RF Exposure Evaluation Report

Product	:	Non-invasive Ventilator
Trade mark	:	N/A
Model/Type reference	:	LeRes-B,R100,LeRes-S,R200,LeRes-B1,R101,LeRes-S1,R201,LeRes-C,R10,LeRes-A,R20,LeRes-C1,R11,LeRes-A1,R21
Serial Number	:	N/A
Report Number	:	EED32O81096003
FCC ID	:	2ADXK-9001
Date of Issue	:	Dec. 26, 2022
Test Standards	:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Test result	:	PASS

Prepared for:

Shenzhen Viatom Technology Co., Ltd.
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2 Version

Version No.	Date	Description
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4 General Information

4.1 Client Information

Applicant:	Shenzhen Viatom Technology Co., Ltd.
Address of Applicant:	4E, 3#, Tingwei Industrial Park,Honglang North 2nd Road, Baoan District, Shenzhen, 518057, Guangdong, China
Manufacturer:	Shenzhen Viatom Technology Co., Ltd.
Address of Manufacturer:	4E, 3#, Tingwei Industrial Park,Honglang North 2nd Road, Baoan District, Shenzhen, 518057, Guangdong, China
Factory:	Shenzhen Viatom Technology Co., Ltd.
Address of Factory:	501, Building B, Ganghongji High-tech Intelligent Industrial Park, No.1008 Songbai Road, Xili Street, Nanshan District, Shenzhen, 518055, Guangdong, China

4.2 General Description of EUT

Product Name:	Non-invasive Ventilator
Mode No.:	LeRes-B,R100,LeRes-S,R200,LeRes-B1,R101,LeRes-S1,R201,LeRes-C,R10,LeRes-A, R20,LeRes-C1,R11,LeRes-A1,R21
Test Mode No.:	LeRes-S
Trade mark:	N/A

4.3 Product Specification subjective to this standard

Frequency Range:	BLE : 2402-2480MHz 2.4GHz Wi-Fi: IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz
Modulation Type: (Bluetooth):	GFSK
Modulation Type: (Wi-Fi):	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20): OFDM (BPSK, QPSK, 16QAM, 64QAM)
Test Power Grade:	Default
Test Software of EUT:	BLE : NRFgo 2.4GHz Wi-Fi: EspRFTestTool
Antenna Type (Bluetooth):	Chip Antenna
Antenna Gain (Bluetooth):	3.53dBi

Antenna Type (Wi-Fi):	PCB Antenna	
Antenna Gain (Wi-Fi):	1.97dBi	
Function (Wi-Fi):	☒SISO ☐2x2 MIMO ☐3x3 MIMO ☐4x4MIMO	
Power Supply:	Adapter:	Model:MDA90B-220S24-18 Input:100-240V~50/60Hz 2.2A Max Output:24V⎓3.75A
Max Conducted Peak Output Power:	BLE: -2.32dBm, 2.4G WIFI:10.38dBm.	
	The Max Conducted Peak Output Power data refer to the report EED32O81096001, EED32O81096002.	
Sample Received Date:	Oct. 09, 2022	
Sample tested Date:	Oct. 09, 2022 to Nov. 14, 2022	

Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.
Model No.: LeRes-B,R100,LeRes-S,R200,LeRes-B1,R101,LeRes-S1,R201,LeRes-C,R10,LeRes-A, R20,LeRes-C1,R11,LeRes-A1,R21.
Only the model LeRes-S was tested,the differences between each model are modes of appearance, optional function, and bag type. However, the WIFI module, Bluetooth module, the rest circuit principle, the internal structure, the PCB Layout, and safety key parts are the same, which doesn't affect the EMC and RF test.

4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$ **Equation 1**

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

5.2 Maximum Permissible Exposure

Substituting the MPE safe distance using d = 20 cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

BLE:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
39	2480	0.586	2.254	20	0.0003	1

2.4G WIFI:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm^2)
1	2412	10.914	1.574	20	0.0034	1

For BT and WIFI

BT and WIFI can not transmit simultaneously.

*** End of Report ***