



REPORT No. : SZ18050296S01

TEST REPORT

APPLICANT : Shenzhen Tesla Wireless Device Co.,Ltd.
PRODUCT NAME : Wireless Charger
MODEL NAME : B170UR,B170UA
BRAND NAME : EnergyPad
FCC ID : 2AP5M-B170U
STANDARD(S) : 47CFR 2.1091

TEST DATE : 2018-06-14
ISSUE DATE : 2018-06-15

Tested by:

Gan Yueming

Gan Yueming (Test engineer)

Approved by:

Peng Huarui

Peng Huarui (Supervisor)

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MORLAB

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Change History		
Issue	Date	Reason for change
1.0	2018-06-15	First edition



1. Technical Information

Note: Provide by manufacturer.

1.1. Applicant and Manufacturer Information

Applicant:	Shenzhen Tesla Wireless Device Co.,Ltd.
Applicant Address:	Room 306, Building#9, Yun Gu Phase 2, PingShan Yi Lu, Nanshan Dist., Shenzhen, P.R.C
Manufacturer:	Shenzhen Fowata Intelligent Technology Co., Ltd.
Manufacturer Address:	YuDaFu Industrial Garden Xing Ye West Road, Sha Jing Town, Bao An, Shenzhen

1.2. Equipment Under Test (EUT) Description

EUT Type:	Wireless Charger		
Hardware Version:	B170UR		
Software Version:	B170UR v1.1.1		
Frequency Bands:	115KHz~140KHz		
Antenna type:	N/A		
MPE:	E-field	0.15V/m	50%Limit: 312(V/m)
	H-field	0.012A/m	50%Limit: 0.815(A/m)

Note: According to the statement, the model B170UR and B170UA are accordant in both hardware and software. The two models have identical circuits and coils and differ only in the shape of the coil's shell and in the material of the plastic shell of circuit board .The application information of B170UR and B170UA are identical only except above mentioned points.

1.3. Photographs of the EUT

Please refer to the External Photos for the Photos of the EUT



1.4. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	47 CFR§2.1091	Radiofrequency Radiation Exposure Evaluation: Mobile Devices
2	680106 D01v03	RF Exposure Considerations for Low Power Consumer Wireless Power Transfer Applications

2. FCC MPE Requirement

2.1. General Information

For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 15 cm. 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 15 cm measured from the center of the probe(s) to the edge of the device. 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.

2.2. MPE Limit

Basic Restrictions Reference levels

Basic Restriction for electric, magnetic and electromagnetic fields (0Hz to 300GHz)

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 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

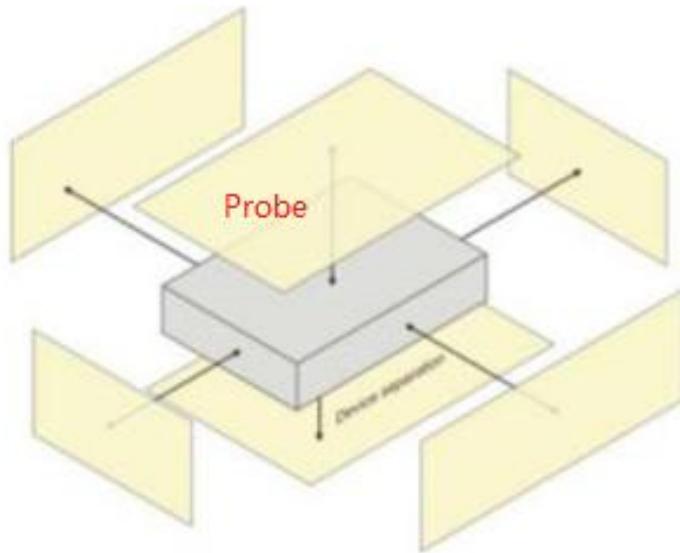
2.3. Measurement Uncertainty (95% confidence levels, k=2)

Test Item	Uncertainty
Uncertainty for Radiated Frequency	7×10^8
Uncertainty for test site temperature and humidity	0.6 °C
	3%

2.4. Test Information

The EUT working at normal charging mode, use the E-Probe measure the H-field Strength, E-field Strength separately. The measure distance is 15cm.

