

MPE REPORT

FCC ID: 2ARBY-CORE400S

Date of issue: Jan. 07, 2021

| | |
|---------------------|---|
| Report number: | MTi201225003-03E4 |
| Sample description: | Air Purifier |
| Model(s): | Core 400S |
| Applicant: | Arovast Corporation |
| Address: | 1202 N Miller St. Suite A, Anaheim, CA 92806, USA |
| Date of test: | Dec. 28, 2020 to Jan. 07, 2021 |

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

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| TEST RESULT CERTIFICATION | |
|----------------------------------|--|
| Applicant's name: | Arovast Corporation |
| Address: | 1202 N Miller St. Suite A, Anaheim, CA 92806, USA |
| Manufacture's name: | Xiamen Vork Health Industry Co., Ltd. |
| Address: | 102#&202#, Xianghong Road 16th, Torch Hi-tech Industrial Area, Xiangnan, Xiamen, China |
| Product name: | Air Purifier |
| Trademark: | LEVOIT |
| Model and/or type reference: | Core 400S |
| Serial model: | N/A |
| RF exposure procedures: | KDB 447498 D01 v06 |

This device described above has been tested by Shenzhen Microtest Co., Ltd and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

Tested by:

Danny Xu

Jan. 07, 2021

Reviewed by:

Leo Su

Jan. 07, 2021

Approved by:

Tom Xue

Jan. 07, 2021



RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

| Frequency range (MHz) | Electric field strength (V/m) | Magnetic field strength (A/m) | Power density (mW/cm ²) | Averaging time (minutes) |
|--|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| (A) Limits for Occupational/Controlled Exposure | | | | |
| 0.3-3.0 | 614 | 1.63 | *100 | 6 |
| 3.0-30 | 1842/f | 4.89/f | *300/f ² | 6 |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1,500 | | | f/300 | 6 |
| 1,500-100,000 | | | 5 | 6 |
| (B) Limits for General Population/Uncontrolled Exposure | | | | |
| 0.3-1.34 | 614 | 1.63 | *100 | 30 |
| 1.34-30 | 824/f | 2.19/f | *180/f ² | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1,500 | | | f/1500 | 30 |
| 1,500-100,000 | | | 1.0 | 30 |

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

MPE Calculation Method

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π = 3.1415926

R = distance between observation point and center of the radiator in cm (20cm)

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

BT: Operation Frequency: GFSK, $\pi/4$ -DQPSK, 8DPSK: 2402-2480MHz

WIFI: Operation Frequency: WIFI 802.11b/g/n HT20: 2412-2462MHz,

802.11n HT40: 2422-2452MHz,

BLE: Operation Frequency: GFSK: 2402-2480MHz

Power density limited: 1mW/ cm²

Antenna Type: PCB Antenna;

Antenna gain: 2.04dBi

R=20cm

$mW=10^{(dBm/10)}$

antenna gain Numeric= $10^{(dBi/10)}=10^{(2.04/10)}=1.60$

BT:

| Channel Freq. (MHz) | modulation | conducted power (dBm) | Tune-up power (dBm) | Max | | Antenna | | Evaluation result (mW/cm ²) | Power density Limits (mW/cm ²) |
|---------------------|----------------|-----------------------|---------------------|---------------|-------|---------|---------|---|--|
| | | | | tune-up power | | Gain | | | |
| | | | | (dBm) | (mW) | (dBi) | Numeric | | |
| 2402 | GFSK | 6.233 | 6±1 | 7 | 5.012 | 2.04 | 1.60 | 0.0016 | 1 |
| 2441 | | 6.108 | 6±1 | 7 | 5.012 | 2.04 | 1.60 | 0.0016 | 1 |
| 2480 | | 5.021 | 6±1 | 7 | 5.012 | 2.04 | 1.60 | 0.0016 | 1 |
| 2402 | $\pi/4$ -DQPSK | 8.694 | 8±1 | 9 | 7.943 | 2.04 | 1.60 | 0.0025 | 1 |
| 2441 | | 8.398 | 8±1 | 9 | 7.943 | 2.04 | 1.60 | 0.0025 | 1 |
| 2480 | | 7.403 | 8±1 | 9 | 7.943 | 2.04 | 1.60 | 0.0025 | 1 |
| 2402 | 8DPSK | 9.014 | 9±1 | 10 | 10 | 2.04 | 1.60 | 0.0032 | 1 |
| 2441 | | 8.893 | 9±1 | 10 | 10 | 2.04 | 1.60 | 0.0032 | 1 |
| 2480 | | 8.627 | 9±1 | 10 | 10 | 2.04 | 1.60 | 0.0032 | 1 |



