

FCC MPE REPORT

Certification

Applicant Name:
LG Electronics Inc.

Address:
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Date of Issue:
February 11, 2019

Location:
HCT CO., LTD.,
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Report No.: HCT-RF-1902-FI007

FCC ID: BEJ-WK7

APPLICANT: LG Electronics Inc.

Model: WK7

EUT Type: ThinQ Speaker

The measurements shown in this report were made in accordance with the procedures specified in §2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998, 21 U.S. C. 853(a)



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Manager of Telecommunication testing center

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Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-1902-FI007	February 11, 2019	- First Approval Report

RF Exposure Statement

1. LIMITS

According to §1.1310 and §2.1091 RF exposure is calculated.

(B) Limits for General Population/Uncontrolled Exposures

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
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 - 1500.....	f/1500	30
1500 - 100.000.....	1.0	30

F = frequency in MHz

* = Plane-wave equivalent power density

2. MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance

$$S = PG/4\pi R^2$$

S = Power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

3. RESULTS

3-1. Bluetooth

Average output Power at antenna input terminal	7.00	dBm
Average output Power at antenna input terminal	5.012	mW
Prediction distance	20.000	cm
Prediction frequency	2402 ~ 2480	MHz
Antenna Gain(typical)	-3.88	dBi
Antenna Gain(numeric)	0.409	-
Power density at prediction frequency(S)	0.000408	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

2.1091

EIRP	3.12 (dBm)
ERP	0.97 (dBm)
ERP	0.001 (W)
ERP Limit	3.00 (W)
MARGIN	33.80 (dB)

3-2. Bluetooth LE

Average output Power at antenna input terminal	7.00	dBm
Average output Power at antenna input terminal	5.012	mW
Prediction distance	20.000	cm
Prediction frequency	2402 ~ 2480	MHz
Antenna Gain(typical)	-3.88	dBi
Antenna Gain(numeric)	0.409	-
Power density at prediction frequency(S)	0.000408	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

2.1091

EIRP	3.12 (dBm)
ERP	0.97 (dBm)
ERP	0.001 (W)
ERP Limit	3.00 (W)
MARGIN	33.80 (dB)

3-3. DTS

Average output Power at antenna input terminal	18.00	dBm
Average output Power at antenna input terminal	63.096	mW
Prediction distance	20.000	cm
Prediction frequency	2 412 ~ 2 472	MHz
Antenna Gain(typical)	-3.88	dBi
Antenna Gain(numeric)	0.409	-
Power density at prediction frequency(S)	0.005137	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

2.1091

EIRP	14.12 (dBm)
ERP	11.97 (dBm)
ERP	0.016 (W)
ERP Limit	3.00 (W)
MARGIN	22.80 (dB)

3-4. 5 GHz Band(UNII 1)

Average output Power at antenna input terminal	15.00	dBm
Average output Power at antenna input terminal	31.623	mW
Prediction distance	20.000	cm
Prediction frequency	5 150 ~ 5 250	MHz
Antenna Gain(typical)	-0.60	dBi
Antenna Gain(numeric)	0.871	-
Power density at prediction frequency(S)	0.005479	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

2.1091

EIRP	14.40 (dBm)
ERP	12.25 (dBm)
ERP	0.017 (W)
ERP Limit	3.00 (W)
MARGIN	22.52 (dB)

3-5 5 GHz Band(UNII 3)

Average output Power at antenna input terminal	16.00	dBm
Average output Power at antenna input terminal	39.811	mW
Prediction distance	20.000	cm
Prediction frequency	5 725 ~ 5 850	MHz
Antenna Gain(typical)	0.87	dBi
Antenna Gain(numeric)	1.222	-
Power density at prediction frequency(S)	0.009677	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

2.1091

EIRP	16.87 (dBm)
ERP	14.72 (dBm)
ERP	0.030 (W)
ERP Limit	3.00 (W)
MARGIN	20.05 (dB)

-> **Worst Case: Simultaneous MPE 20cm is**

->Simultaneous MPE 20cm is WLAN(2.4 GHz) (0.005137/1.0) + Bluetooth (0.000408/1.0) = 0.005545 < 1

->Simultaneous MPE 20cm is + WLAN(5 GHz) (0.009677/1.0) + Bluetooth (0.000408/1.0) = 0.010085 < 1