

FCC 47 CFR MPE REPORT

Icon Health and Fitness, Inc.

Tablet

Model Number: MP32-ARGON2-MIRROR

FCC ID: OMC422475

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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

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

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, $d=0.2\text{m}$, 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)	Target power (dBm)	Antenna gain	
					(dBi)	(Linear)
GFSK	2402	4.58	2.87	4±2	2.9	1.95
	2441	4.35	2.72	4±2	2.9	1.95
	2480	3.70	2.34	3±2	2.9	1.95
$\pi/4$ -DQPSK	2402	4.24	2.65	4±2	2.9	1.95
	2441	3.79	2.39	3±2	2.9	1.95
	2480	3.03	2.01	3±2	2.9	1.95
8-DPSK	2402	3.82	2.41	3±2	2.9	1.95
	2441	3.72	2.36	3±2	2.9	1.95
	2480	3.10	2.04	3±2	2.9	1.95
BLE	2402	4.47	2.80	4±2	2.9	1.95
	2440	4.38	2.74	4±2	2.9	1.95
	2480	3.77	2.38	3±2	2.9	1.95
IEEE 802.11b	2412	14.29	26.85	14±2	2.9	1.95
	2437	14.23	26.49	14±2	2.9	1.95
	2462	14.45	27.86	14±2	2.9	1.95
IEEE 802.11g	2412	19.53	89.74	19±2	2.9	1.95
	2437	19.91	97.95	19±2	2.9	1.95
	2462	19.36	86.30	19±2	2.9	1.95
IEEE 802.11n HT20	2412	18.26	66.99	18±2	2.9	1.95
	2437	18.26	66.99	18±2	2.9	1.95
	2462	18.53	71.29	18±2	2.9	1.95
IEEE 802.11a	5180	13.10	20.42	13±2	2.9	1.95
	5200	12.37	17.26	12±2	2.9	1.95
	5240	12.12	16.29	12±2	2.9	1.95
	5260	13.04	20.14	13±2	2.9	1.95
	5300	11.98	15.78	11±2	2.9	1.95
	5320	11.50	14.13	11±2	2.9	1.95
	5500	10.10	10.23	10±2	2.9	1.95
	5580	10.86	12.19	10±2	2.9	1.95
	5700	10.09	10.21	10±2	2.9	1.95
	5745	10.75	11.89	10±2	2.9	1.95
	5785	10.25	10.59	10±2	2.9	1.95
5825	10.43	11.04	10±2	2.9	1.95	

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power (dBm)	Antenna gain	
					(dBi)	(Linear)
IEEE 802.11n HT20	5180	13.11	20.46	13±2	2.9	1.95
	5200	12.42	17.46	12±2	2.9	1.95
	5240	12.16	16.44	12±2	2.9	1.95
	5260	13.11	20.46	13±2	2.9	1.95
	5300	12.20	16.60	12±2	2.9	1.95
	5320	11.53	14.22	11±2	2.9	1.95
	5500	10.15	10.35	10±2	2.9	1.95
	5580	10.95	12.45	10±2	2.9	1.95
	5700	10.15	10.35	10±2	2.9	1.95
	5745	10.78	11.97	10±2	2.9	1.95
	5785	10.24	10.57	10±2	2.9	1.95
	5825	11.08	12.82	11±2	2.9	1.95
IEEE 802.11n HT40	5190	12.89	19.45	12±2	2.9	1.95
	5230	12.09	16.18	12±2	2.9	1.95
	5270	13.06	20.23	13±2	2.9	1.95
	5310	10.86	12.19	10±2	2.9	1.95
	5510	9.14	8.20	9±2	2.9	1.95
	5590	9.61	9.14	9±2	2.9	1.95
	5670	11.44	13.93	11±2	2.9	1.95
	5755	11.08	12.82	11±2	2.9	1.95
	5795	9.66	9.25	9±2	2.9	1.95

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	6	2.9	1.95	0.00194	0.00154	Compiles
$\pi/4$ -DQPSK	6	2.9	1.95	0.00154	0.00154	Compiles
8-DPSK	5	2.9	1.95	0.00154	0.00123	Compiles
BLE	6	2.9	1.95	0.00194	0.00154	Compiles
IEEE 802.11b	16	2.9	1.95	0.02448	0.01544	Compiles
IEEE 802.11g	21	2.9	1.95	0.04883	0.04883	Compiles
IEEE 802.11n HT20	20	2.9	1.95	0.04883	0.03879	Compiles
5G Band						
IEEE 802.11a	15	2.9	1.95	0.00974	0.01227	Compiles
IEEE 802.11n HT20	15	2.9	1.95	0.01227	0.01227	Compiles
IEEE 802.11n HT40	15	2.9	1.95	0.00974	0.01227	Compiles

Mode	Power Density (S) (mW/cm ²)	total (mW/cm ²)	Limited of Power Density (S) (mW/cm ²)	Test Result
BT	0.00194	0.06498	1	Compiles
BLE	0.00194		1	Compiles
2.4GWi Fi	0.04883		1	Compiles
5GWi Fi	0.01227		1	Compiles

End of Test Report