

FCC 47 CFR MPE REPORT

Icon Health and Fitness, Inc.

Tablet

Model Number: MP27-Argon2

Additional Model: MP27-Argon2X

FCC ID: OMC436415

Prepared for:	Icon Health and Fitness, Inc.
	1500 South 1000 West, Logan Utah, 84321, United States
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
Tel: 86-769-83081888-808	

Report Number:	ESTE-R2109025
Date of Test:	Aug. 05~Oct. 08, 2021
Date of Report:	Oct. 22, 2021

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)	MAX Peak output power (dBm)	MAX Peak output power (mW)	Target power (dBm)	Antenna gain	
					(dBi)	(Linear)
GFSK	2402	5.90	3.8905	5 ± 2	2.8	1.905
$\pi/4$ -DQPSK	2402	4.61	2.8907	4 ± 2	2.8	1.905
8-DPSK	2402	4.62	2.8973	4 ± 2	2.8	1.905
BLE	2402	5.99	3.9719	5 ± 2	2.8	1.905
IEEE 802.11b	2437	17.14	51.7607	17 ± 2	2.8	1.905
IEEE 802.11g	2462	21.95	156.6751	21 ± 2	2.8	1.905
IEEE 802.11n HT20(2.4G)	2462	22.03	159.5879	22 ± 2	2.8	1.905
IEEE 802.11a	5180	13.404	21.8978	13 ± 2	2.8	1.905
IEEE 802.11n HT20(5G)	5180	12.965	19.7925	12 ± 2	2.8	1.905
IEEE 802.11n HT40(5G)	5190	13.126	20.5400	13 ± 2	2.8	1.905

3. Calculated Result and Limit

Mode	Target power (dBm)	Antenna gain		Power Density (S) (mW/cm ²)	Limited of Power Density (S) (mW/cm ²)	Test Result
		(dBi)	(Linear)			
2.4G Band						
GFSK	7	2.8	1.905	0.0019	1	Complies
π /4-DQPSK	6	2.8	1.905	0.0015	1	Complies
8-DPSK	6	2.8	1.905	0.0015	1	Complies
BLE	7	2.8	1.905	0.0019	1	Complies
IEEE 802.11b	19	2.8	1.905	0.0301	1	Complies
IEEE 802.11g	23	2.8	1.905	0.0756	1	Complies
IEEE 802.11n HT20	24	2.8	1.905	0.0952	1	Complies
5G Band						
IEEE 802.11a	15	2.8	1.905	0.0120	1	Complies
IEEE 802.11n HT20	14	2.8	1.905	0.0095	1	Complies
IEEE 802.11n HT40	15	2.8	1.905	0.0120	1	Complies

Bluetooth+2.4G Wi-Fi+5G Wi-Fi

MAX Power Density (S) (mW/cm ²) Bluetooth	MAX Power Density (S) (mW/cm ²) 2.4G WiFi	MAX Power Density (S) (mW/cm ²) 5G WiFi	Power Density (S) (mW/cm ²) Total	Limited of Power Density (S) (mW/cm ²)	Test Result
0.0019	0.0952	0.0120	0.1091	1	Complies

End of Test Report