

FCC 47 CFR § 2.1093

RF EXPOSURE EVALUATION REPORT (Wireless Power Transfer)

FOR

GSM/WCDMA/LTE/NR/NTN Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax/be, NFC, UWB and WPT

MODEL NUMBER: SM-F971U, SM-F971U1

FCC ID: A3LSMF971U

REPORT NUMBER: S-4792147575-S6V2

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Prepared for
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Testing Laboratory

TL-637

Revision History

Rev.	Date	Revisions	Revised By
V1	2026-04-23	Initial Issue	--
V2	2026-04-28	Revised Date Test in Sec. 1. Revised Sec. 4.2. Revised Equipment & Peripherals info. in Sec. 6. Revised System verification Results in Sec. 8. Removed Scaling factor calculation Section. Revised H-field and 1-g SAR Results Table in Sec. 9.	JeongYeon Won

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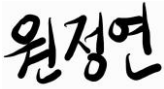
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1. Attestation of SAR Characterization

Applicant Name	SAMSUNG ELECTRONICS CO.,LTD.
FCC ID	A3LSMF971U
Model Number	SM-S947U, SM-S947U1
Applicable Standards	FCC 47 CFR § 2.1093
Exposure Category	1-g SAR limit (W/kg)
General population / Uncontrolled exposure	1.6
RF Exposure Conditions	The Highest Reported SAR (W/kg) < 0.10
Date Tested	2026-02-19 to 2026-04-27
Test Results	Pass

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government

Approved & Released By: 	Prepared By: 
Justin Park Operations Leader UL Korea, Ltd. Suwon Laboratory	JeongYeon Won Laboratory Engineer Associate UL Korea, Ltd. Suwon Laboratory

2. Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093.

- 447498 D04 Interim General RF Exposure Guidance v01
- 680106 D01 Wireless Power Transfer v04

In addition to the above, the following information was used:

- [TCB workshop](#) October, 2023; 4.2 Wireless Power Transfer
- DASY6 MODULE WPT SYSTEM HANDBOOK
- DASY8/6 Module WPT and SAR Application note
- DASY8/6 Module WPT PIA Inquiry Compliance testing against SAR and MPE Limits (V1.2)

3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at

Suwon
SAR 1 Room

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637.

The full scope of accreditation can be viewed at;

<https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf>.

4. H-field Measurement System & Test Equipment

4.1. H-field Measurement System

DASY system Module WPT - MAGPy Probe is optimized for evaluation of compliance for wireless power transfer (WPT) systems and any other sources operating in the 3 kHz - 10 MHz frequency range. Module WPT V3.2 is compatible with the DASY8/6 systems and in addition has been extended for easy evaluations of pulsed sources.

