TEST REPORT

Report No.:	BCTC2105674617-2E
Applicant:	ShenZhen Mossloo Industrial CO., Ltd.
Product Name:	Wireless power bank
Model/Type Ref.:	MSL-M2022Q 5077-07
Tested Date:	2021-05-26 to 2021-06-25
Issued Date:	2021-06-28

Shenzhen BCTC Testing Co., Ltd.

FCC ID: 2AN8FMSL-M2022Q

Product Name:	Wireless power bank
Trademark:	N/A
Model/Type Ref.:	MSL-M2022Q 5077-07
Prepared For:	ShenZhen Mossloo Industrial CO., Ltd.
Address:	Road One No.4, Science Industrial Park, Shangxue Village, Bantian Street, Longgang District, Shenzhen, China
Manufacturer:	ShenZhen Mossloo Industrial CO., Ltd.
Address:	Road One No.4, Science Industrial Park, Shangxue Village, Bantian Street, 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, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2021-05-26
Sample tested Date:	2021-05-26 to 2021-06-25
Issue Date:	2021-06-28
Report No.:	BCTC2105674617-2E
Test Standards:	FCC CFR 47 part1, 1.1307(b), 1.1310
Test Results:	PASS

Tested by:

Eric Yang/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.

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(Note: N/A means not applicable)

1. VERSION

Report No.	Issue Date	Description	Approved
BCTC2105674617-2E	2021-06-28	Original	Valid

2. PRODUCT INFORMATION

2.1 Product Information

Model/Type Ref.:	MSL-M2022Q 5077-07
Model differences:	All the model are the same circuit and RF module, except model names.
Operation Frequency:	115kHz-220kHz
Modulation type:	FSK
Antenna installation:	Inductive loop coil antenna
Ratings:	DC 3.85V From Battery Lightning Input: DC 5V/2A Type-C Input/Output: DC 5V/2.4A; 9V/2A USB-A Output: DC 5V/3A; 9V/2A;12V/1.5A Wireless Output: 5W/7.5W/10W/15W

2.2 Support Equipment

Device Type	Brand	Model	Parameters	Remark
Mobile phone	iphone	iphone8P	N/A	Auxiliary
Adapter	UGREEN	CD122	Input: AC100-240V~ 50/60Hz, 800mA Max USB Output: 5V 3A, 9V 2A, 12V 1.5A	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

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Test Modes	keeping TX+Charging mode

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, Tangwei, 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

IC Registered No.: 23583

3.2 Test Instrument Used

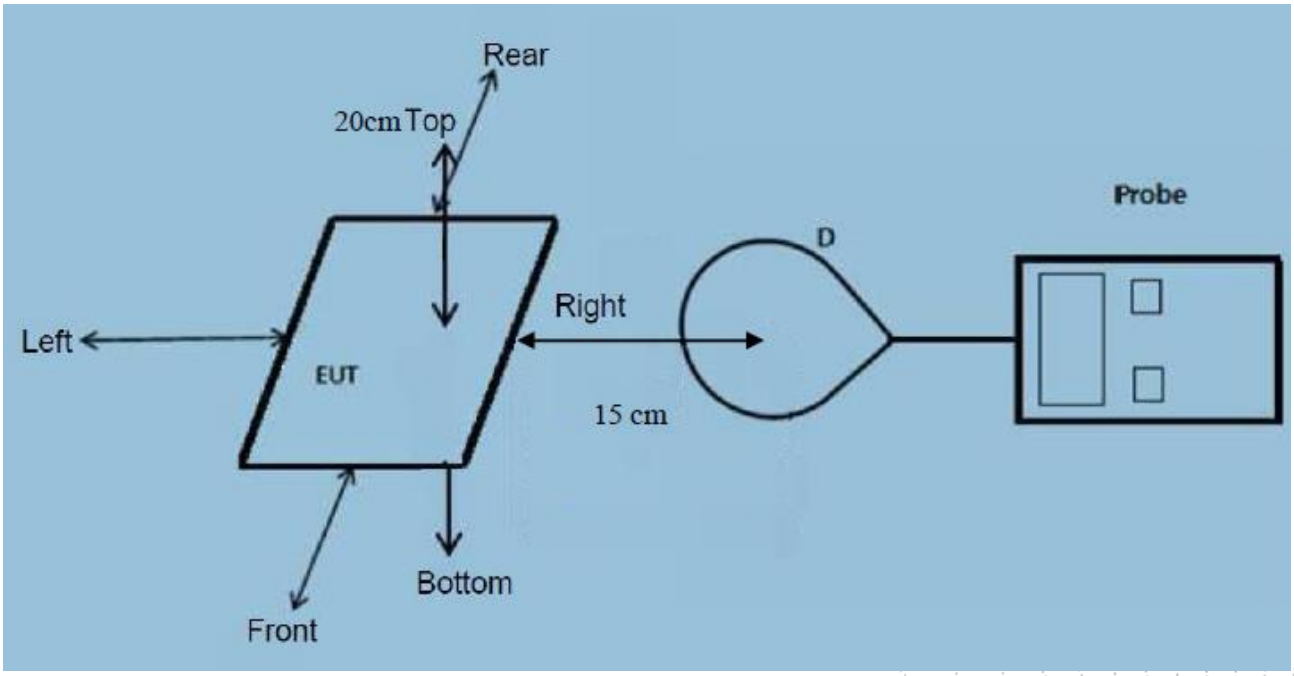
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Exposure Level Tester	Narda	NBM-550	H-1365	Jul. 15, 2020	Jul. 14, 2021
Electric and Magnetic Field Analyzer	Narda	EHP50F	510ZY01634	Jul. 15, 2020	Jul. 14, 2021
Probe	Narda	EF 0691	H-1234	Jul. 15, 2020	Jul. 14, 2021
843 Chamber	ETS	843	84301	Aug. 27, 2020	Aug. 26, 2023

