

# TEST REPORT

FCC SAR Exclusion Test for LCWB-009  
Certification

**APPLICANT**  
LG Electronics Inc.

**REPORT NO.**  
HCT-SR-2412-FC005

**DATE OF ISSUE**  
December 6, 2024

**Tested by**  
Jee Ill Lee



**Technical Manager**  
Yun Jeang Heo



Accredited by KOLAS, Republic of KOREA

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

# TEST REPORT

REPORT NO.  
HCT-SR-2412-FC005

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Dec. 06, 2024

Applicant

**LG Electronics Inc.**  
170, Seongsan Pachong-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do  
51533, Republic of Korea

EUT Type  
Model Name

RF Module  
LCWB-009

FCC ID

BEJ-LCWB009

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)

Maximum Output Power

Bluetooth : 7 dBm  
2.4 GHz WiFi : 19 dBm

Modulation type

CCK/DSSS/OFDM/GFSK

FCC Classification

Digital Transmission System (DTS)

FCC Rule Part(s)

47CFR §2.1093

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	Dec. 06, 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 / ISED 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)

This test report provides test result(s) under the lab's valid Scope of Accreditation by A2LA (American Association for Laboratory Accreditation), signatory of the ILAC-MRA.

(A2LA (ISO/IEC 17025) Certificate No. 4114.01)

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## 1. EUT DESCRIPTION

Model Name		LCWB-009
EUT Type		RF Module
Power Supply		DC 3.3 V / 5.0V
Frequency Range	Bluetooth	2 402 MHz – 2 480 MHz
	2.4 GHz WiFi	2 412 MHz – 2 462 MHz
Max. RF Output Power	Bluetooth	Target Power : 6.0 dBm Tolerance + 1.0 dBm = 7.0 dBm
	2.4 GHz WiFi	Target Power : 17.0 dBm Tolerance + 2.0 dBm = 19.0 dBm
Modulation Type	Bluetooth	GFSK
	2.4 GHz WiFi	CCK/DSSS: 802.11b OFDM: 802.11g, 802.11n(HT20)
Bluetooth Version		5.2
Number of Channels	Bluetooth	40 Channels
	2.4 GHz WiFi	11 Channels
Antenna Specification		Antenna type: PCB Pattern Antenna
		Peak Gain: -1.05 dBi
EUT Serial Number		Conduction: BC2B0232261A
		Radiation: BC2B023222C2

## 2. TEST METHODOLOGY

### 2.1 FCC

Limb SAR and Body SAR Test Exclusions Applied \_2.4 GHz WiFi, Bluetooth 5.2 LE

According to the FCC KDB 447498 D01 v06 section 4.3.1, for 100 MHz to 6 GHz and test separation distances  $\leq 50$  mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

a) For 100 MHz to 6 GHz and test separation distances  $\leq 50$  mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR, and  $\leq 7.5$  for 10-g extremity SAR, where

$$\frac{\text{Max Power of Channel(mW)}}{\text{Test Separation Distance (mm)}} * \sqrt{\text{Frequency(GHz)}} \leq 3.0 \text{ For 1g SAR, } 7.5. \text{ for 10g SAR}$$

where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

#### 1. Bluetooth 5.2 LE Calculation Result:

Tx frequency range: 2 402 MHz ~ 2 480 MHz

Body SAR Consideration Min. test separation distance: 50 mm

Maximum Output Power: 7.0 dBm (5.01 mW)

The Highest RF channel frequency: 2 480 MHz

#### For Body SAR Exclusion

Mode	Frequency	Maximum Allowed Power	Separation Distance	$\leq 3.0$ for 1 g SAR
	[MHz]	[mW]	[mm]	
Bluetooth 5.2 LE	2 480	5.01	50	0.16

Based on the maximum output power of Bluetooth 5.2 LE and antenna to use separation distance, Bluetooth 5.2 Body SAR were not required.

## 2. 2.4 GHz WiFi Calculation Result:

Tx frequency range: 2 412 MHz ~ 2 462 MHz

Body SAR Consideration Min. test separation distance: 50 mm

Maximum Output Power: 19.0 dBm (79.43 mW)

The Highest RF channel frequency: 2 462 MHz

### For Body SAR Exclusion

Mode	Frequency	Maximum Allowed Power	Separation Distance	$\leq 3.0$ for 1 g SAR
	[MHz]	[mW]	[mm]	
2.4 GHz WiFi	2 462	79.43	50	2.49

Based on the maximum output power of 2.4 GHz WiFi and antenna to use separation distance,  
2.4 GHz WiFi Body SAR were not required.