

TEST REPORT

Report No.: BCTC2304364669-2E

Applicant: Shenzhen Joway Power Supply Co., Ltd.

Product Name: Magnetic Wireless Power Bank

Model/Type Ref.: PB5

Tested Date: 2023-04-07 to 2023-04-14

Issued Date: 2023-04-14

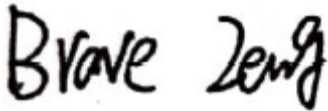
Shenzhen BCTC Testing Co., Ltd.



FCC ID: 2AEZ4-PB5

Product Name: Magnetic Wireless Power Bank
Trademark: N/A
Model/Type Ref.: PB5
Prepared For: Shenzhen Joway Power Supply Co., Ltd.
Address: Blog 10th & 11th, Antuoshan High-Tech Industrial Park, Shajing Street, Shenzhen China
Manufacturer: Shenzhen Joway Power Supply Co., Ltd.
Address: Blog 10th & 11th, Antuoshan High-Tech Industrial Park, Shajing Street, Shenzhen China
Prepared By: Shenzhen BCTC Testing Co., Ltd.
Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date: 2023-04-07
Sample tested Date: 2023-04-07 to 2023-04-14
Issue Date: 2023-04-14
Report No.: BCTC2304364669-2E
Test Standards: FCC CFR 47 part1, 1.1307(b), 1.1310
Test Results: PASS

Tested by:



Brave Zeng/ Project Handler

Approved by:



Zero Zhou/Reviewer

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(Note: N/A Means Not Applicable)

1. Version

Report No.	Issue Date	Description	Approved
BCTC2304364669-2E	2023-04-14	Original	Valid

2. Product Information

2.1 Product Information

Model/Type Ref.:	PB5
Model differences:	N/A
Product Description:	Magnetic Wireless Power Bank
Operation Frequency:	115kHz-205kHz
Antenna installation:	loop coil antenna
	USB-C Input: 5V/3A;9V/2A
	USB-A Output:5V/3A
Ratings:	USB-C Output:5V/3A,9V2.22A,12V1.5A
	Lighting Output:5V2.4A,9V2.22A
	Wireless Output :5W,7.5W,10W,15W
Hardware Version:	N/A
Software Version:	N/A

Cable of Product

No.	Cable Type	Quantity	Provider	Length (m)	Shielded	Note
1	--	--	Applicant	---	Yes/No	With a ferrite ring in mid Detachable
2	--	--	BCTC	--	Yes/No	--

2.2 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
1.	Wireless charging load	---	---	---	auxiliary
2.	Adapter	---	---	---	auxiliary

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

2.3 Test Mode

AC Mode	Test Modes 1	Charging +Wireless(5W)
DC Mode	Test Modes 2	Wireless Charging 5W
	Test Modes 3	Wireless Charging 7.5W
	Test Modes 4	Wireless Charging 10W
	Test Modes 5	Wireless Charging 15W

3. Test Facility And Test Instrument Used

3.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: 712850

A2LA certificate registration number is: CN1212

ISED Registered No.: 23583

ISED CAB identifier: CN0017

3.2 Test Instrument Used

EMF Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Electromagnet -ic radiation tester	Wavecontrol	SMP160	19SN0980	May 26, 2022	May 25, 2023
Electromagne- tic field probe	Wavecontrol	WP400-3	20WP120082	Sept. 08, 2022	Sept. 07, 2023
843 Chamber	ETS	843	84301	Aug. 27, 2020	Aug. 26, 2023
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\