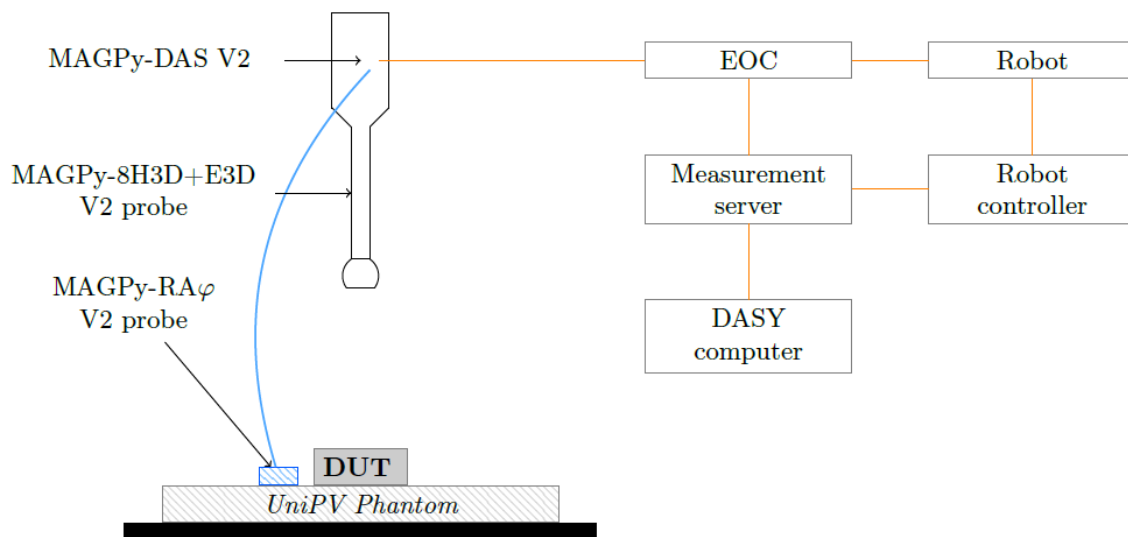


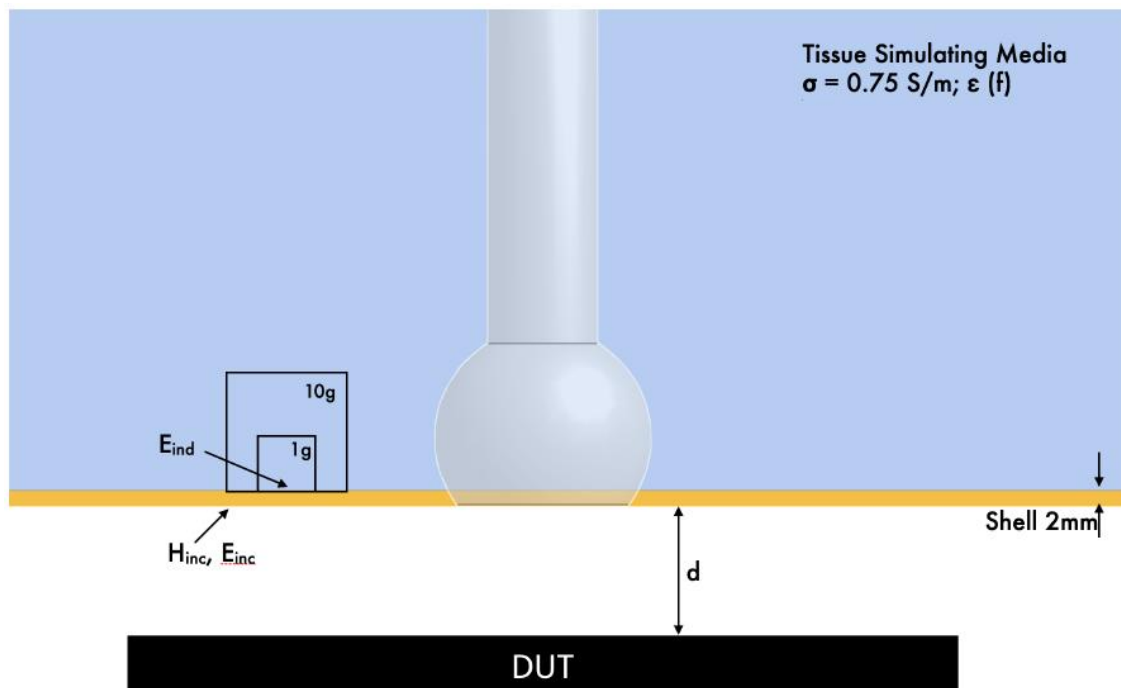
Figure : Typical measurement setup with DASY system Module WPT-MAGPy

