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Report Template Version: V03
Report Template Revision Date: Mar.1st, 2017

RF Exposure Evaluation Report

Report No. :	CQASZ20190600033EX-02
Applicant:	JMTek Industries(Shenzhen) Co., Ltd.
Address of Applicant:	14G, Innovation Tech Building, Quanzhi Science and Technology innovation Park, ShaJing Street, Baoan District, ShenZhen, China
Manufacturer:	JMTek Industries(Shenzhen) Co., Ltd.
Address of Manufacturer:	14G, Innovation Tech Building, Quanzhi Science and Technology innovation Park, ShaJing Street, Baoan District, ShenZhen, China
Equipment Under Test (EUT):	
Product:	Wireless Charger
Model No.:	WPC488-10W
Brand Name:	N/A
FCC ID:	2APU5-WPC488-10W
Standards:	47 CFR Part 1.1307 47 CFR Part 1.1310 KDB 680106 D01 RF Exposure Wireless Charging Base App v03
Date of Test:	Jun. 24, 2019 to Jun. 28, 2019
Date of Issue:	Jul. 01, 2019
Test Result :	**PASS***

Tested By: Tom Chen.

(Tom Chen)

Reviewed By: Aaron Ma

(Aaron Ma)

Approved By:

(Jack Ai)

SHENZHEN HUAXIA TESTING TECHNOLOGY CO.,LTD 华夏准测 APPROVED

* In the configuration tested, the EUT complied with the standards specified above.

2 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20190600033EX-02	Rev.01	Initial report	Jul. 01, 2019

3 Contents

4 General Information

4.1 Client Information

Applicant:	JMTek Industries(Shenzhen) Co., Ltd.
Address of Applicant:	14G, Innovation Tech Building, Quanzhi Science and Technology innovation Park, ShaJing Street, Baoan District, ShenZhen, China
Manufacturer:	JMTek Industries(Shenzhen) Co., Ltd.
Address of Manufacturer:	14G, Innovation Tech Building, Quanzhi Science and Technology innovation Park, ShaJing Street, Baoan District, ShenZhen, China

4.2 General Description of EUT

Product Name:	Wireless Charger
Model No.:	WPC488-10W
Trade Mark:	N/A
Hardware Version:	/
Software Version:	/
Operation Frequency:	172.2KHz
Modulation Type:	Induction
Antenna Type:	Loop coil antenna
Antenna Gain:	0 dBi
Charger Information:	Input: 5V⎓2A; 9V⎓1.67A Wireless Output: 5V⎓1A(5W), 9V⎓1.1A(10W) USB Output: 5V⎓1A Max

Note: For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

4.3 Test Environment

Operating Environment:	
Temperature:	25.0 °C
Humidity:	53 % RH
Atmospheric Pressure:	1001mbar
Test Mode:	
Mode a:	Wireless charging Mode at 9V (Full load)
Mode b:	Wireless charging Mode at 9V (half load)
Mode c:	Wireless charging Mode at 9V (Null load)
Mode d:	Wireless charging Mode at 5V (Full load)
Mode e:	Wireless charging Mode at 5V (half load)
Mode f:	Wireless charging Mode at 5V (Null load)

4.4 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	emark	FCC certification
Adapter	Samsung	EP-TA50CBC	Provide by client	Verification
Adapter	HUAWEI	HW-050450C00	Provide by client	Verification
Wireless electronic Load	-	-	Provide by client	-

4.5 Test Location

Shenzhen Huaxia Testing Technology Co., Ltd,

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

4.6 Test Facility

• **A2LA (Certificate No. 4742.01)**
Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

• **FCC Registration No.: 522263**
Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.:522263

4.7 Equipment List

Test Equipment	Manufacturer	Model No.	Instrument No.	Calibration Date	Calibration Due Date
Broadband Field Meter	Narda Safety Test Solutions GmbH	NBM-520	SB9873	2018/10/18	2019/10/17
Magnetic field probe	HIOKI	3470	SB9058/04	2018/12/14	2019/12/13