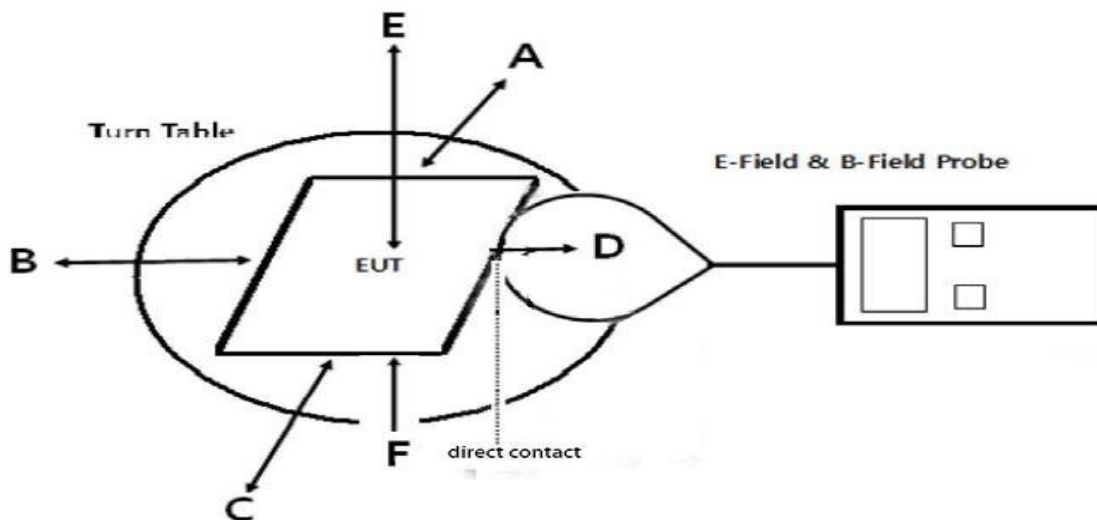
4. Method Of Measurement

4.1 Applicable Standard

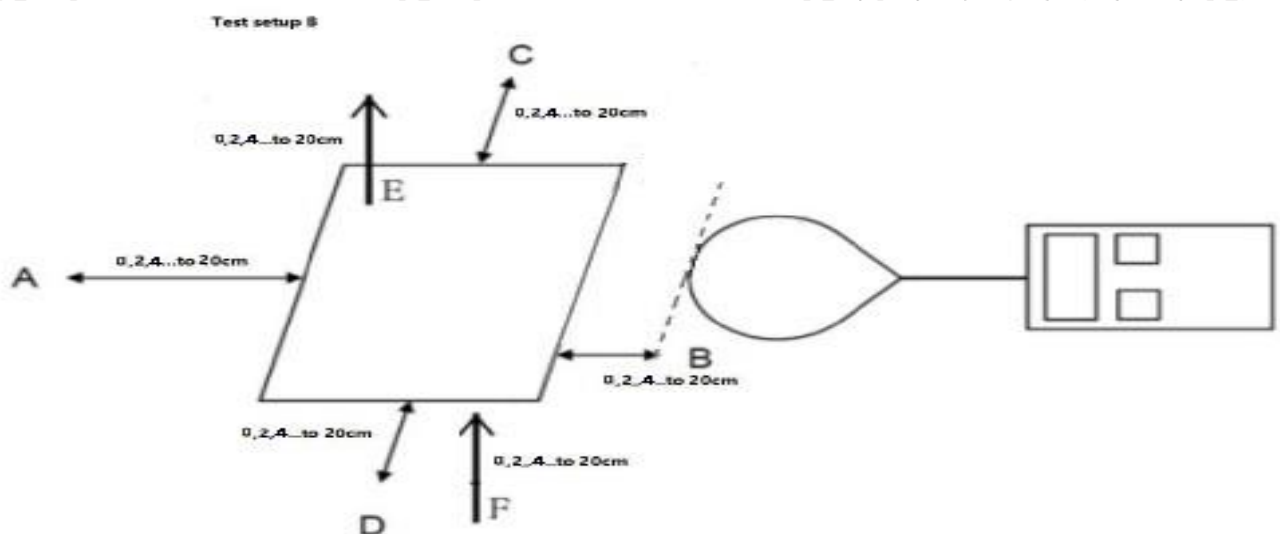
According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines. According to §1.1310 and §2.1093 RF exposure is calculated. According KDB680106 D01v03: RF Exposure Wireless Charging Apps v02.

4.2 Block Diagram Of Test Setup

A:



B:



4.3 Limit

Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	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/ cm ²)	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

4.4 Test Procedure

- he RF exposure test was performed in anechoic chamber.
- The measurement probe was placed at 0 cm surrounding the device for test setup A; and the measurement Probe was placed from 0 cm to 20 cm, in 2 cm maximum increment measured from the edge of the device For the test setup B.
- The highest emission level was recorded and compared with limit as soon as measurement of eachd) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
- The EUT was measured according to the dictates of KDB680106
- D01v03r01
- Remark:
The EUT's test position A, B, C, D , E and F is valid for the E and H field measurements.

