Test Report

Report No.:	MTi220322010-01E6
Date of issue:	2022-07-04
Applicant:	SHENZHEN POWEROAK NEWENER CO., LTD
Product:	Portable Power Station
Model(s):	AC500
FCC ID:	2AYT3-AC500

Shenzhen Microtest Co., Ltd.

http://www.mtitest.com

Address: 101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
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Instructions

1. This test report shall not be partially reproduced without the written consent of the laboratory.

2. The test results in this test report are only responsible for the samples submitted

3. This test report is invalid without the seal and signature of the laboratory.

4. This test report is invalid if transferred, altered, or tampered with in any form without authorization.

5. Any objection to this test report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

Contents

Test Result Certification	
Applicant:	**SHENZHEN POWEROAK NEWENER CO., LTD**
Address:	19th floor, Tower 1, Kaidaer Building, Tongsha Road No.168, XiLi Town, Nanshan District, Shenzhen, China
Manufacturer:	**SHENZHEN POWEROAK NEWENER CO., LTD**
Address:	19th floor, Tower 1, Kaidaer Building, Tongsha Road No.168, XiLi Town, Nanshan District, Shenzhen, China
Product description	
Product name:	Portable Power Station
Trademark:	BLUETTI
Model name:	AC500
Serial Model:	N/A
Standards:	FCC CFR 47 PART 1, § 1.1310
Test method:	KDB 680106 v03r01
Date of Test	
Date of test:	2022-06-28 ~ 2022-07-04
Test result:	Pass

Test Engineer : David. Lee

(David Lee)

Reviewed By: : Leon chen

(Leon Chen)

Approved By: : Tom Xue

(Tom Xue)

1 General Description

1.1 Description of the EUT

Product name:	Portable Power Station
Model name:	AC500
Series Model:	N/A
Model difference:	N/A
Electrical rating:	Input: AC port: 120V~60Hz, 50A DC port: 12-150V⎓15A×2 Adapter: 58.8V⎓8A Output: AC×3: 100-120V~50/60Hz, 20A Max for each AC×2: 100-120V~50/60Hz, 30A Max for each AC×1: 100-120V~50/60Hz, 50A Max AC output 5000W total Aviation Sockets×1: 12V⎓30A USB-A×2: 3.6V-12V⎓3A, 18W×2 Total USB-A×2: 5V⎓3A, 15W Total USB-C×2: 5-15V⎓3A, 20V⎓5A, 100W Cigarette Lighter×1: 24V⎓10A Wireless Charging×2: 5/7.5/10/15W×2 External battery capacity: 51.2V⎓60-360Ah, 3072-18432Wh
Battery:	51.2V⎓60-360Ah, 3072-18432Wh
Accessories:	N/A
Hardware version:	V1.0
Software version:	V1.0
RF specification:	
Operation frequency:	115 kHz – 205 kHz
Modulation type:	ASK
Antenna type:	Coil Antenna

1.2 Description of test modes

All the test modes were carried out with the EUT in normal operation, the final test mode of the EUT was the worst test mode for emission test, which was shown in this report and defined as:

No.	Emission test modes
Mode 1	Wireless output 1(5W)
Mode 2	Wireless output 1(7.5W)
Mode 3	Wireless output 1(10W)
Mode 4	Wireless output 1(15W)
Mode 5	Wireless output 2(5W)
Mode 6	Wireless output 2(7.5W)
Mode 7	Wireless output 2(10W)
Mode 8	Wireless output 2(15W)
Mode 9	Wireless output 1+2(5W+5W)
Mode 10	Wireless output 1+2(7.5W+5W)
Mode 11	Wireless output 1+2(10W+5W)
Mode 12	Wireless output 1+2(15W+5W)
Mode 13	Wireless output 1+2(5W+7.5W)
Mode 14	Wireless output 1+2(7.5W+7.5W)
Mode 15	Wireless output 1+2(10W+7.5W)
Mode 16	Wireless output 1+2(15W+7.5W)
Mode 17	Wireless output 1+2(5W+10W)
Mode 18	Wireless output 1+2(7.5W+10W)
Mode 19	Wireless output 1+2(10W+10W)
Mode 20	Wireless output 1+2(15W+10W)
Mode 21	Wireless output 1+2(5W+15W)
Mode 22	Wireless output 1+2(7.5W+15W)
Mode 23	Wireless output 1+2(10W+15W)
Mode 24	Wireless output 1+2(15W+15W)
Mode 25	Stand-by
The worst test mode of conducted emissions: Mode 24 **The worst test mode of radiated emissions（9kHz-30MHz）:** Mode 24 **The worst test mode of radiated emissions（30MHz-1GHz）:** Mode 24	

