

TEST REPORT

Report No.: BCTC2308192132-2E

Applicant: Shenzhen usbangel Technology Limited

Product Name: Power Bank

Model/Type
reference: U5024CW

Tested Date: 2023-08-23 to 2023-09-04

Issued Date: 2023-09-04

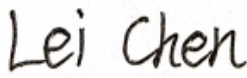
Shenzhen BCTC Testing Co., Ltd.



FCC ID: 2AX87-U5024CW

Product Name: Power Bank
Trademark: N/A
Model/Type reference: U5024CW
MP-5000W
Prepared For: Shenzhen usbangel Technology Limited
Address: 402, 502, 602, No.28 Hongyuan Road, Pingdong Community, Pingdi Sub-District,
Longgang District, Shenzhen, China
Manufacturer: Shenzhen usbangel Technology Limited
Address: 402, 502, 602, No.28 Hongyuan Road, Pingdong Community, Pingdi Sub-District.
Longgang District. 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: 2023-08-23
Sample tested Date: 2023-08-23 to 2023-09-04
Issue Date: 2023-09-04
Report No.: BCTC2308192132-2E
Test Standards: FCC CFR 47 part1, 1.1307(b), 1.1310
Test Results: PASS

Tested by:



Lei Chen/Project Handler

Approved by:



Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

Table Of Content

Test Report Declaration	Page
1. Version	4
2. Product Information	5
2.1 Product Information	5
2.2 Support Equipment	5
2.3 Test Mode	5
3. Test Facility And Test Instrument Used	6
3.1 Test Facility	6
3.2 Test Instrument Used	6
4. Method Of Measurement	7
4.1 Applicable Standard	7
4.2 Block Diagram Of Test Setup	7
4.3 Limit	8
4.4 Test Procedure	8
4.5 Equipment Approval Considerations	9
4.6 E And H Field Strength	10
5. Photographs Of Test Set-Up	14

(Note: N/A Means Not Applicable)

TC
3C
PPR
測

1. Version

Report No.	Issue Date	Description	Approved
BCTC2308192132-2E	2023-09-04	Original	Valid

2. Product Information

2.1 Product Information

Model/Type reference:	U5024CW MP-5000W
Model differences:	All the model are the same circuit and RF module, except model names and color.
Hardware Version:	N/A
Software Version:	N/A
Product Description:	Power Bank
Operation Frequency:	115kHz-205kHz
Antenna installation:	loop coil antenna
Ratings:	USB-C Input: 5V/2.4A USB-C Output: 5V/2.4A Wireless charging Output: 5W, 7.5W Battery: DC 3.7V

Cable of Product

No.	Cable Type	Quantity	Provider	Length (m)	Shielded	Note
1	--	--	Applicant	---	Yes/No	---
2.	--	--	BCTC	---	Yes	---

2.2 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
1.	---	---	---	---	---

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

Test Mode 1	Wireless charging (Full load)
Test Mode 2	Wireless charging (Half load)
Test Mode 3	Wireless charging (Empty load)

Note: All test mode were tested and passed, only shows the worst case mode which were recorded in this report.

EUT cannot carry out wireless charging transmission in the charging state.

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 15, 2023	May 14, 2024
Electromagne- tic field probe	Wavecontrol	WP400-3	20WP120082	Sept. 08, 2022	Sept. 07, 2023
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\