2.5. Test Setup





2.6. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
STT	Field meter	SEM-600	D-1044	2018.05.29	2019.05.28
STT	Probe	LF-04	I-1044	2018.05.29	2019.05.28
STT	Holder	TR-01	N/A	N/A	N/A
STT	USB Line	USB T0 mini L=1.3M	N/A	N/A	N/A

3. Assess Results

Test Date:	2018.06.14
Temperature: 22.5±0.6 °C	Humidity: 53.4±3.0%

E- field strength result (Test frequency range from 115KHz to 140KHz)					
Test Configuration	Exposure Position	Distance (cm)	E-field Strength (Max. V/m)	Limit 50%(V/m)	Result
5V 140KHz	Top Surface	20	0.08	302	PASS
	Edge 1	15	0.07	302	PASS
	Edge 2	15	0.05	302	PASS
	Edge 3	15	0.08	302	PASS
	Edge 4	15	0.08	302	PASS
	Bottom Surface	15	0.09	302	PASS

E- field strength result (Test frequency range from 115KHz to 140KHz)					
Test Configuration	Exposure Position	Distance (cm)	E-field Strength (Max. V/m)	Limit 50%(V/m)	Result
5V 115 KHz -140KHz	Top Surface	20	0.12	302	PASS
	Edge 1	15	0.05	302	PASS
	Edge 2	15	0.05	302	PASS
	Edge 3	15	0.08	302	PASS
	Edge 4	15	0.05	302	PASS
	Bottom Surface	15	0.15	302	PASS



E- field strength result (Test frequency range from 115KHz to 140KHz)

Test Configuration	Exposure Position	Distance (cm)	E-field Strength (Max. V/m)	Limit 50%(V/m)	Result
9V 140KHz	Top Surface	20	0.06	302	PASS
	Edge 1	15	0.06	302	PASS
	Edge 2	15	0.06	302	PASS
	Edge 3	15	0.05	302	PASS
	Edge 4	15	0.05	302	PASS
	Bottom Surface	15	0.09	302	PASS

H- field strength result (Test frequency range from 115KHz to 140KHz)

Test Configuration	Exposure Position	Distance (cm)	E-field Strength (Max. A/m)	Limit 50%(A/m)	Result
5V 140KHz	Top Surface	20	0.009	0.815	PASS
	Edge 1	15	0.012	0.815	PASS
	Edge 2	15	0.01	0.815	PASS
	Edge 3	15	0.01	0.815	PASS
	Edge 4	15	0.011	0.815	PASS
	Bottom Surface	15	0.012	0.815	PASS

H- field strength result (Test frequency range from 115KHz to 140KHz)

Test Configuration	Exposure Position	Distance (cm)	E-field Strength (Max. A/m)	Limit 50%(A/m)	Result
5V 115 KHz -140KHz	Top Surface	20	0.01	0.815	PASS
	Edge 1	15	0.012	0.815	PASS
	Edge 2	15	0.013	0.815	PASS
	Edge 3	15	0.012	0.815	PASS
	Edge 4	15	0.01	0.815	PASS
	Bottom Surface	15	0.015	0.815	PASS



H- field strength result (Test frequency range from 115KHz to 140KHz)					
Test Configuration	Exposure Position	Distance (cm)	E-field Strength (Max. A/m)	Limit 50%(A/m)	Result
5V 140KHz	Top Surface	20	0.008	0.815	PASS
	Edge 1	15	0.011	0.815	PASS
	Edge 2	15	0.01	0.815	PASS
	Edge 3	15	0.01	0.815	PASS
	Edge 4	15	0.011	0.815	PASS
	Bottom Surface	15	0.012	0.815	PASS

Note:

1. According to KDB 680106 D01V03 section 5 b), 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
2. The more tighter limit apply to each band.
3. In this report, 15cm distance gap was used for testing on top surface.



Annex A General Information

1. Identification of the Responsible Testing Laboratory

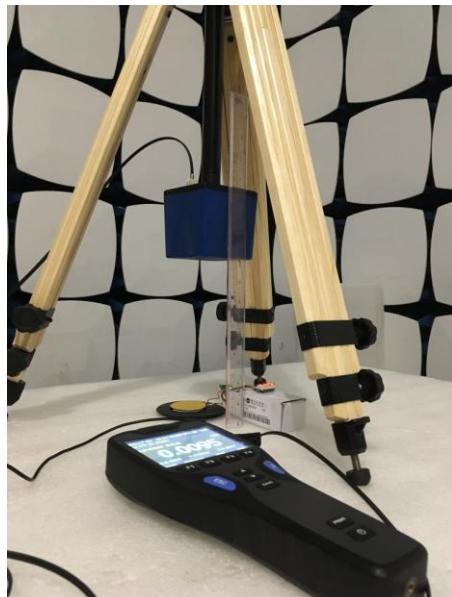
Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

