RF Exposure Report

Report No.	:	**SFCHRE-WTW-P24070624**
Applicant	:	**Getac Technology Corporation**
Address	:	**5F., Building A, No. 209, Sec. 1 Nangang., Rd., Taipei City, 11568, Taiwan**
Product	:	**Digitizer Module**
FCC ID	:	**QYLGET101AZ12**
Brand	:	**EMRight**
Model No.	:	**GET-101A**
FCC Rule Part	:	**CFR §2.1093**
Standards	:	**47 CFR FCC Part 1.1310**
Sample Received Date	:	**Jul. 26, 2024**
Date of Testing	:	**Aug. 01, 2024**
Lab Address	:	**No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan**
Test Location	:	**No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City, Taiwan**
FCC Accredited No.	:	**TW0003**

CERTIFICATION: The above equipment have been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch–Lin Kou Laboratories**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's SAR characteristics under the conditions specified in this report. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by TAF or any government agencies.

Prepared By : Vera Huang

Vera Huang / Specialist

Approved By : Gordon Lin

Gordon Lin / Manager

Testing Laboratory
2021

Table of Contents

Release Control Record

Report No.	Reason for Change	Date Issued
SFCHRE-WTW-P24070624	Initial release	Sep. 18, 2024

1 Description of Equipment Under Test

EUT Type	Digitizer Module
FCC ID	QYLGET101AZ12
Brand Name	EMRight
Model Name (HVIN)	GET-101A
Operating Frequency (Unit: kHz)	510.6
Antenna Type	Loop Antenna
EUT Stage	Engineering Sample

Note:

1. The EUT is authorized for use in specific End-product. Please refer to below table for further details. Model of ZX10 was chosen for final test.

Product	Brand	Model	Description
Tablet	Getac	ZX10	For marketing purpose
		ZX10-Ex	
		ZX10G2	
		ZX10-210	
		ZX10-220	
		ZX10Y (Y= 10 characters, Y can be 0 to 9, A to Z, a to z, “/”, “\”, “-”, “_” or blank for marketing purpose)	

2. The above EUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.

2 Description of Test Modes

The test modes are presented in the report as below.

Test Mode	Test Condition
A	TX Mode (ZX10 with Touch Pen) – 511kHz
B	Standby Mode

3 Preface

The objective of this report is the numerical exposure investigation of one Wireless Power Transfer (WPT) charger (further referred to as ”device under test” or ”EUT”) designed by Otter Products, LLC. (further referred to as ”applicant”). In particular the Specific Absorption Rate (SAR, heat damage hazard) and internal electric fields was investigated and compared to exposure limits specified by FCC [1].

4 SAR Measurement System

4.1 DASY8 Module WPT - MAGPy System

SPEAG offers two types of MAGPy systems: one for fast and easy in situ evaluations (MAGPy V2) and one for high precision robot-based evaluations in the lab (Module WPT). DASY8 Module WPT is based on the MAGPy technology integrated in our DASY8 product line for high precision robot-based evaluations. It is the only system for demonstrating compliance of wireless power transfer (WPT) devices according to IEC PAS 63184 (Chapter 8 "Measurement and numerical combination methods") and it enables fully automated compliance testing compatible with FCC KDB 680106 D01.

