FCC Test Report

Client Name	:	**JMTek Industries(Shenzhen) Co.,Ltd**
Client Address	:	**14G, Innovation Tech Building, Quanzhi Science and Technology innovation Park,ShaJing Street, Baoan District, ShenZhen, China**
Product Name	:	**Power Bank**
Report Date	:	**Dec. 20, 2023**

Shenzhen Anbotek Compliance Laboratory Limited

Contents

TEST REPORT

Applicant	:	JMTek Industries(Shenzhen) Co.,Ltd
Manufacturer	:	JMTek Industries(Shenzhen) Co.,Ltd
Product Name	:	Power Bank
Model No.	:	MPB500
Reference Model No.	:	MPB500B, MPB500W
Trade Mark	:	N/A
Rating(s)	:	Input: 5V⎓ 3A, 9V⎓ 2A, 12V⎓ 1.5A Type-C Output: 5V⎓ 3A, 9V⎓ 2.22A, 12V⎓ 1.67A Wireless Output: 15W Max Type-C and Wireless Output: 5V⎓ 3A Battery capacity: DC 3.85V, 5000mAh
Test Standard(s)	:	**FCC Part 1.1310, 1.1307(b)**
Test Method(s)	:	**KDB680106 D01 RF Exposure Wireless Charging Apps v04 October 25, 2023 TCB Workshop**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 1.1307 & KDB680106 D01 & October 25, 2023 TCB Workshop requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt	Nov. 13, 2023
Date of Test	Nov. 13~ 30, 2023
Prepared By	Stella Zhu (Stella Zhu)
Approved & Authorized Signer	Edward Pan (Edward Pan)

1. General Information

1.1. Client Information

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

1.2. Description of Device (EUT)

Product Name	:	Power Bank
Model No.	:	MPB500
Reference Model No.	:	MPB500B, MPB500W (Note: All samples are the same except the model number and appearance color and material of plastic shell material, so we prepare "MPB500" for test only.)
Trade Mark	:	N/A
Test Power Supply	:	DC 5V from Adapter input AC 120V/60Hz/DC 3.85V battery inside
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)
Adapter	:	N/A
RF Specification		
Operation Frequency	:	110.1-205kHz
Modulation Type	:	ASK
Antenna Type	:	Inductive loop coil Antenna
Antenna Gain(Peak)	:	0 dBi
Remark: 1) All of the RF specification are provided by customer. 2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.		

1.3. Auxiliary Equipment Used During Test

Description	Rating(s)
Adapter:	Model: AD651P Output: 5V⎓ 3A, 9V⎓ 3A,10V⎓ 5A,12V⎓ 3A,15V⎓ 3A, 20V⎓ 3.25A Input: 100-240V~1.5A, 50-60Hz
Mobile phone	iPhone 12

1.4. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Electric and Magnetic field Analyzer	NARDA	EHP-200A	180ZX10202	Oct. 16, 2023	1 Year

1.5. Measurement Uncertainty

Magnetic Field Reading(A/m)	:	+/-0.04282(A/m)
Electric Field Reading(V/m)	:	+/-0.03679(V/m)

1.6. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 434132

Shenzhen Anbotek Compliance Laboratory Limited, 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. 434132.

ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.
1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.

1.7. Disclaimer

1. The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
2. The test report is invalid if there is any evidence and/or falsification.
3. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
4. This document may not be altered or revised in any way unless done so by Anbotek and all revisions are duly noted in the revisions section.
5. 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.
6. The authenticity of the information provided by the customer is the responsibility of the customer and the laboratory is not responsible for its authenticity.

The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2. Measurement and Result

2.1. Requirements

According to the item 5.b) of KDB 680106 D01v04:
Inductive wireless power transfer applications that meet all of the following requirements are excluded from submitting an RF exposure evaluation.

1) Power transfer frequency is less that 1 MHz

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

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

4) Client device is inserted in or placed directly in contact with the transmitter

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

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.

