

TEST REPORT

of

FCC CFR 47 part1, 1.1307(b), 1.1310

FCC ID: ZID-AP301-PT10

Equipment Under Test : PHONE TOASTER
Model Name : AP301-PT10
Variant Model Name(s) : -
Applicant : SK NETWORKS CO., LTD.
Manufacturer : Devatec Co., Ltd.
Date of Receipt : 2020.11.02
Date of Test(s) : 2020.11.18 ~ 2020.12.09
Date of Issue : 2020.12.15

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

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- 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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Report Number: F690501-RF-RTL001474

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1. General Information

1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

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- Designation number: KR0150

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1.2. Details of Applicant

Applicant : SK NETWORKS CO., LTD.

Address : 4, Maesan-ro, 52beon-gil, Paldal-gu, Suwon-si, Gyeonggi-do, South Korea, 16460

Contact Person : Lee, Jong-geun

Phone No. : +82 70 7800 3670

1.3. Details of Manufacturer

Company : Devated Co., Ltd.

Address : 15, Bodojin-ro 30beon-gil, Seo-gu, Incheon, Republic of Korea, 22847

1.4. Description of EUT

Kind of Product	PHONE TOASTER
Model Name	AP301-PT10
Power Supply	DC 12 V
Operation Mode	15 W (WPT)
Frequency Range	110.1 ~ 150 kHz (WPT) 2 402 MHz ~ 2 480 MHz (Bluetooth)
H/W Version	1.0
S/W Version	1.0

1.5. Test Equipment List

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Interval	Cal. Due
Electric and Magnetic field Probe analyzer	NARDA	EHP 200AC	170WX91017	Nov. 16, 2020	Annual	Nov. 16, 2021
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
Samsung Mobile Phone	Samsung Electronics Co., Ltd.	SM-G970	A3LSMG970U
SWITCHING ADAPTER	Shenzhen Sorghum red Electronics Technology Co., Ltd.	G024A120200ZZUV	-

1.6. Test Report Revision

Revision	Report Number	Date of Issue	Description
0	F690501-RF-RTL001474	2020.12.15	Initial

2. RF Exposure Evaluation

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

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time
(A) Limits for Occupational/Controlled Exposure				
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
(B) Limits for General Population/Uncontrolled Exposure				
<u>0.3-1.34</u>	<u>614</u>	<u>1.63</u>	*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/1500	30
<u>1 500-100 000</u>	-	-	<u>1.0</u>	<u>30</u>

2.1.1. Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

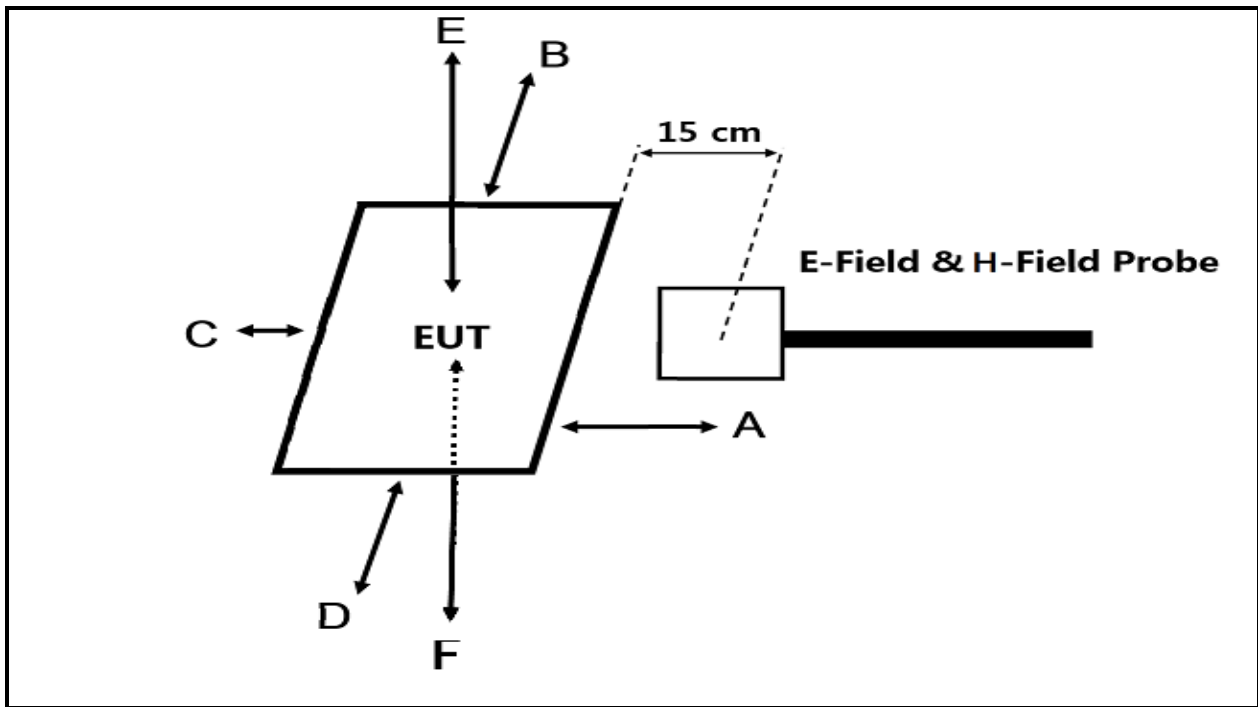
G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

2.2. Test Setup



2.3. Measurement procedure

- The RF exposure test was performed in anechoic chamber.
- The measurement probe was placed at test distance (15 cm) which is between the edge of the charger and the geometric center of probe.
- The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E, F) were completed.
- The EUT was measured according to the dictates of KDB 680106 D01 RF Exposure Wireless Charging Apps v03.

2.4. E and H field strength

Ambient temperature : $(23 \pm 1) ^\circ\text{C}$
Relative humidity : 47 % R.H.

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

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

Frequency Range (kHz)	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)
110.1 ~ 150	0.996	1.089	0.891	<u>1.130</u>	0.684	0.677	614

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

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

Frequency Range (kHz)	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)
110.1 ~ 150	0.142	0.142	0.138	0.140	<u>0.147</u>	0.146	1.63

2.5. RF Exposure Evaluation

Test Item : RF Exposure Evaluation Data

Test Mode : Normal Operation

2.5.1. Output Power into Antenna & RF Exposure Evaluation Distance

Bluetooth

- Maximum tune up tolerance

Frequency Range (MHz)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 cm (mW/cm ²)	Limits (mW/cm ²)
2 402 ~ 2 480	-5.1	-3.01	0.000 031	1.0

Note;

- The power density Pd (5th column) at a distance of 20 cm calculated from the Friis transmission formula is far below the limit of 1 mW/cm².
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
- This equipment should be installed and operated with minimum 20 cm between the radiator and your body.
- The antenna gain of this transmitter is less than 6 dB i and must not be collocated or operating in conjunction with any other antenna or transmitter unless authorized to do so by the FCC.
- According to KDB 447498 D01 RF Exposure Guidance 4.1.

- End of the Test Report -