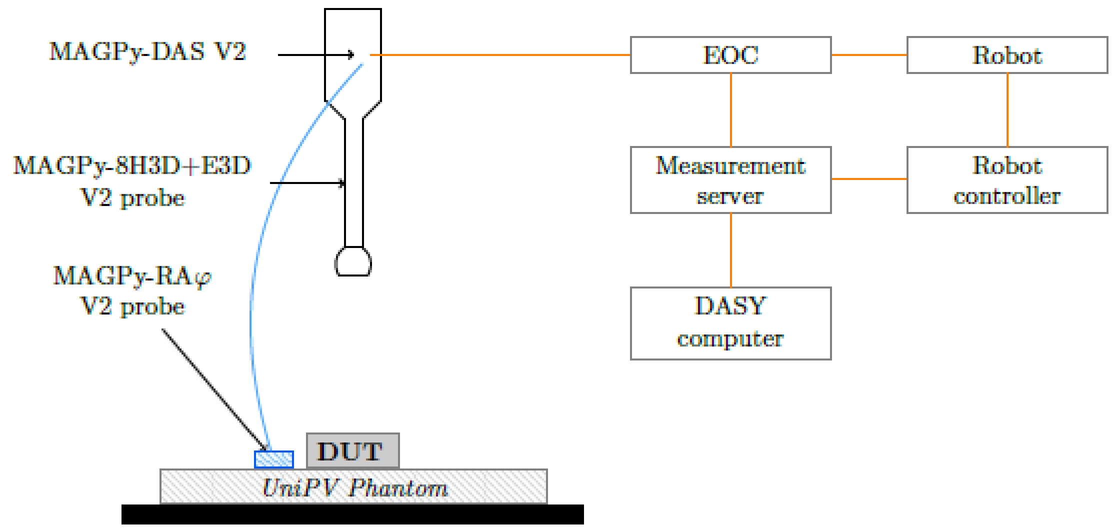


Fig-4.1 Typical measurement setup with DASY8 Module WPT

4.1.1 Robot

DASY8 Module WPT is composed of the isotropic probe MAGPy-8H3D+E3D Version 2, the reference probe (MAGPy-RAφ), and the data acquisition system (MAGPy-DAS) 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. At each probe location, eight isotropic H-field values are acquired in parallel. The dedicated graphical user interface (GUI) fully automates the testing workflow. The WPT robot series have many features that are important for our application:

- Evaluation of H-field (3 kHz – 10 MHz)
- Demonstration of compliance (3 kHz – 4 MHz) according to IEC PAS 63184.

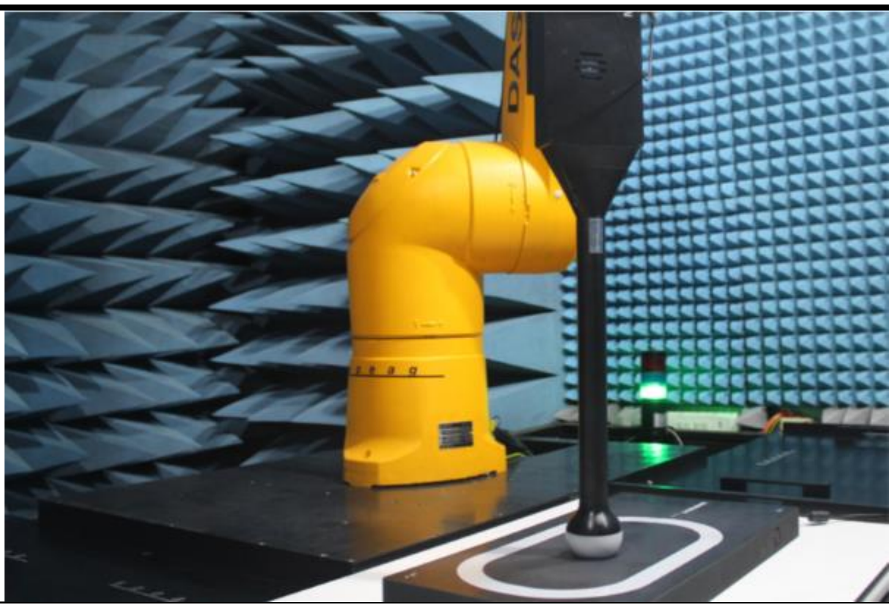
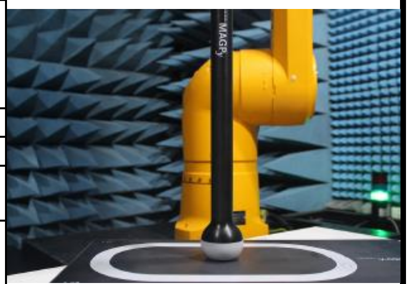


Fig-4.2 SPEAG DASY8 System

4.1.2 Probes

The MAGPy-H3D probe consists of eight isotropic H-field sensors and one isotropic E-field sensor:

Model	MAGPy-8H3D+E3D V2	
Construction	The MAGPy-8H3D+E3D V2 probe (Figure 3.10.1) 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.	
Frequency	3 kHz–10 MHz	
Temperature range	0–40 °C	
Dynamic Range	H-field sub-probes: 0.1–3200A/m (0.12 μT–4 mT) E-field sub-probes: 0.08–2000V/m	
Dimensions	Probe head diameter: 60 mm MAGPy-8H3D+E3D V2 & MAGPy-DAS V2: 110mm×635mm×35mm	

4.1.3 Data Acquisition Electronics (DAE)

Model	MAGPy-DAS	
Construction	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.	
Measurement Range	27×14 Bit ADC Channels with 25 MSPs	
Batterys	The MAGPy-DAS V2 includes rechargeable batteries, which can be charged via a high power 15V USB-C power supply. The USB-C port for the charging is labeled with a lightning sign on the side of the DAS box. The charging takes about 3 hours and typical lifetime in operation is about 2 h. MAGPy-DAS V2 can also be powered by an external power supply.	

