

Electrolux Home Products, Inc.

MPE ASSESSMENT REPORT

Report Type:

FCC MPE assessment report

Model:

EHAW4010AG, EHAW6020AG

REPORT NUMBER:

210900634SHA-003

ISSUE DATE:

Feb 14, 2022

DOCUMENT CONTROL NUMBER:

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Applicant: Electrolux Home Products, Inc.
10200 David Taylor Drive, Charlotte, NC 28262, United States

Manufacturer: Electrolux Home Products, Inc.
10200 David Taylor Drive, Charlotte, NC 28262, United States

FCC ID: 2A3EWEHAW4

SUMMARY:

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

KDB447498 D01 General RF Exposure Guidance v06

FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

PREPARED BY:

Project Engineer

Teddy Yin

REVIEWED BY:

Reviewer

Daniel Zhao

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Revision History

Report No.	Version	Description	Issued Date
210900634SHA-003	Rev. 01	Initial issue of report	Feb 14, 2022

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Air Purifier
Type/Model/PMN/HVIN:	EHAW4010AG, EHAW6020AG
Description of EUT:	EUT is an Air Purifier. Both models are same except for the model's name and the size of the enclosure. So EHAW6020AG was tested as representative. EUT supports WIFI and RFID function.
Rating:	120V~, 60Hz
Category of EUT:	Class B
EUT type:	<input type="checkbox"/> Table top <input checked="" type="checkbox"/> Floor standing
Software Version:	V02.20
Hardware Version:	1V0
Sample No.:	0211022-06-002
Sample received date:	Apr 2, 2021
Date of test:	Apr 2~Dec 20, 2021

1.2 Technical Specification

WIFI

Frequency Range:	2412MHz ~ 2462MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20, IEEE 802.11n-HT40
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) IEEE 802.11n-HT40: OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Channel Number:	11 Channels for 802.11b, 802.11g and 802.11n(HT20) 7 Channels for 802.11n(HT40)
Data Rate:	IEEE 802.11b: Up to 11 Mbps IEEE 802.11g: Up to 54 Mbps IEEE 802.11n-HT20: Up to MCS7 IEEE 802.11n-HT40: Up to MCS7
Channel Separation:	5 MHz
Antenna Information:	1.5dBi, PCB antenna

TEST REPORT

RFID

Operation Frequency:	13.56MHz
Type of Modulation:	ASK
Product Type:	<input type="checkbox"/> Mobile <input type="checkbox"/> Portable <input checked="" type="checkbox"/> Fix Location
Channel Number:	1
Antenna Designation:	Integral PCB antenna, non-user removable
Gain of Antenna:	0dBi max (Declared by manufacture)

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.: CN0051
	VCCI Registration Lab Registration No.: R-14243, G-10845, C-14723, T-12252
	A2LA Accreditation Lab Certificate Number: 3309.02

2 MPE Assessment

Test result: Pass

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (uT)	Equivalent plane wave power density S_{eq} (W/m ²)
0-1 Hz	-	$3,2 \times 10^4$	4×10^4	-
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	-
8-25 Hz	10 000	4 000/f	5 000/f	-
0,025-0,8 kHz	250/f	4/f	5/f	-
0,8-3 kHz	250/f	5	6,25	-
3-150 kHz	87	5	6,25	-
0,15-1 MHz	87	0,73/f	0,92/f	-
1-10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	-
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375 f^{1/2}$	$0,0037 f^{1/2}$	$0,0046 f^{1/2}$	f/200
2-300 GHz	61	0,16	0,20	10

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0**

2.2 Assessment Results

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)

WIFI

As we can see from the test report 210900634SHA-001:

The maximum radiated power = 20.26dBm = 106.17 mW;

Here R is chosen to be 20cm,

$$S1 = PG / (4\pi R^2) = 106.17 / (4 * 3.14 * 20 * 20) = 0.0211 \text{ mW/cm}^2$$

RFID

As we can see from the test report 210900634SHA-002:

The maximum radiated power = 59.6-95.3=-35.7dBm = 0.00027 mW;

Here R is chosen to be 20cm,

$$S2 = PG / (4\pi R^2) = 0.00027 / (4 * 3.14 * 20 * 20) = 0.000000054 \text{ mW/cm}^2$$

$$S = S1 + S2 = 0.0211 + 0.000000054 = 0.0211 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$$

Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.

To ensure compliance, operations at closer than this distance is not recommended.

***** END *****