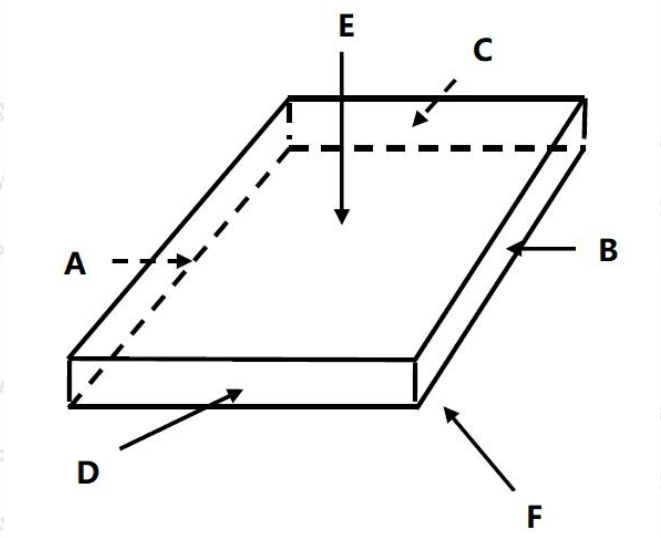
Limits For Maximum Permissible Exposure (MPE)

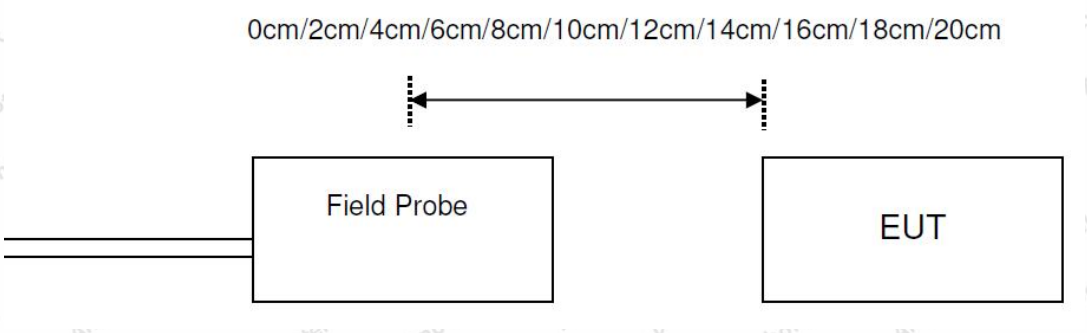
Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*($900/f^2$)	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	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

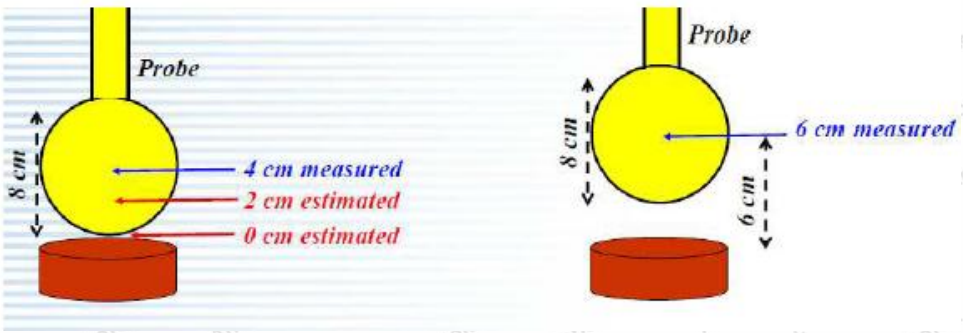
F=frequency in MHz
*=Plane-wave equivalent power density
RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

2.2. Test Setup

Six side of EUT







Note:
H-field data are taken along all three axes the device, from 0,2,4 cm, 6cm to 20 cm, in 2 cm minimum increment measured from the edge of the device, with one axis coincident with the axis of the main coil.

