FCC 47 CFR MPE REPORT

Arovast corporation

Ultrasonic Cool Mist Humidifier

Model Number: Classic300S

Additional Model: LUH-A601S-WUSB, LUH-A601S-BUSR.
LUH-A601S- followed by three to four letters. These medels are identical, except the model name and color.

FCC ID: 2ARBY-CLASSIC-300SB

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

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

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)
GFSK	2402	9.44	8.790
	2441	9.52	8.954
	2480	9.33	8.570
π/4-DQPSK	2402	11.74	14.928
	2441	11.67	14.689
	2480	11.53	14.223
8-DPSK	2402	12.12	16.293
	2441	12.06	16.069
	2480	11.86	15.346
BLE	2402	9.38	8.670
	2440	9.42	8.750
	2480	9.09	8.110
IEEE 802.11b	2412	18.57	71.945
	2437	18.16	65.464
	2462	17.99	62.951
IEEE 802.11g	2412	16.05	40.272
	2437	15.60	36.308
	2462	15.64	36.644
IEEE 802.11n HT20	2412	16.05	40.272
	2437	15.56	35.975
	2462	15.61	36.392
IEEE 802.11n HT40	2422	15.42	34.834
	2437	15.10	32.359
	2452	15.10	32.359

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								
GFSK	9.52	9±1	10	3.76	2.377	0.00473	1	Complies
π/4-DQPSK	11.74	11±1	12	3.76	2.377	0.00749	1	Complies
8-DPSK	12.12	12±1	13	3.76	2.377	0.00943	1	Complies
BLE	9.42	9±1	10	3.76	2.377	0.00473	1	Complies
IEEE 802.11b	18.57	18±1	19	3.76	2.377	0.03756	1	Complies
IEEE 802.11g	16.05	16±1	17	3.76	2.377	0.02370	1	Complies
IEEE 802.11n HT20	16.05	16±1	17	3.76	2.377	0.02370	1	Complies
IEEE 802.11n HT40	15.42	15±1	16	3.76	2.377	0.01882	1	Complies

End of Test Report