



FCC 47 CFR MPE REPORT

Shengzhen PICEA Intelligent Technology Co., Ltd

Robot Vacuum

Model Number: HOME-A10P

FCC ID: 2BGN6-SCZN0526

Applicant:	Shenzhen PICEA Intelligent Technology Co., Ltd
Address:	401 bldg.C6, NO. 145 of Yuhu Road, Yulu Subdistrict, Yutang st.,
	Guangming Dist., ShenZhen 518132 Guangdong P.R. China
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
Tel: 86-769-83081888-808	

Report Number:	ESTE-R2506305
Date of Test:	May 24, 2025 ~ Jul. 31, 2025
Date of Report:	Aug. 08, 2025

Maximum Permissible Exposure

1. Applicable Standards

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

1.1. Limits for Maximum Permissible Exposure (MPE)

(a) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-10000			5	6

(b) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-10000			1.0	30

Note: f=frequency in MHz; *Plane-wave equivalent power density

1.2. MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric Field (V/m)

P = Peak RF output Power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

2. Conducted Power Result

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)
BLE 1M	2402	7.71	5.902
	2440	7.29	5.358
	2480	6.05	4.027
BLE 2M	2402	7.87	6.124
	2440	7.43	5.534
	2480	6.2	4.169
IEEE 802.11b	2412	17.46	55.719
	2437	18.58	72.111
	2462	18.37	68.707
IEEE 802.11g	2412	18.51	70.958
	2437	19.76	94.624
	2462	19.16	82.414
IEEE 802.11n HT20	2412	18.47	70.307
	2437	19.71	93.541
	2462	19.09	81.096
IEEE 802.11n HT40	2422	17.64	58.076
	2437	19.09	81.096
	2452	18.75	74.989
IEEE 802.11ax HE20	2412	18.19	65.917
	2437	19.56	90.365
	2462	19.62	91.622
IEEE 802.11ax HE40	2422	18.28	67.298
	2437	19.47	88.512
	2452	19.69	93.111

3. Calculated Result and Limit

Mode	Peak output power (dBm)	Target power (dBm)	MAX Target power (dBm)	Antenna gain		Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
				(dBi)	(Linear)			
2.4G Band								
BLE 1M	7.71	7±1	8	-1.33	0.736	0.00092	1	Complies
BLE 2M	7.87	7±1	8	-1.33	0.736	0.00092	1	Complies
IEEE 802.11b	18.58	18±1	19	-1.33	0.736	0.01163	1	Complies
IEEE 802.11g	19.76	19±1	20	-1.33	0.736	0.01465	1	Complies
IEEE 802.11n HT20	19.71	19±1	20	-1.33	0.736	0.01465	1	Complies
IEEE 802.11n HT40	19.09	19±1	20	-1.33	0.736	0.01465	1	Complies
IEEE802.11axHE20	19.62	19±1	20	-1.33	0.736	0.01465	1	Complies
IEEE802.11axHE40	19.69	19±1	20	-1.33	0.736	0.01465	1	Complies

End of Test Report