MPE REPORT

FCC ID: ZCB-K5

Date of issue: Mar. 20, 2019

Report Number:	MTi190319E064
Sample Description:	IP Camera
Model(s):	K5（708JBU）, Q5 (636JBU), W4（757JBU）, W5（758JA）, W6（791JA）, 702JBU, 705JBU, 632JBU, 635JBU, 754JBU
Applicant:	Shenzhen Smart-eye Digital Electronics Co.,Ltd
Address:	#6 Northern Zone, Shangxue S&T City, Bantian, Longgang District, Shenzhen, China
Date of Test:	Feb. 23, 2019 to Mar. 20, 2019

Shenzhen Microtest Co., Ltd.

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TEST RESULT CERTIFICATION	
Applicant's name:	Shenzhen Smart-eye Digital Electronics Co.,Ltd
Address:	#6 Northern Zone, Shangxue S&T City, Bantian, Longgang District, Shenzhen, China
Manufacture's name:	Shenzhen Smart-eye Digital Electronics Co.,Ltd
Address:	#6 Northern Zone, Shangxue S&T City, Bantian, Longgang District, Shenzhen, China
Product name:	IP Camera
Trademark:	N/A
Model name:	K5 (708JBU)
Series model:	Q5 (636JBU), W4 (757JBU) , W5 (758JA) , W6 (791JA) , 702JBU, 705JBU, 632JBU, 635JBU, 754JBU
Difference in series models:	The wireless module used in the product is the same, just different in appearance and color.
RF Exposure Procedures:	KDB 447498 D01 v06

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.

Tested by: Orange Chen.

Orange Chen Mar. 20, 2019

Reviewed by: Blue.Zheng

Blue Zheng Mar. 20, 2019

Approved by: Smith Chen

Smith Chen Mar. 20, 2019

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: $Pd= (Pout*G)\ (4*pi*R^2)$

Where

Pd= Power density in mW/cm2

Pout=output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.14115926

R= distance between observation point and center of the radiator in cm(20cm)

Pd 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

WIFI:

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

802.11n HT40: 2422-2452MHz

Power density limited: 1mW/ cm^2

Antenna Type: Wifi Antenna: Metal Antenna;
WIFI antenna gain: 2dBi

R=20cm

mW=10^(dBm/10)

antenna gain Numeric=10^(dBi/10)= 10^(2/10)=1.58

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	13.20	13±1	14	25.118864	1.58	0.00790	1
2437		13.14	13±1	14	25.118864	1.58	0.00790	1
2462		12.22	13±1	14	25.118864	1.58	0.00790	1
2412	802.11g	12.18	12±1	13	19.952623	1.58	0.00627	1
2437		12.17	12±1	13	19.952623	1.58	0.00627	1
2462		11.86	12±1	13	19.952623	1.58	0.00627	1
2412	802.11n H20	11.23	11±1	12	15.848932	1.58	0.00498	1
2437		11.63	11±1	12	15.848932	1.58	0.00498	1
2462		10.70	11±1	12	15.848932	1.58	0.00498	1
2422	802.11n H40	8.19	8±1	9	7.9432823	1.58	0.00250	1
2437		7.98	8±1	9	7.9432823	1.58	0.00250	1
2452		7.22	8±1	9	7.9432823	1.58	0.00250	1

Conclusion:

For the max result: 0.00790≤ 1.0 for 1g SAR, No SAR is required.

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