



TEST REPORT

FCC MPE Test for LGSBWAC03
Certification

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-RF-2007-FI004-R1

DATE OF ISSUE
13 July 2020

Tested by
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Accredited by KOLAS, Republic of KOREA

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Additional Model

-

Applicant

LG Electronics Inc.

222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, 451-713, Korea

**Eut Type
Model Name**

RF Module
LGSBWAC03

FCC ID

BEJLGSBWAC03

Date of Receipt

May 21, 2020

Frequency range

2 402 MHz ~ 2 480 MHz (Bluetooth)
2 412 MHz ~ 2 462 MHz (WLAN)
5 180 MHz ~ 5 825 MHz (UNII)

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.

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	July 08, 2020	Initial Release
1	July 13, 2020	A2LA mark removed & Typo revised (Page 1, 2, 3)

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

This laboratory is not accredited for the test results marked *.

The above Test Report is the accredited test result by (KS Q) ISO/IEC 17025 AND KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA.(HCT Accreditation No.: KT197)

* The report shall not be reproduced except in full(only partly) without approval of the laboratory.

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

3-1. Bluetooth

Average output Power at antenna input terminal	10.00	dBm
Average output Power at antenna input terminal	10.00	mW
Prediction distance	20.00	cm
Prediction frequency	2402 – 2480	MHz
Antenna Gain(typical)	1.190	dBi
Antenna Gain(numeric)	1.315	-
Power density at prediction frequency(S)	0.0026	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

2.1091

EIRP	11.19 (dBm)
ERP	9.04 (dBm)
ERP	0.008 (W)
ERP Limit	3.00 (W)
MARGIN	25.73 (dB)

3-1. BT LE

Average output Power at antenna input terminal	9.500	dBm
Average output Power at antenna input terminal	8.913	mW
Prediction distance	20.00	cm
Prediction frequency	2402 – 2480	MHz
Antenna Gain(typical)	1.190	dBi
Antenna Gain(numeric)	1.315	-
Power density at prediction frequency(S)	0.0023	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

2.1091

EIRP	10.69 (dBm)
ERP	8.54 (dBm)
ERP	0.007 (W)
ERP Limit	3.00 (W)
MARGIN	26.23 (dB)

3-1. DTS

Average output Power at antenna input terminal	21.00	dBm
Average output Power at antenna input terminal	125.893	mW
Prediction distance	20.00	cm
Prediction frequency	2412 – 2472	MHz
Antenna Gain(typical)	3.380	dBi
Antenna Gain(numeric)	2.178	-
Power density at prediction frequency(S)	0.0545	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

2.1091

EIRP	24.38 (dBm)
ERP	22.23 (dBm)
ERP	0.167 (W)
ERP Limit	3.00 (W)
MARGIN	12.54 (dB)

3-1. UNII

Average output Power at antenna input terminal	19.00	dBm
Average output Power at antenna input terminal	79.433	mW
Prediction distance	20.00	cm
Prediction frequency	5180 – 5825	MHz
Antenna Gain(typical)	4.230	dBi
Antenna Gain(numeric)	2.649	-
Power density at prediction frequency(S)	0.0419	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

2.1091

EIRP	23.23 (dBm)
ERP	21.08 (dBm)
ERP	0.128 (W)
ERP Limit	3.00 (W)
MARGIN	13.69 (dB)

Worst Case: Simultaneous MPE 20cm is

$$2.4G \text{ WLAN } (0.0545) + BT (0.0026) = 0.0571 < 1$$