



RF EXPOSURE Test Report

Report No.: MTi210225009-04E2

Date of issue: May 11, 2021

Applicant: WIRELESS-TAG TECHNOLOGY
CO., LIMITED

Product name: IDO-SOM2D0X
IDO-SOM2D01, IDO-SOM2D02,
IDO-SOM2D01-V1-1GW, IDO-
SOM2D01-V1-2GW, IDO-

Model(s): SOM2D02-V1-1GW, IDO-
SOM2D02-V1-2GW, IDO-
SOM2D02-V1-4GW, IDO-
SOM2D01-V1-4GW

FCC ID: 2AFOS-IDO-SOM2D01

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.....:	WIRELESS-TAG TECHNOLOGY CO., LIMITED
Address.....:	Room 115-118, Building A, Chengshishanhai Center, No. 11, Zhongxing Road, Bantian Sub-District, Longgang district, Shenzhen, 518000 China
Manufacturer's Name.....:	Kangtuo Industrial (Shenzhen) Co., Ltd.
Address.....:	Gongshu Xinhuyuan Industrial Zone, Xixiang Street, Baoan District, Shenzhen City, Guangdong Province, China

Product description

Product name.....:	IDO-SOM2D0X
Trademark.....:	WIRELESS-TAG
Model Name.....:	IDO-SOM2D01
Serial Model.....:	IDO-SOM2D02, IDO-SOM2D01-V1-1GW, IDO-SOM2D01-V1-2GW, IDO-SOM2D02-V1-1GW, IDO-SOM2D02-V1-2GW, IDO-SOM2D02-V1-4GW, IDO-SOM2D01-V1-4GW
Standards.....:	N/A
Test procedure.....:	KDB 447498 D01 v06

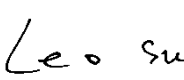
Date of Test

Date (s) of performance of tests..... :	Mar. 11, 2021 ~ May 11, 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 : 

 (Demi Mu)

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

2.4GWiFi:

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

802.11n HT40: 2422-2452MHz,

Power density limited: 1mW/ cm²

Antenna Type: FPC Antenna;

WIFI antenna gain: 3dBi

R=20cm

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

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

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)
		Ant A	Ant A	(dBm)	(mW)	Numeric		
2412	802.11b	15.88	16±1	17	50.118723	2	0.01994	1
2437		16.21	16±1	17	50.118723	2	0.01994	1
2462		15.54	16±1	17	50.118723	2	0.01994	1
2412	802.11g	13.19	13±1	14	25.118864	2	0.00999	1
2437		13.8	13±1	14	25.118864	2	0.00999	1
2462		13.16	13±1	14	25.118864	2	0.00999	1
2412	802.11n H20	13.5	13±1	14	25.118864	2	0.00999	1
2437		13.53	13±1	14	25.118864	2	0.00999	1
2462		13.03	13±1	14	25.118864	2	0.00999	1
2422	802.11n H40	12.19	12±1	13	19.952623	2	0.00794	1
2437		12.15	12±1	13	19.952623	2	0.00794	1
2452		11.74	12±1	13	19.952623	2	0.00794	1

Conclusion:

For the max result: $0.01994 \leq 1.0$ for 1g SAR, No SAR is required.

----END OF REPORT----