DASYsystem Module WPT – MAGPy's Specifications

System	DASY8/6 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). It measures the incident electric and magnetic fields (E-Field, H-Field) in a volume from the surface of the DUT using advanced field reconstructions to obtain a high-resolution (mm range) field distribution. The induced electric (E-) field distributions 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 sets of isotropic H-field values and one set of isotropic E-field values are acquired in parallel. The dedicated graphical user interface (GUI) fully automates the testing workflow.
Applications	Laboratory evaluation of WPT systems and any other local electromagnetic source not requiring magnetic (H-) field volume scans exceeding 2000 mm × 1000 mm × 1500 mm: - Assessment of high-resolution H-field distribution (3 kHz – 10 MHz) - Assessment of high-resolution E-field distribution (3 kHz – 10 MHz) - Determination of the induced field and SAR distribution in the standard phantom (3 kHz – 4 MHz) - Demonstration of compliance (3 kHz – 4 MHz) with international standards and national regulations, e.g., ISED Canada SPR-002
Basic Components	The basic components of DASY8/6 Module WPT are: Platform and DASY8/6 TX2-90XL Robot DASY8/6 Measurement Server EOC8 Light-Beam Unit Quick Adapter Change System (QACSV1) DASY8/6 PC
MAGPy-DAS	The MAGPy-DAS includes: 27 14-bit ADC channels with 25 MSPs - Peak detection stage - Hardware supervising unit - Data transfer to the backend 22 tap FIR filter
MAGPy-RAφV2	Specifications of the MAGPy-RAφ reference amplitude and phase probe: - Frequency range: 3 kHz – 10 MHz - Dynamic range: 0.1 A/m – 3200 A/m (0.12 μT – 4 mT) - Loop coil area: 18.9 cm² - Sensor size: 51 mm x 51 mm x 0.2 mm

MAGPy-8H3D+E3D V2	The MAGPy-8H3D+E3D probe consists of eight isotropic H-field sensors and one isotropic E-field sensor: Probe design: • Probe length: 335 mm • Probe tip diameter: 60 mm • 8H3D: eight isotropic 1 cm²-H-field sensors, arranged at the corners of a 22 mm cube • First H-field sensor plane: 7.5 mm from the probe tip • E3D: one isotropic E-field sensor (dipole / monopole) (arm length: 50mm) Sensor specifications: • Frequency range: 3 kHz – 10 MHz • H-field dynamic range: 0.1 A/m – 3200 A/m (0.12 μT – 4 mT) • H-field extrapolation uncertainty: 0.6 dB ($k = 2$) • E-field dynamic range: 0.08 V/m – 2000 V/m
Software	Software components: • DASY8 Module WPT application programming interface (API) • WPT /6backend • Jupyter Notebook GUI • Sim4Life plugin (vector potential reconstruction, P-EM-QS solver)

4.2. Simulated SAR based on DASY module WPT S/W



Distance used in the tables 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 E/H-fields as well as the SAR are also illustrated. Finally, 1-g_SAR is simulated through incident E/H-field. ($\sigma = 0.75 \text{ S/m}$, $\rho = 1000 \text{ Kg/m}^3$, $\epsilon_r = 55$)

4.3. Test Equipment

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal Date	Cal. Due Date
Probe	SPEAG	MAGPy-8H3D+E3D	3071	2025-08-12	2026-08-12
	SPEAG	MAGPy-DAS	2050	2025-08-12	2026-08-12
System verification Source	SPEAG	V-Coil350/85	1019	2025-08-15	2026-08-15
	SPEAG	V-Coil50/400	1014	2025-08-15	2026-08-15

5. Measurement Uncertainty

5.1 Incident E/H-field Measurement Uncertainty

DASY8 Uncertainty Budget for Peak Incident <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	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	0.10
12	Surface field reconstruction	0.3	N	1	1	0.3
Combined uncertainty ($k = 1$)						0.67
Expanded uncertainty ($k = 2$)						1.33 (16.6%)

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%)

Notes:

The uncertainties of Incident E/H-field used the data provided by Equipment manufacturer.

5.2 1-g SAR Simulation Uncertainty

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 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	0.02	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%)

Notes:

The uncertainties of 1-g SAR used the data provided by Equipment manufacturer.

