



RF EXPOSURE Test Report

Report No.: MTi220211003-01E3

Date of issue: Feb. 26, 2022

Applicant: Zhuhai Gotech Intelligent Technology Co., Ltd.

Product name: Smart Security Window & Door Sensor

Model(s): DZ-WGM1, WGM1, WGM2, WGM3

FCC ID: 2A4GF-DZ-WGM1

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

Instructions

1. The report shall not be partially reproduced without the written consent of the laboratory;
2. The test results of this report are only responsible for the samples submitted;
3. This report is invalid without the seal and signature of the laboratory;
4. This report is invalid if transferred, altered or tampered with in any form without authorization;
5. Any objection to this report shall be submitted to the laboratory within 15 days from the date of receipt of the report.



TEST RESULT CERTIFICATION	
Applicant's name.....:	Zhuhai Gotech Intelligent Technology Co., Ltd.
Address.....:	66 Yongda Road, Hongqi Town, Jinwan District, Zhuhai 519090 P.R.China
Manufacturer's Name	Zhuhai Gotech Intelligent Technology Co., Ltd.
Address.....:	66 Yongda Road, Hongqi Town, Jinwan District, Zhuhai 519090 P.R.China
Product description	
Product name	Smart Security Window & Door Sensor
Trademark	N/A
Model Name	DZ-WGM1
Serial Model	WGM1, WGM2, WGM3
Standards.....:	N/A
Test procedure	KDB 447498 D01 v06
Date of Test	
Date (s) of performance of tests	2022-02-14 ~ 2022-02-23
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

:

Cindy Qin

(Cindy Qin)

Technical Manager

:

Leon Chen

(Leon Chen)

Authorized Signatory

:

Tom Xue

(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	*900/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: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = 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: 2412-2462MHz,

Power density limited: 1mW/ cm²

Antenna Type: PCB Antenna;

WIFI & BLE antenna gain: 3dBi

R=20cm

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

antenna gain Numeric= $10^{(dBi/10)}=10^{(3/10)}=2$

BLE:

Channe l Freq. (MHz)	modulation	conducted power	Tune- up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/cm2)	(mW/cm 2)
				(dBm)	(mW)	(dBi)	Num eric		
2402	GFSK	-0.017	0±1	1	1.259	3	2.00	0.0005	1
2440		0.223	0±1	1	1.259	3	2.00	0.0005	1
2480		0.065	0±1	1	1.259	3	2.00	0.0005	1

2.4GWiFi:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna	Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain	Power density(mW/cm ²)	(mW/cm ²)
				(dBm)	(mW)	Numeric		
		Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	
2412	802.11b	9.67	9±1	10	10	2	0.00398	1
2437		9.69	9±1	10	10	2	0.00398	1
2462		8.95	9±1	10	10	2	0.00398	1

Conclusion:

BLE+2.4G WIFI=0.0005+0.00398=0.00448

For the max result: 0.00448≤ 1.0 for 1g SAR, No SAR is required.

----END OF REPORT----

Address: 101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China.

Tel: (86-755)88850135

Fax: (86-755) 88850136

Web:www.mttest.com

E-mail: mti@51mti.com