



FCC TEST REPORT

FCC ID: 2BFEX-N5-A

Product	:	Robot vacuum cleaner
Model Name	:	N5-A
Additional model	:	N5-YA, N5-D, N5-YD, N5-B, N5-BG, N5-YB, N5-YBG, N5-BD, N5-BDG, N5-BYD, N5-BYDG, N5
Brand	:	N/A
Report No.	:	PTC24022201702E-FC04
Prepared for		
Shenzhen Pureatic Electromechanical Technology Co., Ltd		
Room 301, Building A2, Rongchang Industry Park, NO.440, Hedong country, guancheng community, guanhu street, longhua district, shenzhen city.		
Prepared by		
Precise Testing & Certification Co., Ltd.		
Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China		



Report No.: PTC24022201702E-FC04

TEST RESULT CERTIFICATION

Applicant's name : Shenzhen Pureatic Electromechanical Technology Co., Ltd
Address : Room 301, Building A2, Rongchang Industry Park, NO.440, Hedong country, guancheng community, guanhu street, longhua district, shenzhen city.
Manufacture's name : Shenzhen Pureatic Electromechanical Technology Co., Ltd
Address : Room 301, Building A2, Rongchang Industry Park, NO.440, Hedong country, guancheng community, guanhu street, longhua district, shenzhen city.
Product name : Robot vacuum cleaner
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Test procedure : FCC CFR47 Part 1.1307(b)(1)
Test Date : Mar. 07, 2024 to Mar. 15, 2024
Date of Issue : Mar. 27, 2024
Test Result : PASS

This device described above has been tested by PTC, 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.

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Test Engineer:

A handwritten signature in black ink, appearing to read 'Jack Zhou'.

Jack Zhou / Engineer

Technical Manager:

A handwritten signature in black ink, appearing to read 'Simon Pu'.

Simon Pu/ Manager



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Report No.: PTC24022201702E-FC04

2 Test Summary

Test Items	Test Requirement	Result
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	15.247 (i)	PASS
Remark:		
N/A: Not Applicable		



3 General Information

3.1 General Description of E.U.T.

Product Name	:	Robot vacuum cleaner
Model Number	:	N5-A
Additional model	:	N5-YA, N5-D, N5-YD, N5-B, N5-BG, N5-YB, N5-YBG, N5-BD, N5-BDG, N5-BYD, N5-BYDG, N5
Model difference	:	Only the appearance color is different.
Specification	:	BT BDR+EDR+BLE 802.11b/g/n HT20/HT40
Operation Frequency	:	2402-2480MHz for BDR+EDR+BLE 2412-2462MHz for 802.11b/g/ n(HT20) 2422-2452MHz for 802.11 n(HT40)
Number of Channel	:	79 channels for BDR+EDR 40 channels for BLE 1 channels for 802.11b/g/n(HT20) 7 channels for 802.11 n(HT40)
Type of Modulation	:	GFSK, $\pi/4$ -DQPSK, 8DPSK For DSS GFSK, For DTS DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;
Antenna installation	:	PIFA Antenna
Antenna Gain	:	4.02 dBi
Power supply	:	Adapter 1: NLB100150W1A4S58 Input: 100-240V~, 50/60Hz, 0.4A Max Output: DC 15V, 1.0A Adapter 2: JF018WR-1500100UH Input: 100-240V~, 50/60Hz, 0.5A Output: DC 15V, 1.0A Battery 1: Capacity: 4400mAh, Input: DC 11.1V Battery 2: Capacity: 5200mAh, Input: DC 11.1V Battery 3: Capacity: 2600mAh, Input: DC 11.1V
Hardware Version	:	01
Software Version	:	VV0.1



4 RF Exposure

Test Requirement : 15.247 (i)

Evaluation Method : FCC Part 2.1091

4.1 Requirements

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 levels 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 0.2 m normally can be maintained between the user and the device.

4.2 The procedures / limit

(A) Limits for Occupational / Controlled Exposure

Frequency Range	Electric Field	Magnetic Field	Power Density (S)	Averaging Time
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
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range	Electric Field	Magnetic Field	Power Density (S)	Averaging Time
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
1500-100,000			1.0	30

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



4.3 MPE Calculation Method

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

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

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

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

4.4 Test Result

Item	Antenna Gain (numeric)	Max. Peak Output Power (dBm)	Tune up tolerance (dBm)	Max Tune Up Power (mW)	Power Density (mW/cm ²)	Limit of Power Density (mW/cm ²)	Result
BDR+EDR	2.52	10.68	10.68 ± 1	14.7231	0.07381	1	Pass
BLE	2.52	5.78	5.78 ± 1	4.7643	0.02388	1	Pass
2.4G WIFI	2.52	20.77	20.77 ± 1	150.3142	0.75356	1	Pass

*****THE END REPORT*****