

# TEST REPORT

FCC MPE Test for LGSBWAC24  
Certification

**APPLICANT**  
LG Electronics Inc.

**REPORT NO.**  
HCT-RF-2408-FC006

**DATE OF ISSUE**  
August 9, 2024

**Tested by**  
Kyung Jun Woo



**Technical Manager**  
Jong Seok Lee



Accredited by KOLAS, Republic of KOREA

**HCT CO., LTD.**  
*Bongjai Huh*  
BongJai Huh / CEO

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August 09, 2024

**Applicant**      **LG Electronics Inc.**  
222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do 17709, Republic of Korea

**Product Name**      RF Module  
**Model Name**      LGSBWAC24

**FCC ID**      BEJLGSBWAC24

**Date of Test**      July 16, 2024 ~ August 09, 2024

**Frequency range**      2 402 MHz - 2 480 MHz (Bluetooth)  
2 412 MHz - 2 472 MHz (WLAN)  
5 180 MHz - 5 825 MHz (UNII)

**Test Standard Used**      1.1310, § 2.1091

**Brand**      LG

**Location of Test**       Permanent Testing Lab     On Site Testing Lab  
(Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)

**Test Results**      PASS

## REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	August 09, 2024	Initial Release

## Notice

### Content

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.

The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.

The test results have only been applied with the test methods required by the standard(s).

The laboratory is not accredited for the test results marked \*.

Information provided by the applicant is marked \*\*.

Test results provided by external providers are marked \*\*\*.

When confirmation of authenticity of this test report is required, please contact [www.hct.co.kr](http://www.hct.co.kr)

This test report provides test result(s) under the scope accredited by the Korea Laboratory Accreditation Scheme (KOLAS), which signed the ILAC-MRA.

(KOLAS (KS Q ISO/IEC 17025) Accreditation No. KT197)

## RF Exposure Statement

### 1. Limit

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

(i) Limits for Occupational/Controlled Exposure

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
0.3 - 3.00.....	614	1.63	<sup>(a)</sup> (100)	6
3.00 - 30.....	8242/f	4.89/f	<sup>(a)</sup> (900/ f <sup>2</sup> )	6
30 - 300.....	61.4	0.163	1.0	6
300 - 1500.....	.....	.....	f/300	6
1500 - 100.000.....	.....	.....	5	6

(ii) Limits for General Population/Uncontrolled Exposure

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
0.3 - 1.34.....	614	1.63	<sup>(a)</sup> (100)	30
1.34 - 30.....	824/f	2.19/f	<sup>(a)</sup> (180/ f <sup>2</sup> )	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

<sup>(a)</sup> = 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)	-1.010	dBi
Antenna Gain(numeric)	0.793	-
Power density at prediction frequency( S)	0.0016	mW/cm <sup>2</sup>
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm <sup>2</sup>

#### 3-2. 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)	-1.010	dBi
Antenna Gain(numeric)	0.793	-
Power density at prediction frequency( S)	0.0016	mW/cm <sup>2</sup>
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm <sup>2</sup>

#### 3-3. DTS

Maximum output Power at antenna input terminal	22.00	dBm
Maximum output Power at antenna input terminal	158.49	mW
Prediction distance	20.00	cm
Prediction frequency	2412 – 2472	MHz
Antenna Gain(typical)	4.930	dBi
Antenna Gain(numeric)	3.112	-
Power density at prediction frequency( S)	0.0981	mW/cm <sup>2</sup>
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm <sup>2</sup>

**3-4. UNII**

Max Average output Power at antenna input terminal	18.00	dBm
Max Average output Power at antenna input terminal	63.10	mW
Prediction distance	20.00	cm
Prediction frequency	5180 – 5825	MHz
Directional Gain (typical)	4.770	dBi
Directional Gain (numeric)	2.999	-
Power density at prediction frequency( S)	0.0376	mW/cm <sup>2</sup>
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm <sup>2</sup>

**Simultaneous transmission operations**

Worst Case: Simultaneous MPE 20cm is

$$\sum_{i=1}^n \frac{\text{Power density } i}{\text{Limit } i} < 1$$

->Simultaneous MPE is

5G WLAN (0.0376) + BT (0.0016) = 0.0392 < 1

2.4G WLAN (0.0981) + BT (0.0016) = 0.0997 < 1