



MPE Test Report

Report No.: MTi210104001-01E2

Date of issue: Feb. 04, 2021

Applicant: Kootion Information Technology
CO., LTD

Product name: Wireless IP Camera

Model(s): X12, X12H, X12T, X12W, X12F

FCC ID: 2AYSL-X12

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>



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TEST RESULT CERTIFICATION

Applicant's name.....	Kootion Information Technology CO., LTD
Address.....	4/F, Building A1, 272-1 Xiangyang Road, Shigu Community, Tangxia Town, Dongguan, China
Manufacturer's Name	Kootion Information Technology CO., LTD
Address.....	4/F, Building A1, 272-1 Xiangyang Road, Shigu Community, Tangxia Town, Dongguan, China
Product description	
Product name	Wireless IP Camera
Trademark	N/A
Model Name	X12
Serial Model	X12H, X12T, X12W, X12F
Standards	N/A
Test procedure	KDB 447498 D01 v06
Date of Test	
Date (s) of performance of tests	Jan. 15, 2021 ~ Feb. 04, 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

(Demi Mu)

Technical Manager

:

Leo Su

(Leo Su)

Authorized Signatory

:

Tom Xue

(Tom Xue)



1 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)

1.1 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.



1.2 Measurement Result

WIFI:

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

802.11n HT40: 2422-2452MHz,

Power density limited: 1mW/ cm²

Antenna Type: Wifi Antenna: External Antenna;

WIFI antenna gain: 3dBi

R=20cm

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

antenna gain Numeric= $10^{(dBi/10)}=10^{(3/10)}=2.14$

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	14.9	15±1	16	39.811	2	0.01584	1
2437		15.3	15±1	16	39.811	2	0.01584	1
2462		14.8	15±1	16	39.811	2	0.01584	1
2412	802.11g	12.88	13±1	14	25.119	2	0.00999	1
2437		13.29	13±1	14	25.119	2	0.00999	1
2462		12.92	13±1	14	25.119	2	0.00999	1
2412	802.11n H20	12.92	13±1	14	25.119	2	0.00999	1
2437		13.17	13±1	14	25.119	2	0.00999	1
2462		12.81	13±1	14	25.119	2	0.00999	1
2422	802.11n H40	12.46	12±1	13	19.953	2	0.00794	1
2437		12.85	12±1	13	19.953	2	0.00794	1
2452		12.72	12±1	13	19.953	2	0.00794	1

Conclusion:

For the max result: $0.01584 \leq 1.0$ for 1g SAR, No SAR is required.

----END OF REPORT----