FCC 47 CFR MPE REPORT

Arovast Corporation

Levoit Vesync Aura Sensor

Model Number: LTM-AS041S-WUS

Additional Model: LTM-AS041S-XXXY
(XXX may be A-Z, Y may be A-Z or none)

FCC ID: 2ARBY-AS041S

Applicant:	Arovast Corporation
Address:	1202 N Miller St. Suite A, Anaheim, California 92806, United States
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
Tel: 86-769-83081888-808	

Report Number:	ESTE-R2203226
Date of Test:	Mar. 03~Apr. 07, 2022
Date of Report:	Apr. 08, 2022

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)	Target power (dBm)	Antenna gain	
					(dBi)	(Linear)
BLE (1Mbps)	2402	7.65	5.821	7±1	-0.5	0.891
	2440	7.07	5.093	7±1	-0.5	0.891
	2480	6.89	4.887	6±1	-0.5	0.891
BLE (2Mbps)	2402	7.80	6.026	7±1	-0.5	0.891
	2440	7.22	5.272	7±1	-0.5	0.891
	2480	7.06	5.082	7±1	-0.5	0.891
Zigbee	2402	10.27	10.641	10±1	-0.5	0.891
	2441	10.25	10.593	10±1	-0.5	0.891
	2480	4.13	2.588	4±1	-0.5	0.891

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)			
BLE	8	-0.5	0.891	**0.00112**	1	Complies
Zigbee	11	-0.5	0.891	0.00223	1	Complies

End of Test Report