

TEST REPORT

Product Name : Doorbell camera
Model Number : IPB203, DB201
FCC ID : 2AQ7B-IPB203

Prepared for : SHENZHEN INTERTHINGS TECHNOLOGY CO.,LTD.
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Report Number : EDG2304230044E00103R
Date(s) of Tests : May 16, 2023 to June 06, 2023
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1. TEST RESULT CERTIFICATION

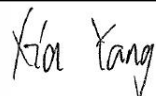
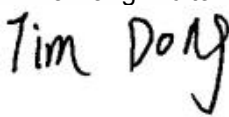
Applicant : SHENZHEN INTERTHINGS TECHNOLOGY CO.,LTD.
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Manufacturer : SHENZHEN INTERTHINGS TECHNOLOGY CO.,LTD.
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Factory : SHENZHEN INTERTHINGS TECHNOLOGY CO.,LTD.
Address : L310, Jinhetian Business Center, NO. 329, 3rd Road Longhuan, Helian Community, Longhua Street, Longhua District, Shenzhen, China
EUT : Doorbell camera
Model Name : IPB203, DB201
Trademark : 

Measurement Procedure Used:

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 1.1310: §1.1307(b)	PASS

The above equipment was tested by EMTEK(DONGGUAN) CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules FCC 1.1310: §1.1307(b).

The test results of this report relate only to the tested sample identified in this report

Date of Test : May 16, 2023 to June 06, 2023
Prepared by : 
Xia Yang /Editor
Reviewer : 
Tim Dong/ Supervisor
Approved & Authorized Signer : 

Sam Lv / Manager



Modified History

Version	Report No.	Revision Date	Summary
	EDG2304230044E00103R	/	Original Report



2. EUT Specification

Characteristics	Description
Product:	Doorbell camera
Model Number:	IPB203, DB201 All products are the same, only the model number and color of appearance are different Here we selected IPB203 for all the test
Sample:	2#
Device Type:	2.4G WIFI+433.92MHz Doorbell camera
Data Rate:	802.11b 802.11g 802.11n(20MHz channel bandwidth) 802.11n(40MHz channel bandwidth)
Modulation:	DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;
Operating Frequency Range(s) :	2412-2462MHz for 802.11b/g/n(HT20); 2422-2452MHz for 802.11n(HT40); 433.92MHz
Number of Channels:	11 channels for 802.11b/g/n(HT20);
	7 Channels for 802.11n(HT40);
	1 channel for 433.92MHz
Transmit Power Max:	Wifi 2.4G: -0.90 dBm(0.000813W) 433MHz: 74.36 dBuV@3m
Antenna Gain:	WIFI 2.4G: 1.79 dBi 433MHz: 1.0 dBi
Power supply:	DC 5V 1A form USB, DC 3.7V form battery
Evaluation applied:	☒ MPE Evaluation ☐ SAR Evaluation

3. Test Requirement

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)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	6
1500-100000	--	--	1	30

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 =3.1416

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

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.

According to ANSI C63.10-2013

9.5 Equations to calculate EIRP

Calculate the EIRP from the radiated field strength in the far field using Equation (22):

$$EIRP = E^2 + 20 \log(d) - 104.7 \quad (22)$$

where

EIRP is the equivalent isotropically radiated power, in dBm

E is the field strength of the emission at the measurement distance, in dBμV/m

d is the measurement distance, in m

4. Measurement Result

WIFI 2.4G

Antenna gain: 1.79 dBi

Mode	Frequency (MHz)	Output Power (dBm)	E. I.R.P (dBm)	Target Power W/tolerance (dBm)	Max tune up power (dBm) tolerance	Max tuneup power (mW) tolerance	Power Density at R=20cm (mW/cm ²)	Limit (mW/cm ²)
802.11b	2412	-0.90	0.89	0±1	1	1.26	0.000250	1
	2437	-1.89	-0.10	-1±1	0	1.00	0.000199	1
	2462	-3.15	-1.36	-2±1	-1	0.79	0.000158	1
802.11g	2412	-7.20	-5.41	-4±1	-5	0.32	0.000063	1
	2437	-8.23	-6.44	-7±1	-6	0.25	0.000050	1
	2462	-9.48	-7.69	-8±1	-7	0.20	0.000040	1
802.11n (HT20)	2412	-7.35	-5.56	-6±1	-5	0.32	0.000063	1
	2437	-8.26	-6.47	-7±1	-6	0.25	0.000050	1
	2462	-9.53	-7.74	-8±1	-7	0.20	0.000040	1
802.11n (HT40)	2422	-7.69	-5.90	-6±1	-5	0.32	0.000063	1
	2437	-8.28	-6.49	-6±1	-5	0.32	0.000063	1
	2452	-9.10	-7.31	-7±1	-6	0.25	0.000050	1

433MHz

Antenna gain: 1.0 dBi

Channel Freq. (MHz)	Max Field Strength (dBuV/m)	peak output power (dBm)	Tune up Power (dBm)	Max tune up power (dBm)	Max tune up power (mW)	Power Density at R=20cm (mW/cm ²)	Limit (mW/cm ²)
433.92	74.36	-19.80	-20±1	-19	0.012589	0.00000315	1

*** End of Report ***