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Annex B Test Setup Photos

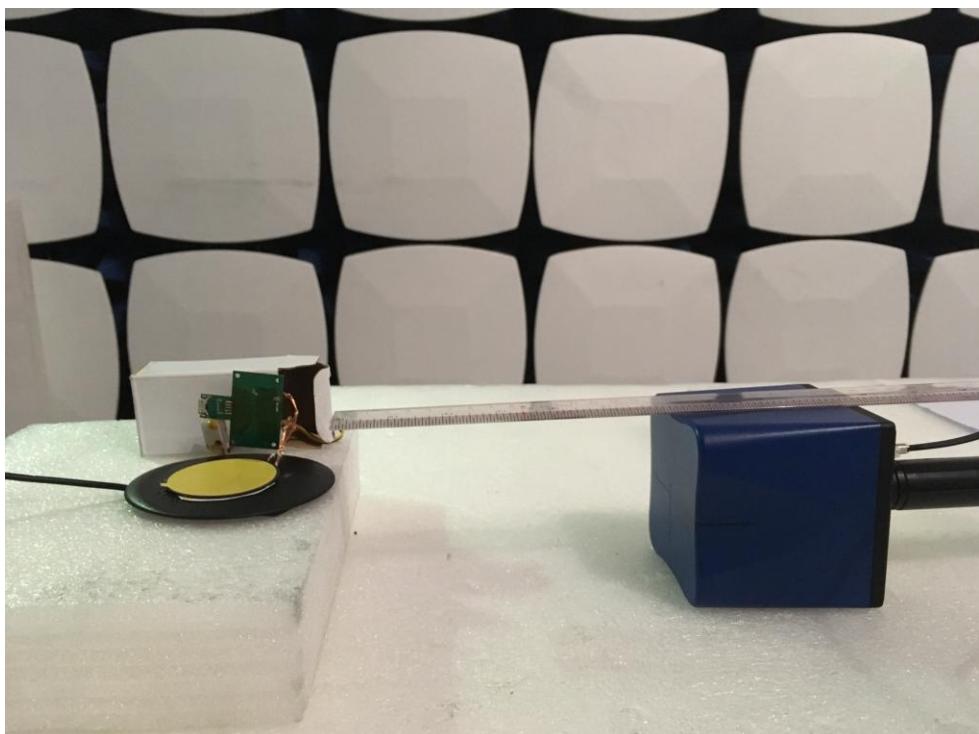


Top Surface_20cm

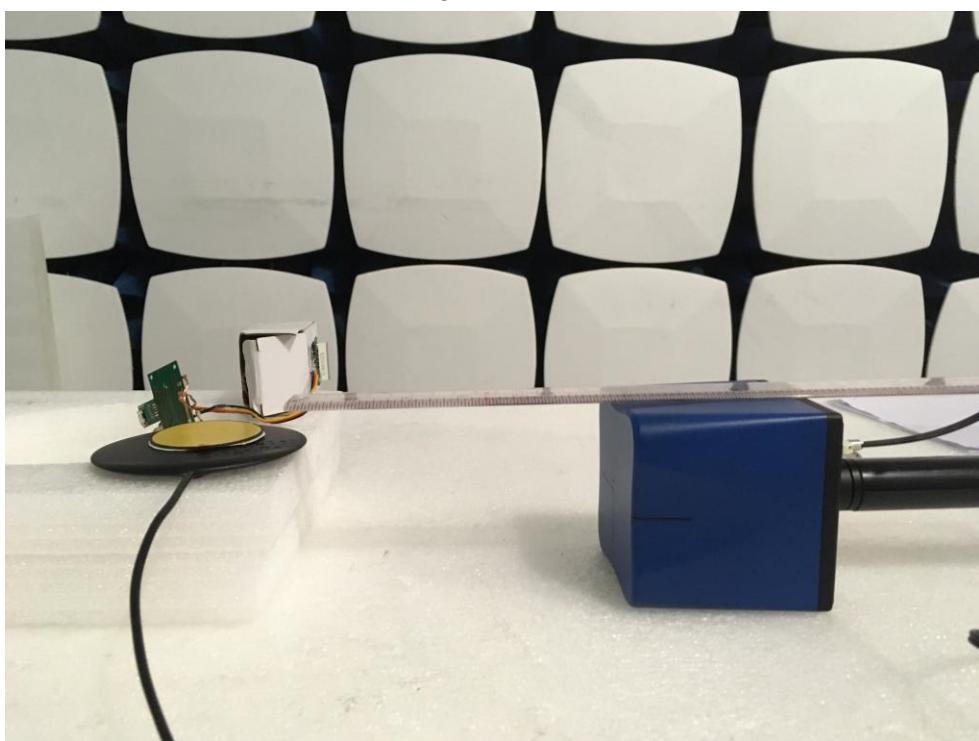


