RF Exposure Evaluation Report

Test report
On Behalf of
SHENZHEN UGOOD TECHNOLOGY CO., LIMITED
For
Wireless Charging Power Bank
Model No.: PW01

FCC ID: 2AGA5-PW01

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Standards	**FCC CFR 47 part1 1.1310** **FCC KDB publication 680106 D01** **OET Bulletin 65**
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1. TEST SUMMARY

1.1 Refer Evaluation Method

ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

FCC KDB publication 680106 D01 RF Exposure Wireless Charging Apps v03: RF Exposure Considerations for Low Power Consumer Wireless Power Transfer Applications

FCC CFR 47 part1 1.1310: Radiofrequency radiation exposure limits.

FCC CFR 47 part2 2.1091: Radiofrequency radiation exposure evaluation: mobile devices

FCC CFR 47 part 15.C:Indusial, Scientific, and Medical Equipment

OET Bulletin 65 Edition 97-01: Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields

1.2 TEST PROCEDURES AND RESULTS

DESCRIPTION OF TEST	section number	RESULT
Electric Field Strength (E) (V/m)	FCC CFR 47 part1, 1.1310 KDB680106 D01v03 (3)(3)	PASS
Magnetic Field Strength (H) (A/m)	FCC CFR 47 part1, 1.1310 KDB680106 D01v03 (3)(3)	PASS

Note:

1. PASS: Test item meets the requirement.

2. Fail: Test item does not meet the requirement.

3. N/A: Test case does not apply to the test object.

4. The test result judgment is decided by the limit of test standard.

2. GENERAL INFORMATION

2.1 General Description of EUT

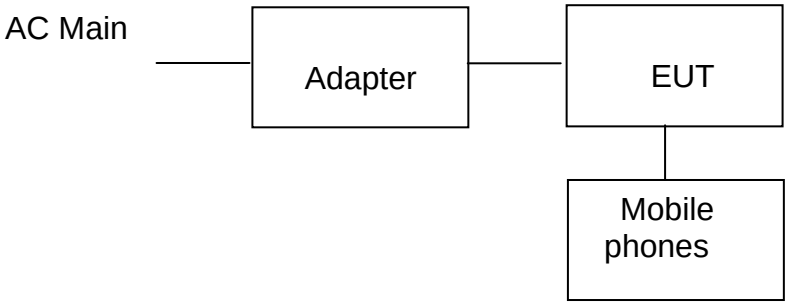
Equipment	Wireless Charging Power Bank
Model Name	PW01
Serial No.	N/A
Model Difference	N/A
Trade Mark	MIABOO
FCC ID	2AGA5-PW01
Antenna Type	Coil Antenna
Antenna Gain	0dBi
BT Operation frequency	125KHz
Number of Channels	1
Modulation Type	ASK
Power Source	Built-in DC3.7V bettery Input: DC 5V from Micro USB Wireless Output: DC5V
Power Rating	Built-in DC3.7V bettery Input: DC 5V from Micro USB Wireless Output: DC5V

2.3 Operation of EUT during testing

Test Mode	charging conditions
Mode 1	90%
Mode 2	50%
Mode 3	10%

2.4 Description of Test Setup

Operation of EUT during testing



- Mobile phones information
  Model: S6
  Input: 5VDC

- Adapter information
  Model: UP0920
  Input: AC100-240V, 50/60Hz, 0.5A
  Output: DC5V, 5V/9V, 2A