4.5 Equipment Approval Considerations

The EUT does comply with item 5(b) of KDB 680106 D01v03

1) Power transfer frequency is less than 1MHz

Yes, the device operate in the frequency range from 115-205KHz

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

Yes, 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 able to detect and allow coupling onlybetween individual pair of coils.

No, the prototype has only a single coil.

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

Yes, client device is placed directly in contact with the transmitter.

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

No, The product is portable

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.

Yes, the EUT field strength levels are 10% x MPE limit.

4.6 E And H Field Strength

For setup A:
Worst Case Operating Mode: Mode 5

H-Filed Strength at 0 cm from edges surrounding the EUT (A/m)

Frequency Range (KHz)	Operation condition	Test Position A (A/m)	Test Position B (A/m)	Test Position C (A/m)	Test Position D (A/m)	Test Position E (A/m)	Test Position F (A/m)	Limits (A/m)
115kHz-205kHz	1% battery	0.075	0.067	0.098	0.092	0.042	0.077	1.63
115kHz-205kHz	50% battery	0.075	0.083	0.094	0.098	0.035	0.072	1.63
115kHz-205kHz	99% battery	0.066	0.083	0.088	0.094	0.041	0.061	1.63

Frequency Range (KHz)	Operation condition	Test Position A (uT)	Test Position B (uT)	Test Position C (uT)	Test Position D (uT)	Test Position E (uT)	Test Position F (uT)
115kHz-205kHz	1% battery	0.094	0.084	0.122	0.115	0.053	0.096
115kHz-205kHz	50% battery	0.094	0.103	0.118	0.122	0.043	0.090
115kHz-205kHz	99% battery	0.082	0.104	0.110	0.118	0.051	0.076

Note: A/m = uT ÷ 1.25

E-Filed Strength at 0 cm from edges surrounding the EUT (V/m)

Frequency Range (KHz)	Operation condition	Test Position A (V/m)	Test Position B (V/m)	Test Position C (V/m)	Test Position D (V/m)	Test Position E (V/m)	Test Position F (V/m)	Limits (V/m)
115kHz-205kHz	1% battery	0.063	0.088	0.062	0.101	0.037	0.085	614
115kHz-205kHz	50% battery	0.061	0.081	0.077	0.101	0.039	0.070	614
115kHz-205kHz	99% battery	0.079	0.078	0.090	0.096	0.040	0.095	614

For setup B:
Worst Case Operating Mode: Mode 5

1% battery

H-Filed Strength at (distance from 0cm to 20cm at 2cm iteration) surrounding the EUT (A/m)

Test distance (cm)	Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)	Test Position F(A/m)	Limits (A/m)
0	0.069	0.087	0.082	0.095	0.032	0.082	1.63
2	0.073	0.061	0.077	0.101	0.032	0.060	1.63
4	0.065	0.067	0.098	0.090	0.047	0.087	1.63
6	0.080	0.085	0.078	0.091	0.045	0.093	1.63
8	0.080	0.087	0.095	0.109	0.037	0.077	1.63
10	0.076	0.081	0.098	0.090	0.039	0.074	1.63
12	0.061	0.082	0.097	0.097	0.038	0.077	1.63
14	0.066	0.070	0.088	0.092	0.037	0.064	1.63
16	0.075	0.080	0.092	0.103	0.036	0.073	1.63
18	0.063	0.061	0.097	0.099	0.048	0.061	1.63
20	0.065	0.081	0.097	0.095	0.044	0.085	1.63

Test distance (cm)	Test Position A(uT)	Test Position B(uT)	Test Position C(uT)	Test Position D(uT)	Test Position E(uT)	Test Position F(uT)
0	0.087	0.109	0.103	0.119	0.040	0.103
2	0.091	0.076	0.097	0.126	0.040	0.075
4	0.081	0.084	0.123	0.113	0.059	0.109
6	0.100	0.107	0.097	0.114	0.056	0.116
8	0.100	0.109	0.118	0.137	0.046	0.096
10	0.094	0.102	0.122	0.113	0.049	0.092
12	0.077	0.102	0.121	0.121	0.047	0.097
14	0.082	0.087	0.110	0.115	0.046	0.080
16	0.094	0.100	0.115	0.129	0.044	0.091
18	0.079	0.076	0.121	0.124	0.060	0.076
20	0.081	0.101	0.121	0.118	0.056	0.106

