

# RF Exposure Evaluation Report

**Report No.:** RWAO202400009C

**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:** YMMMF8030P

**Multiple Models:** N/A

**Trade Mark:** Whirlpool

**FCC ID:** PR4FLUSHP2MTY

**Standards:** 47 CFR §1.1310

KDB 447498 D01 General RF Exposure Guidance v06

**Test Date:** 2024-01-08

**Test Result:** Complied

**Report Date:** 2024-02-05

**Reviewed by:**

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## Revision History

Version No.	Issued Date	Description
00	2024-02-05	Original

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# 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	2A-1(assigned by WATC)
Sample Received Date	2024-01-08
Sample Status	Good Condition
Operating Frequency Range	2450MHz $\pm$ 50.0 MHz
Power Supply	AC 120V/60Hz
Microwave Rated Input Power <sup>#</sup>	1500W
Microwave Rated Output Power <sup>#</sup>	850W
Modification	Sample No Modification by the test lab

## 1.3 Laboratory Location

World Alliance Testing and 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](mailto: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 <sup>2</sup> )	Averaging time (minutes)
<b>(i) Limits for Occupational/Controlled Exposure</b>				
0.3–3.0	614	1.63	*(100)	≤6
3.0–30	1842/f	4.89/f	*(900/f <sup>2</sup> )	<6
30–300	61.4	0.163	1.0	<6
300–1,500			f/300	<6
1,500–100,000			5	<6
<b>(ii) Limits for General Population/Uncontrolled Exposure</b>				
0.3–1.34	614	1.63	*(100)	<30
1.34–30	824/f	2.19/f	*(180/f <sup>2</sup> )	<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/cm<sup>2</sup>);

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 <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )	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 RWAO202400008A, the maximum tested microwave leakage is 0.17mW/cm<sup>2</sup>, the limit is 1.0mW/cm<sup>2</sup>

Simultaneously transmit Consideration:

Microwave Oven + Wi-Fi module

The ratio=0.0829/1.0+0.17/1.0=0.2529<1

**Result: Complied.**

**---End of Report---**