5 Compliance Evaluation

DASY8 Module WPT SW version V2.6 offers compliance evaluation with respect to:

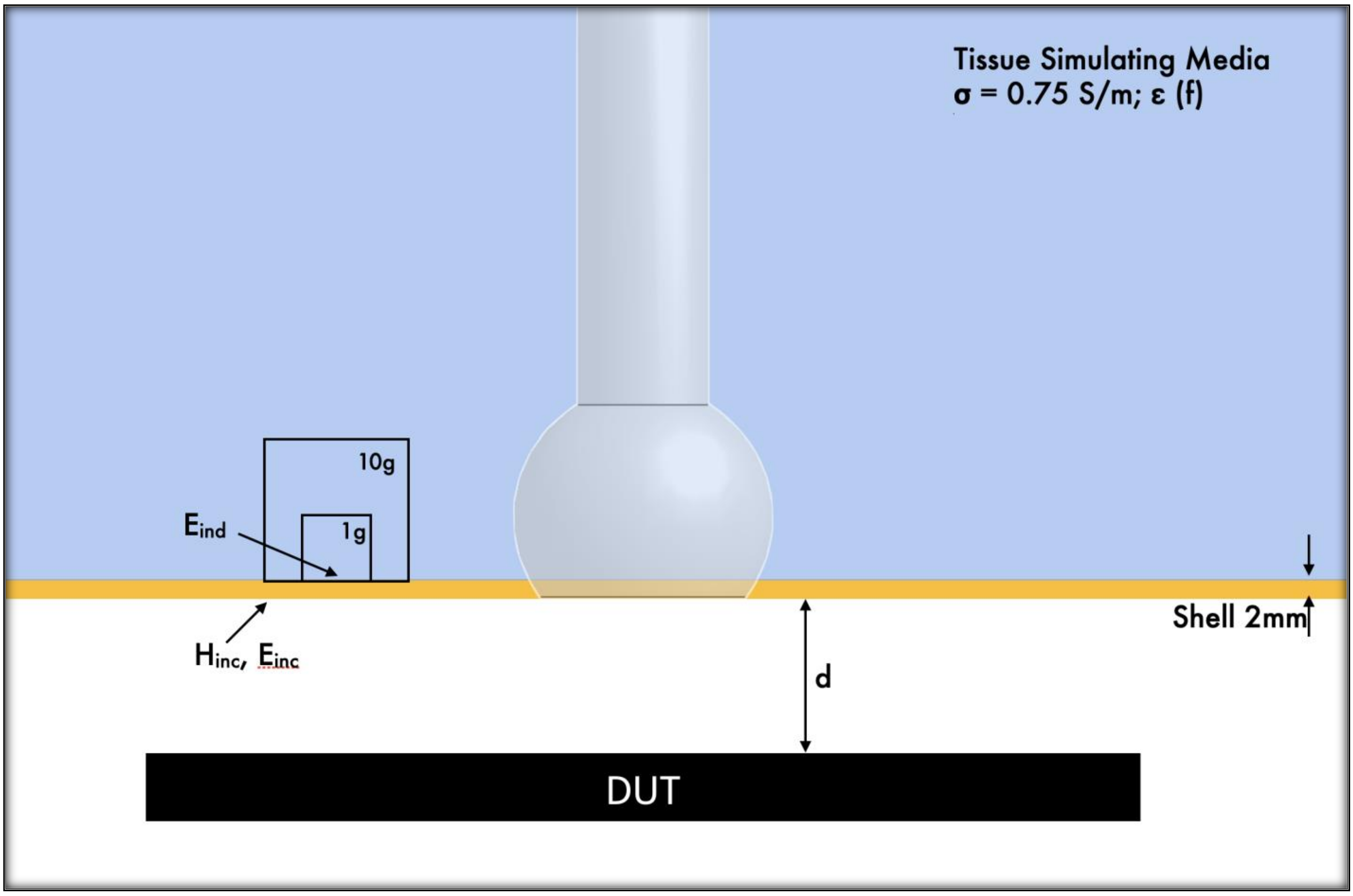
Reference levels based on the incident H- and E-fields measured from the volume scan.
Basic restrictions based on the peak induced E-field, peak induced current density, and peak spatial-average SAR calculated from the Sim4Life simulation.

