FCC 47 CFR MPE REPORT

Arovast Corporation

Pedestal Air Circulator Fan

Model Number: LPF-R432S-AUS

Additional Model: LPF-R432S-XXXX
(where "X" may be blank, number from 0 to 9 or letter from A to Z)

FCC ID: 2ARBY-R432SA

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

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	8.96	7.870
	2440	5.31	3.396
	2480	2.00	1.585
BLE 2M	2402	8.93	7.816
	2440	5.35	3.428
	2480	2.15	1.641
IEEE 802.11b	2412	19.16	82.414
	2437	16.79	47.753
	2462	14.31	26.977
IEEE 802.11g	2412	19.85	96.605
	2437	17.66	58.345
	2462	15.70	37.154
IEEE 802.11n HT20	2412	18.78	75.509
	2437	16.45	44.157
	2462	14.37	27.353
IEEE 802.11n HT40	2422	17.74	59.429
	2437	16.17	41.400
	2452	14.85	30.549

3. Calculated Result and Limit

Mode	Peak output power (dBm)	Target power (dBm)	MAX 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								
BLE 1M	8.96	8±1	9	2.7	1.862	0.00294	1	Complies
BLE 2M	8.93	8±1	9	2.7	1.862	0.00294	1	Complies
IEEE 802.11b	19.16	19±1	20	2.7	1.862	0.03704	1	Complies
IEEE 802.11g	19.85	19±1	20	2.7	1.862	0.03704	1	Complies
IEEE 802.11n HT20	18.78	18±1	19	2.7	1.862	0.02943	1	Complies
IEEE 802.11n HT40	17.74	17±1	18	2.7	1.862	0.02337	1	Complies

End of Test Report