combination of Grantee Code and Equipment Product Code
HW	-	Hardware
Inv. No.	-	Inventory number
N/A	-	not applicable
S/N	-	Serial Number
SW	-	Software

5 Client information

5.1 Applicant

Name: Molex Technologies GmbH

Address: Mizarstraße 3
12529 Schönfeld
GERMANY

Contact Person: Ines Baufeld
Contact Person's Email: ines.baufeld@molex.com

5.2 Manufacturer

Name: Molex Technologies GmbH

Address: Mizarstraße 3
12529 Schönfeld
GERMANY

5.3 Application Details

Date of receipt of order: 2025-09-03

Date of receipt of test item: 2025-09-08

Start of test: 2026-01-29

End of test: 2026-02-02

6 Test sample information

The data about the test samples is given/supplied by the customer and not under control by cetecom advanced GmbH.

6.1 Test Item (declared by applicant)

Kind of test item:	Wireless Charger
Device type:	Automotive device
Model name:	WCH-PF31d
S/N serial number:	S8W-00112.11.2503420068
FCC-ID:	RK7WCH-PF31D
Hardware status:	CH 01
Software status:	CS 01
Frequency:	Wireless Charging 127.55 kHz / 360 kHz
Antenna:	Integrated antenna
Mounting position:	Center console car
Battery option:	13.58 V DC by external power supply
Accessories:	--
Test Sample Status	Identical prototype
Exposure Category:	General population / uncontrolled environment

7 Test Standards

Test Standard	Version	Test Standard Description
IEEE Std. C95-3	2021	IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave
IEC PAS 63184	May 2021	Assessment methods of the human exposure to electric and magnetic fields from wireless power transfer systems – Models, instrumentation, measurement and numerical methods and procedures (frequency range of 1 kHz to 30 MHz)
IEC TR 62905	01.02.2018	IEC/TR 62905:2018(E) is a Technical Report. It describes general exposure assessment methods for wireless power transfer (WPT) at frequency up to 10 MHz considering thermal and stimulus effects. Exposure assessment procedures and experimental results are shown as examples such as electric vehicles (EVs) and mobile devices.

FCC KDBs:

KDB 865664D01v01	August 7, 2015	FCC OET SAR measurement requirements 100 MHz to 6 GHz
KDB 865664D02v01	October 23, 2015	RF Exposure Compliance Reporting and Documentation Considerations
KDB 447498D01v06	October 23, 2015	Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies
KDB 680106 D01v04	October 24, 2023	Equipment Authorization of Wireless Power Transfer devices

APPLICATION NOTE:

Testing WPT Devices with DASY8/6 Modules WPT and SAR for Compliance with FCC KDB 447498/680106 (Chapter 5 Test System and Procedures for Frequencies from 100 kHz to 4 MHz, by SPEAG, R2, 05/24)

WPT MANUAL:

DASY 8 Module WPT System Handbook incl. SW Module WPT 3.2 (by SPEAG, 05/12/2025)

7.1 RF exposure limits

RF Exposure levels according CFR 47 – Part 1, §1.1310:

Human Exposure	Uncontrolled Environment General Population	Controlled Environment Occupational
Spatial Peak SAR* (Brain and Trunk)	1.60 W/kg	8.00 W/kg
Spatial Average SAR** (Whole Body)	0.08 W/kg	0.40 W/kg
Spatial Peak SAR*** (Hands/Feet/Ankle/Wrist)	4.00 W/kg	20.00 W/kg

Table 1: RF exposure limits (100 kHz to 6 GHz)

The limit applied in this test report is shown in bold letters

Notes:

- * The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time
- ** The Spatial Average value of the SAR averaged over the whole body.
- *** The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

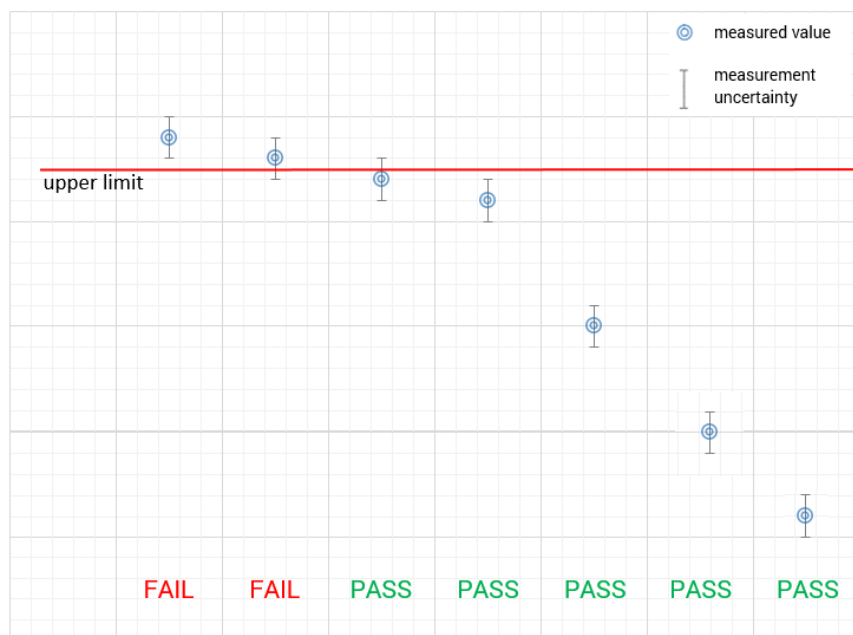
Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation).

