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TEST REPORT

of

FCC CFR 47 part1, 1.1307(b), 1.1310

FCC ID: A3LEP-OR900-L

Equipment Under Test	:	WIRELESS CHARGER
Model Name	:	EP-OR900
Variant Model Name(s)	:	-
Applicant	:	Samsung Electronics Co Ltd
Manufacturer	:	Samsung Electronics Co., Ltd.
Date of Receipt	:	2023.03.13
Date of Test(s)	:	2023.03.13 ~ 2023.03.31
Date of Issue	:	2023.03.31

In the configuration tested, the EUT complied with the standards specified above. This test report does not assure KOLAS accreditation.

1) The results of this test report are effective only to the items tested.
2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.
3) This test report cannot be reproduced, except in full, without prior written permission of the Company.

Tested by: Teo Kim

Technical Manager: Jinhyoung Cho

SGS Korea Co., Ltd. Gunpo Laboratory

INDEX

Table of Contents

1. General Information

1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)
- 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- Designation number: KR0150

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1.2. Details of Applicant

Applicant : Samsung Electronics Co Ltd
Address : 19 Chapin Rd., Building D, Pine Brook, New Jersey, United States, 07058
Contact Person : Chun, Jenni
Phone No. : +1 973 808 6375

1.3. Details of Manufacturer

Company : Samsung Electronics Co., Ltd.
Address : Yen Phong 1 Industrial park, Yen Phong District, Bac Ninh Province, VIETNAM
Factory : LUXSHARE-ICT (NGHE AN) LIMITED
Address : NO.18, NO.3 ROAD, NGHE AN VSIP INDUSTRY PARK, HUNG TAY COMMUNE, HUNG NGUYEN DISTRICT, NGHE AN PROVINCE, VIETNAM

1.4. Description of EUT

Kind of Product	WIRELESS CHARGER
Model Name	EP-OR900
Serial Number	L1WPS001-CS-H_1
Power Supply	DC 5 V
Operation Mode	5 W
Frequency Range	143.5 ~ 146.5 ㎑
Antenna Type	Loop Coil Antenna
Antenna Serial Number	13705-T0S0019H-00_1
PCB Version	X1
H/W Version	X1
S/W Version	V1.3
FVIN	N/A

1.5. Declaration of Manufacturer

- The EUT can only operate on Smart Wearable Device.

1.6. Test Equipment List

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Interval	Cal. Due
Electric and Magnetic field Probe analyzer	NARDA	EHP 200AC	170WX91017	Dec. 19, 2022	Annual	Dec. 19, 2023
Anechoic Chamber	SY Corporation	L × W × H (9.6 m × 6.4 m × 6.6 m)	N/A	N.C.R.	N/A	N.C.R.

▶Support Equipment

Description	Manufacturer	Model	FCC ID
Smart Wearable Device	Samsung Electronics Co., Ltd.	SM-R500	A3LSMR500
TRAVEL ADAPTER	RFTECH THAI NGUYEN CO.,LTD	EP-TA800 001	-
Lap top	Dell	Latitude 3510	-

1.7. Summary of Test Results

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 1 Subpart I		
Section	**Test Item(s)**	**Result**
1.1307(b) 1.1310(e)(1)	Electronic Field, Magnetic Field	Complied

1.8. Test Report Revision

Revision	Report Number	Date of Issue	Description
0	F690501-RF-RTL003952	2023.03.31	Initial

1.9. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Electric Field	19.44 %
Magnetic Field	19.86 %

All measurement uncertainty values are shown with a coverage factor of *k*=2 to indicate a 95 % level of confidence.

1.10. Worst Case of Test Configurations

In order to check all kinds of possible configurations, EUT was evaluated with appropriate client and under each charging condition as below table.

