



FCC TEST REPORT

FCC ID: 2BFEX-N5

Product	:	Robot vacuum cleaner
Model Name	:	N5,N5pro
Brand	:	N/A
Report No.	:	PTC24091001803E-FC04
Prepared for		
Shenzhen Pureatic Electromechanical Technology Co.,Ltd		
Room301,Building A2,Rongchang Industry Park, NO.440,Hedong country,guancheng community,guanhu street,longhua district,shenzhen city.		
Prepared by		
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TEST RESULT CERTIFICATION

Applicant's name : Shenzhen Pureatic Electromechanical Technology Co.,Ltd

Address : Room301,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 : Room301,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,N5pro

Test procedure : FCC CFR47 Part 1.1307(b)(1)

Test Date : Sep. 26, 2024 to Oct. 31, 2024

Date of Issue : Oct. 31, 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.: PTC24091001803E-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 Name	:	N5
Additional model	:	N5pro
Specification	:	Bluetooth BDR+EDR; Bluetooth BLE 802.11b/g/n HT20/HT40
Operation Frequency	:	2402-2480MHz for BT 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 DTS 11 channels for 802.11b/g/ n(HT20) 7 channels for 802.11n(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	:	FPC antenna
Antenna Gain	:	4.02 dBi
Power supply	:	Adapter: JF018WR-1600100UH Input: AC100-240V 50/60Hz 0.5A Output: DC 16.0V 1.0A Battery: Li-ion Battery : Li18650 Rated Voltage: 11.1V Rated Capacity:5200mAh
Hardware Version	:	N/A
Software Version	:	V1.2.3
Model difference	:	The cover model and the main check model are model is different, the appearance is different, and the function is different (model N5 Pro adds water tank function and carpet detection in model N5),the working principle is the same as the parts.



4 RF Exposure

Test Requirement : FCC Part 1.1307(b)(1)

Evaluation Method : KDB 447498 D01 General RF Exposure Guidance v06

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

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

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

Mode	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
2402(3DH5)	2.52	5.92	5.92±1	4.9204	0.001551	1	Pass
2402(BLE_1 M)	2.52	1.36	1.36±1	1.7219	0.000543	1	Pass
2437(11B)	2.52	16.34	16.34±1	54.2001	0.01709	1	Pass

Conclusion:

1. Calculate in the worst-case mode.
2. Max. Tune Up Power is declared by manufacturer, and used to calculate.
3. WIFI and BT can't transmit simultaneously.

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