

On your side



TEST REPORT

RF Exposure certification of HLW-TNHP1.

APPLICANT

LG Electronics Inc.

REPORT NO.

HCT-SR-1908-FI002

DATE OF ISSUE

Aug 05, 2019

HCT Co., Ltd.

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TEST REPORT

FCC SAR Test for
certification

REPORT NO.
HCT-SR-1908-FI002

DATE OF ISSUE
Aug 05, 2019

Applicant	LG Electronics European Shared Service Center B.V. Krijgsman 1, 1186 DM Amstelveen, The Netherlands
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Equipment Type	Wireless Charger
Model Name	HLW-TNHP1
Additional Model Name	N/A

FCC ID	BEJ-HLWTNHP1
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Date of Test	Jun 30, 2019 ~ Jun 31, 2019
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FCC Rule Part(s)	CFR 52.1091 FCC KDB 680106 D01 v03
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This device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in FCC KDB procedures and had been tested in accordance with the measurement procedures specified in FCC KDB procedures.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.

Tested by
Min young Kim

Technical Manager
Yun Jeang Heo

This report only responds to the tested sample and may not be reproduced, except in full, without written approval of the HCT Co., Ltd.

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	Aug.05, 2019	Initial Release

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1. Test Regulations

The tests were performed according to the following regulations:

Test Method	- FCC KDB Publication 680106 D01 v03
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2. Test Location

2.1 Test Laboratory

Company Name	HCT Co., Ltd.
Address	74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA
Telephone	031-645-6300
Fax.	031-645-6401

3. Information of the EUT

3.1 General Information of the EUT

Model Name	HLW-TNHP1
Additional Model Name	N/A
Equipment Type	Wireless Charger
FCC ID	BEJ-HLWTNHP1
Applicant	LG Electronics Inc.
Power Supply	12 Vdc / 3.0A
Frequency Range	146.6 kHz, 147.7 kHz
Output Power	5 W

4. RF Exposure evaluation

Human exposure to RF emissions from mobile devices (47 CFR §2.1091) may be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and/or power density, as appropriate,

since exposures are assumed to occur at distances of 20 cm or more from persons.

According to KDB 680106 D01 RF Exposure Wireless Charging Apps, RF exposure evaluation should be conducted assuming a user separation distance of 15 cm for devices designed for typical desktop applications. E and H field strength measurements or numerical modelling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 15cm measured from the center of the probe(s) to the edge of the device

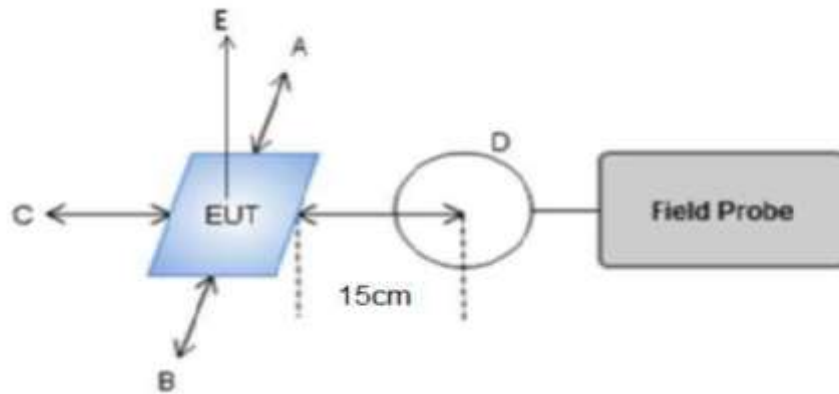
5. Limits For General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW /cm ²)	Averaging Time (minutes)
0.3 ~ 3.0	614	1.63	(100)*	30
3.0 ~ 30	824/f	2.19/f	(180/f ₂)*	30
30 ~ 300	27.5	0.073	0.2	30
300~1500	-	-	f/1500	30
1500~100000	-	-	1.0	30

6. Equipment List

No.	Instrument	Model No.	Manufacture	Serial No.	Calibration interval	Due to Calibration
☒	EM Field Meter	SMP2	Wave control	18SN0913	2 years	2020-07-11
☒	Isotropic EM Field Probe	WP400	Wave control	18WP100472	2 years	2020-07-11

6. Test Setup



A	B	C	D	E
Top Side	Bottom side	Left Side	Right Side	Front Side(Screen)

Since the E / H field on the rear side can not be measured while the phone is loaded on the wireless Power transmitter charger pad, the measurement side is Front (screen) Top, Bottom, Right Side, Left Side. Please refer to the setup photo for detailed location information.

7. MPE Evaluation Results

The EUT does comply with item 5 KDB 680106 D01 RF Exposure Wireless Charging App v03.

(1) Power transfer frequency is less than 1 MHz.

Conform

(2) Output power from each primary coil is less than or equal to 15 watts.

Conform

(3) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.

Conform

(4) Client device is placed directly in contact with the transmitter.

Conform

(5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).