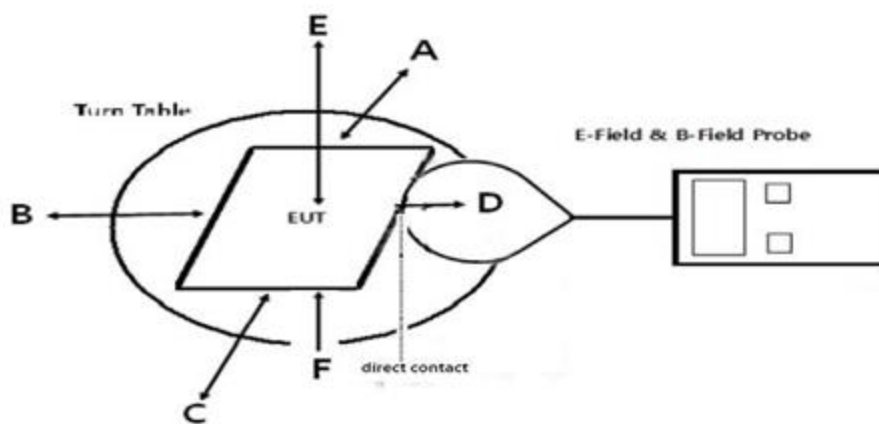
4. Method Of Measurement

4.1 Applicable Standard

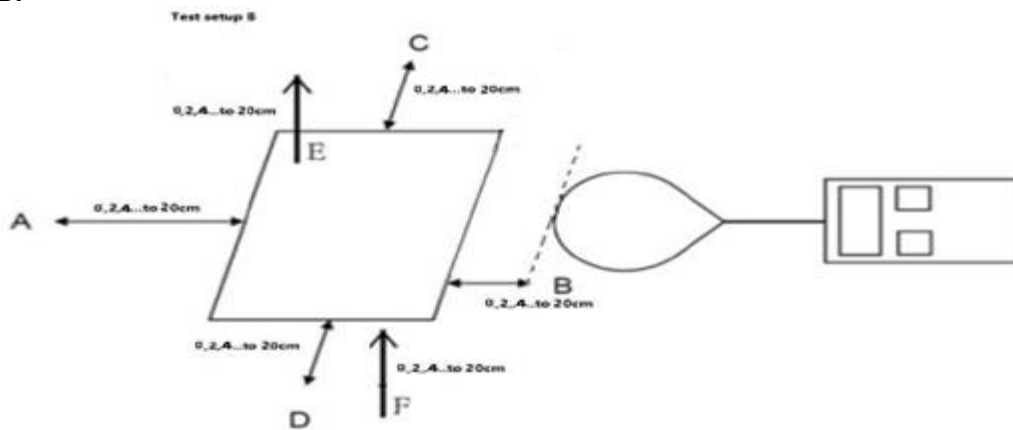
According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines. According to §1.1310 and §2.1093 RF exposure is calculated. According 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 7.5W.

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 1

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	0.071	0.068	0.063	0.098	0.043	0.096	1.63
115kHz-205kHz	50% battery	0.070	0.061	0.064	0.107	0.033	0.072	1.63
115kHz-205kHz	99% battery	0.063	0.064	0.083	0.099	0.045	0.097	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	0.088	0.085	0.078	0.122	0.054	0.120
115kHz-205kHz	50% battery	0.088	0.077	0.080	0.134	0.042	0.090
115kHz-205kHz	99% battery	0.079	0.080	0.104	0.124	0.056	0.121

Note: A/m=uT/1.25

For setup B:
Worst Case Operating Mode: Mode 1

1% battery

H-Filed Strength at (Distance from 0cm to 20cm and with 2-cm increments) 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)
2	0.067	0.067	0.061	0.098	0.044	0.099	1.63
4	0.065	0.063	0.090	0.108	0.037	0.083	1.63
6	0.066	0.078	0.072	0.106	0.033	0.086	1.63
8	0.062	0.084	0.093	0.102	0.035	0.066	1.63
10	0.073	0.087	0.080	0.092	0.032	0.073	1.63
12	0.068	0.085	0.090	0.097	0.046	0.066	1.63
14	0.071	0.069	0.096	0.102	0.040	0.091	1.63
16	0.069	0.069	0.091	0.102	0.038	0.062	1.63
18	0.071	0.069	0.097	0.105	0.039	0.097	1.63
20	0.070	0.067	0.077	0.105	0.044	0.076	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)
2	0.084	0.083	0.076	0.122	0.055	0.124
4	0.081	0.078	0.113	0.134	0.047	0.104
6	0.083	0.097	0.090	0.132	0.041	0.108
8	0.077	0.105	0.116	0.127	0.044	0.083
10	0.091	0.109	0.100	0.114	0.040	0.092
12	0.085	0.106	0.113	0.121	0.057	0.082
14	0.089	0.086	0.120	0.127	0.050	0.113
16	0.086	0.086	0.114	0.128	0.047	0.077
18	0.089	0.086	0.122	0.132	0.048	0.121
20	0.087	0.084	0.097	0.131	0.055	0.096

