

RF Exposure Evaluation Report

Report No.: RWAO202400020C

Applicant: Whirlpool Microwave Products Development Limited.

Address: 17th Fl, Elite Centre, 22 Hung To Rd, Kwun Tong, Hong Kong

Product Name: Household microwave oven

Product Model: YWMMF7330R

Multiple Models: N/A

Trade Mark: Whirlpool

FCC ID: PR4FLUSHP2WHY

Standards: 47 CFR §1.1310
KDB 447498 D01 General RF Exposure Guidance v06

Test Date: 2024-03-29

Test Result: Complied

Report Date: 2024-04-01

Reviewed by:

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Revision History

Version No.	Issued Date	Description
00	2024-04-01	Original

Contents

1	General Information	4
1.1	Client Information	4
1.2	Product Description of EUT	4
1.3	Laboratory Location.....	4
2	RF Exposure Evaluation	5
2.1	Standard	5
2.2	Result.....	6

1 General Information

1.1 Client Information

Applicant:	Whirlpool Microwave Products Development Limited.
Address:	17th Fl, Elite Centre, 22 Hung To Rd, Kwun Tong, Hong Kong
Manufacturer:	Whirlpool Microwave Products Development Limited.
Address:	17th Fl, Elite Centre, 22 Hung To Rd, Kwun Tong, Hong Kong

1.2 Product Description of EUT

The EUT is Microwave Oven operate on 2450MHz ISM frequency Band.

Sample Serial Number	2G-1 (assigned by WATC)
Sample Received Date	2024-01-10
Sample Status	Good Condition
Operating Frequency Range	2450MHz±50.0 MHz
Power Supply	AC 120V/60Hz
Microwave Rated Input Power [#]	1500W
Microwave Rated Output Power [#]	900W
Modification	Sample No Modification by the test lab

1.3 Laboratory Location

World Alliance Testing & Certification (Shenzhen) Co., Ltd

No. 1002, East Block, Laobing Building, Xingye Road 3012, Xixiang street, Bao'an District, Shenzhen, Guangdong, People's Republic of China

Tel: +86-755-29691511, Email: qa@watc.com.cn

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 463912, the FCC Designation No. : CN5040.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0160.

2 RF Exposure Evaluation

2.1 Standard

According to §1.1310, radio frequency devices shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission’s guideline.

Table 1 to § 1.1310(e)(1)–Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3–3.0	614	1.63	*(100)	≤6
3.0–30	1842/f	4.89/f	*(900/f ²)	<6
30–300	61.4	0.163	1.0	<6
300–1,500			f/300	<6
1,500–100,000			5	<6
(ii) 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
300–1,500			f/1500	<30
1,500–100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

Calculation formula:

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

2.2 Result

Radio	Frequency (MHz)	Maximum Conducted Power including Tune-up Tolerance		Antenna Gain		Min. test separation distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)	Verdict
		(dBm)	(mW)	(dBi)	(numeric)				
2.4G WLAN	2412-2462	22.0	158.49	4.2	2.63	20	0.0829	1.0	Pass
BT	2402-2480	3.0	2.0	4.2	2.63	20	0.0005	1.0	Pass
BLE	2402-2480	0	1.0	4.2	2.63	20	0.0010	1.0	Pass

Note: The device contains a certified Wi-Fi module (Model: RIGEL, FCC ID: 2AC7Z-RIGEL), the Maximum Conducted Power including Tune-up Tolerance and Antenna Gain in above table was refer from the module report.

For microwave oven, refer report RWAO202400020A, the maximum tested microwave leakage is 0.12mW/cm², the limit is 1.0mW/cm²

Simultaneously transmit Consideration:

Microwave Oven + Wi-Fi module

The ratio=0.0829/1.0+0.12/1.0=0.2029<1

Result: Complied.

---End of Report---