# 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

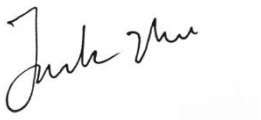
## TEST RESULT CERTIFICATION

| | | |
|---|---|---|
| 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 |
| Model name | : | N5-A, N5-YA, N5-D, N5-YD, N5-B, N5-BG, N5-YB, N5-YBG, N5-BD, N5-BDG, N5-BYD, N5-BYDG, N5 |
| 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.

This report shall not be reproduced except in full, without the written approval of PTC, this document may be altered or revised by PTC, personal only, and shall be noted in the revision of the document.

Test Engineer:



Jack Zhou / Engineer

Technical Manager:

Simon Pu/ Manager

# Contents

**Page**

## 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<br>802.11b/g/n HT20/HT40 |
| Operation Frequency | : | 2402-2480MHz for BDR+EDR+BLE<br>2412-2462MHz for 802.11b/g/ n(HT20)<br>2422-2452MHz for 802.11 n(HT40) |
| Number of Channel | : | 79 channels for BDR+EDR<br>40 channels for BLE<br>1 channels for 802.11b/g/n(HT20)<br>7 channels for 802.11 n(HT40) |
| Type of Modulation | : | GFSK, Π/4-DQPSK,8DPSK For DSS<br>GFSK, For DTS<br>DSSS with DBPSK/DQPSK/CCK for 802.11b;<br>OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n; |
| Antenna installation | : | PIFA Antenna |
| Antenna Gain | : | 4.02 dBi |
| Power supply | : | Adapter 1: NLB100150W1A4S58<br>Input: 100-240V~, 50/60Hz, 0.4A Max<br>Output: DC 15V, 1.0A<br>Adapter 2: JF018WR-1500100UH<br>Input: 100-240V~, 50/60Hz, 0.5A<br>Output: DC 15V, 1.0A<br>Battery 1: Capacity: 4400mAh, Input: DC 11.1V<br>Battery 2: Capacity: 5200mAh, Input: DC 11.1V<br>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 (V/m) = $\frac{\sqrt{30 \times P \times G}}{d}$ Power Density: Pd (W/m²) = $\frac{E^2}{377}$

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

## 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******