

## **FCC §18.313, §1.1310, §2.1091- MAXIMUM PERMISSIBLE EXPOSURE**

### **Applicable 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:

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

## Measurement

### Environmental Conditions

<b>Temperature:</b>	25.8 °C
<b>Relative Humidity:</b>	69 %
<b>ATM Pressure:</b>	100.2 kPa

*The testing was performed by Joson Xiao on 2025-07-30.*

Radiation leakage was measured in the as-received condition with the oven door closed using a microwave leakage meter.

A 275 mL water load was placed in the center of the oven and the oven was operated at maximum output power.

☒ There was no microwave leakage exceeding a power level of 0.1mW/cm<sup>2</sup> observed at any point 5 cm or more from the external surface of the oven.

A maximum of 1.0 mW/cm<sup>2</sup> is allowed in accordance with the applicable Federal Standards. Hence, microwave leakage in the as-received condition with the oven door closed was below the maximum allowed.

Simultaneously transmit Consideration:

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	0.0010	1.0	Pass
BLE	2402-2480	0	1.0	4.2	2.63	20	0.0005	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.

Simultaneously transmit Consideration:

Microwave Oven + *Wi-Fi module*

The ratio=0.0829/1.0+0.1/1.0=0.1829<1

**Result: Complied.**