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



Note: 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

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/ 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

4.4 Test procedure

a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.

b) The measurement probe was placed at test distance (15cm) which is between the edge of the charger and the geometric centre 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.

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 115-220KHz

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 only between individual pair of coils.

Yes, the transfer system includes only single primary and secondary coils.

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).

Yes, the EUT is a mophie device charging mat.

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.

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4.6 E and H field Strength

E-Field Strength at 15 cm surrounding the EUT and 20cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	50% Limits Test (V/m)	Limits Test (V/m)
1%	0.115-0.22	0.15	0.66	0.72	0.89	0.53	307	614
50%	0.115-0.22	0.24	0.45	0.92	0.85	0.85	307	614
99%	0.115-0.22	0.46	0.90	0.38	0.68	0.91	307	614

H-Field Strength at 15 cm surrounding the EUT and 20cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	50% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.22	0.053	0.075	0.071	0.068	0.069	0.815	1.63
50%	0.115-0.22	0.053	0.066	0.075	0.075	0.074	0.815	1.63
99%	0.115-0.22	0.032	0.077	0.065	0.069	0.078	0.815	1.63

E-Field Strength at 10 cm surrounding the EUT and 10cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	50% Limits Test (V/m)	Limits Test (V/m)
1%	0.115-0.22	0.53	0.58	0.38	0.58	0.70	307	614
50%	0.115-0.22	0.60	0.73	0.56	0.66	0.87	307	614
99%	0.115-0.22	0.39	0.50	0.38	0.53	0.40	307	614

H-Field Strength at 10 cm surrounding the EUT and 10cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	50% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.22	0.060	0.073	0.080	0.077	0.079	0.815	1.63
50%	0.115-0.22	0.059	0.074	0.078	0.077	0.068	0.815	1.63
99%	0.115-0.22	0.049	0.071	0.065	0.071	0.075	0.815	1.63

E-Field Strength at 8 cm surrounding the EUT and 8cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	50% Limits Test (V/m)	Limits Test (V/m)
1%	0.115-0.22	0.60	0.90	0.47	0.41	0.41	307	614
50%	0.115-0.22	0.65	0.66	0.72	0.44	0.92	307	614
99%	0.115-0.22	0.76	0.42	0.75	0.89	0.94	307	614

H-Field Strength at 8 cm surrounding the EUT and 8cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	50% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.22	0.066	0.080	0.072	0.069	0.074	0.815	1.63
50%	0.115-0.22	0.058	0.074	0.070	0.070	0.073	0.815	1.63
99%	0.115-0.22	0.035	0.077	0.067	0.075	0.063	0.815	1.63

E-Field Strength at 6 cm surrounding the EUT and 6cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	50% Limits Test (V/m)	Limits Test (V/m)
1%	0.115-0.22	0.56	0.80	0.58	0.39	0.55	307	614
50%	0.115-0.22	0.67	0.70	0.86	0.66	0.50	307	614
99%	0.115-0.22	0.50	0.45	0.70	0.78	0.77	307	614

H-Field Strength at 6 cm surrounding the EUT and 6cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	50% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.22	0.060	0.072	0.069	0.071	0.071	0.815	1.63
50%	0.115-0.22	0.050	0.070	0.077	0.068	0.060	0.815	1.63
99%	0.115-0.22	0.041	0.073	0.078	0.063	0.075	0.815	1.63