Note: A/m=uT/1.25

50% battery

H-Filed Strength at (Distance from 0cm to 20cm and with 2-cm increments) 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)
2	0.072	0.069	0.081	0.103	0.035	0.067	1.63
4	0.068	0.085	0.071	0.106	0.049	0.097	1.63
6	0.076	0.080	0.082	0.093	0.032	0.071	1.63
8	0.069	0.079	0.095	0.095	0.040	0.091	1.63
10	0.078	0.072	0.077	0.096	0.043	0.086	1.63
12	0.077	0.070	0.083	0.091	0.046	0.091	1.63
14	0.072	0.078	0.097	0.106	0.042	0.088	1.63
16	0.071	0.076	0.069	0.106	0.035	0.091	1.63
18	0.078	0.073	0.099	0.101	0.033	0.070	1.63
20	0.067	0.070	0.070	0.101	0.032	0.082	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)
2	0.090	0.086	0.101	0.129	0.044	0.084
4	0.085	0.107	0.089	0.133	0.061	0.121
6	0.095	0.100	0.102	0.116	0.039	0.089
8	0.087	0.099	0.119	0.119	0.050	0.113
10	0.098	0.090	0.096	0.120	0.054	0.107
12	0.096	0.088	0.103	0.114	0.057	0.113
14	0.090	0.098	0.122	0.132	0.053	0.110
16	0.089	0.094	0.087	0.132	0.044	0.113
18	0.098	0.091	0.124	0.126	0.041	0.087
20	0.084	0.088	0.088	0.126	0.040	0.103

Note: A/m=uT/1.25

99% battery

H-Filed Strength at (Distance from 0cm to 20cm and with 2-cm increments) 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)
2	0.075	0.064	0.075	0.096	0.046	0.096	1.63
4	0.061	0.061	0.065	0.106	0.044	0.080	1.63
6	0.076	0.087	0.063	0.093	0.037	0.072	1.63
8	0.078	0.081	0.098	0.096	0.040	0.081	1.63
10	0.072	0.079	0.093	0.102	0.047	0.080	1.63
12	0.078	0.087	0.068	0.103	0.046	0.084	1.63
14	0.079	0.072	0.091	0.092	0.034	0.065	1.63
16	0.064	0.074	0.077	0.092	0.034	0.074	1.63
18	0.069	0.074	0.098	0.101	0.035	0.095	1.63
20	0.078	0.064	0.089	0.107	0.041	0.093	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)
2	0.094	0.080	0.094	0.120	0.058	0.119
4	0.076	0.076	0.081	0.133	0.055	0.100
6	0.095	0.109	0.078	0.116	0.046	0.090
8	0.097	0.101	0.122	0.120	0.049	0.101
10	0.090	0.098	0.117	0.128	0.059	0.099
12	0.097	0.109	0.085	0.129	0.057	0.105
14	0.098	0.090	0.114	0.115	0.043	0.081
16	0.080	0.092	0.096	0.116	0.043	0.093
18	0.086	0.092	0.122	0.126	0.044	0.119
20	0.097	0.080	0.111	0.134	0.051	0.116

