



REPORT No. : SZ18060226S01

TEST REPORT

APPLICANT : Shenzhen Tesla Wireless Device Co.,Ltd.

PRODUCT NAME : Wireless Charger

MODEL NAME : B85UX,B85UF,B85UL,B85UE,B85UO,B85UC,B85UP,B85UR ,Z01A

BRAND NAME : EnergyPad

FCC ID : 2AP5M-B85U

STANDARD(S) : 47CFR 2.1091

TEST DATE : 2018-07-08

ISSUE DATE : 2018-07-10

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	2018-07-10	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 Kaifa Technology Co., Ltd.
Manufacturer Address:	7006, Caitian Rd, Futian Dist, Shenzhen

1.2. Equipment Under Test (EUT) Description

EUT Type:	Wireless Charger		
Hardware Version:	EN16U		
Software Version:	B85UX v1.1.1		
Frequency Bands:	120KHz~140KHz		
MPE:	E-field	1.68 V/m	50%Limit: 307(V/m)
	H-field	0.126 A/m	50%Limit: 0.815(A/m)

Note:

According to the declaration that models B85UX, B85UF, B85UL, B85UE, B85UO, B85UC, B85UP, B85UR, Z01A have identical circuits and coils, all of them differ only in the shape and color of the coil housing, the plastic housing material of the circuit board. And the model B85UX was selected for MPE measurement.

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

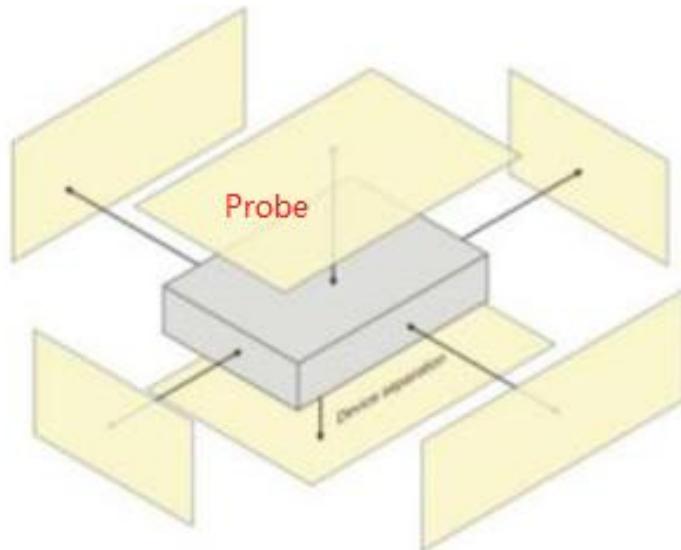
2.3. Measurement Uncertainty (95% confidence levels, k=2)

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.

2.5. Test Setup





3. Assess Results

3.1. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
STT	Broadband 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	Probe holder	TR-01	N/A	N/A	N/A
STT	Optical fiber line	L=5M	N/A	N/A	N/A

3.2. Test Results

EUT: Wireless charger	Test Date: 2018.07.08
Temperature: 25±2 °C	Humidity: 20-60%

E field strength result (Test frequency range from 120KHz to 140KHz)					
Test Loading	Exposure Position	Distance (cm)	E-field Strength (Max. V/m)	Limit 50%(V/m)	Result
140K 5V	Top Surface	20	0.63	307	PASS
	Bottom Surface	15	1.55	307	PASS
	Left Side	15	1.11	307	PASS
	Right Side	15	0.87	307	PASS
	Top Side	15	1.32	307	PASS
	Bottom Side	15	0.83	307	PASS
140K 9V	Top Surface	20	0.71	307	PASS
	Bottom Surface	15	1.68	307	PASS
	Left Side	15	0.70	307	PASS
	Right Side	15	0.67	307	PASS
	Top Side	15	0.93	307	PASS
	Bottom Side	15	0.58	307	PASS