2.2. Measurement Instruments List

Description	Brand	Model No.	Frequency Range	Calibrated Date	Calibrated Until
Broadband Field Meter	NARDA	NBM-550	-	Dec. 26, 2019	Dec. 25, 2020
Magnetic Field Meter	NARDA	ELT-400	1 – 400kHz	Dec. 26, 2019	Dec. 25, 2020
Magnetic Probe	NARDA	HF-3061	300kHz – 30MHz	Dec. 26, 2019	Dec. 25, 2020
Magnetic Probe	NARDA	HF-0191	27 – 1000MHz	Dec. 26, 2019	Dec. 25, 2020
Broadband Field Meter	NARDA	NBM-550	-	Dec. 26, 2019	Dec. 25, 2020
Electric Field Meter	COMBINOVA	EFM 200	5Hz – 400kHz	Dec. 26, 2019	Dec. 25, 2020
E-Field Probe	NARDA	EF-0391	100kHz – 3GHz	Dec. 26, 2019	Dec. 25, 2020
E-Field Probe	NARDA	EF-6091	100MHz – 60GHz	Dec. 26, 2019	Dec. 25, 2020

NOTE: 1. The calibration interval of the above test instruments is 12 months .

3. MAXIMUM PERMISSIBLE EXPOSURE

3.1 MAXIMUM PERMISSIBLE EXPOSURE

Limit of Maximum Permissible Exposure

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6
Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180 / f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1	30

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

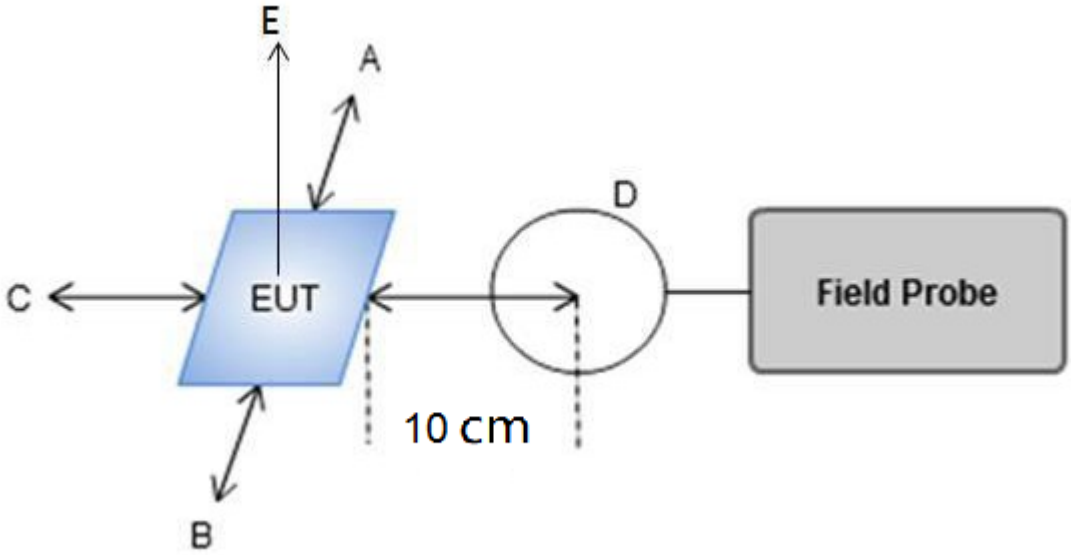
Note 2: For the applicable limit, see FCC 1.1310, 680106 D01 RF Exposure Wireless Charging Apps v03

Note 3: Per KDB 680106 D01 Section 3. RF Exposure Requirements;

1) According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission’s guidelines.

2) According to §1.1310 and §2.1091 RF exposure is calculated.

3.2 TEST SETUP



3.3. TEST PROCEDURE

a. For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of (H-field & E- field strengths for all sides is 10cm, H-field strengths of top side is 10cm).
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 10cm measured from the center of the probe(s) to the edge of the device.
For mobile RF exposure
a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.
b) The measurement probe was placed at test distance (10cm) which is between the edge of the charger and the geometric center of probe.
c) The turn table was rotated 360d degree to search of highest strength.
d) The highest emission level was recorded and compared with limit as soon as measurement of each points(A, B, C, D, E) were completed.
e) The EUT were measured according to the dictates of KDB 680106D01v03.
For portable RF exposure
a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.
b) The measurement probe was placed at test distance (0cm) which is between the edge of the charger and the geometric center of probe.
c) The turn table was rotated 360d degree to search of highest strength.
d) 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.
e) The EUT were measured according to the dictates of KDB 680106D01v03.

