FCC TEST REPORT

FCC ID: 2AMYQ-202012GD580

Product	:	Robotic Vacuum Cleaner
Model Name	:	X580、X580r、simum6、simum7、simum8、simum9、M1、N1、S3、V6、X580pro、X581、X582、X586、X580s
Brand	:	N/A
Report No.	:	PTC20120302003E-FC02
Prepared for		
Shenzhen Hua Xin Information Technology Co.,Ltd.		
Section A,10/F,Block 1,No.7 Industrial Park,Yulu Community,Yutang,Guangming New District,Shenzhen,China		
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 Hua Xin Information Technology Co.,Ltd.
Address	:	Section A,10/F,Block 1,No.7 Industrial Park,Yulu Community,Yutang,Guangming New District,Shenzhen,China
Manufacture's name	:	Shenzhen Hua Xin Information Technology Co.,Ltd.
Address	:	Section A,10/F,Block 1,No.7 Industrial Park,Yulu Community,Yutang,Guangming New District,Shenzhen,China
Product name	:	Robotic Vacuum Cleaner
Model name	:	X580、X580r、simum6、simum7、simum8、simum9、M1、N1、S3、V6、X580pro、X581、X582、X586、X580s
Test procedure	:	KDB 447498 D01 General RF Exposure Guidance v06
Test Date	:	Dec 08, 2020 to Jan 20, 2021
Date of Issue	:	Jan 20, 2021
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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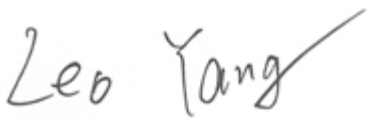
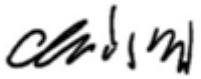
Test Engineer:



Leo Yang / Engineer

Technical Manager:



Chris Du / Manager

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2 Test Summary

Test Items	Test Requirement	Result
Maximum Permissible Exposure (Exposure of Humans to RF Fields)	1.1307(b)(1)	PASS
Remark:		
N/A: Not Applicable		

3 General Information

3.1 General Description of E.U.T.

Product Name	:	Robtic Vaccum Cleaner
Model Name	:	X580
Additional model		X580r、simum6、simum7 simum8、simum9、M1、N1、S3、V6、X580pro、X581、X582、X586、X580s Note：The appearance and color of the product are different, and the electrical principle is the same. The main test model is Simum6
Specification	:	802.11b/g/n HT20
Operation Frequency	:	2412-2462MHz for 802.11b/g;/ n(HT20)
Number of Channel	:	11 channels for 802.11b/g; n(HT20)
Type of Modulation	:	DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;
Antenna installation	:	PCB antenna
Antenna Gain	:	3 dBi
Power supply	:	DC19V 0.6A Adaptor Input AC 100-240V 50/60HZ 500mA 1、YJS015D-1900600U (Dongguan Yingju Power Co., Ltd.) 2、GSCU0600S019V12E(HU NAN GIANTSUN POWER ELECTRONICS CO., LTD) 3、DBS012A-1900600U(Guangdong Debom Technology Dongguan Co.,LTD.) DC19V 1A Adaptor Input AC 100-240V 50/60HZ 800mA **4、YJS024W-1901000U(Dongguan Yingju Power Co., Ltd.)** 5、DBS024A-1901000U (Guangdong Debom Technology Co.,LTD.)
Battery：	:	1、**SUN-INTE-181(Sunwoda Electronic Co.,Ltd) Input 14.4V 5200mAh** 2、SUN-INTE-279 (Sunwoda Electronic Co.,Ltd) Input 14.4V 5200mAh 3、SUN-INTE-273 (Sunwoda Electronic Co.,Ltd) Input 14.4V 2500mAh 4、SUN-INTE-273 (Sunwoda Electronic Co.,Ltd) Input 14.4V 2600mAh 5、SUN-INTE-172 (Sunwoda Electronic Co.,Ltd) Input 14.4V 2600mAh 6、INR18650 M26-4S1P(Yiyang Corun Battery Co.,Ltd)
Hardware Version	:	N/A
Software Version	:	N/A

4 RF Exposure

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

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)	Peak Output Power (mw)	Power Density (mW/cm2)	Limit of Power Density (mW/cm2)	Result
2437	2	20.22	105.20	0.0418	1	Pass

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