8 Reporting statements of conformity – decision rule

Only the measured values related to their corresponding limits will be used to decide whether the equipment under test meets the requirements of the test standards listed in chapter 3.

The measurement uncertainty is mentioned in this test report, see chapter 9, but is not taken into account - neither to the limits nor to the measurement results. Measurement results with a smaller margin to the corresponding limits than the measurement uncertainty have a potential risk of more than 20% that the decision might be wrong."

measured value, measurement uncertainty, verdict



9 Summary of Measurement Results

☒	No deviations from the technical specifications ascertained	
☐	Deviations from the technical specifications ascertained	
Maximum SAR value (W/kg)		
	reported	limit
body worn 0 mm distance for 1g	0.043	1.6
extremity 0 mm distance for 10g	0.019	4.0

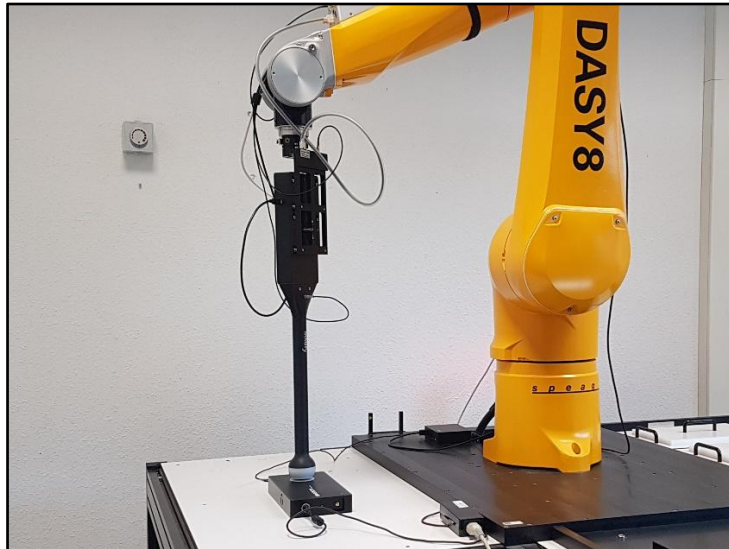
10 Test Environment / Lab Data

Ambient temperature:	20 – 24 °C
Relative humidity content:	40 – 50 %
Air pressure:	not relevant for this kind of testing
Power supply:	230 V / 50 Hz

11 Test Set-Up

11.1 Measurement System

11.1.1 Measurement with MAGPy-H3D probe / DASY 8 WPT-System



The DASY8 WPT-System is a complete high precision robot-based evaluation platform for demonstrating compliance of wireless power transfer (WPT) devices according to IEC PAS 63184:2021(Chapter 8 "Measurement and numerical combination methods") and enables fully automated compliance testing. [1]

It is composed of the isotropic probe MAGPy-8H3D+E3D V2, the reference amplitude and phase probe (MAGPy-RAφ V2), and the data acquisition system (MAGPy-DAS V2) mounted to the DASY8 robot via the emergency stop (MAGPy-ES). The induced electric (E-) fields and specific absorption rate (SAR) are assessed with Sim4Life's Quasi-Static EM Solver (P-EM-QS) using only the measured data. The dedicated graphical user interface (GUI) fully automates the testing workflow.

This allows for Laboratory evaluation of WPT devices and any other local electromagnetic source not requiring magnetic (H-) field volume scans exceeding 2000 x 1000 x 1500 mm³ with a precision of ±2.0mm.

The H-field distributions can be analyzed directly, and the values are compared to the reference level, or they are converted into Maxwell field and used as excitations for determining the basic restriction quantities for further dosimetric analysis with the Magneto Quasi-Static (MQS) solver [2].

This specific solution is optimized for:

- Evaluation of E & H-field (3 kHz – 10 MHz)
- Demonstration of compliance (3 kHz and 4 MHz) according to IEC PAS 63184:2021 [3]

References:

[1] Assessment methods of the human exposure to electric and magnetic fields from wireless power transfer systems. Models, instrumentation, measurement and numerical methods and procedures (frequency range of 1 kHz to 30MHz), IEC PAS 63184:2021.