H- field strength result (Test frequency range from 120KKHz to 140KHz)					
Test Loading	Exposure Position	Distance (cm)	H-field Strength (Max. A/m)	Limit 50%(A/m)	Result
140K 5V	Top Surface	20	0.042	0.815	PASS
	Bottom Surface	15	0.069	0.815	PASS
	Left Side	15	0.048	0.815	PASS
	Right Side	15	0.064	0.815	PASS
	Top Side	15	0.033	0.815	PASS
	Bottom Side	15	0.03	0.815	PASS
140K 9V	Top Surface	20	0.049	0.815	PASS
	Bottom Surface	15	0.126	0.815	PASS
	Left Side	15	0.033	0.815	PASS
	Right Side	15	0.034	0.815	PASS
	Top Side	15	0.02	0.815	PASS
	Bottom Side	15	0.019	0.815	PASS

Note:

1. This device designed for typical desktop applications, therefore mobile exposure conditions are applied and client device is placed directly in contact with the transmitter.
2. According to the user manual, output power from each primary coil is less than or equal to 15 watts.
3. 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



Annex A General Information

1. Identification of the Responsible Testing Laboratory

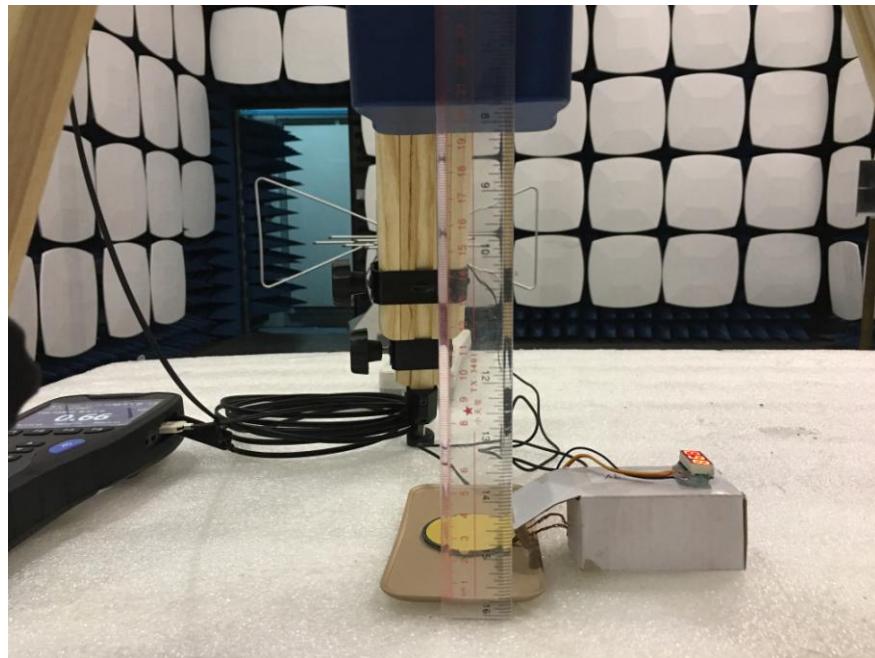
Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
Telephone:	+86 755 36698555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

2. Identification of the Responsible Testing Location

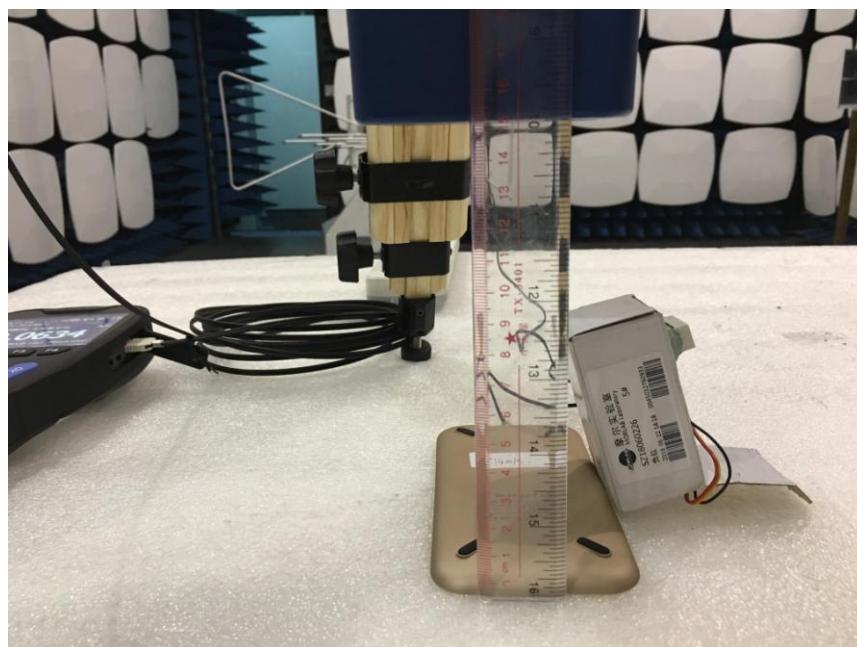
Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

