

TEST REPORT

FCC MPE Test for LGSWNAX61
Certification

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-RF-2509-FC001

DATE OF ISSUE
September 3, 2025

Tested by
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Accredited by KOLAS, Republic of KOREA

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DATE OF ISSUE
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Applicant	LG Electronics Inc. 222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do 17709, Republic of Korea
Product Name	RF Module
Model Name	LGSWNAX61
FCC ID	2BO3LLGSWNAX61
Date of Test	July 21, 2025 ~ August 29, 2025
Frequency range	2 402 MHz ~ 2 480 MHz (Bluetooth, BT LE) 2 412 MHz ~ 2 472 MHz (WLAN) 5 180 MHz ~ 5 825 MHz (UNII) 5 955 MHz ~ 7 115 MHz (UNII 6G)
Test Standard Used	§ 1.1310, § 2.1091
Test Results	PASS
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)
Brand	LG

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	September 03, 2025	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

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.

(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	^(a) (100)	30
1.34 - 30.....	824/f	2.19/f	^(a) (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

^(a) = 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)	-2.730	dBi
Antenna Gain(numeric)	0.533	-
Power density at prediction frequency(S)	0.0011	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

3-2. Bluetooth LE

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)	-2.730	dBi
Antenna Gain(numeric)	0.533	-
Power density at prediction frequency(S)	0.0011	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

3-3. DTS SISO ANT1

Average output Power at antenna input terminal	17.00	dBm
Average output Power at antenna input terminal	50.119	mW
Prediction distance	20.00	cm
Prediction frequency	2412 ~ 2472	MHz
Antenna Gain(typical)	0.490	dBi
Antenna Gain(numeric)	1.119	-
Power density at prediction frequency(S)	0.0112	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

3-4. DTS SISO ANT2

Average output Power at antenna input terminal	17.00	dBm
Average output Power at antenna input terminal	50.119	mW
Prediction distance	20.00	cm
Prediction frequency	2412 ~ 2472	MHz
Antenna Gain(typical)	0.690	dBi
Antenna Gain(numeric)	1.172	-
Power density at prediction frequency(S)	0.0117	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

3-5. DTS MIMO

Average output Power at antenna input terminal	20.00	dBm
Average output Power at antenna input terminal	100.000	mW
Prediction distance	20.00	cm
Prediction frequency	2412 ~ 2472	MHz
Antenna Gain(typical)	3.600	dBi
Antenna Gain(numeric)	2.291	-
Power density at prediction frequency(S)	0.0456	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

3-6. UNII 5 GHz SISO ANT1

Average output Power at antenna input terminal	15.00	dBm
Average output Power at antenna input terminal	31.623	mW
Prediction distance	20.00	cm
Prediction frequency	5180 ~ 5825	MHz
Antenna Gain(typical)	2.250	dBi
Antenna Gain(numeric)	1.679	-
Power density at prediction frequency(S)	0.0106	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

3-7. UNII 5 GHz SISO ANT2

Average output Power at antenna input terminal	15.00	dBm
Average output Power at antenna input terminal	31.623	mW
Prediction distance	20.00	cm
Prediction frequency	5180 ~ 5825	MHz
Antenna Gain(typical)	3.110	dBi
Antenna Gain(numeric)	2.046	-
Power density at prediction frequency(S)	0.0129	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

3-8. UNII 5 GHz MIMO

Average output Power at antenna input terminal	18.00	dBm
Average output Power at antenna input terminal	63.096	mW
Prediction distance	20.00	cm
Prediction frequency	5180 ~ 5825	MHz
Antenna Gain(typical)	5.700	dBi
Antenna Gain(numeric)	3.715	-
Power density at prediction frequency(S)	0.0466	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

3-9. UNII 6 GHz SISO ANT1

Average output Power at antenna input terminal	7.00	dBm
Average output Power at antenna input terminal	5.012	mW
Prediction distance	20.00	cm
Prediction frequency	5 955 ~ 7 115	MHz
Antenna Gain(typical)	2.650	dBi
Antenna Gain(numeric)	1.841	-
Power density at prediction frequency(S)	0.0018	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

3-10. UNII 6 GHz SISO ANT2

Average output Power at antenna input terminal	7.50	dBm
Average output Power at antenna input terminal	5.623	mW
Prediction distance	20.00	cm
Prediction frequency	5 955 ~ 7 115	MHz
Antenna Gain(typical)	3.400	dBi
Antenna Gain(numeric)	2.188	-
Power density at prediction frequency(S)	0.0024	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

3-11. UNII 6 GHz MIMO

Average output Power at antenna input terminal	10.50	dBm
Average output Power at antenna input terminal	11.220	mW
Prediction distance	20.00	cm
Prediction frequency	5 955 ~ 7 115	MHz
Antenna Gain(typical)	5.820	dBi
Antenna Gain(numeric)	3.819	-
Power density at prediction frequency(S)	0.0085	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

Simultaneous transmission operations

Worst Case: Simultaneous MPE 20cm is

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

Simultaneous MPE

- 5 GHz WLAN SISO ANT1 (0.0106) + 2.4 GHz WLAN SISO ANT2 (0.0117) + BT LE SISO (0.0011) = 0.0234 < 1
- 6 GHz WLAN SISO ANT1 (0.0018) + 2.4 GHz WLAN SISO ANT2 (0.0117) + BT LE SISO (0.0011) = 0.0146 < 1
- 2.4 GHz WLAN MIMO (0.0456) + BT LE SISO (0.0011) = 0.0467 < 1
- 5 GHz WLAN MIMO (0.0466) + BT LE SISO (0.0011) = 0.0477 < 1
- 6 GHz WLAN MIMO (0.0085) + BT LE SISO (0.0011) = 0.0096 < 1