[2] The MQS conditions are violated above 4MHz and SPEAG recommends to use IEC/IEEE 62209-1528 for the frequency range above 4 MHz.

[3] Sim4Life, V7.2, ZMT Zurich MedTech AG, Zurich, Switzerland.

11.1.1.1 Workflow for Tier-4 Compliance Testing of IEC PAS 63184:2021

Compliance testing according to Tier-4 of IEC PAS 63184:2021 is the most accurate method ensuring no overestimation of the exposure. The workflow implemented in DASY8 Module WPT consists of the following steps:

1. probe alignment,
2. teaching of the DUT position,
3. 3D scan with automated grid optimization,
4. vector potential reconstruction (Sim4Life),
5. solving the MQS equation in the muscle half-space,
6. applying coverage factors (pre-determined by the IT'IS Foundation),
7. advanced evaluations in various posed Sim4Life ViP phantoms.

Additionally, the system performance is routinely verified using the standard verification sources as DUT's.

11.1.1.2 Compatibility with IEC PAS 63184:2021

DASY8 Module WPT is fully compliant with IEC PAS 63184:2021 and evaluates the reference values and basic restrictions according to:

- ICNIRP 2020
- ICNIRP 2010
- ICNIRP 1998
- IEEE C95.1 - 2019
- FCC Regulation
- FCC KDB 680106 D01
- FCC KDB 447498 D01
- Health Canada Safety Code 6
- ISED Canada RSS-102.NS.MEAS
- IEC/IEEE 63184 (Tier 4 and Tier 2)

11.1.1.3 MAGPy-Probes

MAGPy-8H3D+E3D V2

The MAGPy-8H3D+E3D V2 probe consists of eight isotropic H-field subprobes and one isotropic E-field subprobe that are all integrated inside the probe head with a flat tip. Each isotropic H-field subprobe is comprised of three concentric orthogonal loop coil sensors.

The isotropic E-field subprobe is composed of three orthogonal sensors (x and y sensors are dipoles, and the sensor measuring the z component is a monopole).

In total, the MAGPy-8H3D+E3D V2 probe contains 27 sensors that measure in the time domain. The specifications of the probe are provided in the table below.

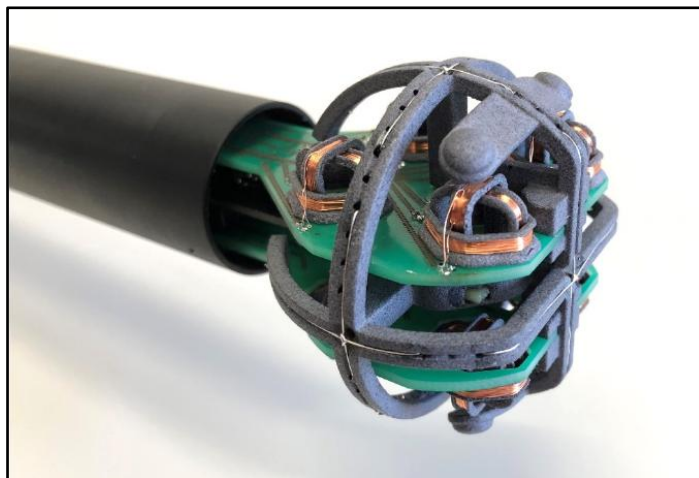
The MAGPy-8H3D+E3D V2 probe measures the isotropic H-field and E-field, and is compatible with DASY8 Module WPT V2.2 and MAGPy V2.2.



Probe design	
Probe head diameter	60mm
H-field sub-probes	8 isotropic H-field sub-probes Concentric loops of 1 cm ² arranged at the corners of a 22mm cube
E-field sub-probes	1 isotropic E-field sub-probe Orthogonal dipole/monopole (arm length: 50mm)
Temperature range	0–40 °C
Dimensions	110mm×635mm×35mm (MAGPy-8H3D+E3D V2 & MAGPy-DAS V2)
H-field measurement specifications	
Frequency range	3 kHz–10MHz
Dynamic range	0.1–3200A/m (0.12 µT–4 mT)
E-field measurement specifications	
Frequency range	3 kHz–10MHz
Dynamic range	0.08–2000V/m

The sensor offset, i.e., the distance from the outer surface (tip) of the probe to the center of the closest H-field sensors inside, is 7.5 mm. The distance to the virtual measuring point is 19 mm (The center of the 8 sub-field probes)

The following picture shows The MAGPy-8H3D+E3D V2 probe with the probe-head cap removed, showing the eight isotropic H-field sub-probes and one isotropic E-field sub-probe:



MAGPy-RA ϕ V2

The MAGPy-RA ϕ V2 probe is a pick-up coil to serve as a phase and amplitude reference, composed of one loop with the specifications shown in following table.