SPEAG released a DASY8 Module WPT system (SW Module WPT V2.6) for E and H-field measurement. The system also supports a Sim4Life plug-in that includes components for importing 3D H-field scan data (Hx, Hy, Hz values in the measurement volume) to the Sim4Life simulation platform. A magneto quasi-static (MQS) simulation is automatically set up to solve for a lossy half-space Phantom setup. The lossy half-space has muscle tissue dielectric properties (σ =0.75 S/m, ρ = 1000 kg/m^3). 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 post-processing engine determines the maximum induced E-field, current density, and SAR values in a homogeneous half-space of muscle tissue equivalent media (half-space muscle phantom) positioned at the compliance distance. In general, the compliance distance corresponds to the closest point (with respect to the exposure source) the human body (e.g., a part of the hand) can reach during the operation of the source.

The relative dielectric constant, conductivity, and mass density of the homogeneous phantom used in the simulations were 55, 0.75 S/m, and 1000 kg/m^3, respectively, which correspond to the phantom. The phantom dimension was adapted according to the coil-to-phantom distance to guarantee that the uncertainty compared to an infinite phantom block is <0.1 dB.

6 Simulation Results



The distance used in the test raw data for simulation and compliance evaluation results is defined as the spacing between the top surface of the DUT and the bottom surface of the fictive phantom shell (with a thickness of 2 mm). In this case, the evaluation is made at distance d. Typically d = 0, i.e., at the DUT surface. The evaluation locations of the incident fields (i.e., Hinc and Einc) as well as the induced fields (e.g., Eind, psSAR1g, and psSAR10g) are also illustrated.

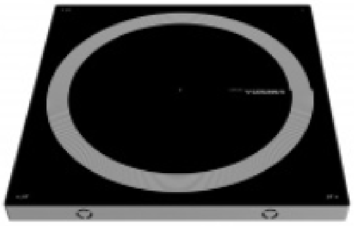
7 System Check and Validation Sources

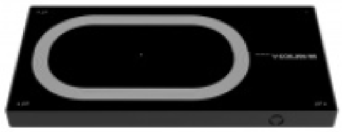
For the DASY8 Module WPT, a set of four system validation sources (3 kHz, 85 kHz, 400 kHz and 6.78 MHz) are available. These sources consist of series resonant spiral coils, fed with an integrated current source. The current source consists of an oscillator and an amplifier at the appropriate frequency. 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 1Ω resistor connected in series with the coil, therefore the current I corresponds to the measured voltage Vtest port (I = Vtest port). 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 (Hinc,max, Eind,max, Jind,max, SAR) for each source have been determined for several distances through simulations using the MQS solver in Sim4Life.

Fig-7.1 System Verification Setup for Frequency 400 kHz

7.1 Device

Model	V-Coil500/3 V2	
Frequency (kHz)	3	
Coil Dimension (mm)	500x500	
No. of Turns	11	
Current Source	I500/3	
Current Monitor Port	SMB	
Dimensions	500 x 500 x 35 mm	

Model	V-Coil350/85 V2	
Frequency (kHz)	85	
Coil Dimension (mm)	350x200	
No. of Turns	13	
Current Source	I350/85	
Current Monitor Port	SMB	
Dimensions	250×500×35	

Model	V-Coil50/400 V2	
Frequency (kHz)	400	
Coil Dimension (mm)	50x50	
No. of Turns	11	
Current Source	I50/400	
Current Monitor Port	SMB	
Dimensions	125×250×35	

Model	V-Coil25/6780 V2	
Frequency (kHz)	6780	
Coil Dimension (mm)	25x25	
No. of Turns	11	
Current Source	I25/6780	
Current Monitor Port	SMB	
Dimensions	125×250×35	

