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TEST REPORT

FCC MPE Test for LAN5900WR

Certification

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-RF-1912-FC022-R2

DATE OF ISSUE
January 07, 2020

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FCC ID
BEJLAN5900WR

Applicant	**LG Electronics Inc.** 10, Magokjungang 10-ro, Gangseo-gu, Seoul, Republic of Korea
Eut Type	RADIO – CAR
Model Name	LAN5900WR

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.
This test results were applied only to the test methods required by the standard.

Tested by
Se Wook Park (signature)

Technical Manager
Jong Seok Lee (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	December 18, 2019	Initial Release
1	December 27, 2019	Added the note on page 4 Revised the BT Average output power on Page 5
2	January 07, 2020	Revised the BT Average output power on Page 5

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

Note

: The front design of LAN5900WR is changed by applied RENAULT vehicle variant without PCB and circuit design

3. RESULTS

3-1. Bluetooth

Average output Power at antenna input terminal	2.00	dBm
Average output Power at antenna input terminal	1.585	mW
Prediction distance	20.00	cm
Prediction frequency	2402 – 2480	MHz
Antenna Gain(typical)	2.80	dBi
Antenna Gain(numeric)	1.905	-
Power density at prediction frequency(S)	0.0006	mW/cm^2
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm^2

2.1091

EIRP	4.8	(dBm)
ERP	2.65	(dBm)
ERP	0.002	(W)
ERP Limit	3.00	(W)
MARGIN	32.12	(dB)

3-2. DTS

Average output Power at antenna input terminal	18.00	dBm
Average output Power at antenna input terminal	63.10	mW
Prediction distance	20.00	cm
Prediction frequency	2412 – 2462	MHz
Antenna Gain(typical)	2.200	dBi
Antenna Gain(numeric)	1.660	-
Power density at prediction frequency(S)	0.0208	mW/cm^2
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm^2

2.1091

EIRP	20.2	(dBm)
ERP	18.05	(dBm)
ERP	0.064	(W)
ERP Limit	3.00	(W)
MARGIN	16.72	(dB)

3-3. UNII

Average output Power at antenna input terminal	14.00	dBm
Average output Power at antenna input terminal	25.12	mW
Prediction distance	20.00	cm
Prediction frequency	5180 – 5825	MHz
Antenna Gain(typical)	4.60	dBi
Antenna Gain(numeric)	2.884	-
Power density at prediction frequency(S)	0.0144	mW/cm^2
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm^2

2.1091

EIRP	18.6	(dBm)
ERP	16.45	(dBm)
ERP	0.044	(W)
ERP Limit	3.00	(W)
MARGIN	18.32	(dB)