It is connected to the MAGPy-8H3D+E3D V2 probe and should be placed near the DUT during the spatial scan to ensure a sufficient signal-to-noise ratio.



Frequency range	3 kHz - 10 MHz
Dynamic range	0.1 – 3200 A/m (0.12 μ T – 4 mT)
Loop coil size	50 × 50mm ²

11.1.1.4 MAGPy-DAS: Data Acquisition System

Description of MAGPy-DAS V2

The MAGPy-DAS V2 is a speed-optimized unit that can process up to 27 input channels in real-time with a sampling rate of 25 MHz. The specifications of the MAGPy-DAS are:

- 27 x 14 Bit ADC Channels with 25 MSPs
- peak detection stage
- hardware supervising unit
- data transfer to backend
- 22 tap FIR filter

The measured analog signals from the MAGPy probes are firstly transferred to the analog input stage, which comprises filters, amplifiers, and attenuators. The analog signal is then transformed into a digital signal through the analog to digital converter (ADC) and treated in the field programmable gate arrays (FPGA) controller. The FPGA firmware consists of:

- FIR filter
- peak detection
- AGC (Automatic gain control unit)
- scaling unit

The controller communicates with the MAGPy software installed on the desktop or tablet PC across USB 2.0.

11.1.2 Measurement Uncertainty

The probe uncertainties stated by the manufacturer are considered to be the main relevant and dominant issues.

11.1.2.1 Typical uncertainty of Module WPT

DASY8 Uncertainty Budget for Peak <i>H</i>-field according to IEC/IEEE 63184						
Item	Error Description	Unc. Value (±dB)	Probab. Distr.	Div.	(c_i)	Std. Unc. (±dB)
Measurement system						
1	Amplitude calibration uncertainty	0.35	N	1	1	0.35
2	Probe anisotropy	0.6	R	$\sqrt{3}$	1	0.35
3	Probe dynamic linearity	0.2	R	$\sqrt{3}$	1	0.12
4	Probe frequency domain response	0.3	R	$\sqrt{3}$	1	0.17
5	Probe frequency linear interp. fit	0.15	R	$\sqrt{3}$	1	0.09
6	Gradient uncertainty	0.1	R	$\sqrt{3}$	1	0.06
7	Parasitic E-field sensitivity	0.1	R	$\sqrt{3}$	1	0.06
8	Detection limit	0.15	R	$\sqrt{3}$	1	0.09
9	Readout electronics	0	N	1	1	0
10	Probe positioning	0.19	N	1	1	0.19
11	Repeatability	0.1	N	1	1	0.10
12	Surface field reconstruction	0.3	N	1	1	0.3
Combined uncertainty ($k = 1$)						0.59
Expanded uncertainty ($k = 2$)						1.33 (16.6%)

Uncertainty budget for peak incident H-field measured with DASY8 Module WPT assessed according to IEC/IEEE 63184

DASY8 Uncertainty Budget for Incident <i>E</i>-field according to IEC/IEEE 63184						
Item	Error Description	Unc. Value (±dB)	Probab. Distr.	Div.	(c_i)	Std. Unc. (±dB)
Measurement system						
1	Amplitude calibration uncertainty	0.53	N	1	1	0.53
2	Probe anisotropy	0.8	R	$\sqrt{3}$	1	0.46
3	Probe dynamic linearity	1	R	$\sqrt{3}$	1	0.58
4	Probe frequency domain response	0.3	R	$\sqrt{3}$	1	0.17
5	Probe frequency linear interp. fit	0.15	R	$\sqrt{3}$	1	0.09
6	Parasitic H-field sensitivity	0.2	R	$\sqrt{3}$	1	0.12
7	Detection limit	0.15	R	$\sqrt{3}$	1	0.09
8	Readout electronics	0	N	1	1	0
9	Repeatability	0.1	N	1	1	0.10
Combined uncertainty ($k = 1$)						0.95
Expanded uncertainty ($k = 2$)						1.89 (24.4%)

Uncertainty budget for incident E-field measured with DASY8 Module WPT with linear gradients across the probe.