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Annex B Test Setup Photos

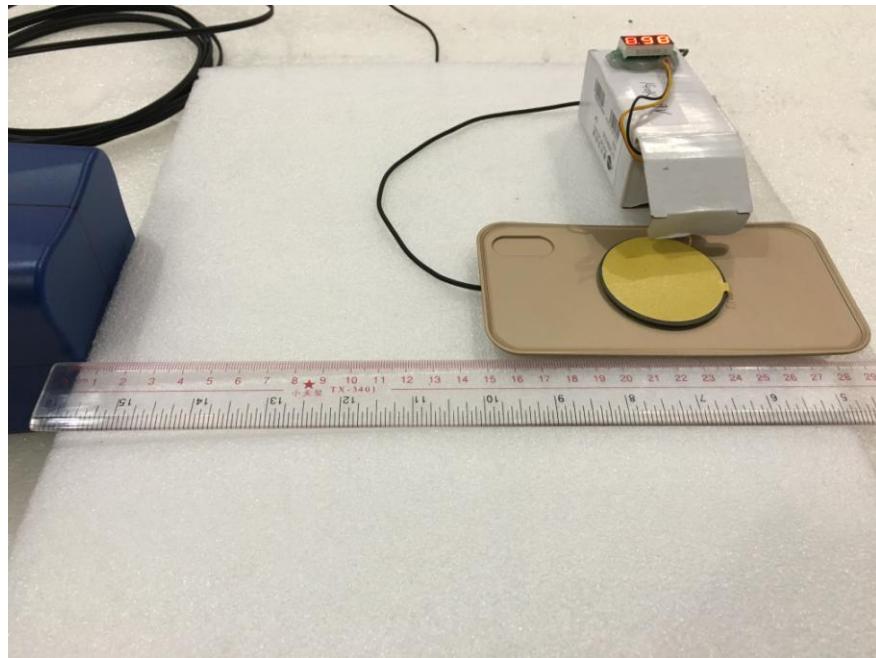


Top Surface_20cm

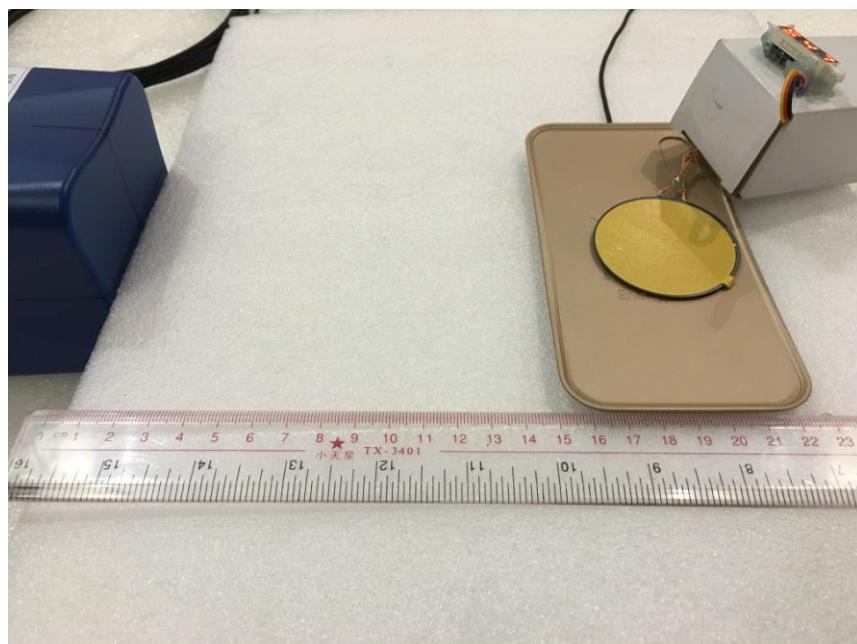


Bottom Surface_15cm

