

TEST REPORT

FCC/ISED MPE Test for LGSBWAC23
Certification

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-RF-2207-FI009

DATE OF ISSUE
July 20, 2022

Tested by
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Technical Manager
Se Wook Park



Accredited by KOLAS, Republic of KOREA

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CUSTOMER SECRET



TEST REPORT

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LGSBWAC23

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Additional Model

-

Applicant

LG Electronics Inc.

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

Eut Type Model Name

RF Module
LGSBWAC23

FCC ID

BEJLGSBWAC23

Frequency range

2 402 MHz ~ 2 480 MHz (Bluetooth)
2 412 MHz ~ 2 472 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 20, 2022	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

KOLAS Statement:

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. (KOLAS Accreditation No. KT197)

If this report is required to confirmation of authenticity, please contact to www.hct.co.kr

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

Max Average output Power at antenna input terminal	10.00	dBm
Max Average output Power at antenna input terminal	10.00	mW
Prediction distance	20.00	cm
Prediction frequency	2402 – 2480	MHz
Antenna Gain(typical)	1.12	dBi
Antenna Gain(numeric)	1.294	-
Power density at prediction frequency(S)	0.0026	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

2.1091

EIRP	11.12	(dBm)
ERP	8.97	(dBm)
ERP	0.008	(W)
ERP Limit	3.00	(W)
MARGIN	25.80	(dB)

3-1. BT LE

Max Average output Power at antenna input terminal	10.00	dBm
Max Average output Power at antenna input terminal	10.00	mW
Prediction distance	20.00	cm
Prediction frequency	2402 – 2480	MHz
Antenna Gain(typical)	1.12	dBi
Antenna Gain(numeric)	1.294	-
Power density at prediction frequency(S)	0.0026	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

2.1091

EIRP	11.12	(dBm)
ERP	8.97	(dBm)
ERP	0.008	(W)
ERP Limit	3.00	(W)
MARGIN	25.80	(dB)

3-1. DTS_MIMO

Max Average output Power at antenna input terminal	23.00	dBm
Max Average output Power at antenna input terminal	199.53	mW
Prediction distance	20.00	cm
Prediction frequency	2412 – 2472	MHz
Directional Gain (typical)	1.71	dBi
Directional Gain (numeric)	1.483	-
Power density at prediction frequency(S)	0.0588	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

2.1091

EIRP	24.71	(dBm)
ERP	22.56	(dBm)
ERP	0.180	(W)
ERP Limit	3.00	(W)
MARGIN	12.21	(dB)

3-1. UNII_MIMO

Max Average output Power at antenna input terminal	19.00	dBm
Max Average output Power at antenna input terminal	79.43	mW
Prediction distance	20.00	cm
Prediction frequency	5180 – 5825	MHz
Directional Gain (typical)	4.51	dBi
Directional Gain (numeric)	2.825	-
Power density at prediction frequency(S)	0.0446	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

2.1091

EIRP	23.51	(dBm)
ERP	21.36	(dBm)
ERP	0.137	(W)
ERP Limit	3.00	(W)
MARGIN	13.41	(dB)

Worst Case: Simultaneous MPE 20cm is

2.4G MIMO WLAN (0.0558) + BT (0.0026) = 0.0584 < 1