6. DUT Information

The EUT has WPT (Wireless Power Transfer) feature which has inductive charging coil to charge phone or watch. The charging frequency is between 110 kHz to 148 kHz, and the maximum power consumption is 9.0 W in charging status. According to manufacturer's guide, Charging mode tests are assessed between 110 kHz and 148 kHz and Standby mode operates at 145 kHz.

SUPPORT EQUIPMENTS & PERIPHERALS

SUPPROT EQUIPMENT & PERIPHERALS LIST					
Description	Manufacturer	Model	Serial Number	FCC ID	Recived PWR
Phone (WPT client)	Samsung Electronics Co., Ltd.	SM-G986B/DS	R3CMB0C70XN	A3LSMG986B	Up to 15 W
Watch (WPT Client)	Samsung Electronics Co., Ltd.	SM-R835F	RFAM90ZXFTF	A3LSMR835	Up to 5 W
Watch (WPT Client)	Samsung Electronics Co., Ltd.	SM-R910	RFAW406TRZM	A3LSMR910	Up to 10 W

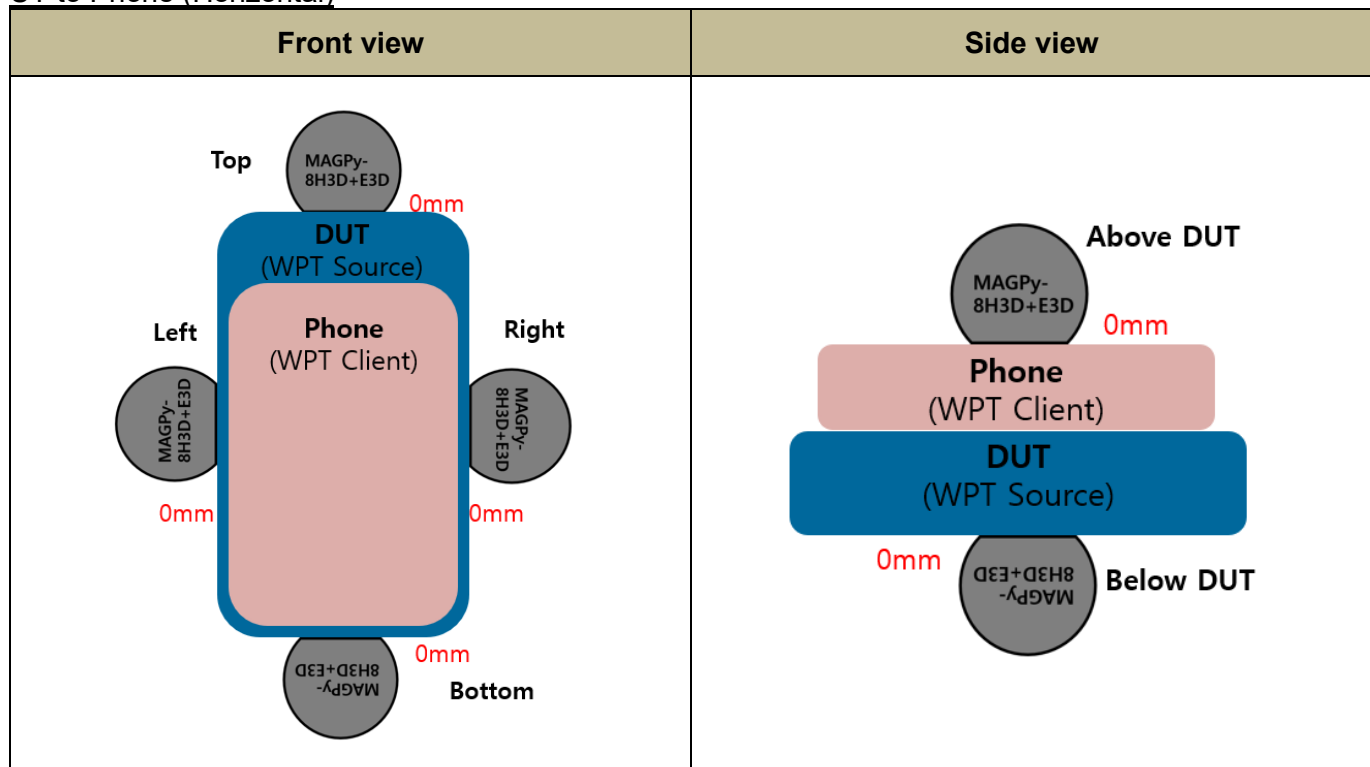
Notes:

A WPT Rx device was used to allow the WPT Tx to operate at maximum output.