Note: A/m = $\mu T \div 1.25$

E-Filed Strength at (distance from 0cm to 20cm at 2cm iteration) surrounding the EUT (V/m)

Test distance (cm)	Test Position A(V/m)	Test Position B(V/m)	Test Position C(V/m)	Test Position D(V/m)	Test Position E(V/m)	Test Position F(V/m)	Limits (V/m)
0	0.078	0.072	0.090	0.097	0.034	0.077	614
2	0.062	0.064	0.099	0.091	0.038	0.082	614
4	0.064	0.070	0.100	0.101	0.039	0.092	614
6	0.070	0.073	0.084	0.101	0.039	0.080	614
8	0.080	0.067	0.068	0.107	0.034	0.061	614
10	0.063	0.078	0.071	0.093	0.045	0.098	614
12	0.077	0.063	0.069	0.103	0.050	0.081	1.63
14	0.069	0.086	0.067	0.104	0.033	0.065	614
16	0.063	0.074	0.077	0.098	0.037	0.077	614
18	0.074	0.072	0.075	0.095	0.046	0.086	614
20	0.064	0.087	0.088	0.108	0.049	0.078	614

50% battery
H-Filed Strength at (distance from 0cm to 20cm at 2cm iteration) surrounding the EUT (A/m)

Test distance (cm)	Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)	Test Position F(A/m)	Limits (A/m)
0	0.062	0.083	0.077	0.090	0.036	0.096	1.63
2	0.076	0.078	0.066	0.101	0.034	0.073	1.63
4	0.079	0.061	0.065	0.105	0.040	0.061	1.63
6	0.071	0.062	0.091	0.090	0.039	0.081	1.63
8	0.076	0.077	0.072	0.099	0.046	0.060	1.63
10	0.065	0.085	0.099	0.097	0.033	0.095	1.63
12	0.070	0.065	0.099	0.102	0.037	0.083	1.63
14	0.078	0.061	0.075	0.097	0.047	0.093	1.63
16	0.074	0.079	0.074	0.095	0.032	0.068	1.63
18	0.060	0.075	0.090	0.092	0.044	0.085	1.63
20	0.072	0.086	0.076	0.102	0.035	0.085	1.63

Test distance (cm)	Test Position A(uT)	Test Position B(uT)	Test Position C(uT)	Test Position D(uT)	Test Position E(uT)	Test Position F(uT)
0	0.077	0.104	0.096	0.113	0.045	0.120
2	0.095	0.098	0.083	0.126	0.043	0.091
4	0.099	0.077	0.082	0.131	0.050	0.076
6	0.089	0.077	0.114	0.113	0.049	0.101
8	0.095	0.097	0.091	0.124	0.057	0.076
10	0.081	0.106	0.124	0.122	0.041	0.119
12	0.087	0.082	0.124	0.127	0.046	0.103
14	0.097	0.077	0.094	0.122	0.058	0.116
16	0.093	0.099	0.093	0.119	0.040	0.085
18	0.076	0.093	0.113	0.115	0.055	0.106
20	0.090	0.108	0.095	0.128	0.043	0.106

Note: $A/m = uT \div 1.25$

E-Filed Strength at (distance from 0cm to 20cm at 2cm iteration) surrounding the EUT (V/m)

Test distance (cm)	Test Position A(V/m)	Test Position B(V/m)	Test Position C(V/m)	Test Position D(V/m)	Test Position E(V/m)	Test Position F(V/m)	Limits (V/m)
0	0.086	0.103	0.100	0.118	0.052	0.112	614
2	0.085	0.088	0.081	0.131	0.042	0.093	614
4	0.094	0.094	0.097	0.121	0.059	0.107	614
6	0.097	0.097	0.088	0.136	0.050	0.113	614
8	0.082	0.109	0.120	0.114	0.058	0.082	614
10	0.082	0.076	0.114	0.134	0.042	0.077	614
12	0.089	0.095	0.095	0.115	0.057	0.122	614
14	0.083	0.089	0.093	0.123	0.056	0.079	614
16	0.096	0.110	0.077	0.120	0.052	0.098	614
18	0.087	0.085	0.080	0.133	0.045	0.078	614
20	0.082	0.110	0.117	0.114	0.058	0.083	614

