



RF EXPOSURE Test Report

Report No.: MTi210611010-01E3

Date of issue: July 01, 2021

Applicant: Guangdong WiiRobot Co., Ltd
Rove G2800 Gyroscope

Product name: Navigation Robot Vacuum
Cleaner

Model(s): G2800, G2800-BK, G2800-GY,
G2810-GY, G2810

FCC ID: 2AZ7PG2800

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>



Instructions

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TEST RESULT CERTIFICATION

Applicant's name.....:	Guangdong WiiRobot Co., Ltd
Address.....:	Room 401, Building 1, No.11 Yinghe 1st Street, Yaoshan, Xiegang Town, Dongguan City, Guangdong Province
Manufacturer's Name	Guangdong WiiRobot Co., Ltd
Address.....:	Room 401, Building 1, No.11 Yinghe 1st Street, Yaoshan, Xiegang Town, Dongguan City, Guangdong Province

Product description

Product name	Rove G2800 Gyroscope Navigation Robot Vacuum Cleaner
Trademark	ROVE
Model Name	G2800
Serial Model	G2800-BK, G2800-GY, G2810-GY, G2810
Standards.....:	N/A
Test procedure.....:	KDB 447498 D01 v06

Date of Test

Date (s) of performance of tests	June 21, 2021 ~ July 01, 2021
Test Result.....:	Pass

This device described above has been tested by Shenzhen Microtest Co., Ltd. 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.

Testing Engineer : 

 ((Danny Xu)

Technical Manager : 

 (Leo Su)

Authorized Signatory : 

 (Tom Xue)



RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*300/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f ²	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

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

MPE Calculation Method

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π = 3.1415926

R = distance between observation point and center of the radiator in cm (20cm)

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.



Measurement Result

BLE:

Operation Frequency: 2402-2480MHz,

Power density limited: 1mW/ cm²

2.4GWiFi:

Operation Frequency: WIFI 802.11b/g/n HT20: 2412-2462MHz,

Power density limited: 1mW/ cm²

Antenna Type: PCB Antenna;

WIFI antenna gain: 2.5dBi

R=20cm

$mW=10^{(dBm/10)}$

antenna gain Numeric= $10^{(dBi/10)}=10^{(2.5/10)}=1.78$

BLE:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm ²)	Power density Limits (mW/cm ²)
		(dBm)		tune-up power		Gain			
				(dBm)	(dBm)	(mW)	(dBi)	Numeric	
2402	GFSK	4.407	5±1	6	3.981	2.5	1.78	0.0014	1
2440		5.256	5±1	6	3.981	2.5	1.78	0.0014	1
2480		5.405	5±1	6	3.981	2.5	1.78	0.0014	1



2.4GWiFi :

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna Gain Numeric	Evaluation result at 20cm Power density(mW/cm2)	Power density Limits (mW/cm2)
				tune-up power				
				(dBm)	(mW)			
2412	802.11b	10.23	10±1	11	12.589254	1.78	0.04546	1
2437		10.80	10±1	11	12.589254	1.78	0.04546	1
2462		10.18	10±1	11	12.589254	1.78	0.04546	1
2412	802.11g	11.86	12±1	13	19.952623	1.78	0.39264	1
2437		12.36	12±1	13	19.952623	1.78	0.39264	1
2462		11.90	12±1	13	19.952623	1.78	0.39264	1
2412	802.11n H20	11.81	12±1	13	19.952623	1.78	0.39264	1
2437		12.23	12±1	13	19.952623	1.78	0.39264	1
2462		11.86	12±1	13	19.952623	1.78	0.39264	1

Conclusion:

Simultaneous transmit: BLE+2.4GWiFi=0.0014+0.39264=0.39404 ≤ 1.0 for 1g SAR, No SAR is required.

----END OF REPORT----