FCC MPE TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

10W Wireless Fast Charging Station

ISSUED TO
TP-Link Technologies Co., Ltd.

Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China

Tested by: Zong Liyao
(Engineer)
Date: Jun. 25, 2018

Approved by: Wei Yanquan
(Chief Engineer)
Date: Jun. 25, 2018

Report No.:	BL-SZ1830386-702
EUT Type:	10W Wireless Fast Charging Station
Model Name:	TL-WCS200
Brand Name:	tp-link
Test Standard:	47 CFR Part 1.1307
	47 CFR Part 1.1310
FCC ID:	TE7WCS200
Test Conclusion:	Pass
Test Date:	Apr. 15, 2018 ~ Apr. 13, 2018
Date of Issue:	Jun. 25, 2018

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Revision History

Version	Issue Date	Revisions Content
Rev. 01	May 29, 2018	Initial Issue
Rev. 02	Jun. 25, 2018	Update the Operating Mode on page 5

TABLE OF CONTENTS

1 GENERAL INFORMATION

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China.
Phone Number	+86 755 6685 0100
Fax Number	+86 755 6182 4271

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China.
Accreditation Certificate	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory has been listed by US Federal Communications Commission to perform electromagnetic emission measurements. The recognition numbers of test site are 832625. The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Test Environment Condition

Ambient Temperature	21 to 23 ℃
Ambient Relative Humidity	40 to 50%
Ambient Pressure	100 to 102 KPa

1.4 Announce

(1) The test report reference to the report template version v1.2.
(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
(3) The test report is invalid if there is any evidence and/or falsification.
(4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
(5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
(6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	TP-Link Technologies Co., Ltd.
Address	Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China

2.2 Manufacturer Information

Manufacturer	TP-Link Technologies Co., Ltd.
Address	Building 24 (floors 1,3,4,5) and 28 (floors1-4) Central Science and Technology Park, Shennan Rd, Nanshan, Shenzhen, China

2.3 Factory Information

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Type	10W Wireless Fast Charging Station
Model Name Under Test	TL-WCS200
Series Model Name	N/A
Description of Model Name Differentiation	N/A
Hardware Version	N/A
Software Version	N/A
Network and Wireless connectivity	N/A

2.5 Ancillary Equipment

Note: Not application.

2.6 Technical Information

The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	110.5kHz~205kHz	
Antenna Type	Coil Antenna	
About Product	The EUT only support the QI technology.	
Exposure Category	General Population/Uncontrolled exposure	
EUT Stage	Mobile Device	
Product	Type	
	☒ Production unit	☐ Identical prototype

3 STANDARD INFORMATION

3.1 Test Standard

No.	Identity	Document Title
1	47 CFR Part 1	Practice and Procedure
2	KDB 680106 D01	RF Exposure Considerations for Low Power Consumer Wireless Power Transfer Applications

3.2 Radiofrequency Radiation Exposure Limit

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*				

NOTE:

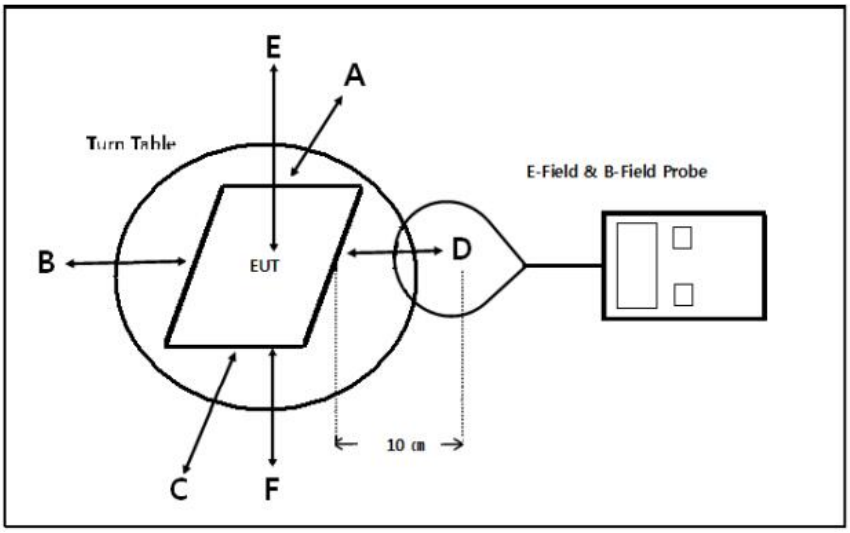
General Population/Uncontrolled Exposure: Locations where there is the exposure of individuals who have no knowledge or control of their exposure. General population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

Occupational/Controlled Exposure: Locations where there is exposure that may be incurred by persons who are aware of the potential for exposure. In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

4 TEST SETUP

4.1 Test Setup Photo

Maximum E-field and H-field measurements were made on each of five sides of the EUT that could come in contact with a user. The five sides are defined as follows: Top (A), Left (B), Bottom (C), Right (D), and Front (E). Refer to the test position diagram below.



4.2 Measurement procedure

1. The RF exposure test was performed in anechoic chamber.
2. The measurement probe was placed at test distance (10 cm) which is between the edge of the charger and the geometric center of probe.
3. The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E, F) were completed.
4. The EUT was measured according the dictates of KDB 680106 D01v02.

4.3 Mobile Condition

Probe	Condition	Test Distance (cm)
E-field	Mobile	10
H-field	Mobile	10

4.4 Test Equipment

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
E-field Probe	Narda	EP601	511WX51129	2016.05.13	2017.05.12
H-field Probe	Schaffner	EMC-20	1324.11	2016.05.13	2017.05.12
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2016.03.28	2017.03.27

4.5 Test Configuration

To check all kinds of possible modes, the EUT was evaluated with appropriate client and under each charging condition as the below table:

Test Mode NO.	Description	
1	Idle Mode	The EUT was powered on and there is no client device attached with the EUT.
2	Charging Mode	The EUT was charging the client device which has Less than 1 % of battery.
3	Charging Mode	The EUT was charging the client device which has Less than 50 % of battery.
4	Charging Mode	The EUT was charging the client device which has 100 % of battery.

5 TEST RESULT

5.1 E-field

Distance (cm)	Test Mode	EUT Edges					Limit (V/m)
		A (V/m)	B (V/m)	C (V/m)	D (V/m)	E (V/m)	
10	1	11.15	13.35	10.46	10.57	21.06	614.0
	2	11.26	13.52	10.58	10.75	21.42	
	3	10.28	12.25	9.66	9.58	20.16	
	4	10.95	12.77	9.85	10.11	20.25	

5.2 H-field

Distance (cm)	Test Mode	EUT Edges					Limit (A/m)
		A (A/m)	B (A/m)	C (A/m)	D (A/m)	E (A/m)	
10	1	0.20	0.18	0.15	0.15	0.24	1.63
	2	0.19	0.18	0.15	0.14	0.25	
	3	0.19	0.16	0.12	0.14	0.24	
	4	0.18	0.17	0.12	0.13	0.23	

6 Test Conclusion

6.1 E-field

Distance (cm)	Worst-case Test Mode	EUT Edge	Limit (V/m)	30% Limit (V/m)	Verdict
		E (V/m)			
10	2	21.42	614.0	184.2	Pass

6.2 H-field

Distance (cm)	Worst-case Test Mode	EUT Edge	Limit (A/m)	30% Limit (A/m)	Verdict
		E (A/m)			
10	2	0.25	1.63	0.49	Pass

The E-field and H-field data shown in this report show that the EUT is compliant with the 30% of the MPE limits.

--END OF REPORT--