2.3. Test Procedure

1) The RF exposure test was performed in anechoic chamber.
2) The measurement probe was placed at required test distance (from 0,2,4 cm, 6cm to 20 cm, in 2 cm minimum increment) which is between the edge/top surface 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. (A is the left, B is the right, C is the back, D is the front, **E** is the **top** and F is the bottom side.)

4) The EUT was measured according to the dictates of TCB Workshop, October 25, 2023 and KDB 680106 D01 v04.

Remark;

The EUT's test position A, B, C, D, E and F is valid for the E and H field measurements.

2.4. Test Result

2.4.1. Equipment Approval Considerations item 5.b of KDB 680106 D01 v04.

1) Power transfer frequency is less that 1 MHz

- The device operate in the frequency range 110.1-205kHz.

2) Output power from each primary coil is less than 15 watts

- The maximum output power of the primary coil is 15W.

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

- The transfer system including a charging system with only single primary coils is to detect and allow only between individual pairs of coils.

4) Client device is inserted in or placed directly in contact with the transmitter

- Client device is placed directly in contact with the transmitter.

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

- The EUT is a portable exposure conditions

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.

- Conducted the measurement with the required distance and the test results please refer to the section 2.4.

2.4.2. Environmental evaluation and exposure limit according to FCC CFR 47 part 1, 1.1307(b), 1.1310

Temperature:	23.8°C	Relative Humidity:	52 %
Pressure:	1012 hPa	Test Voltage:	DC 5V from Adapter input AC 120V/60Hz
Frequency Range:	110.1-205kHz		

E-Field Strength									
Test distance	Battery power	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	Reference Limit (V/m)	Limits Test (V/m)
EUT Base support input + Standby									
0cm	1%	0.47	0.56	0.49	0.48	0.59	0.47	307	614
	50%	1.49	1.97	1.43	1.59	1.75	1.49	307	614
	99%	2.47	2.92	2.50	2.46	2.96	2.47	307	614
EUT Base support input + iPhone 12 operating (10% electric quantity worst case)									
0,2,4cm	1%	0.45	0.54	0.45	0.44	0.55	0.45	307	614
	50%	1.47	1.91	1.40	1.58	1.69	1.47	307	614
	99%	2.47	2.93	2.51	2.47	2.96	2.47	307	614
6cm	1%	0.43	0.50	0.43	0.41	0.53	0.43	307	614
	50%	1.41	1.85	1.38	1.52	1.60	1.41	307	614
	99%	2.37	2.83	2.37	2.35	2.84	2.37	307	614
8cm	1%	0.37	0.49	0.39	0.37	0.47	0.37	307	614
	50%	1.41	1.47	1.36	1.39	1.52	1.40	307	614
	99%	2.35	2.81	2.36	2.34	2.81	2.35	307	614
10cm	1%	0.33	0.48	0.34	0.32	0.44	0.33	307	614
	50%	1.34	1.45	1.34	1.37	1.50	1.34	307	614
	99%	2.33	2.79	2.33	2.32	2.78	2.33	307	614
12cm	1%	0.32	0.43	0.32	0.30	0.41	0.32	307	614
	50%	1.31	1.44	1.32	1.35	1.48	1.33	307	614
	99%	2.33	2.75	2.26	2.31	2.75	2.43	307	614

E-Field Strength									
Test distance	Battery power	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	Reference Limit (V/m)	Limits Test (V/m)
14cm	1%	0.32	0.40	0.31	0.29	0.40	0.30	307	614
	50%	1.31	1.42	1.31	1.31	1.47	1.32	307	614
	99%	2.31	2.74	2.24	2.30	2.73	2.34	307	614
16cm	1%	0.28	0.38	0.30	0.27	0.39	0.28	307	614
	50%	1.28	1.40	1.30	1.29	1.46	1.28	307	614
	99%	2.30	2.74	2.22	2.27	2.71	2.31	307	614
18cm	1%	0.24	0.38	0.27	0.25	0.38	0.24	307	614
	50%	1.27	1.36	1.25	1.26	1.46	1.27	307	614
	99%	2.27	2.71	2.20	2.24	2.73	2.27	307	614
20cm	1%	0.22	0.35	0.24	0.23	0.33	0.21	307	614
	50%	1.26	1.33	1.24	1.25	1.45	1.26	307	614
	99%	2.24	2.68	2.23	2.21	2.70	2.24	307	614