Charging mode with client device	Mode	Description
Model: SM-R500 FCC ID: A3LSMR500	5 W	1 % of battery 50 % of battery 99 % of battery
	143.5 ~ 146.5 ㎑	

Mode	Battery	Frequency (㎑)	E-field Strength (V/m)	H-field Strength (A/m)
5 W	1 %	145	**0.398**	**0.166**
	50 %		0.380	0.158
	99 %		0.388	0.162

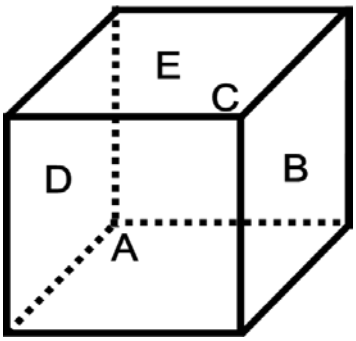
Note;

- EUT was investigated with client device under normal charging condition as above then worst value was only reported.

2. Test Result

2.1. Isotropic Probe Test Setup

The measurement probe (EHP-200AC) is a regular hexahedron and supports 3-axis isotropic probe.



A: Front of measurement probe
B: Right of measurement probe
C: Rear of measurement probe
D: Left of measurement probe
E: Top of measurement probe
***Bottom of measurement probe is not used to measure RF exposure condition owing to connection with a stick.

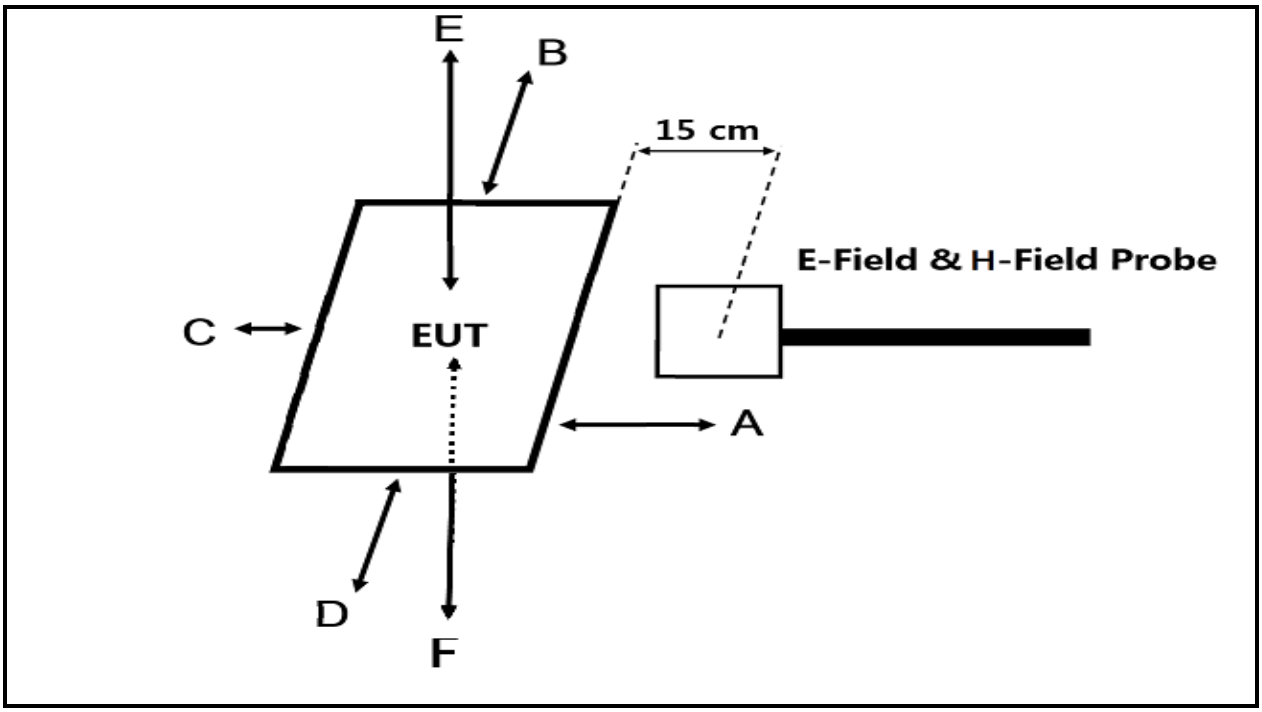
- Measurement isotropic probe was investigated by rotating the probe through various angles for one of the EUT's sides as below.