E-Field Strength at 4 cm surrounding the EUT and 4cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	50% Limits Test (V/m)	Limits Test (V/m)
1%	0.115-0.22	0.13	0.56	0.58	0.76	0.61	307	614
50%	0.115-0.22	0.45	0.36	0.95	0.83	0.95	307	614
99%	0.115-0.22	0.33	0.55	0.84	0.39	0.78	307	614

H-Field Strength at 4 cm surrounding the EUT and 4cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	50% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.22	0.053	0.075	0.064	0.075	0.066	0.815	1.63
50%	0.115-0.22	0.044	0.076	0.079	0.076	0.073	0.815	1.63
99%	0.115-0.22	0.034	0.078	0.064	0.066	0.071	0.815	1.63

E-Field Strength at 2 cm surrounding the EUT and 2cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	50% Limits Test (V/m)	Limits Test (V/m)
1%	0.115-0.22	0.25	0.48	0.41	0.48	0.51	307	614
50%	0.115-0.22	0.74	0.51	0.75	0.49	0.54	307	614
99%	0.115-0.22	0.66	0.66	0.69	0.81	0.38	307	614

H-Field Strength at 2 cm surrounding the EUT and 2cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	50% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.22	0.059	0.076	0.063	0.071	0.075	0.815	1.63
50%	0.115-0.22	0.055	0.078	0.077	0.063	0.067	0.815	1.63
99%	0.115-0.22	0.043	0.069	0.071	0.065	0.074	0.815	1.63

E-Field Strength at 0 cm surrounding the EUT and 0cm above the top surface of the EUT

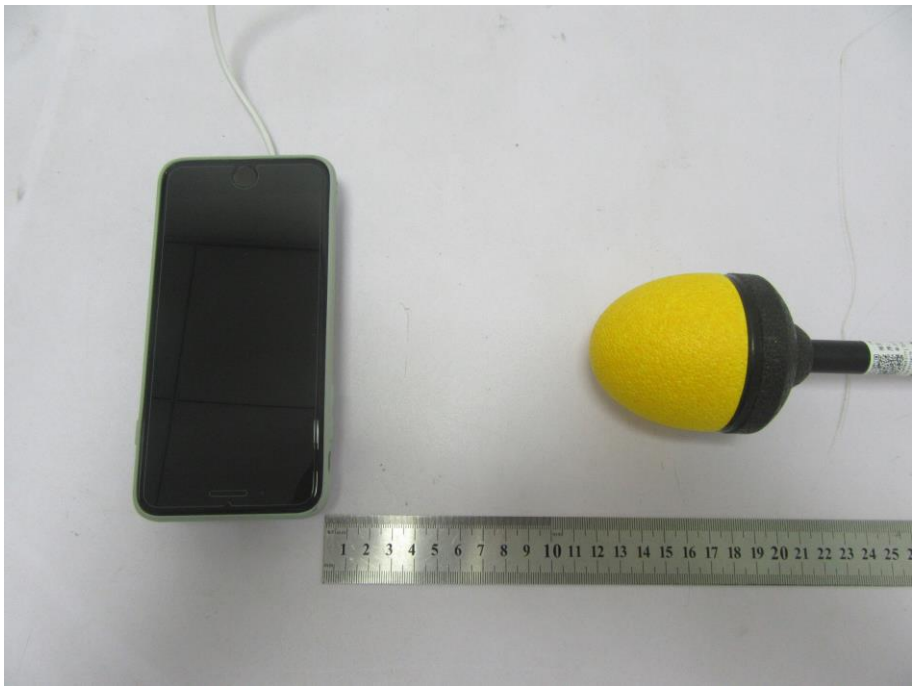
Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	50% Limits Test (V/m)	Limits Test (V/m)
1%	0.115-0.22	0.75	0.94	0.86	0.38	0.95	307	614
50%	0.115-0.22	0.80	0.82	0.39	0.40	0.44	307	614
99%	0.115-0.22	0.77	0.94	0.62	0.89	0.84	307	614

H-Field Strength at 0 cm surrounding the EUT and 0cm above the top surface of the EUT

Battery level	Frequency Range (MHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	50% Limits Test (A/m)	Limits Test (A/m)
1%	0.115-0.22	0.054	0.069	0.065	0.074	0.064	0.815	1.63
50%	0.115-0.22	0.043	0.060	0.067	0.065	0.065	0.815	1.63
99%	0.115-0.22	0.045	0.065	0.061	0.078	0.078	0.815	1.63

5. PHOTOGRAPHS OF TEST SET-UP

15cm



0cm

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 stamp of laboratory.

4.The test report is invalid without signature of person(s) testing and authorizing.

5.The test process and test result is only related to the Unit Under Test.

6.The quality system of our laboratory is in accordance with ISO/IEC17025.

7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

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