8 Human Exposure Limits

8.1 Limits for Maximum Permissible Exposure

§ 1.1310 The criteria listed in table 1 shall be used to evaluate the environmental impact of human exposure to radiofrequency(RF) radiation as specified in § 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of § 2.1093 of this chapter.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f²)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f²)	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density
NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.
NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

680106 D01 RF Exposure Wireless Charging Apps v04, section 3.2 as reproduced below:
3.2 Equipment Authorization Procedures for Devices Operating at Frequencies Below 4 MHz
The RF exposure limits, as set forth in § 1.1310, do not cover the frequency range below 100 kHz for Specific Absorption Rate (SAR) and below 300 kHz for Maximum Permitted Exposure (MPE). In addition, present limitations of RF exposure evaluation systems prevent an accurate evaluation of SAR below 4 MHz. For these reasons, a specific MPE-based RF Exposure compliance procedure for devices operating in the aforementioned low-frequency ranges has been set in place. Accordingly, for § 2.1091-Mobile devices, the MPE limits between 100 kHz to 300 kHz are to be considered the same as those at 300 kHz in Table 1 of § 1.1310, that is, 614 V/m and 1.63 A/m, for the electric field and magnetic field, respectively.

9 Specific Absorption Rate Limits

Specific Absorption Rate (47 CFR Ch. I § 1.1310 10-1-20 Edition)

Condition	Uncontrolled Environment (General Public)		Controlled Environment (Occupational)	
	SAR Limit	Mass Avg.	SAR Limit	Mass Avg.
SAR averaged over the whole body mass	0.08 W/kg	whole body	0.4 W/kg	whole body
Peak spatially-averaged SAR	1.6 W/kg	1 g of tissue*	8 W/kg	1 g of tissue*
Peak spatially-averaged SAR for extremities, such as hands, wrists, feet, ankles, and pinnae	4.0 W/kg	10 g of tissue*	20 W/kg	10 g of tissue*
* Defined as a tissue volume in the shape of a cube				

10 SAR and Induced H-field & E-field Measurement Procedure

According to the IEC PAS 63184:2021 and FCC KDB 680106 D01v04 standard, the system for demonstration of compliance of any WPT device or any device generating a high H-field in the frequency range from 3 kHz to 4MHz. the recommended procedure for Evaluation of internal E-field, current density and SAR against basic restrictions. At frequencies above 4 MHz, the induced fields can be directly measured with DASY8 Module SAR. There is the consists of the following steps:

(a) Make EUT to transmit maximum output power
(b) Position the probe, connected and placed close to the EUT coil/antenna
(c) The EUT that creates the electromagnetic field is placed on the measurement platform
(d) Perform testing steps on the DASY system
(e) Record the ps SAR (1g. avg.) and Induced H-field & E-field scan value

10.1 Magnetic Fields

Figure 10.2 shows a xy-cutplane for the simulated magnetic field strength through the center of the EUT. It can be seen how the main PCBs ground and the ferrite confine the main part of the magnetic field to the dedicated WPT receiver location above the EUT.

Analogue to the setup of the measurement (cf. section 10) the simulated magnetic field (Hfield) strength was evaluated along the corresponding line above the active coil. The measurements start at z = 0.6 mm, which corresponds to the ”sensor center to tip distance” of the ”MAGPy-H3D”z = 0 field probe. The simulated line starts at the top of the EUTs housing at (0 mm).