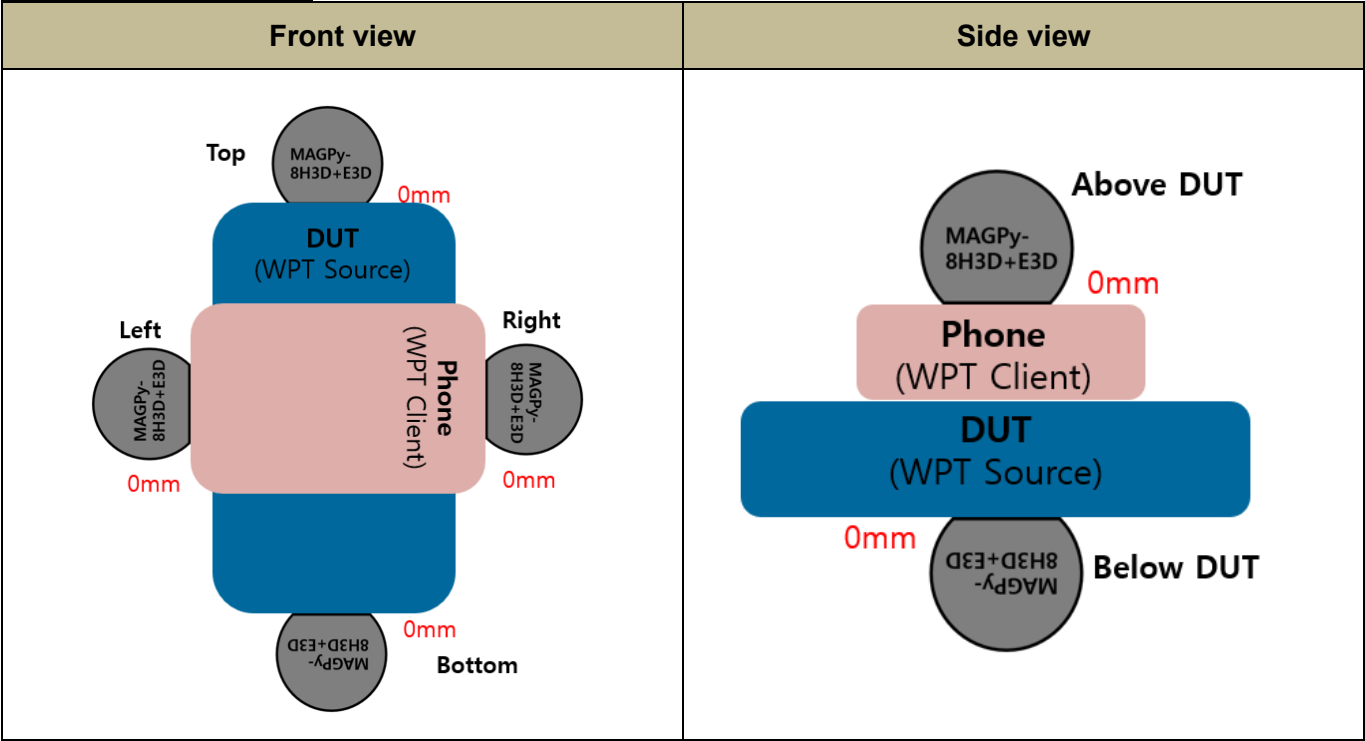
MEASUREMENT TEST SETUP

The measurement was taken using a probe placed 0 mm surrounding the device and above the top surface of the DUT. Measurements were taken at the top (below source/above client) and all sides of the EUT per KDB680106 D01.