3.4 RESULT OF MAXIMUM PERMISSIBLE EXPOSURE

Mode 1: charging conditions at 10%.

E-Field Strength at 10cm from the edges surrounding the EUT (V/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limits Test (V/m)
0.125	1.14	1.82	1.65	1.38	1.72	614

H-Field Strength at 10cm from the edges surrounding the EUT (A/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limits Test (A/m)
0.125	0.45	0.82	0.58	0.24	0.20	1.63

Mode 2: charging conditions at 50%.

E-Field Strength at 10cm from the edges surrounding the EUT (V/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limits Test (V/m)
0.125	1.12	1.47	1.58	1.46	1.52	614

H-Field Strength at 10cm from the edges surrounding the EUT (A/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limits Test (A/m)
0.125	0.57	0.82	0.65	0.21	0.24	1.63

Mode 3: charging conditions at 90%.

E-Field Strength at 10cm from the edges surrounding the EUT (V/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limits Test (V/m)
0.125	1.14	1.72	1.15	1.85	1.24	614

H-Field Strength at 10cm from the edges surrounding the EUT (A/m)

Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limits Test (A/m)
0.125	0.35	0.74	0.36	0.25	0.31	1.63

Remark: According KDB 680106 D01 RF Exposure Wireless Charging App v03, section 5, b). The aggregate H-field strengths at 10cm 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. The E- field evaluation conducted assuming a user separation distance of 10cm according to the KDB 680106 D01 RF Exposure Wireless Charging App v03 section 3, c).

Result: The device comply with the RF exposure requirement according to 680106 D01 v03, section 5, b).

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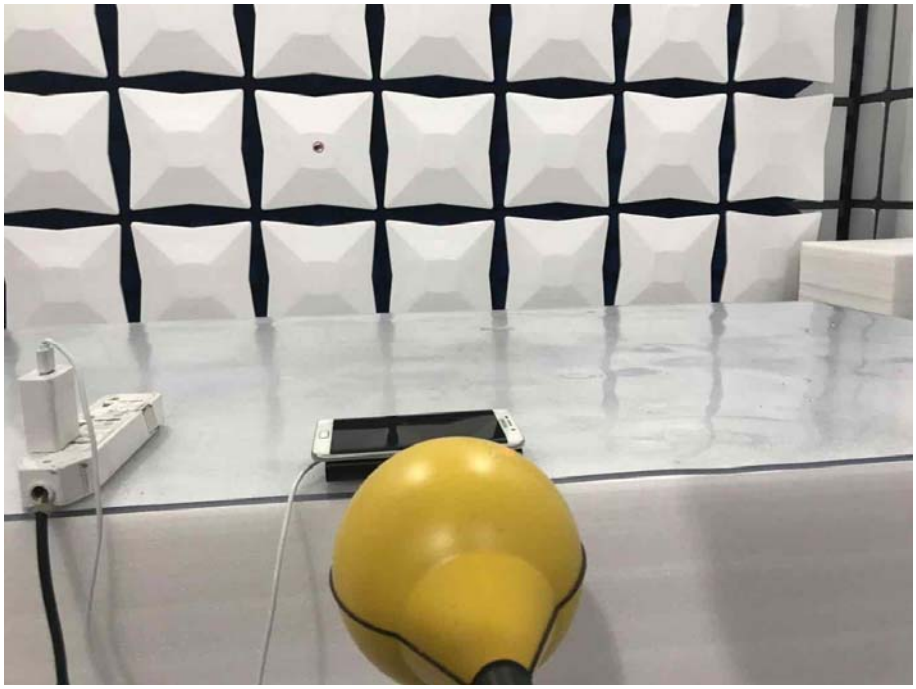
5. PHOTOGRAPH OF TEST



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