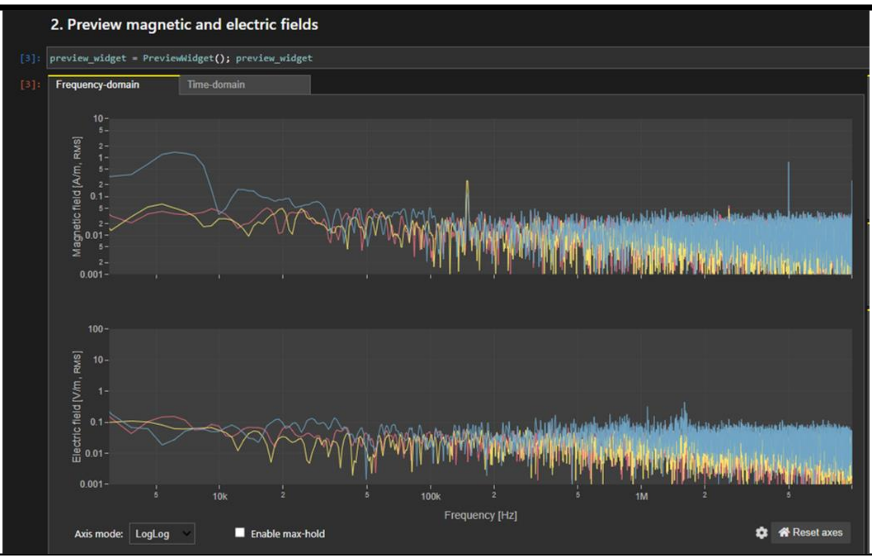


Fig-10.1 Preview magnetic and electric fields

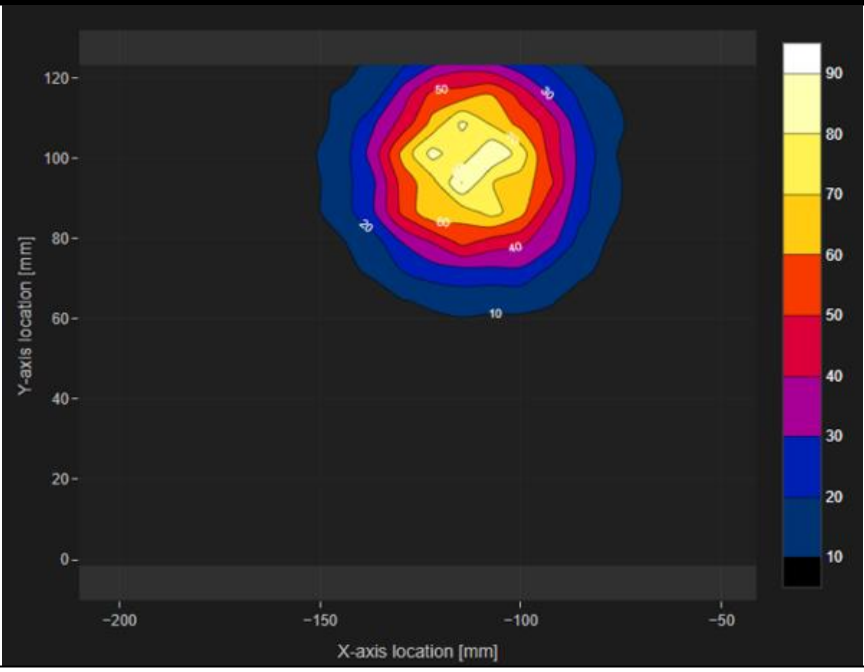


Fig-10.2 The simulated magnetic field displayed on a xy-plane through the DUT.

11 System Validation

For the DASY8 Module WPT, a set of four system validation sources (3 kHz, 85 kHz, 400 kHz, and 6.78 MHz) is available. These sources consist of series resonant spiral coils fed with an integrated current source. The current source comprises an oscillator and an amplifier operating at the appropriate frequency. A monitoring port in the form of an SMB connector is provided on the device to monitor the current through the coil. The port offers the voltage across a 1Ω resistor connected in series with the coil; therefore, the current I corresponds to the measured voltage Vtest port (I = Vtest port). The voltage on the port can thus be monitored with an oscilloscope, and it should be equal to the current through the coil.

SPEAG developed the evaluation system DASY8 Module WPT for small-to-large size wireless power transfer (WPT) devices, which combines subsystems of DASY8, MAGPy, and Sim4Life. The IT'IS Foundation was tasked with developing the system check and validation sources for WPT evaluations.

The table below shows the target value and measured value after normalization to 1A. When comparing to the target value provided by SPEAG calibration, the verification data should be within its specification of 1.23 dB.

400 kHz source SN 1015

	Hinc	Ecube	Local	Eline	Jarea	SAR1g	SAR10g
Data source	**[A/m]**	**[V/m]**	**[V/m]**	**[V/m]**	**[A/m2]**	**[mW/kg]**	**[mW/kg]**
Ref. (sigma=0.75)	264	4.18	4.28	4.29	2.67	7.06	3.55
New meas	248	3.9	4	4.01	2.47	5.96	2.97
Deviation [dB]	-0.54	-0.60	-0.59	-0.59	-0.68	-0.74	-0.77

Note: Refer to Appendix D for more details.

