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TEST REPORT

FCC MPE Test for WC1NP8

Class II Permissive Change

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-RF-2004-FI010

DATE OF ISSUE
April 21, 2020

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Additional Model
-

Applicant	LG Electronics Inc. 222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, Korea
EUT Type **Model Name**	RF Module WC1NP8
FCC ID	BEJ-WC1NP8

This test results were applied only to the test methods required by the standard.

Tested by
Jin Gwan Lee

(signature)

Technical Manager
Jong Seok Lee

(signature)

(signature)

HCT CO., LTD.
Soo Chan Lee
SooChan Lee / CEO

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	April 21, 2020	Initial Release

Engineering Statement:
The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance

RF Exposure Statement

1. Limit

According to § 1.1310, § 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 to the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

3. RESULTS

Bluetooth

Max Peak output Power at antenna input terminal	9.074	dBm
Max Peak output Power at antenna input terminal	8.080	mW
Prediction distance	20.00	cm
Prediction frequency	2480.000	MHz
Antenna Gain(typical)	-3.880	dBi
Antenna Gain(numeric)	0.409	-
Power density at prediction frequency(S)	0.000658	mW/cm^2
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm^2

DTS_MIMO

Max Peak output Power at antenna input terminal	25.82	dBm
Max Peak output Power at antenna input terminal	381.944	mW
Prediction distance	20.000	cm
Prediction frequency	2437.000	MHz
Antenna Gain(typical)	0.740	dBi
Antenna Gain(numeric)	1.186	-
Power density at prediction frequency(S)	0.090101	mW/cm^2
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm^2

UNII_ MIMO

Max Peak output Power at antenna input terminal	20.000	dBm
Max Peak output Power at antenna input terminal	100.000	mW
Prediction distance	20.000	cm
Prediction frequency	5785.000	MHz
Antenna Gain(typical)	2.540	dBi
Antenna Gain(numeric)	1.795	-
Power density at prediction frequency(S)	0.035705	mW/cm^2
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm^2

Simultaneous transmission operations

1. The power density level at 20 cm is **0.000658 mW/cm^2**, which is below the uncontrolled exposure limit of **1.0 mW/cm^2** at **Bluetooth.**

2. The power density level at 20 cm is **0.090101 mW/cm^2**, which is below the uncontrolled exposure limit of **1.0 mW/cm^2** at **WLAN(2.4 GHz).**

3. The power density level at 20 cm is **0.035705 mW/cm^2**, which is below the uncontrolled exposure limit of **1.0 mW/cm^2** at **WLAN(5 GHz).**

->Simultaneous MPE 20cm is (0.000658/1.0) + (0.090101/1.0) + (0.035705/1.0) = 0.126464 < 1

* The Worst case Bluetooth : 9.074 dBm, WLAN(2.4 GHz): 25.820 dBm, WLAN(5 GHz): 20.000 dBm is Higest Power.