5 RF Exposure Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

According to FCC Part1.1310: 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 part1.1307(b)

TABLE 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 Exposures				
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
300–1500	.....	.....	f/300	6
1500–100,000	.....	.....	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
300–1500	.....	.....	f/1500	30
1500–100,000	.....	.....	1.0	30

Note 1: f = frequency in MHz ; *Plane-wave equivalent power density

Note 2: For the applicable limit, see FCC 1.1310, 680106 D01 RF Exposure Wireless Charging Apps v03

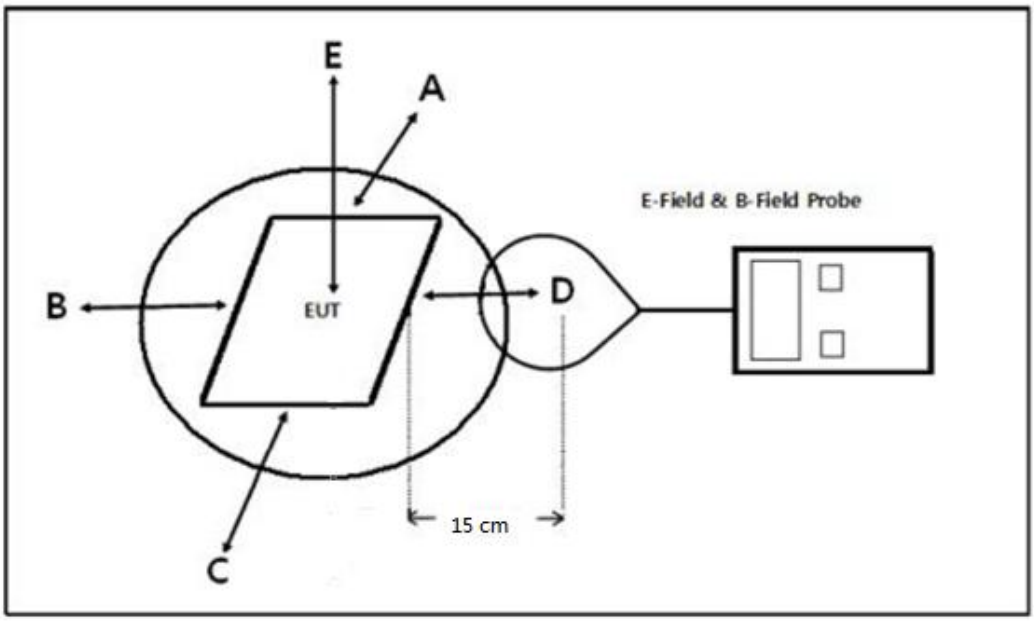
Note 3: Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

Note 4: The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit .

5.1.2 Test Procedure

For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 20 cm(Top) and 15cm(Edge). E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 20 cm(Top) and 15cm(Edge) measured from the center of the probe(s) to the edge of the device.

5.1.3 Test Setup



Note: Position A: Front of EUT; Position B: Left of EUT; Position C: back of EUT; Position D: Right of EUT; Position E: Top of EUT(20 cm measure distance);

5.1.4 Test Results

The EUT does comply with item 5 KDB680106 D01 v03.

(1) Power transfer frequency is less than 1 MHz.
(Conform)

(2) Output power from each primary coil is less than or equal to 15 watts.
(Conform)

(3) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.
(Conform)

(4) Client device is placed directly in contact with the transmitter.
(Conform)

(5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
(Conform)

(6) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.
(Conform)

Test condition: Mode a

E-field strength test result:

Frequency Range	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Limit (V/m)
172.2KHz	0.19	0.20	0.18	0.18	2.15	614

H-field strength test result:

Frequency Range	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Limit (A/m)
172.2KHz	0.08	0.11	0.10	0.11	0.72	1.63

Test condition: Mode b

E-field strength test result:

