MPE REPORT

FCC ID: 2AB22-ESW15-USA

Date of issue: Aug. 20, 2018

Report Number: MTi180825E115

Sample Description: Voltson Smart WiFi Outlet

Model(s):   ESW15-USA

Applicant: Etekcity Corporation

Address: 1202 N Miller St. Suite A, Anaheim, CA 92806, USA

Date of Test: Aug. 08, 2018 to Aug. 20, 2018

Shenzhen Microtest Co., Ltd.

http://www.mtitest.com

Tel:(86-755)88850135   Fax: (86-755) 88850136   Web: http://www.mtitest.com   E-mail: mti@51mti.com

Address: No.102A & 302A, East Block, Hengfang Industrial Park, Xingye Road, Xixiang, Bao'an District, Shenzhen, Guangdong, China

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:	Voltson Smart WiFi Outlet
Trademark:	ETEKCITY
Model and/or type reference . :	ESW15-USA
Serial Model...............................:	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:

Leo Su

Leo Su   Aug. 20, 2018

Reviewed by:

Blue Zheng

Blue Zheng   Aug. 20, 2018

Approved by:

Smith Chen

Smith Chen   Aug. 20, 2018

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

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.

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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: PCB Mounted Embedded Antenna;
WIFI antenna gain: 0.59dBi

R=20cm

mW=10^(dBm/10)

antenna gain Numeric=10^(dBi/10)= 10^(3.3/10)=2.14

Channel Freq. (MHz)	modulation	conducted power (dBm) Ant A	Tune-up power (dBm) Ant A	Max		Antenna Gain Numeric Ant A	Evaluation result at 20cm Power density(mW/cm2) Ant A	Power density Limits (mW/cm2)
				tune-up power				
				(dBm) Ant A	(mW) Ant A			
2412	802.11b	13.66	14±1	15	31.6227766	0.59	0.00371	1
2437		14.32	14±1	15	31.6227766	0.59	0.00371	1
2462		13.87	14±1	15	31.6227766	0.59	0.00371	1
2412	802.11g	11.68	12±1	13	19.95262315	0.59	0.00234	1
2437		12.77	12±1	13	19.95262315	0.59	0.00234	1
2462		12.35	12±1	13	19.95262315	0.59	0.00234	1
2412	802.11n H20	12.33	12±1	13	19.95262315	0.59	0.00234	1
2437		12.42	12±1	13	19.95262315	0.59	0.00234	1
2462		12.31	12±1	13	19.95262315	0.59	0.00234	1

Conclusion:

For the max result : 0.00371≤ 1.0

----END OF REPORT----

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