SGS Korea Co., Ltd.
4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
Tel. +82 31 428 5700 / Fax. +82 31 427 2370
http://www.sgsgroup.kr

TEST REPORT

of

FCC CFR 47 part1, 1.1307(b), 1.1310

FCC ID: A3LEPOR900

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	:	2022.04.14
Date of Test(s)	:	2022.04.20 ~ 2022.05.03
Date of Issue	:	2022.05.06

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.
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Tested by: Teo Kim

Technical Manager: Jinhyoung Cho

SGS Korea Co., Ltd. Gunpo Laboratory

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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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Phone No. : +82 31 688 0901
Fax No. : +82 31 688 0921

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 : Jenni, Chun
Phone No. : +1 973 808 6361

1.3. Details of Manufacturer

Company : Samsung Electronics Co., Ltd.
Address : Yen Phong 1 Industrial park, Yen Phong District Bac Ninh Province, VIETNAM

1.4. Description of EUT

Kind of Product	WIRELESS CHARGER
Model Name	EP-OR900
Serial Number	R37T4DA00T1RTA
Power Supply	DC 5 V
Operation Mode	5 W
Frequency Range	143.5 ~ 146.5 ㎑
Antenna Type	Loop Coil Antenna
Antenna Serial Number	W2401
PCB Version	EP-OR900 REV0.5, EP-OR900 REV0.6
H/W Version	01
S/W Version	V3.2

1.5. Declaration of Manufacturer

- The antenna can only operate on Smart Wearable Device.
- The EUT is two PCB versions, both of which use the same antenna.

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. 02, 2021	Annual	Dec. 02, 2022
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

Note;

- According to the manufacturer, the EUT is two PCB versions, both of which use the same antenna. So we tested all the versions.

1.8. Test Report Revision

Revision	Report Number	Date of Issue	Description
0	F690501-RF-RTL003097	2022.05.06	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	19.78 %
Magnetic Field	13.66 %

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: A3LEPOR900	5 W	1 % of battery 50 % of battery 99 % of battery
	Ant. 1: 144.5 ~ 147.5 ㎑	

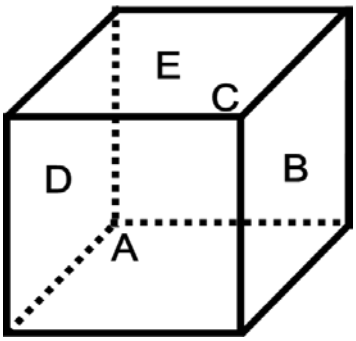
Note;

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

2. Test Result

2.1.1. Isotropic Probe Test Setup

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



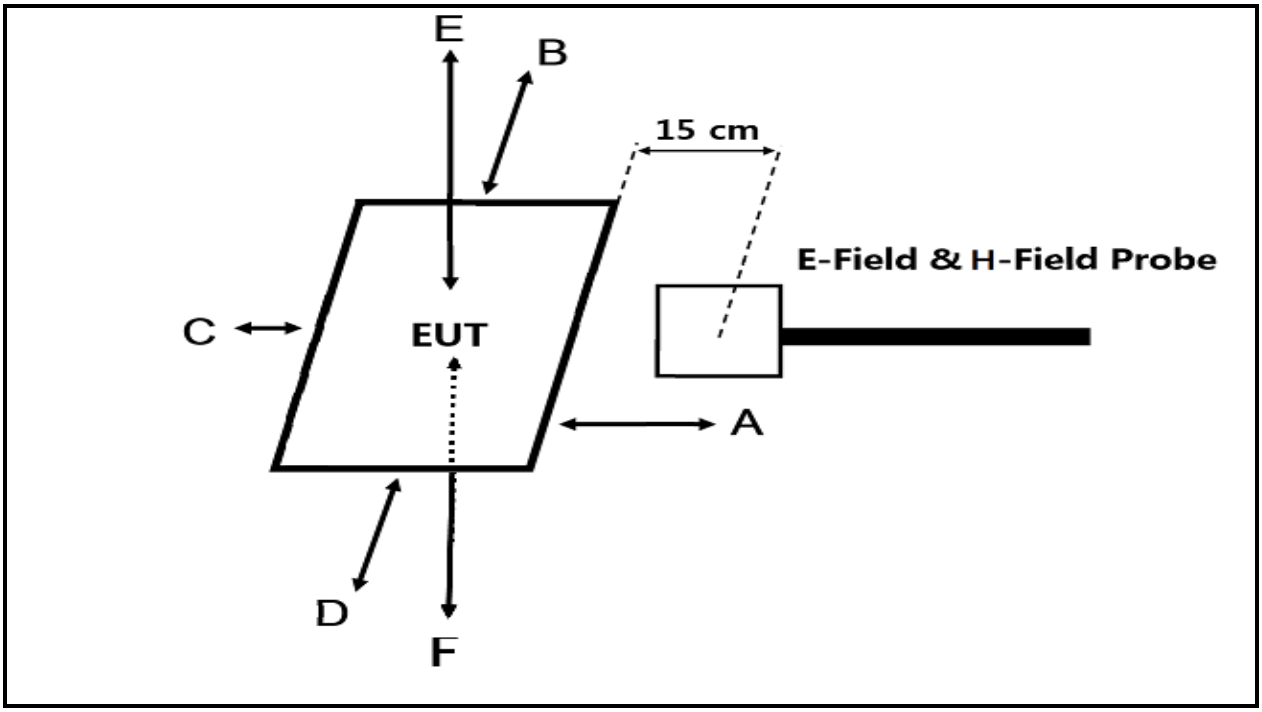
A: Front of measurement probe
B: Right of measurement probe
C: Rear of measurement probe
D: Left of measurement probe
E: Top of measurement probe
***Bottom of measurement probe is not used to measure RF exposure condition owing to connection with a stick.

- At 0 cm distance, 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	-

- When the worst angle among all angles was found, RF exposure measurement should be adjusted from worst angle.

2.1.2. EUT Test Setup



2.1.3. Measurement procedure

a) The RF exposure test was performed in anechoic chamber.
b) The measurement probe was placed at test distance (15 ㎝) 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.

2.3. 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.

2.4. E and H field strength

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

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

- PCB Version: EP-OR900 REV0.5

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

Frequency Range (㎑)	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Probe Position F (V/m)	Limits (V/m)
143.5 ~ 146.5	0.103	**0.131**	0.113	0.082	0.092	0.074	614

- PCB Version: EP-OR900 REV0.6

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

Frequency Range (㎑)	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Probe Position F (V/m)	Limits (V/m)
143.5 ~ 146.5	0.103	**0.142**	0.122	0.099	0.098	0.073	614

Remark;

- Worst Case: one of the several angles was found as **E-side** of isotropic probe.

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

- PCB Version: EP-OR900 REV0.5

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

Frequency Range (㎑)	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Probe Position F (A/m)	Limits (A/m)
143.5 ~ 146.5	0.028	**0.031**	0.029	0.029	0.028	0.028	1.63

- PCB Version: EP-OR900 REV0.6

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

Frequency Range (㎑)	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Probe Position F (A/m)	Limits (A/m)
143.5 ~ 146.5	0.029	0.028	0.028	0.028	0.028	**0.029**	1.63

Remark;

- Worst Case: one of the several angles was found as **B-side** of isotropic probe.

- End of the Test Report -