Frequency Range	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Limit (V/m)
172.2KHz	0.11	0.14	0.15	0.16	0.89	614

H-field strength test result:

Frequency Range	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Limit (A/m)
172.2KHz	0.10	0.14	0.08	0.10	0.70	1.63

Test condition: Mode c

E-field strength test result:

Frequency Range	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Limit (V/m)
172.2KHz	0.08	0.12	0.07	0.08	0.59	614

H-field strength test result:

Frequency Range	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Limit (A/m)
172.2KHz	0.07	0.12	0.11	0.12	0.75	1.63

Test condition: Mode d

E-field strength test result:

Frequency Range	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Limit (V/m)
172.2KHz	0.09	0.09	0.10	0.11	0.90	614

H-field strength test result:

Frequency Range	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Limit (A/m)
172.2KHz	0.09	0.07	0.11	0.06	0.67	1.63

Test condition: Mode e

E-field strength test result:

Frequency Range	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Limit (V/m)
172.2KHz	0.11	0.11	0.08	0.11	0.92	614

H-field strength test result:

Frequency Range	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Limit (A/m)
172.2KHz	0.09	0.08	0.06	0.10	0.65	1.63

Test condition: Mode f

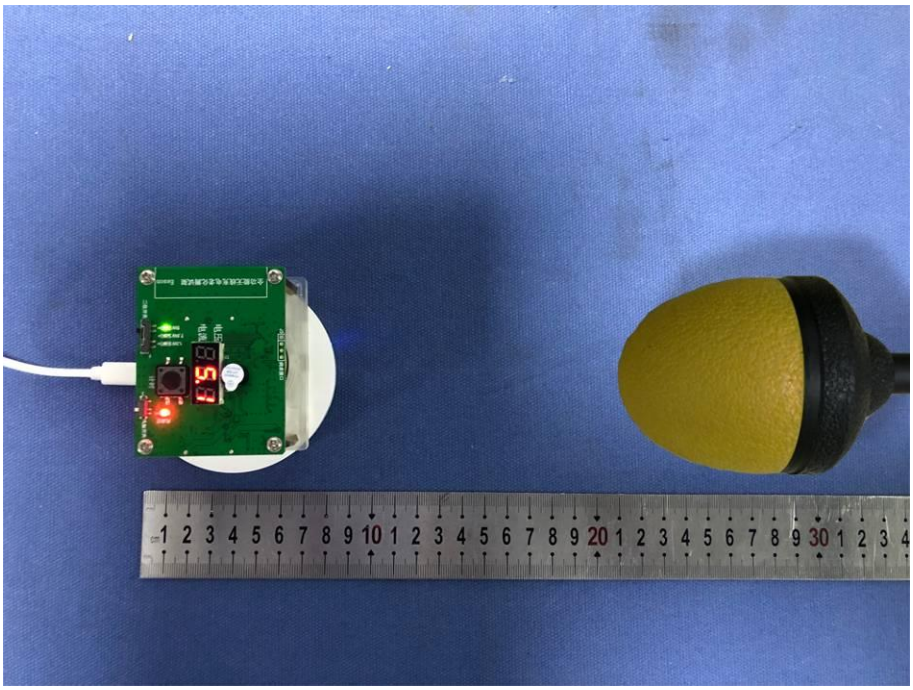
E-field strength test result:

Frequency Range	Probe Position A (V/m)	Probe Position B (V/m)	Probe Position C (V/m)	Probe Position D (V/m)	Probe Position E (V/m)	Limit (V/m)
172.2KHz	0.15	0.13	0.13	0.09	0.90	614

H-field strength test result:

Frequency Range	Probe Position A (A/m)	Probe Position B (A/m)	Probe Position C (A/m)	Probe Position D (A/m)	Probe Position E (A/m)	Limit (A/m)
172.2KHz	0.11	0.06	0.08	0.09	0.67	1.63

APPENDIX A: PHOTOGRAPHS OF TEST SETUP



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