12 Evaluation Results

Mode A_TX Mode (ZX10 with Touch Pen) – 511kHz

Electric field Strength Result

Plot No.	Test Position	Separation Distance (mm)	Einc (V/m,RMS)	Limit	Result
P01	Front Face	0	2.05	614	PASS

Magnetic field Strength Result

Plot No.	Test Position	Separation Distance (mm)	Hinc (A/m,RMS)	Limit	Result
P01	Front Face	0	1.95	1.63	EXCEED*

* An assessment against the Limit for peak spatial-average SAR shall be performed for the EUT when the Limits for Maximum Permissible Exposure are exceeded.

Peak Spatial-Average SAR Evaluation (Simulation Results)

Plot No.	Test Position	Separation Distance (mm)	Peak spatial-average SAR [mW/kg]	Limit (W/kg)	Result
P01	Front Face	0	0.000567	1.6	PASS

Note:
1. The Measurement results refer to Appendix A for more details.
2. The Calibration Certificate for Probe refer to Appendix C.
3. The System Check refer to Appendix D.
4. Multi-frequency enhancement was enabled during evaluation by DASY8/6.

Mode B_Standby Mode

Electric field Strength Result

Plot No.	Test Position	Separation Distance (mm)	Einc (V/m,RMS)	Limit	Result
P02	Front Face	0	0.143	614	PASS

Magnetic field Strength Result

Plot No.	Test Position	Separation Distance (mm)	Hinc (A/m,RMS)	Limit	Result
P02	Front Face	0	0.48	1.63	PASS

Note:
1. The Measurement results refer to Appendix A for more details.
2. The Calibration Certificate for Probe refer to Appendix C.
3. The System Check refer to Appendix D.
4. Multi-frequency enhancement was enabled during evaluation by DASY8/6.

13 Calibration of Test Equipment

Equipment	Manufacturer	Model	SN	Cal. Date	Cal. Interval
MAGPy Field Probe Sensor System	SPEAG	MAGPy-8H3D+E3DV2	3078	Jun. 06, 2024	1 Year
		MAGPy-DASV2	3070		

14 References

[1] Federal Communications Commission (FCC, USA), "FCC Radiofrequency radiation exposure limits, 47 C.F.R. § 1.1310," 2020.

15 Test Setup Photo

Refer to Appendix Photographs of EUT Setup.

---END---

16 Measurement Uncertainty

DASY8 Uncertainty Budget for Peak *H*-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%)**

Preliminary Uncertainty Budget of Peak H -Field

DASY8 Uncertainty Budget for Peak Cube-Average E_{ind} 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	0.1
12	Surface field reconstruction	0.2	N	1	1	0.2
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	Quasistatic approximation	0.1	R	$\sqrt{3}$	1	0.06
Combined uncertainty (k = 1)						0.68
Expanded uncertainty (k = 2)						**1.37 (17.1%)**

Preliminary Uncertainty Budget of Peak Cube-Average Eind

DASY8 Uncertainty Budget for Peak Line-Average E_{ind} 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	0.1
12	Surface field reconstruction	0.2	N	1	1	0.2
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	Quasistatic approximation	0.1	R	$\sqrt{3}$	1	0.06
Combined uncertainty (k = 1)						0.70
Expanded uncertainty (k = 2)						**1.41 (17.6%)**

Preliminary Uncertainty Budget of Peak Line-Average Eind

DASY8 Uncertainty Budget for $psSAR_{1g}$ 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	0.02	N	1	1	0.02
12	Surface field reconstruction	0.1	N	1	1	0.1
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	Quasistatic approximation	0.1	R	$\sqrt{3}$	1	0.06
Combined uncertainty (k = 1)						0.60
Expanded uncertainty (k = 2)						**1.20 (31.9%)**

Preliminary Uncertainty Budget of $psSAR_{1g}$

DASY8 Uncertainty Budget for $psSAR_{10\,g}$ 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	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	0.02	N	1	1	0.02
12	Surface field reconstruction	0.1	N	1	1	0.1
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	Quasistatic approximation	0.1	R	$\sqrt{3}$	1	0.06
Combined uncertainty (k = 1)						0.74
Expanded uncertainty (k = 2)						**1.19 (31.4%)**

Preliminary Uncertainty Budget of $psSAR_{10\,g}$