H-Field Strength									
Test distance	Battery power	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	Reference Limit (A/m)	Limits Test (A/m)
EUT Base support input + Standby									
0cm	1%	0.029	0.048	0.051	0.039	0.047	0.029	0.815	1.63
	50%	0.37	0.44	0.35	0.33	0.56	0.37	0.815	1.63
	99%	0.44	0.62	0.51	0.31	0.33	0.44	0.815	1.63
EUT Base support input + iPhone 12 operating (10% electric quantity worst case)									
0,2,4cm	1%	0.109	0.129	0.130	0.118	0.130	0.109	0.815	1.63
	50%	0.39	0.46	0.38	0.38	0.59	0.39	0.815	1.63
	99%	0.48	0.66	0.56	0.37	0.37	0.48	0.815	1.63
6cm	1%	0.108	0.127	0.128	0.116	0.123	0.107	0.815	1.63
	50%	0.35	0.40	0.32	0.34	0.55	0.35	0.815	1.63
	99%	0.41	0.65	0.48	0.35	0.35	0.46	0.815	1.63
8cm	1%	0.105	0.123	0.121	0.112	0.119	0.105	0.815	1.63
	50%	0.34	0.38	0.30	0.33	0.54	0.34	0.815	1.63
	99%	0.40	0.61	0.43	0.33	0.35	0.44	0.815	1.63
10cm	1%	0.098	0.116	0.114	0.105	0.112	0.098	0.815	1.63
	50%	0.32	0.37	0.29	0.32	0.53	0.32	0.815	1.63
	99%	0.38	0.53	0.42	0.32	0.33	0.34	0.815	1.63
12cm	1%	0.089	0.108	0.107	0.096	0.105	0.089	0.815	1.63
	50%	0.31	0.36	0.28	0.31	0.51	0.31	0.815	1.63
	99%	0.35	0.54	0.40	0.29	0.28	0.33	0.815	1.63

H-Field Strength									
Test distance	Battery power	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Test Position F	Reference Limit (A/m)	Limits Test (A/m)
14cm	1%	0.084	0.103	0.102	0.091	0.100	0.085	0.815	1.63
	50%	0.28	0.37	0.27	0.29	0.50	0.28	0.815	1.63
	99%	0.32	0.50	0.38	0.29	0.28	0.32	0.815	1.63
16cm	1%	0.083	0.102	0.100	0.089	0.098	0.084	0.815	1.63
	50%	0.25	0.33	0.26	0.28	0.47	0.25	0.815	1.63
	99%	0.30	0.50	0.36	0.26	0.25	0.30	0.815	1.63
18cm	1%	0.070	0.088	0.086	0.077	0.084	0.070	0.815	1.63
	50%	0.22	0.30	0.23	0.27	0.45	0.22	0.815	1.63
	99%	0.29	0.47	0.35	0.23	0.22	0.29	0.815	1.63
20cm	1%	0.062	0.081	0.080	0.069	0.078	0.062	0.815	1.63
	50%	0.21	0.30	0.20	0.25	0.43	0.20	0.815	1.63
	99%	0.26	0.35	0.34	0.23	0.21	0.26	0.815	1.63

Note: Measurements was made from all sides and the top of the primary/client pair, according to above table test distance measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

APPENDIX I -- TEST SETUP PHOTOGRAPH

Please refer to separated files Appendix I -- Test Setup Photograph_MPE

APPENDIX II -- EXTERNAL PHOTOGRAPH

Please refer to separated files Appendix II -- External Photograph

APPENDIX III -- INTERNAL PHOTOGRAPH

Please refer to separated files Appendix III -- Internal Photograph

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