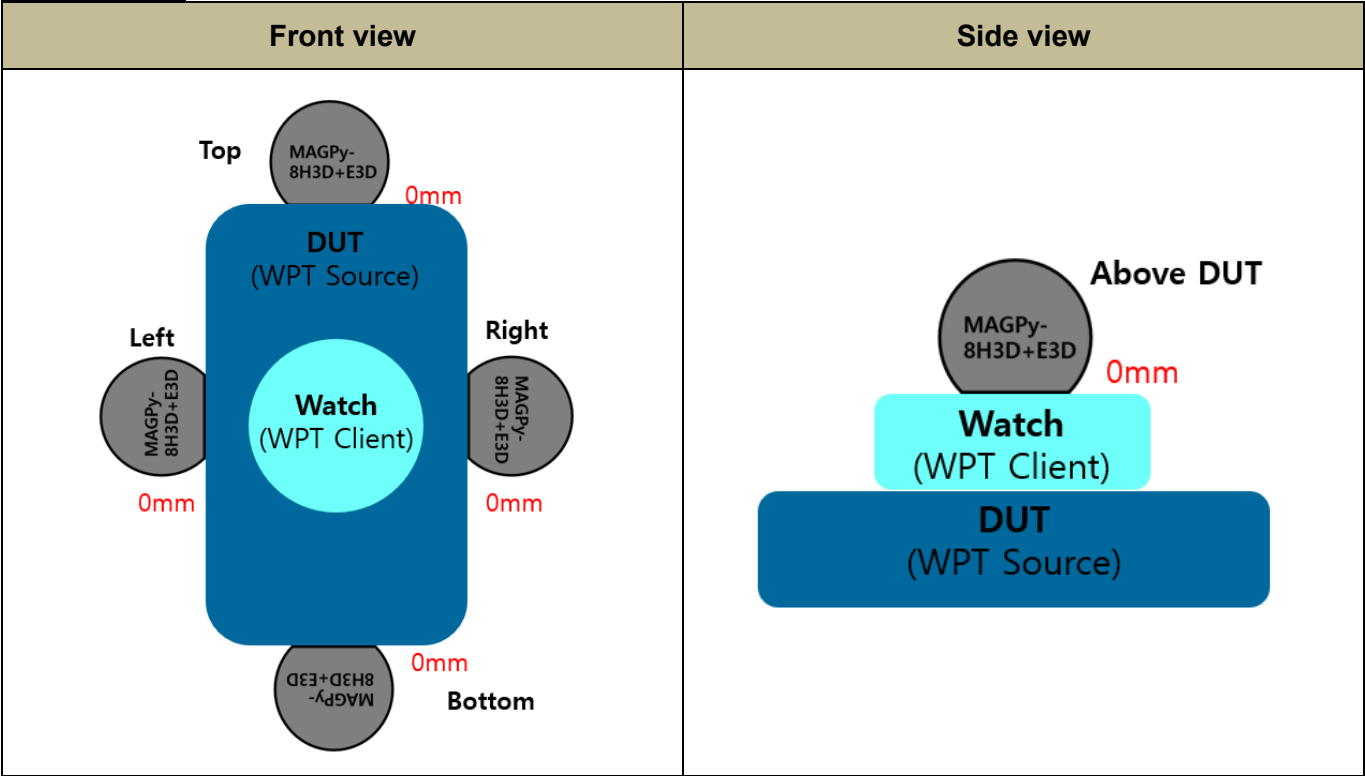
UT to Phone (Horizontal)



DUT to Phone (Vertical)



DUT to Watch



7. RF Exposure Conditions (Test Configurations)

RF Exposure Conditions	Test categories	Mode (Scanning)	Test Configurations	Internal E-field and SAR evaluation distance	DUT test Position	Note
SAR	Exposure from the WPT system during power transfer	Charging mode	WPT Source & WPT Client	0 cm	Above DUT / All edges	1
	Direct exposure from the WPT source	Standby mode	Only WPT Source	0 cm	Above DUT	

Notes:

1. Charging mode SAR tests performed at above DUT and all edges for user/bystander.
2. According to the manufacturer's PIA inquiry guide, we additionally considered the situation where the WPT client is removed during charging, and compensated for this by adding the scaled values in Sec. 9 after measuring Test configuration 1. For more details, please refer to Sec. 9.

