

TEST REPORT

FCC SAR Exclusion Report for MR25GA Certification

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-SR-2407-FC003-R1

DATE OF ISSUE
July 26, 2024

Technical Manager
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(signature) 

Accredited by KOLAS, Republic of KOREA

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<h1 style="margin: 0;">TEST REPORT</h1> <p style="margin: 0;">FCCBT LE Test for MR25GA</p>	<p>REPORT NO. HCT-SR-2407-FC003-R1</p> <p>DATE OF ISSUE July 26, 2024</p>
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Applicant **LG Electronics Inc.**
222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do 17709, Republic of Korea

EUT Type	Magic Remote
Model Name	MR25GA
FCC ID	BEJMR25GA
Location of Test	<input checked="" type="checkbox"/> Permanent Testing Lab <input type="checkbox"/> On Site Testing Lab (Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA)
Maximum Output Power	8 dBm (EIRP)
Modulation type	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.

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REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	July 16, 2024	Initial Release
1	July 26, 2024	Revised pages 5, 6

Notice

Content

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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)

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1. EUT DESCRIPTION

Model Name	MR25GA
EUT Type	Magic Remote
Power Supply	DC 3.0 V
Frequency Range	2 402 MHz – 2 480 MHz
Max. RF Output Power	Conducted power 4 dBm +/- 1.62 dB + peak. Antenna gain 2.38 dBi = 8 dBm (EIRP)
Modulation Type	GFSK
Bluetooth Version	4.2
Number of Channels	40 Channels
Antenna Specification	Antenna type: PCB Antenna
PMN (Product Marketing Number)	Magic Remote
EUT Serial Number	Conduction: MR25GA_C3
	Radiation: MR25GA_R2
Manufacturer	222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do 17709, Republic of Korea

2. TEST METHODOLOGY

2.1 FCC

Limb SAR and Body SAR Test Exclusions Applied _Bluetooth 4.2 LE

Since this product is a remote control product, it is used by most users in the hand, so Limb SAR standard is applied. In addition, since this product is capable of voice recognition by the user, an exception evaluation is applied at a distance of 10 mm from the Body SAR.

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

Calculation Result:

Tx frequency range: 2 402 MHz ~ 2 480 MHz

Limb SAR Consideration Min. test separation distance: 5 mm

Body SAR Consideration Min. test separation distance: 10 mm

Maximum Output Power: 5.62 dBm (4 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 4.2 LE	2 480	4	10	0.6

For Limb SAR exclusion

Mode	Frequency	Maximum Allowed Power	Separation Distance	\leq 7.5 for 10 g SAR
	[MHz]	[mW]	[mm]	
Bluetooth 4.2 LE	2 480	4	5	1.3

Based on the maximum output power of Bluetooth 4.2 LE and antenna to use separation distance, Bluetooth 4.2 LE Limb SAR and Body SAR were not required.