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: 2BHRF-SM-ETEE100

Equipment Under Test	:	Cradle(ETEE Hybrid Toothbrush)
Model Name	:	SM-ETEE100
Variant Model Name(s)	:	-
Applicant	:	SM LNS
Manufacturer	:	SM LNS
Date of Receipt	:	2024.05.24
Date of Test(s)	:	2024.06.11 ~ 2024.06.21
Date of Issue	:	2024.07.31

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: Dave Kim

Technical Manager: Inho Park

SGS Korea Co., Ltd. Gunpo Laboratory

INDEX

Table of Contents

1. General Information ---------- 3

2. Test Result ---------- 6

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

All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx.

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

1.2. Details of Applicant

Applicant : SM LNS
Address : 501, 33, Gangnam-daero 112-gil, Gangnam-gu, Seoul, Republic of Korea
Contact Person : Lim Seung-mo
Phone No. : +82 01-6243-9309

1.3. Details of Manufacturer

Company : Same as applicant
Address : Same as applicant

1.4. Description of EUT

Kind of Product	Cradle(ETEE Hybrid Toothbrush)
Model Name	SM-ETEE100
Serial Number	Radiated Sample(190 ㎑, 210 ㎑): 001, 002 Normal Sample: 003
Power Supply	DC 5 V
Operation Mode	5 W
Frequency Range	190 ㎑, 210 ㎑ (±5 ㎑)
Antenna Type	Coil Antenna
Antenna Serial Number	N/A
PCB Version	Rev V3.
H/W Version	2.0
S/W Version	3.1

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	Apr. 03, 2024	Annual	Apr. 03, 2025
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
ETEE Hybrid Toothbrush	SM LNS	-	-
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-RTL005193	2024.06.27	Initial
1	F690501-RF-RTL005193-1	2024.07.31	Modifying FCC ID

1.9. Measurement Uncertainty

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

Parameter	Uncertainty
Electric Field	19.34 %
Magnetic Field	19.60 %

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
ETEE Hybrid Toothbrush	5 W	1 % of battery 50 % of battery 99 % of battery
	190 ㎑, 210 ㎑	

Mode	Frequency (㎑)	Battery	E-field Strength (V/m)	H-field Strength (A/m)
5 W	190	1 %	**3.669**	**0.163**
		50%	3.542	0.156
		99 %	3.528	0.153
	210	1 %	**1.450**	**0.157**
		50 %	1.339	0.156
		99 %	1.446	0.153

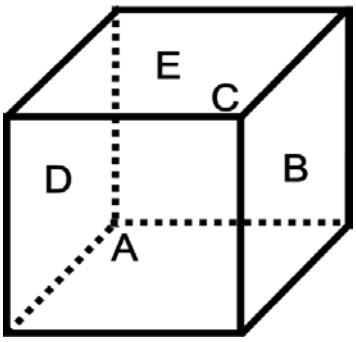
Note;

- 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.

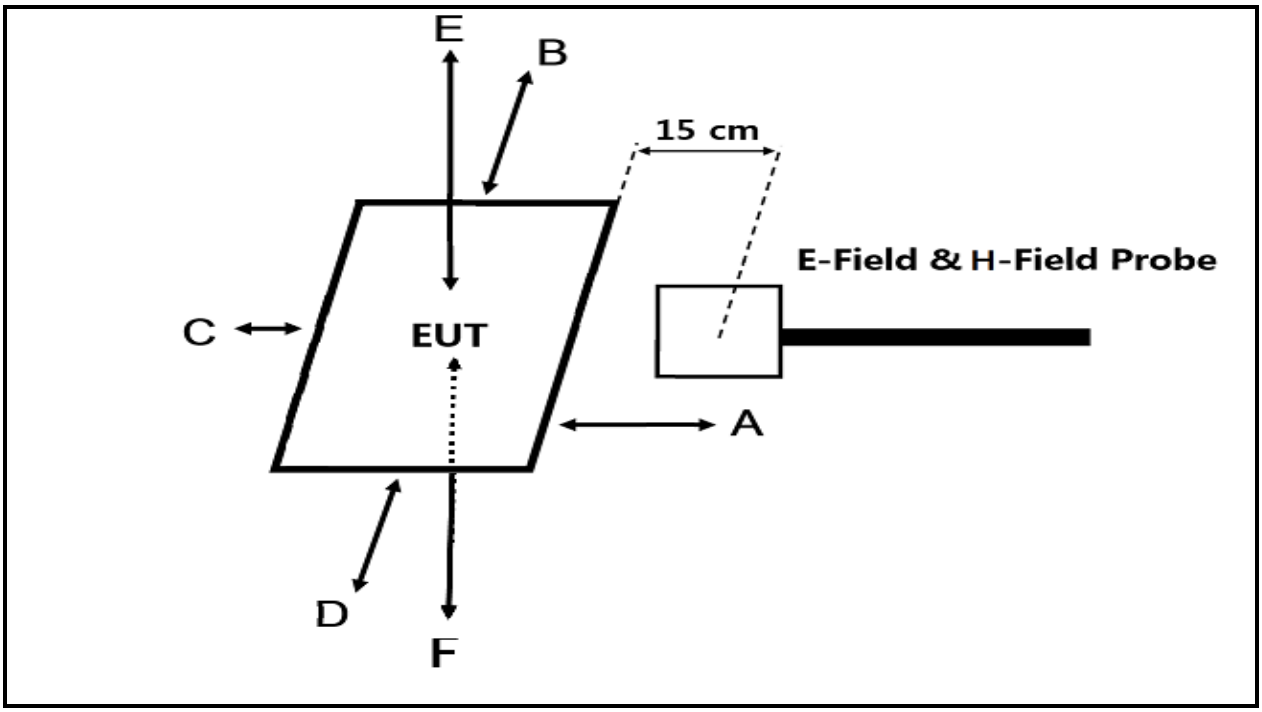
Measurement Point	**A**	**B**	**C**	**D**	**E**
Direction	Front	Right	Rear	Left	Top
Measurement Point	**A to B**	**B to C**	**C to D**	**D to A**	**N/A**
Direction	Front to Right	Right to Rear	Rear to Left	Left to Front	-
Measurement Point	**A to E**	**B to E**	**C to E**	**D to E**	**N/A**
Direction	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 Case
E-field: One of the several angles was found as **Side D** of isotropic probe.
H-field: One of the several angles was found as **Side E** of isotropic probe

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 Wireless Power Transfer v 04.

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)	
185 ~ 195	0.918	0.897	0.782	0.700	**3.669**	1.728	614
205 ~ 215	0.415	0.393	0.434	0.408	**1.450**	0.389	

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)	
185 ~ 195	0.404	0.371	0.410	**0.463**	0.431	0.417	614
205 ~ 215	0.365	0.362	0.362	**0.383**	0.381	0.371	

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)	
185 ~ 195	15	0.157	0.154	0.153	0.156	**0.163**	0.157	1.63
	20					0.150		-
205 ~ 215	15	**0.157**	0.153	0.154	0.153	0.152	0.151	1.63
	20					0.150		-

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)	
185 ~ 195	15	0.156	0.157	0.151	0.153	**0.157**	0.150	1.63
	20					0.150		-
205 ~ 215	15	0.154	0.156	**0.157**	0.150	0.152	0.150	1.63
	20					0.147		-

- End of the Test Report -