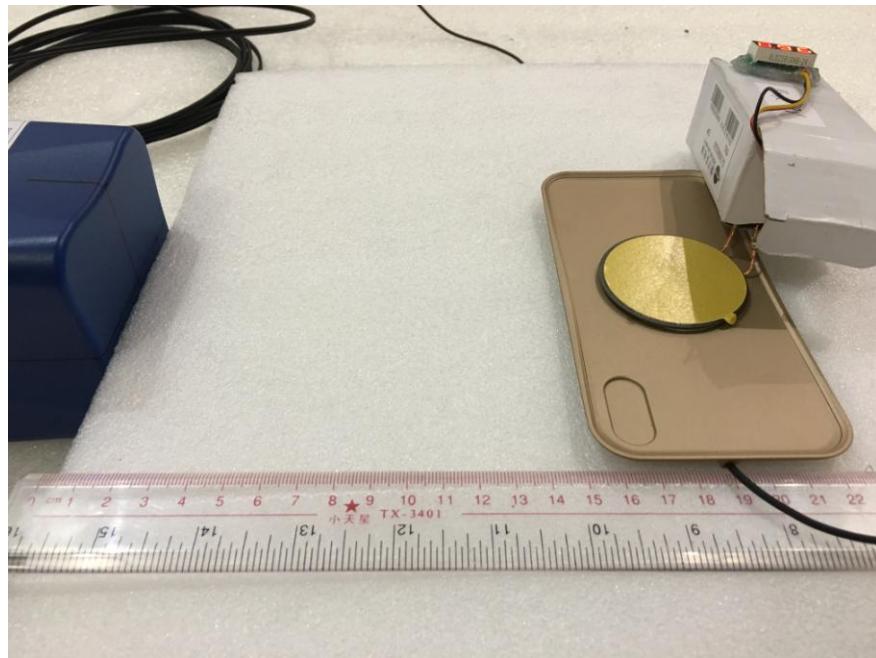
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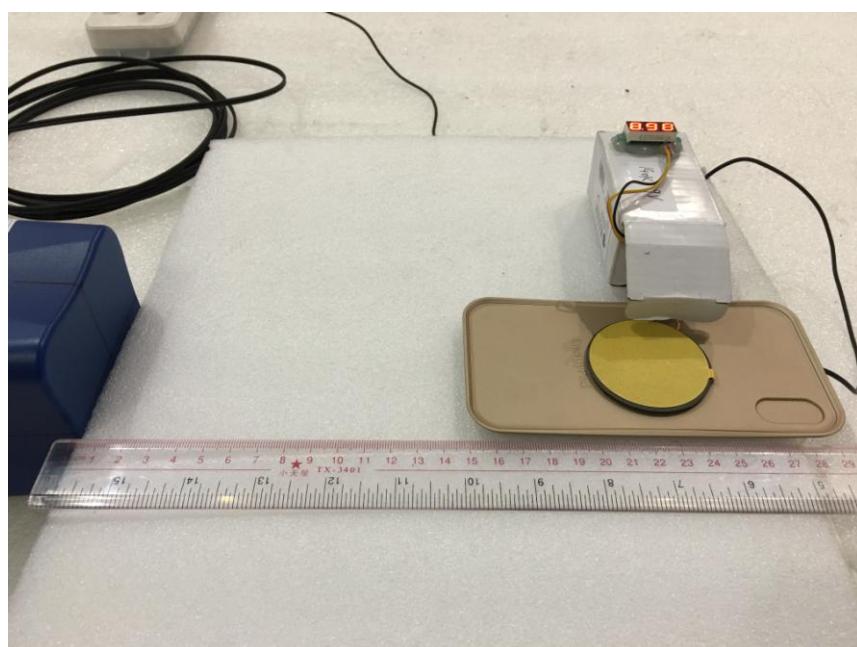
Top Side_15cm



Left Side _15cm



Right Side_15cm



Bottom Side _15cm