Note: A/m=uT/1.25

5. Photographs Of Test Set-Up

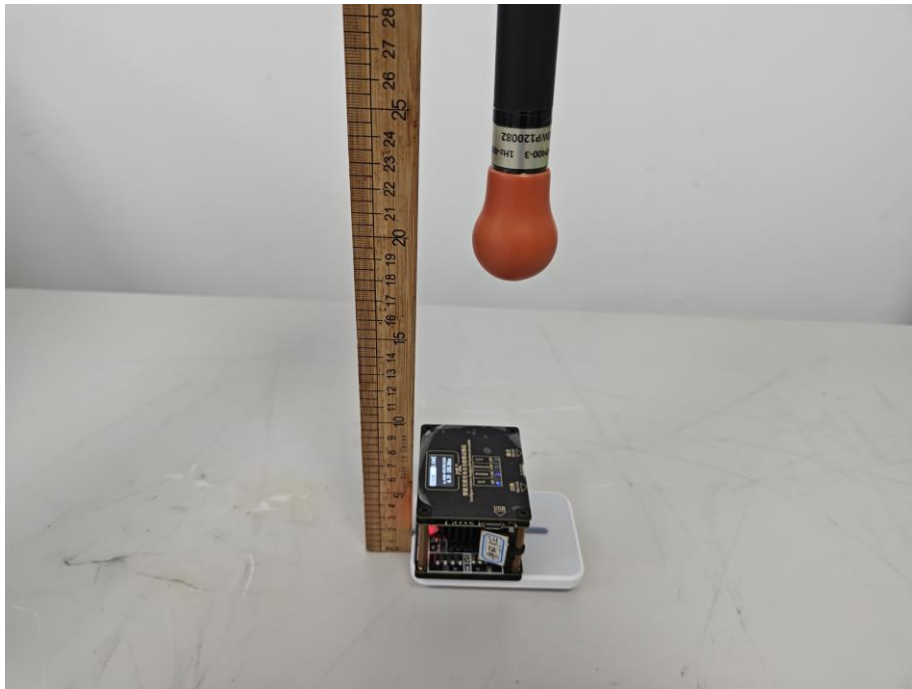
0CM

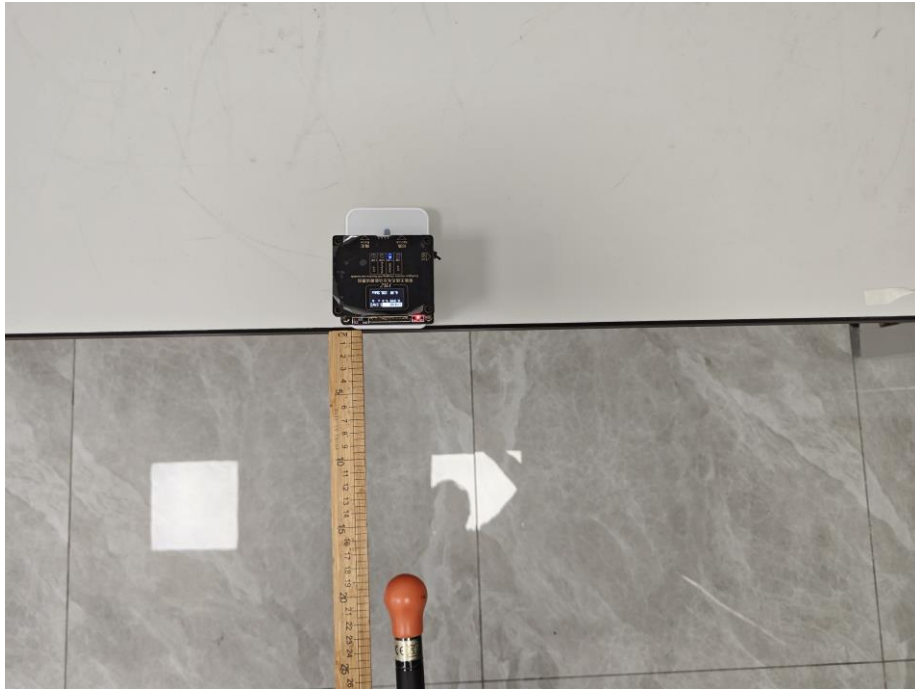






20CM







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 quality system of our laboratory is in accordance with ISO/IEC17025.
8. 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:

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL: 400-788-9558

P.C.: 518103

FAX: 0755-33229357

Website: <http://www.chnbctc.com>

E-Mail: bctc@bctc-lab.com.cn

***** END *****

2017