

LG Electronics USA, Inc.

MPE ASSESSMENT REPORT

Report Type:

FCC Part §2.1091, §2.1093 and §1.1307(b) assessment report

Model:

MVEF1337#, MVEF1323#

REPORT NUMBER:

231100877SHA-002

ISSUE DATE:

December 20, 2023

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TEST REPORT

Applicant: LG Electronics USA, Inc.
111 Sylvan Avenue North Building, Englewood Cliffs, New Jersey, United States

Manufacturing Site: LG Electronics Tianjin Appliances Co., Ltd.
No.9 Jinwei Road, Bei Chen Dist., Tianjin 300402, People's Republic of China

Product Name: Microwave oven

Type/Model: MVEF1337#, MVEF1323#
("#" represents "A to Z" or "0 to 9" or blank, according to exterior design, color, cooking utensil or market.)

FCC ID: BEJV1332TAF

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:

47CFR Part 18 (2018)
FCC/OET MP-5 (1986)
KDB447498 D01 General RF Exposure Guidance v06
FCC Part2.1093 FCC Part1.1307(b), 1.1310, 2.1091

PREPARED BY:



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Reviewer
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Revision History

Report No.	Version	Description	Issued Date
231100877SHA-002	Rev. 01	Initial issue of report	December 20, 2023

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Microwave oven
Type/Model:	MVEF1337#, MVEF1323# (# represents "A to Z" or "0 to 9" or blank, according to exterior design, color, cooking utensil or market.)
Brand Name:	LG
Description of EUT:	The EUT is a Microwave oven which have series models, and they are electric identical. The model MVEF133F, MVEF1323F were chosen to testing.
Rating:	AC 120V 60Hz Output: 1000W
Frequency:	2450MHz
EUT type:	☒ Table top ☐ Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	November 25, 2023
Date of test:	November 25, 2023 ~ December 18, 2023

1.2 Technical Specification

Contains FCC ID: BEJ-LCWB001

Frequency Band:	2400MHz ~ 2483.5MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n(HT20)
Type of Modulation:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n(HT20): OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Operating Frequency:	2412MHz to 2462MHz for IEEE 802.11b/g/n(HT20)
Channel Number:	11 Channels for 802.11b, 802.11g, 802.11n(HT20)
Channel Separation:	5 MHz
Antenna Information:	PCB antenna: 1.5dBi

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1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN0175
	IC Registration Lab CAB identifier.: CN0014
	VCCI Registration Lab Registration No.: R-14243, G-10845, C-14723, T-12252
	A2LA Accreditation Lab Certificate Number: 3309.02

2 Radiation Hazard Measurement

Test result: Pass

2.1 Limit

A maximum of 1.0mW/cm² is allowed in accordance with the applicable FCC standards. Hence, microwave leakage in the as-received condition with the oven door closed was below the maximum allowed.

2.2 Radiation Hazard (Health) Requirement

For ISM equipment operating on higher frequencies (above 900 MHz), in particular microwave ovens and medical diathermy equipment, radiation leakage should be measured in accordance with the current Bureau of Radiological Health standard, employing an electromagnetic radiation monitor. This test is made primarily to assure that personnel will not be exposed to radiation hazard in testing the equipment. Equipment submitted to the FCC which have radiation leakage apparently in excess of BRH limit will be reported to BRH for their evaluation. See FCC Bulletin OST 56, "Questions and Answers about Biological Effects and Potential Hazards of Radiofrequency Radiation".

2.3 Measurement Procedure

The EUT was set-up according to the FCC MP-5 and FCC Part 18 for Radiation Hazard Measurement. The measurement was using a microwave leakage meter to measure the Radiation leakage in the as-received condition with the oven door closed. A 1000ml water load in a beaker was located in the center of the oven and the Microwave Oven was set to maximum power. While the oven operating, the microwave meter will check the leakage and then record the maximum leakage.

2.4 MPE Assessment Limit

Mobile device exposure for standalone operations:

According to §1.1310, the limit 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)
Limits For General Population/Uncontrolled Exposure				
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

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2.3 Test Results

For WIFI module :

Power density (S) is calculated according to the formula:

$$S = PG / (4\pi R^2)$$

Where S = power density in mW/cm²

P = Radiated transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

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Working Mode	Frequency band	Power		Antenna Gain		R	S	Limits
	(MHz)	dBm	mW	dBi	(Numeric)	(cm)	(mW/cm ²)	(mW/cm ²)
2.4G WIFI	2412-2462	20.0	100	1.5	1.413	20	0.0281	1

Note: 1 mW/cm² from 1.310 Table 1.

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For microwave oven

There was no microwave leakage exceeding a power level of 0.15mW/cm² observed at any point 5cm or more from the external surface of the oven.

WIF module and microwave oven can simultaneous transmitting, so the maximum rate of MPE is,
 $0.15/1+0.0281/1=0.1781<1.0$.

*****END*****