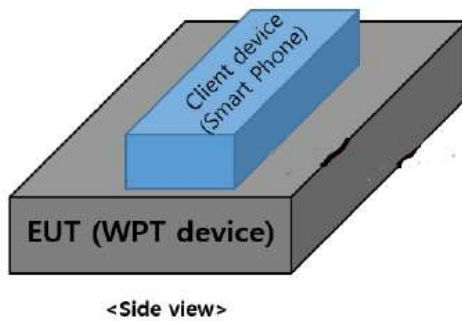
Conform

(6) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the E side surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

Conform

7.1 WPT Module only

Electric Field Strength Measurement

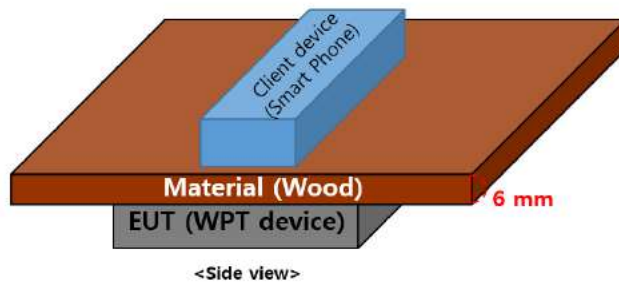


Electric Field Strength Measurements (V/m)	Distance (cm)	10 % Battery charging load mode (V/m)	50 % Battery charging load mode (V/m)	90% Battery charging load mode (V/m)	Limit (V/m)
Front(E)	15	4.07	3.97	3.99	614
Front(E)	20	1.96	1.97	1.98	614
Right (D)	15	0.81	0.83	0.79	614
Left C)	15	0.79	0.8	0.81	614
Bottom(B)	15	0.90	0.92	0.93	614
Top(A)	15	0.86	0.88	0.85	614

Magnetic Field Strength Measurement

Magnetic Field Strength Measurements (A/m)	Distance (cm)	10 % Battery charging load mode (A/m)	50 % Battery charging load mode (A/m)	90% Battery charging load mode (A/m)	Limit (A/m)
Front(E)	15	0.060	0.040	0.040	1.63
Front(E)	20	0.030	0.020	0.020	1.63
Right (D)	15	0.010	0.010	0.010	1.63
Left C)	15	0.010	0.020	0.010	1.63
Bottom(B)	15	0.020	0.030	0.030	1.63
Top(A)	15	0.020	0.010	0.020	1.63

7.2 WPT Module with Wood Cover material



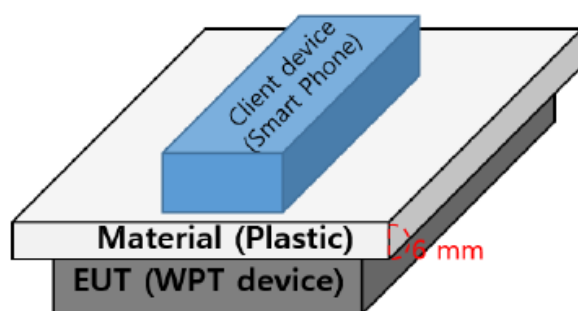
Electric Field Strength Measurement

Electric Field Strength Measurements (V/m)	Distance (cm)	10 % Battery charging load mode (V/m)	50 % Battery charging load mode (V/m)	90% Battery charging load mode (V/m)	Limit (V/m)
Front(E)	15	7.29	7.26	7.31	614
Front(E)	20	5.10	5.08	5.12	614
Right (D)	15	3.60	3.57	3.59	614
Left C)	15	4.33	4.31	4.28	614
Bottom(B)	15	3.17	3.12	3.10	614
Top(A)	15	3.10	3.12	3.15	614

Magnetic Field Strength Measurement

Magnetic Field Strength Measurements (A/m)	Distance (cm)	10 % Battery charging load mode (A/m)	50 % Battery charging load mode (A/m)	90% Battery charging load mode (A/m)	Limit (A/m)
Front(E)	15	0.164	0.170	0.178	1.63
Front(E)	20	0.084	0.090	0.093	1.63
Right (D)	15	0.030	0.040	0.047	1.63
Left C)	15	0.100	0.110	0.120	1.63
Bottom(B)	15	0.060	0.080	0.050	1.63
Top(A)	15	0.080	0.070	0.070	1.63

7.3 WPT Module with Plastic Cover material



<Side view>

Electric Field Strength Measurement

Electric Field Strength Measurements (V/m)	Distance (cm)	10 % Battery charging load mode (V/m)	50 % Battery charging load mode (V/m)	90% Battery charging load mode (V/m)	Limit (V/m)
Front(E)	15	2.2	2.2	2.2	614
Front(E)	20	1.12	1.12	1.12	614
Right (D)	15	1.08	1.08	1.08	614
Left C)	15	1.07	1.07	1.07	614
Bottom(B)	15	0.94	0.94	0.94	614
Top(A)	15	0.92	0.92	0.92	614

Magnetic Field Strength Measurement

Magnetic Field Strength Measurements (A/m)	Distance (cm)	10 % Battery charging load mode (A/m)	50 % Battery charging load mode (A/m)	90% Battery charging load mode (A/m)	Limit (A/m)
Front(E)	15	0.040	0.040	0.050	1.63
Front(E)	20	0.020	0.020	0.030	1.63
Right (D)	15	0.030	0.020	0.030	1.63
Left C)	15	0.020	0.020	0.010	1.63
Bottom(B)	15	0.010	0.020	0.020	1.63
Top(A)	15	0.020	0.010	0.010	1.63