



RF EXPOSURE Test Report

Report No.: MTi210910026-09E2

Date of issue: 2022-06-16

Applicant: Shenzhen Tactile Intelligent Technology Co., Ltd.

Product name: IDO-EVB3020 DEMO BOARD

Model(s): IDO-EVB3020

Series model: Please refer to the remark

FCC ID: 2A7JC-IDO-EVB3020

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>



Series model Remark:

IDO-EVB3020-V1, IDO-EVB3020-V1-D1E8-C, IDO-EVB3020-V1-D1E16-C, IDO-EVB3020-V1-D1E32-C, IDO-EVB3020-V1-D1E64-C, IDO-EVB3020-V1-D2E8-C, IDO-EVB3020-V1-D2E16-C, IDO-EVB3020-V1-D2E32-C, IDO-EVB3020-V1-D2E64-C, IDO-EVB3020-V1-D1E8-J, IDO-EVB3020-V1-D1E16-J, IDO-EVB3020-V1-D1E32-J, IDO-EVB3020-V1-D1E64-J, IDO-EVB3020-V1-D2E8-J, IDO-EVB3020-V1-D2E16-J, IDO-EVB3020-V1-D2E32-J, IDO-EVB3020-V1-D2E64-J



Instructions

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TEST RESULT CERTIFICATION	
Applicant's name.....	Shenzhen Tactile Intelligent Technology Co., Ltd.
Address.....	Room 801-803, 8th Floor, Block A, Building 6, International Innovation Valley, Nanshan District, Shenzhen, PRC. Post Code: 518000
Manufacturer's Name	Shenzhen Tactile Intelligent Technology Co., Ltd.
Address.....	Room 801-803, 8th Floor, Block A, Building 6, International Innovation Valley, Nanshan District, Shenzhen, PRC. Post Code: 518000
Factory's Name	Kangtuo Industrial (Shenzhen) Co., Ltd.
Address.....	Gushu community, Xixiang street, Bao'an District, Shenzhen City, Guangdong Province
Product description	
Product name	IDO-EVB3020 DEMO BOARD
Trademark	INDUSTIO
Model Name	IDO-EVB3020
Serial Model	IDO-EVB3020-V1, IDO-EVB3020-V1-D1E8-C, IDO-EVB3020-V1-D1E16-C, IDO-EVB3020-V1-D1E32-C, IDO-EVB3020-V1-D1E64-C, IDO-EVB3020-V1-D2E8-C, IDO-EVB3020-V1-D2E16-C, IDO-EVB3020-V1-D2E32-C, IDO-EVB3020-V1-D2E64-C, IDO-EVB3020-V1-D1E8-J, IDO-EVB3020-V1-D1E16-J, IDO-EVB3020-V1-D1E32-J, IDO-EVB3020-V1-D1E64-J, IDO-EVB3020-V1-D2E8-J, IDO-EVB3020-V1-D2E16-J, IDO-EVB3020-V1-D2E32-J, IDO-EVB3020-V1-D2E64-J
Standards.....	N/A
Test procedure	KDB 447498 D01 v06
Date of Test	
Date (s) of performance of tests	2022-05-28 ~ 2022-06-16
Test Result.....	Pass

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

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: 2.22dBi

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/cm2)	(mW/cm2)
				(dBm)	(mW)	Numeric		
		Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	
2412	802.11b	16.38	16±1	17	50.118723	1.67	0.01662	1
2437		16.32	16±1	17	50.118723	1.67	0.01662	1
2462		16.78	16±1	17	50.118723	1.67	0.01662	1
2412	802.11g	14.25	15±1	16	39.810717	1.67	0.01320	1
2437		14.23	15±1	16	39.810717	1.67	0.01320	1
2462		14.42	15±1	16	39.810717	1.67	0.01320	1
2412	802.11n H20	12.83	13±1	14	25.118864	1.67	0.00833	1
2437		13.64	13±1	14	25.118864	1.67	0.00833	1
2462		13.85	13±1	14	25.118864	1.67	0.00833	1
2422	802.11n H40	13.87	13±1	14	25.118864	1.67	0.00833	1
2437		13.45	13±1	14	25.118864	1.67	0.00833	1
2452		13.54	13±1	14	25.118864	1.67	0.00833	1

Conclusion:

For the max result: $0.01662 \leq 1.0$ SAR, No SAR is required.

----END OF REPORT----