MPE REPORT

FCC ID: 2AB22-ESWL03

Date of issue: Jan. 21, 2019

Report Number:	MTi190114E079
Sample Description:	Smart WiFi Light Switch
Model(s):	ESWL03
Applicant:	Etekcity Corporation
Address:	1202 N Miller St. Suite A, Anaheim, CA 92806, USA
Date of Test:	Jan. 07, 2019 to Jan. 21, 2019

Shenzhen Microtest Co., Ltd.

http://www.mtitest.com

TEST RESULT CERTIFICATION	
Applicant's name:	Etekcity Corporation
Address:	1202 N Miller St. Suite A, Anaheim, CA 92806, USA
Manufacture's name:	Dongguan Raiwee Electronic Technology Co., Ltd
Address:	Building 11, Antouling, Industry Avenue, Qinghu Village, Qishi Town, Dongguan, Guangdong, China
Product name:	Smart WiFi Light Switch
Trademark:	ETEKCITY
Model name:	ESWL03
Series model:	N/A
Difference in series models:	N/A
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: Demi Mu Jan. 21, 2019

Reviewed by: Blue Zheng Jan. 21, 2019

Approved by: Smith Chen Jan. 21, 2019

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)

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

Operation Frequency: WIFI 802.11b/g/n20:2412~2462MHz

Power density limited: 1mW/ cm^2

Antenna Type: Spring antenna
Antenna gain: 2.28dBi

R=20cm

mW=10^(dBm/10)

Antenna gain Numeric=10^(dBi/10)= 10^(2.28/10)=1.69

2. SAR Test Exclucsion Thresholds

Bluetooth DTS:

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	12.92	12±1	13	19.952623	1.69	0.00671	1
2437		12.88	12±1	13	19.952623	1.69	0.00671	1
2462		13.07	12±1	13	19.952623	1.69	0.00671	1
2412	802.11g	11.36	12±1	13	19.952623	1.69	0.00671	1
2437		12.25	12±1	13	19.952623	1.69	0.00671	1
2462		12.01	12±1	13	19.952623	1.69	0.00671	1
2412	802.11n H20	11.28	12±1	13	19.952623	1.69	0.00671	1
2437		12.40	12±1	13	19.952623	1.69	0.00671	1
2462		12.14	12±1	13	19.952623	1.69	0.00671	1

Conclusion:

For the max result: 0.00671≤ 1.0 for 1g SAR, No SAR is required.

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