8. System verification



System check performed using 85 kHz verification source according to test system and procedure Manufacturer guide(DASY8 Modules WPT System Handbook (SW Module WPT V3.2)). And The deviation of measured values from the target values of calibration report should be less than the expanded uncertainty.

Reference Target SAR Values

The reference SAR values can be obtained from the calibration certificate of system validation dipoles.

Verification Source	Serial No.	Cal. Date	Cal.due date	Target values at 0 mm distance	
				Measured/Extrapolated	Simulated (Local)
				H-field (A/m)	1-g SAR (W/kg)
V-coil350/85	1019	2025-08-15	2026-08-15	220.00	0.00736
V-coil50/400	1014	2025-08-15	2026-08-15	284.00	0.00782

System verification Results**SAR 1 Room**

Date Tested	System Source		H-field (A/m) (Extrapolated at 0mm)		Deviation (±16.6%)	1-g SAR (Simulated at 0mm)			Deviation (±33.9%)	Plot No.
	Type	Serial #	Test results	Target		Test results	Test results	Target		
2026-03-09	V-coil350/85	1019	202.00	220.00	-8.18	6.89	0.00689	0.00736	-6.39	
2026-03-09	V-coil50/400	1014	239.00	284.00	-15.85	6.10	0.00610	0.00782	-21.99	
2026-03-13	V-coil350/85	1019	206.00	220.00	-6.36	6.83	0.00683	0.00736	-7.20	
2026-03-13	V-coil50/400	1014	253.00	284.00	-10.92	6.66	0.00666	0.00782	-14.83	
2026-03-16	V-coil350/85	1019	213.00	220.00	-3.18	7.40	0.00740	0.00736	0.54	
2026-03-16	V-coil50/400	1014	255.00	284.00	-10.21	7.27	0.00727	0.00782	-7.03	
2026-03-20	V-coil350/85	1019	204.00	220.00	-7.27	6.84	0.00684	0.00736	-7.07	
2026-03-20	V-coil50/400	1014	239.00	284.00	-15.85	5.97	0.00597	0.00782	-23.66	1
2026-03-23	V-coil350/85	1019	224.00	220.00	1.82	8.40	0.00840	0.00736	14.13	2
2026-03-23	V-coil50/400	1014	246.00	284.00	-13.38	6.31	0.00631	0.00782	-19.31	
2026-04-27	V-coil350/85	1019	205.00	220.00	-6.82	6.76	0.00676	0.00736	-8.15	
2026-04-27	V-coil50/400	1014	249.00	284.00	-12.32	6.69	0.00669	0.00782	-14.45	

Notes:

The deviation of measured values from the target values of calibration report should be less than the expanded uncertainty