DASY8 Uncertainty Budget for Peak $2 \times 2 \times 2 \text{ mm}^3$ Cube-Average E_{ind} according to IEC/IEEE 63184						
Item	Error Description	Unc. Value ($\pm \text{dB}$)	Probab. Distr.	Div.	(c_k)	Std. Unc. ($\pm \text{dB}$)
Measurement system						
1	Amplitude calibration uncertainty	0.35	N	1	1	0.35
2	Probe anisotropy	0.6	R	$\sqrt{3}$	1	0.35
3	Probe dynamic linearity	0.2	R	$\sqrt{3}$	1	0.12
4	Probe frequency domain response	0.3	R	$\sqrt{3}$	1	0.17
5	Probe frequency linear interp. fit	0.15	R	$\sqrt{3}$	1	0.09
6	Spatial averaging	0.1	R	$\sqrt{3}$	1	0.06
7	Parasitic E -field sensitivity	0.1	R	$\sqrt{3}$	1	0.06
8	Detection limit	0.15	R	$\sqrt{3}$	1	0.09
9	Readout electronics	0	N	1	1	0
10	Probe positioning	0.19	N	1	1	0.19
11	Repeatability	0.1	N	1	1	0.1
12	Surface field reconstruction	0.3	N	1	1	0.3
Numerical simulations						
13	Grid resolution	0.18	R	$\sqrt{3}$	1	0.10
14	Tissue parameters	0	R	$\sqrt{3}$	1	0
15	Exposure position	0	R	$\sqrt{3}$	1	0
16	Source representation	0.24	N	1	1	0.24
17	Convergence and power budget	0	R	$\sqrt{3}$	1	0
18	Boundary conditions	0.1	R	$\sqrt{3}$	1	0.06
19	Phantom loading/backscattering	0.1	R	$\sqrt{3}$	1	0.06
Combined uncertainty ($k = 1$)						0.72
Expanded uncertainty ($k = 2$)						1.44 (18.0%)

Uncertainty budget for peak $2 \times 2 \times 2 \text{ mm}^3$ cube-average induced E-field measured with DASY8 Module WPT assessed according to IEC/IEEE 63184.

DASY8 Uncertainty Budget for Peak 5 mm Line-Average E_{ind} according to IEC/IEEE 63184						
Item	Error Description	Unc. Value ($\pm$ dB)	Probab. Distr.	Div.	(c_1)	Std. Unc. ($\pm$ dB)
Measurement system						
1	Amplitude calibration uncertainty	0.35	N	1	1	0.35
2	Probe anisotropy	0.6	R	$\sqrt{3}$	1	0.35
3	Probe dynamic linearity	0.2	R	$\sqrt{3}$	1	0.12
4	Probe frequency domain response	0.3	R	$\sqrt{3}$	1	0.17
5	Probe frequency linear interp. fit	0.15	R	$\sqrt{3}$	1	0.09
6	Spatial averaging	0.1	R	$\sqrt{3}$	1	0.06
7	Parasitic E -field sensitivity	0.1	R	$\sqrt{3}$	1	0.06
8	Detection limit	0.15	R	$\sqrt{3}$	1	0.09
9	Readout electronics	0	N	1	1	0
10	Probe positioning	0.19	N	1	1	0.19
11	Repeatability	0.1	N	1	1	0.1
12	Surface field reconstruction	0.3	N	1	1	0.3
Numerical simulations						
13	Grid resolution	0.25	R	$\sqrt{3}$	1	0.14
14	Tissue parameters	0	R	$\sqrt{3}$	1	0
15	Exposure position	0	R	$\sqrt{3}$	1	0
16	Source representation	0.27	N	1	1	0.27
17	Convergence and power budget	0	R	$\sqrt{3}$	1	0
18	Boundary conditions	0.1	R	$\sqrt{3}$	1	0.06
19	Phantom loading/backscattering	0.1	R	$\sqrt{3}$	1	0.06
Combined uncertainty ($k = 1$)						0.74
Expanded uncertainty ($k = 2$)						1.48 (18.5%)

Uncertainty budget for peak 5 mm line-average induced E-field measured with DASY8 Module WPT assessed according to IEC/IEEE 63184.

DASY8 Uncertainty Budget for Peak Local E_{ind} according to IEC/IEEE 63184						
Item	Error Description	Unc. Value ($\pm$ dB)	Probab. Distr.	Div.	(c_i)	Std. Unc. ($\pm$ dB)
Measurement system						
1	Amplitude calibration uncertainty	0.35	N	1	1	0.35
2	Probe anisotropy	0.6	R	$\sqrt{3}$	1	0.35
3	Probe dynamic linearity	0.2	R	$\sqrt{3}$	1	0.12
4	Probe frequency domain response	0.3	R	$\sqrt{3}$	1	0.17
5	Probe frequency linear interp. fit	0.15	R	$\sqrt{3}$	1	0.09
6	Spatial averaging	0.1	R	$\sqrt{3}$	1	0.06
7	Parasitic E -field sensitivity	0.1	R	$\sqrt{3}$	1	0.06
8	Detection limit	0.15	R	$\sqrt{3}$	1	0.09
9	Readout electronics	0	N	1	1	0
10	Probe positioning	0.19	N	1	1	0.19
11	Repeatability	0.1	N	1	1	0.1
12	Surface field reconstruction	0.3	N	1	1	0.3
Numerical simulations						
13	Grid resolution	0.09	R	$\sqrt{3}$	1	0.05
14	Tissue parameters	0	R	$\sqrt{3}$	1	0
15	Exposure position	0	R	$\sqrt{3}$	1	0
16	Source representation	0.27	N	1	1	0.27
17	Convergence and power budget	0	R	$\sqrt{3}$	1	0
18	Boundary conditions	0.1	R	$\sqrt{3}$	1	0.06
19	Phantom loading/backscattering	0.1	R	$\sqrt{3}$	1	0.06
Combined uncertainty ($k = 1$)						0.73
Expanded uncertainty ($k = 2$)						1.45 (18.2%)