WiFi:

| Channel Freq. (MHz) | modulation | conducted power (dBm) | Tune-up power (dBm) | Max | | Antenna | Evaluation result at 20cm | Power density Limits (mW/cm ²) | |
|---------------------|-------------|-----------------------|---------------------|---------------|-----------|---------|---------------------------|--|--------------|
| | | | | tune-up power | | | | | Gain Numeric |
| | | | | (dBm) | (mW) | | | | |
| | | Ant A | Ant A | Ant A | Ant A | Ant A | Ant A | | |
| 2412 | 802.11b | 14.92 | 15±1 | 16 | 39.810717 | 1.6 | 0.01267 | 1 | |
| 2437 | | 15.67 | 15±1 | 16 | 39.810717 | 1.6 | 0.01267 | 1 | |
| 2462 | | 15.18 | 15±1 | 16 | 39.810717 | 1.6 | 0.01267 | 1 | |
| 2412 | 802.11g | 17.26 | 17±1 | 18 | 63.095734 | 1.6 | 0.02008 | 1 | |
| 2437 | | 17.50 | 17±1 | 18 | 63.095734 | 1.6 | 0.02008 | 1 | |
| 2462 | | 16.78 | 17±1 | 18 | 63.095734 | 1.6 | 0.02008 | 1 | |
| 2412 | 802.11n H20 | 16.30 | 17±1 | 18 | 63.095734 | 1.6 | 0.02008 | 1 | |
| 2437 | | 16.58 | 17±1 | 18 | 63.095734 | 1.6 | 0.02008 | 1 | |
| 2462 | | 16.76 | 17±1 | 18 | 63.095734 | 1.6 | 0.02008 | 1 | |
| 2422 | 802.11n H40 | 16.47 | 17±1 | 18 | 63.095734 | 1.6 | 0.02008 | 1 | |
| 2437 | | 16.40 | 17±1 | 18 | 63.095734 | 1.6 | 0.02008 | 1 | |
| 2452 | | 16.30 | 17±1 | 18 | 63.095734 | 1.6 | 0.02008 | 1 | |



BLE:

| Channel Freq. (MHz) | modulation | conducted power | Tune-up power (dBm) | Max | | Antenna | | Evaluation result (mW/cm ²) | Power density Limits (mW/cm ²) |
|---------------------|------------|-----------------|---------------------|---------------|-------|---------|---------|---|--|
| | | (dBm) | | tune-up power | | Gain | | | |
| | | | | (dBm) | (mW) | (dBi) | Numeric | | |
| 2402 | GFSK | 3.150 | 4±1 | 5 | 3.162 | 2.04 | 1.60 | 0.0010 | 1 |
| 2440 | | 3.916 | 4±1 | 5 | 3.162 | 2.04 | 1.60 | 0.0010 | 1 |
| 2480 | | 3.797 | 4±1 | 5 | 3.162 | 2.04 | 1.60 | 0.0010 | 1 |

Simultaneous transmit

BT+2.4GWiFi +BLE=0.0032+0.02008+0.0010=0.02428

Conclusion:

For the max result: $0.02428 \leq 1.0$ for 1g SAR, No SAR is required.

----END OF REPORT----