9. H-field and 1-g SAR Results

Folder Close

Mode	Operating Freq. (kHz)	Test Configuration	Simulated Dist. (cm)	H-field strength (A/m)	1-g SAR result (mW/kg)	1-g SAR Result (W/kg)	Plot No.
Charging Mode DUT to Phone (H)	112	Above DUT	0.0	3.690	1.74E-04	0.000000174	
Charging Mode DUT to Phone (H)	112	Below DUT	0.0	3.620	3.11E-04	0.000000311	1
Charging Mode DUT to Phone (H)	112	left edge	0.0	3.090	1.96E-04	0.000000196	
Charging Mode DUT to Phone (H)	112	Right edge	0.0	4.550	2.32E-04	0.000000232	
Charging Mode DUT to Phone (V)	112	Above DUT	0.0	8.130	1.18E-03	0.00000118	2
Charging Mode DUT to Phone (V)	112	Below DUT	0.0	4.070	3.02E-04	0.000000302	
Charging Mode DUT to Phone (V)	112	Top edge	0.0	1.480	7.80E-05	0.000000078	
Charging Mode DUT to Phone (V)	112	Bottom edge	0.0	2.400	1.29E-04	0.000000129	
Charging Mode DUT to Watch	111	Above DUT	0.0	103.000	0.065	0.000065	3
Charging Mode DUT to Watch (Up to 10 W)	112	Above DUT	0.0	61.700	0.0419	0.0000419	
Charging Mode DUT to Watch	112	Top edge	0.0	19.000	0.0111	0.0000111	
Charging Mode DUT to Watch	112	left edge	0.0	11.100	2.02E-03	0.00000202	
Charging Mode DUT to Watch	112	Bottom edge	0.0	9.220	1.34E-03	0.00000134	
Charging Mode DUT to Watch	111	Right edge	0.0	34.400	1.13E-03	0.00000113	
Standby	145	Above DUT	0.0	650.000	2.05	0.00205	4

Folder Open

Mode	Operating Freq. (kHz)	Test Configuration	Simulated Dist. (cm)	H-field strength (A/m)	1-g SAR result (mW/kg)	1-g SAR Result (W/kg)	Plot No.
Charging Mode DUT to Phone (H)	112	Above DUT	0.0	14.900	4.71E-03	0.00000471	
Charging Mode DUT to Phone (H)	112	Below DUT	0.0	70.800	0.104	0.000104	5
Charging Mode DUT to Phone (H)	112	left edge	0.0	0.165	4.66E-06	4.66E-09	
Charging Mode DUT to Phone (H)	112	Right edge	0.0	1.370	4.50E-05	0.000000045	
Charging Mode DUT to Phone (V)	112	Above DUT	0.0	21.900	3.28E-03	0.00000328	6
Charging Mode DUT to Phone (V)	112	Below DUT	0.0	2.530	1.34E-04	0.000000134	
Charging Mode DUT to Phone (V)	112	Top edge	0.0	1.380	7.10E-05	0.000000071	
Charging Mode DUT to Phone (V)	112	left edge	0.0	0.124	2.22E-6	2.22E-09	
Charging Mode DUT to Phone (V)	112	Bottom edge	0.0	2.840	1.90E-04	0.00000019	
Charging Mode DUT to Watch	112	Above DUT	0.0	86.000	0.062	0.000062	7
Charging Mode DUT to Watch (Up to 10 W)	112	Above DUT	0.0	70.200	0.0487	0.0000487	
Charging Mode DUT to Watch	112	Top edge	0.0	1.680	5.10E-05	0.000000051	
Charging Mode DUT to Watch	111	left edge	0.0	0.272	1.53E-05	1.53E-08	
Charging Mode DUT to Watch	112	Bottom edge	0.0	11.600	2.53E-03	0.00000253	
Charging Mode DUT to Watch	111	Right edge	0.0	4.970	1.01E-03	0.00000101	
Standby	145	Above DUT	0.0	578.000	1.84	0.00184	8

Note:

- Numerical modeling was considered for 1-g SAR according to KDB 680106 D01 and manufacturer guide.
- In the case of the watch, Additional test was performed on a model that accepts a higher charging wattage in the worst-case conditions.

Conclusion:

All of the test results are satisfied the FCC limit. (1.6 W/kg for 1-g SAR)

Appendixes

Refer to separated files for the following appendixes.

S-4792147575-S6 FCC Report RFx WPT App A Photos

S-4792147575-S6 FCC Report RFx WPT App B Test Plots

S-4792147575-S6 FCC Report RFx WPT App C System Plots

S-4792147575-S6 FCC Report RFx WPT App D Probe Certi

S-4792147575-S6 FCC Report RFx WPT App E Source Certi

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