FCC 47 CFR MPE REPORT

Arovast Corporation

Tower Fan

Model Number: LTF-F362S-WUSR

Additional Model: LTF-F362S-Followed by up to 4 characters

FCC ID: 2ARBY-F362SR

Applicant:	Arovast Corporation
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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.o	30

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

1.2. MPE Calculation Method

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

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=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

1.3. Conducted Power Result

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)
BLE 1M	2402	9.85	9.661
	2440	8.81	7.603
	2480	5.50	3.548
BLE 2M	2402	10.61	11.508
	2440	9.48	8.872
	2480	7.86	6.109
IEEE 802.11b	2412	20.81	120.504
	2437	21.42	138.676
	2462	21.03	126.765
IEEE 802.11g	2412	21.53	142.233
	2437	22.00	158.489
	2462	22.25	167.880
IEEE 802.11n HT20	2412	20.61	115.080
	2437	21.09	128.529
	2462	21.14	130.017
IEEE 802.11n HT40	2422	20.13	103.039
	2437	20.24	105.682
	2452	20.30	107.152

2. Calculated Result and Limit

Mode	Peak output power (dBm)	Target power (dBm)	Max Target power (dBm)	Antenna gain (dBi)	Antenna gain (Linear)	Power Density (S) (mW/cm^2)	Limited of Power Density (S) (mW/cm^2)	Test Result
BLE	10.61	10±1	11	3.37	2.173	0.00544	1	Complies
IEEE 802.11b	21.42	21±1	22	3.37	2.173	0.06850	1	Complies
IEEE 802.11g	22.25	22±1	23	3.37	2.173	0.08624	1	Complies
IEEE 802.11n HT20	21.14	21±1	22	3.37	2.173	0.06850	1	Complies
IEEE 802.11n HT40	20.30	20±1	21	3.37	2.173	0.05442	1	Complies

End of Test Report