

Test Report No.:
FCC2021-0002-H

Test Report

EUT : 360 Robot Vacuum Cleaner

MODEL : S10, S10 MAX, X100 MAX, X100,
X10, S10 Pro, 2Pro

BRAND NAME :  **360**

CLIENT : Suzhou 360 Robotic Technology
Co.,Ltd

Classification Of Test : Commission Test

Vkan Certification & Testing Co., Ltd.



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Client		Name : Suzhou 360 Robotic Technology Co.,Ltd Address : G3-2101, Artificial Intelligence industrial park, No. 88 Jinjihu Avenue, Suzhou Industrial Park, Suzhou, Jiangsu, China	
Manufacturer		Name : Suzhou 360 Robotic Technology Co.,Ltd Address : G3-2101, Artificial Intelligence industrial park, No. 88 Jinjihu Avenue, Suzhou Industrial Park, Suzhou, Jiangsu, China	
Equipment Under Test		Name : 360 Robot Vacuum Cleaner Model/Type: S10, S10 MAX, X100 MAX, X100, X10, S10 Pro, 2Pro Trade mark :  Serial NO.:N/A Sampe NO.:1-1	
Date of Receipt.	2021.02.24	Date of Testing	2021.02.24~2021.04.01
Test Specification		Test Result	
FCC Part 2 (Section 2.1091) KDB 447498 D01 IEEE C95.1		PASS	
Evaluation of Test Result	The equipment under test was found to comply with the requirements of the standards applied. Issue Date: 2021.04.01		
Tested by: <u>Cheng Xiaochuan</u> <u>Cheng Xiao Chuan</u> Name Signature	Reviewed by: <u>Zhu Cheng</u> <u>Zhu Cheng</u> Name Signature	Approved by: <u>Dong Sanbi</u> <u>Dong San Bi</u> Name Signature	
Other Aspects: NONE.			
Abbreviations:OK, Pass= passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested			
This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.			



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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCC2021-0002-H	Original release	2021.04.01

1. GERTIFICATION

FCC ID	2AZD5-S10
PRODUCT	360 Robot Vacuum Cleaner
BRAND	
MODEL	S10
ADDITIONAL MODEL	S10 MAX, X100 MAX, X100, X10, S10 Pro, 2Pro
APPLICANT	Suzhou 360 Robotic Technology Co.,Ltd
STANDARDS	FCC Part 2 (Section 2.1091)
	KDB 447498 D01
	IEEE C95.1

Additional models (see about table) are identical with the test model S10 except the color of the appearance and model name for trading purpose.

2. RF EXPOSURE LIMIT

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE(MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY(mW/cm ²)	AVERAGE TIME(minutes)
LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

3. MPE CALCULATION FORMULA

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

5. ANTENNA GAIN

The antennas provided to the EUT, please refer to the following table:

Frequency Band	Antenna Gain (dBi)	Antenna Type
Wi-Fi 2.4GHz	3.2	PCB Antenna
BT-LE(GFSK)	-1	PCB Antenna

6. CALCULATION RESULT OF MAXIMUM CONDUCTED AV POWER

The tuned conducted Average Power (declared by client)

Mode	Frequency (MHz)	Target Power (dBm)	Tolerance (dBm)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
802.11b	2412-2462MHz	13	+2	11	15
802.11g	2412-2462MHz	13	+2	11	15
802.11n HT20	2412-2462MHz	13	+2	11	15
802.11n HT40	2422-2452MHz	13	+2	11	15
BT-LE (GFSK)	2402-2480MHz	4	+2	2	6

The measured conducted Average Power

Mode	Frequency (MHz)	Averaged Power (dBm)
802.11b	2462	13.47
802.11g	2437	14.13
802.11n HT20	2462	13.87
802.11n HT40	2437	13.54
BT-LE (GFSK)	2480	3.65



FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
Wi-Fi 2.4GHz	31.6228	3.2	20	0.013144	1.0
BT-LE (GFSK)	3.981	-1	20	0.00062911	1.0

CONCLUSION:

The BT and WLAN can transmit simultaneously, the formula of calculated the MPE is:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

$$(0.013144) + (0.00062911/1) = 0.0137732 < 1, \text{ which is less than the "1" limit.}$$



Important

- (1) The test report is valid with the official seal of the laboratory and the signatures of Test engineer, Author and Reviewer simultaneously.
- (2) The test report is invalid if altered.
- (3) Any photocopies or part photocopies in the test report are forbidden without the written permission from the laboratory.
- (4) Objections to the test report must be submitted to the laboratory within 15 days.
- (5) Generally, commission test is responsible for the tested samples only.

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