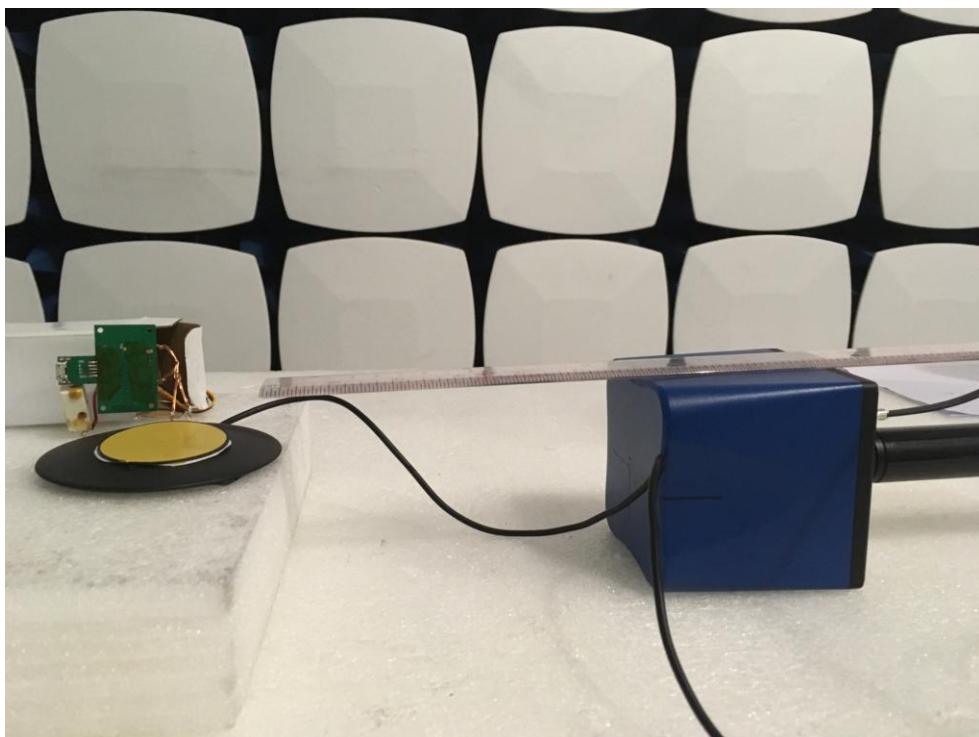
Bottom Surface_15cm

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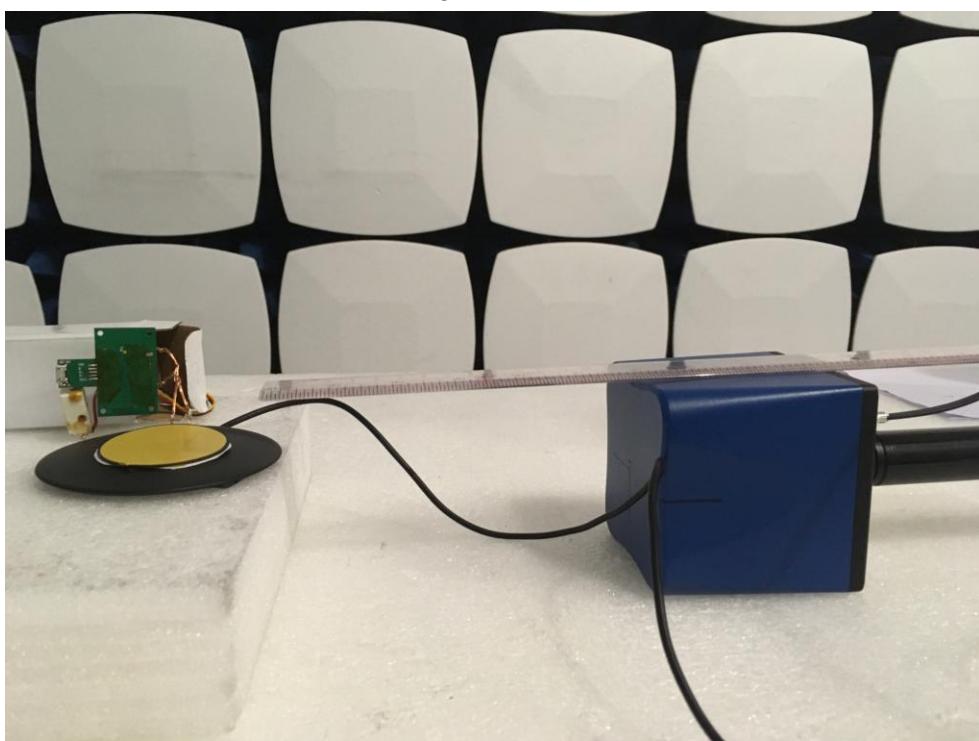


Edge 1_15cm





Edge 3_15cm



Edge 4_15cm