Uncertainty budget for peak local (i.e., not spatial averaged) induced E-field measured with DASY8 Module WPT assessed according to IEC/IEEE 63184.

DASY8 Uncertainty Budget for Peak 1 cm ² Area-Average J _{ind} according to IEC/IEEE 63184						
Item	Error Description	Unc. Value (±dB)	Probab. Distr.	Div.	(c ₁)	Std. Unc. (±dB)
Measurement system						
1	Amplitude calibration uncertainty	0.35	N	1	1	0.35
2	Probe anisotropy	0.6	R	√3	1	0.35
3	Probe dynamic linearity	0.2	R	√3	1	0.12
4	Probe frequency domain response	0.3	R	√3	1	0.17
5	Probe frequency linear interp. fit	0.15	R	√3	1	0.09
6	Spatial averaging	0.1	R	√3	1	0.06
7	Parasitic E-field sensitivity	0.1	R	√3	1	0.06
8	Detection limit	0.15	R	√3	1	0.09
9	Readout electronics	0	N	1	1	0
10	Probe positioning	0.19	N	1	1	0.19
11	Repeatability	0.1	N	1	1	0.1
12	Surface field reconstruction	0.3	N	1	1	0.3
Numerical simulations						
13	Grid resolution	0.12	R	√3	1	0.07
14	Tissue parameters	0	R	√3	1	0
15	Exposure position	0	R	√3	1	0
16	Source representation	0.1	N	1	1	0.1
17	Convergence and power budget	0	R	√3	1	0
18	Boundary conditions	0.1	R	√3	1	0.06
19	Phantom loading/backscattering	0.1	R	√3	1	0.06
Combined uncertainty (<i>k</i> = 1)						0.68
Expanded uncertainty (<i>k</i> = 2)						1.36 (17.0%)

Uncertainty budget for peak 1 cm² area-average induced current density measured with DASY8 Module WPT assessed according to IEC/IEEE 63184.

DASY8 Uncertainty Budget for psSAR1 g according to IEC/IEEE 63184						
Item	Error Description	Unc. Value (±dB)	Probab. Distr.	Div.	(c_i)	Std. Unc. (±dB)
Measurement system						
1	Amplitude calibration uncertainty	0.35	N	1	1	0.35
2	Probe anisotropy	0.6	R	$\sqrt{3}$	1	0.35
3	Probe dynamic linearity	0.2	R	$\sqrt{3}$	1	0.12
4	Probe frequency domain response	0.3	R	$\sqrt{3}$	1	0.17
5	Probe frequency linear interp. fit	0.15	R	$\sqrt{3}$	1	0.09
6	Spatial averaging	0.1	R	$\sqrt{3}$	1	0.06
7	Parasitic <i>E</i> -field sensitivity	0.1	R	$\sqrt{3}$	1	0.06
8	Detection limit	0.15	R	$\sqrt{3}$	1	0.09
9	Readout electronics	0	N	1	1	0
10	Probe positioning	0.19	N	1	1	0.19
11	Repeatability	0.1	N	1	1	0.1
12	Surface field reconstruction	0.2	N	1	1	0.2
Numerical simulations						
13	Grid resolution	0.02	R	$\sqrt{3}$	1	0.01
14	Tissue parameters	0	R	$\sqrt{3}$	1	0
15	Exposure position	0	R	$\sqrt{3}$	1	0
16	Source representation	0.09	N	1	1	0.09
17	Convergence and power budget	0	R	$\sqrt{3}$	1	0
18	Boundary conditions	0.1	R	$\sqrt{3}$	1	0.06
19	Phantom loading/backscattering	0.1	R	$\sqrt{3}$	1	0.06
Combined uncertainty ($k = 1$)						0.63
Expanded uncertainty ($k = 2$)						1.27 (33.9%)

Uncertainty budget for peak 1 gram mass-average induced SAR measured with DASY8 Module WPT assessed according to IEC/IEEE 63184.