Measurement Point	**A**	**B**	**C**	**D**	**E**
Direction	Front	Right	Rear	Left	Top
Measurement Point	**A to B**	**B to C**	**C to D**	**D to A**	**N/A**
Direction	Front to Right	Right to Rear	Rear to Left	Left to Front	-
Measurement Point	**A to E**	**B to E**	**C to E**	**D to E**	**N/A**
Direction	Front to Top	Right to Top	Rear to Top	Left to Top	-

Remark;

- When the worst angle among all angles was found, RF exposure measurement should be adjusted from worst angle.
- Worst side of the probe
  E - field : A side, H - field : A side

2.2. EUT Test Setup



2.3. Measurement procedure

a) The RF exposure test was performed in anechoic chamber.
b) The measurement probe was placed at test distance (15, 20 ㎝) which is between the edge of the charger and the geometric center of probe.
c) Measurement was performed on each side of the EUT as described above picture (A, B, C, D, E, F).
d) The EUT was measured according to the dictates of KDB 680106 D01 RF Exposure Wireless Charging Apps v03.

Note;
According to KDB 680106 D01 v03 Section 5, b) 6), additional H-field measurements were perform at the surface of 20 ㎝ to demonstrate the requirements.

2.4. Environmental evaluation and exposure limit according to FCC CFR 47 part 1, 1.1307(b), 1.1310.

§1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter.

Table 1 to § 1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE)

Frequency Range (㎒)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (㎽/㎠)	Average Time (minutes)
(i) Limits for Occupational /Control Exposures				
0.3-3.0	614	1.63	*(100)	≤ 6
3.0-30	1842/f	4.89/f	*(900/f^2)	<6
30-300	61.4	0.163	1.0	<6
300-1 500	-	-	f/300	<6
1 500-100 000	-	-	5	<6
(ii) Limits for General Population/Uncontrolled Exposures				
0.3-1.34	**614**	**1.63**	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f^2)	<30
30-300	27.5	0.073	0.2	<30
300-1 500	-	-	f/1 500	<30
1 500-100 000	-	-	1.0	<30

f = frequency in ㎒. * = Plane wave equivalent power density.

2.5. E and H field strength

Ambient temperature : (23 ± 1) ℃
Relative humidity : 47 % R.H.

2.5.1. E-Field Strength at from the edges surrounding the EUT

Test Condition: 5 W Operating mode with client device (1 % battery status of client device)

Frequency Range (㎑)	EUT sides						Limits (V/m)
	A (V/m)	B (V/m)	C (V/m)	D (V/m)	E (V/m)	F (V/m)	
143.5 ~ 146.5	0.389	0.380	0.380	0.389	**0.398**	0.389	614

Test Condition: Idle mode

Frequency Range (㎑)	EUT sides						Limits (V/m)
	A (V/m)	B (V/m)	C (V/m)	D (V/m)	E (V/m)	F (V/m)	
143.5 ~ 146.5	0.398	0.389	0.389	**0.398**	0.389	0.389	614

2.5.2. H-Field Strength at from the edges surrounding the EUT

Test Condition: 5 W Operating mode with client device (1 % battery status of client device)

Frequency Range (㎑)	Distance (㎝)	EUT sides						Limits (A/m)
		A (A/m)	B (A/m)	C (A/m)	D (A/m)	E (A/m)	F (A/m)	
143.5 ~ 146.5	15	0.163	0.161	0.164	0.159	**0.166**	0.166	1.63
	20					0.164		-

Test Condition: Idle mode

Frequency Range (㎑)	Distance (㎝)	EUT sides						Limits (A/m)
		A (A/m)	B (A/m)	C (A/m)	D (A/m)	E (A/m)	F (A/m)	
143.5 ~ 146.5	15	0.166	**0.171**	0.163	0.166	0.166	0.161	1.63
	20					0.166		-

- End of the Test Report -