99% battery

H-Filed Strength at (distance from 0cm to 20cm at 2cm iteration) surrounding the EUT (A/m)

Test distance (cm)	Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)	Test Position F(A/m)	Limits (A/m)
0	0.076	0.072	0.070	0.105	0.032	0.085	1.63
2	0.068	0.060	0.086	0.100	0.041	0.065	1.63
4	0.077	0.060	0.064	0.093	0.033	0.093	1.63
6	0.076	0.063	0.084	0.104	0.036	0.079	1.63
8	0.076	0.075	0.100	0.092	0.038	0.077	1.63
10	0.066	0.083	0.098	0.108	0.042	0.086	1.63
12	0.063	0.083	0.094	0.103	0.045	0.090	1.63
14	0.078	0.061	0.080	0.101	0.047	0.081	1.63
16	0.069	0.072	0.091	0.103	0.041	0.084	1.63
18	0.070	0.084	0.083	0.097	0.037	0.085	1.63
20	0.061	0.087	0.089	0.099	0.045	0.063	1.63

Test distance (cm)	Test Position A(uT)	Test Position B(uT)	Test Position C(uT)	Test Position D(uT)	Test Position E(uT)	Test Position F(uT)
0	0.095	0.090	0.087	0.131	0.040	0.106
2	0.085	0.076	0.108	0.125	0.051	0.081
4	0.096	0.075	0.080	0.117	0.042	0.116
6	0.095	0.078	0.105	0.130	0.045	0.098
8	0.096	0.094	0.125	0.115	0.047	0.096
10	0.083	0.103	0.123	0.135	0.053	0.107
12	0.079	0.104	0.117	0.129	0.057	0.112
14	0.097	0.076	0.100	0.126	0.059	0.101
16	0.086	0.090	0.114	0.129	0.051	0.105
18	0.087	0.105	0.103	0.121	0.046	0.106
20	0.076	0.109	0.111	0.124	0.056	0.079

Note:A/m=uT÷1.25

E-Filed Strength at (distance from 0cm to 20cm at 2cm iteration) surrounding the EUT (V/m)

Test distance (cm)	Test Position A(V/m)	Test Position B(V/m)	Test Position C(V/m)	Test Position D(V/m)	Test Position E(V/m)	Test Position F(V/m)	Limits (V/m)
0	0.067	0.061	0.071	0.101	0.046	0.094	614
2	0.076	0.082	0.078	0.104	0.041	0.093	614
4	0.065	0.075	0.078	0.091	0.034	0.095	614
6	0.062	0.086	0.072	0.096	0.031	0.062	614
8	0.072	0.070	0.097	0.095	0.033	0.062	614
10	0.079	0.062	0.093	0.104	0.038	0.083	614
12	0.063	0.089	0.063	0.098	0.043	0.082	614
14	0.069	0.087	0.100	0.099	0.049	0.064	614
16	0.067	0.072	0.066	0.093	0.030	0.093	614
18	0.062	0.089	0.060	0.109	0.033	0.096	614
20	0.070	0.061	0.066	0.102	0.049	0.061	614

Note: In the frequency range of 1k-10M, except the fundamental frequency, other transmissions of the power transmission system are less than 20dB lower than the maximum fundamental transmission, so it is not necessary to evaluate.

5. Photographs Of Test Set-Up

0CM







20CM





C T
CT
PROV
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STATEMENT

1. The equipment lists are traceable to the national reference standards.
2. The test report can not be partially copied unless prior written approval is issued from our lab.
3. The test report is invalid without the "special seal for inspection and testing".
4. The test report is invalid without the signature of the approver.
5. The test process and test result is only related to the Unit Under Test.
6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.
7. The test report without CMA mark is only used for scientific research, teaching, enterprise product development and internal quality control purposes.
8. The quality system of our laboratory is in accordance with ISO/IEC17025.
9. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

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******* END *******

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CO., LTD