NOTE: SAR Upscaling to compensate for the unfulfilled Uncertainty budget

As all other uncertainties fulfil the <30% Budget, upscaling of the SAR Value by 3% ($1.339/1.3=1.03$) for both 1g and 10g SAR is sufficient to offset the expanded by SAR measurements to ensure a reasonable overestimation.

DASY8 Uncertainty Budget for psSAR10g according to IEC/IEEE 63184						
Item	Error Description	Unc. Value (±dB)	Probab. Distr.	Div.	(c _i)	Std. Unc. (±dB)
Measurement system						
1	Amplitude calibration uncertainty	0.35	N	1	1	0.35
2	Probe anisotropy	0.6	R	$\sqrt{3}$	1	0.35
3	Probe dynamic linearity	0.2	R	$\sqrt{3}$	1	0.12
4	Probe frequency domain response	0.3	R	$\sqrt{3}$	1	0.17
5	Probe frequency linear interp. fit	0.15	R	$\sqrt{3}$	1	0.09
6	Spatial averaging	0.1	R	$\sqrt{3}$	1	0.06
7	Parasitic E-field sensitivity	0.1	R	$\sqrt{3}$	1	0.06
8	Detection limit	0.15	R	$\sqrt{3}$	1	0.09
9	Readout electronics	0	N	1	1	0
10	Probe positioning	0.19	N	1	1	0.19
11	Repeatability	0.1	N	1	1	0.1
12	Surface field reconstruction	0.2	N	1	1	0.2
Numerical simulations						
13	Grid resolution	0	R	$\sqrt{3}$	1	0
14	Tissue parameters	0	R	$\sqrt{3}$	1	0
15	Exposure position	0	R	$\sqrt{3}$	1	0
16	Source representation	0.04	N	1	1	0.04
17	Convergence and power budget	0	R	$\sqrt{3}$	1	0
18	Boundary conditions	0.1	R	$\sqrt{3}$	1	0.06
19	Phantom loading/backscattering	0.1	R	$\sqrt{3}$	1	0.06
Combined uncertainty ($k = 1$)						0.63
Expanded uncertainty ($k = 2$)						1.25 (33.4%)

Uncertainty budget for peak 10 gram mass-average induced SAR measured with DASY8 Module WPT assessed according to IEC/IEEE 63184.

NOTE: SAR Upscaling to compensate for the unfulfilled Uncertainty budget

As all other uncertainties fulfil the <30% Budget, upscaling of the SAR Value by 3% ($1.339/1.3=1.03$) for both 1g and 10g SAR is sufficient to offset the expanded by SAR measurements to ensure a reasonable overestimation.

11.1.3 Definition of test position and distances

In absence of an equipment specific regulation with given test distances, all not further noted test positions were measured in “touched” mode, the probe radome touching the DUT at the defined test position.

Due to the mechanical concept of the used probe a distance between DUT surface and electrical centre of the probe antennas remains.

Probe type	Closest physical Test distance (cm)	
	Magnetic Field	Electrical Field
MAGPy-8H3D+E3D V2	0.75 (Sub @ lowest plane)	5.0

11.1.4 System Check and Validation

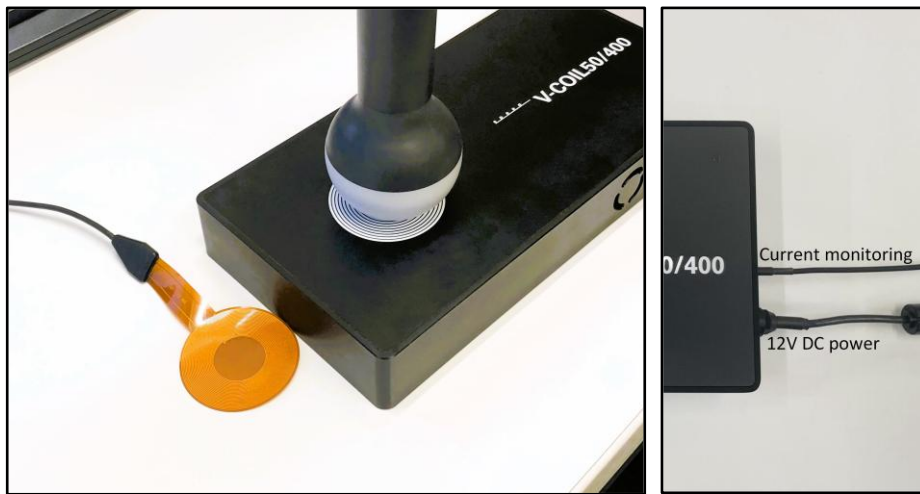
Overview

Verification and Validation (V&V) sources are designed as well-defined sources with target values to verify that the system works within its specification. A system check is typically performed prior to any compliance evaluation.

For the DASY8 Module WPT, a set of four system validation sources (3 kHz, 85 kHz, 400 kHz and 6.78 MHz) are available. These sources consist of series resonant spiral coils, fed with an integrated current source. The current source consists of an oscillator and an amplifier at the appropriate frequency.

A monitoring port in the form of a SMB connector is available on the device to monitor the current through the coil. The port offers the voltage across a 1 Ohm resistor connected in series with the coil, therefore the current I corresponds to the measured voltage V_{testport} ($I = V_{\text{testport}}$). The voltage on the port can thus be monitored with an oscilloscope and this should be equal to the current through the coil.

Target values ($H_{\text{inc,max}}$, $E_{\text{ind,max}}$, $J_{\text{ind,max}}$) for each source have been determined for several distances through simulations using the MQS solver in Sim4Life. The details of the evaluation are available at Application Notes, for each source.



The picture above shows a 400 kHz system check and validation device, with the power cable and the current monitoring cable connected.

Specifications

The specifications of the sources are as follows:

Item	V-Coil500/3	V-Coil350/85	V-Coil50/400	V-Coil25/6780
Frequency (kHz)	3	85	400	6780
Coil Dimension (mm)	500 x 500	350 x 200	50 x 50	25 x 25
No. of Turns	11	13	11	10
Current Source	I500/3	I350/85	I50/400	I25/6780
Current Monitor Port	SMB	SMB	SMB	SMB
Device Dimensions (mm)	500 x 500 x 35	250 x 500 x 35	125 x 250 x 35	125 x 250 x 35

11.2 Test Results

11.2.1 cDASY8 Module WPT – SAR Measurement Results

coil	frequency [kHz]	Distance (mm)	Peak H _{inc} (A/m, rms)	Peak E _{inc} (V/m, rms)	psSAR (mW/kg, rms)		H-field extent	
					LIMIT: 1600		Limit: 4000	
					1g avg.		10g avg.	
					Meas.	Rep.*	Meas.	Rep.*
1	360.36	0	1077	280	40.1	41.3	16.5	17.0
1	127.59	0	2876	402	36.1	37.2	14.9	15.3
2	360.36	0	1015	269	36.3	37.4	15.4	15.9
2	127.59	0	2608	326	30.3	31.2	12.8	13.2
1+2	360.36	0	1118	292	42.1	43.4	18.0	18.5
1+2	127.59	0	2884	365	35.8	36.9	15.0	15.5

*) SAR values were up-scaled to compensate for the unfulfilled Uncertainty budget by factor 1.03

Max SAR W/kg(1g): 0.043

Max SAR W/kg(10g): 0.019

11.2.2 cDASY8 Module WPT – detailed results and system checks

Detailed test results and System checks for the WPT System are described in the additional document:
1-0701-25-01-15_TR1-A201-R01

11.3 Calibration data for DASY8 System WPT

Detailed calibration documents for the DASY8 WPT system are provided in the external Annex document: 1-0701-25-01-15_TR1-A301-R01

12 Test equipment and ancillaries used for tests

To simplify the identification of the test equipment and/or ancillaries which were used, the reporting of the relevant test cases only refer to the test item number as specified in the table below.

Equipment	Type	Manufacturer	Serial No.	Last Calibration	Frequency (months)
E / H Field Probe	MAGPy-8H3D+E3D V2	Schmid & Partner Engineering AG	3079	2025-11-11	12
Data Acquisition System	MAGPy-DAS V2	Schmid & Partner Engineering AG	1023	2025-11-11	12
400 kHz Reference source	V-Coil50/400	Schmid & Partner Engineering AG	1021	2025-11-11	12
DASY8 Module WPT (3.2) software	SW – Version 3.2.0.6673	Schmid & Partner Engineering AG	---	N/A	--
Notebook Jupyter V4.3.5	SW – Version 3.2.9, backend: 3.2.20	Schmid & Partner Engineering AG	---	N/A	--
Sim4Life V Simulation Software (+Plug In)	SW – Version 9.0.0.18820	Schmid & Partner Engineering AG / ZMT Zurich MedTech AG	---	N/A	--

Agenda: Kind of Calibration

k/cal	calibration / calibrated	EK	limited calibration
Ne/cnn	not required (k, ev, izw, zw not required)	zw	cyclical maintenance (external cyclical maintenance)
Ev/chk	periodic self verification	izw	internal cyclical maintenance
Ve	long-term stability recognized	g	blocked for accredited testing
vlkl!	Attention: extended calibration interval		
NK!	Attention: not calibrated	*)	next calibration ordered / currently in progress
cpu	check prior usage		

13 Observations

No observations exceeding those reports with the single test cases have been made.

- END OF TEST REPORT -