1.3 Description of support units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Support equipment list			
Description	Model	Serial No.	Manufacturer
Mobile phone 1	Find X3	/	OPPO
Mobile phone 2	S9+	/	SAMSUNG
Portable Power Station	B300S	/	/
Support cable list			
Description	Length (m)	From	To
/	/	/	/

2 Test facilities and accreditations

2.1 Test laboratory

Test laboratory:	Shenzhen Microtest Co., Ltd.
Test site location:	101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	(86-755)88850135
Fax:	(86-755)88850136
CNAS Registration No.:	CNAS L5868
FCC Registration No.:	448573

3 List of test equipment

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
MTI-E115	Electric and Magnetic Field Probe – Analyzer	Narda	EHP-200A	101166	2022/05/05	2023/05/04

4 Test result

4.1.1 Requirement

§1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter.

Table 1 to §1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE)

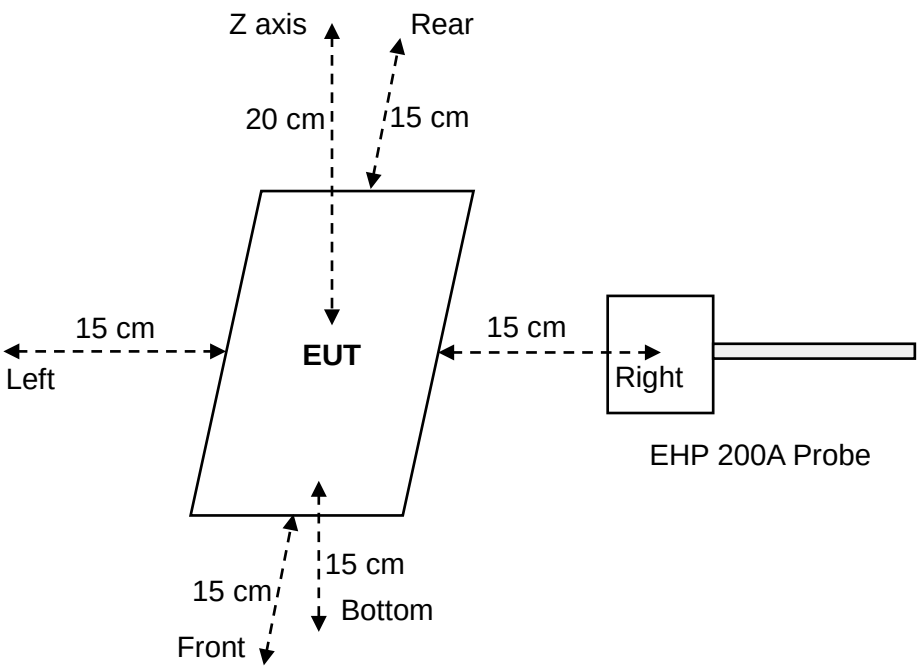
Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*($900/f^2$)	<6
30-300	61.4	0.163	1.0	<6
300-1500			f/300	<6
1500-100000			5	<6
(ii) 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
1500-100000			1.0	<30

f = frequency in MHz
* = Plane-wave equivalent power density

Note 1: Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

Note 2: General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

4.2 Test setup



4.3 Test Procedures

a. The RF exposure test was performed in anechoic chamber.

b. E and H-field measurements should be made with the center of the probe at a distance of 15 cm surrounding the device and 20 cm above the top surface of the primary/client pair.

c. The highest emission level was recorded and compared with limit.

d. The EUT was measured according to the dictates of KDB 680106 v03r01.

4.4 Equipment Approval Considerations item 5 b) of KDB 680106 D01 v03r01

Requirement	Device
1. Power transfer frequency is less than 1 MHz.	Yes. The operating frequencies are: 115 kHz – 205 kHz
2. Output power from each primary coil is less than or equal to 15 watts	Yes. The maximum output power is: 15W
3. The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time.	Yes. The EUT has two source primary coils.
4. Client device is placed directly in contact with the transmitter.	Yes. The 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. Mobile exposure conditions only.
6. The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit.	Yes. See the test result in item 4.5.

4.5 Test results

Test condition 1: Mode 24 operating mode with client device (1 % battery status of client device)

Antenna	Probe Position	E –field (V/m)			H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)	Measurement	Limit	Max. Percentage (%)
1	Z axis	1.0351	614	0.22%	0.3784	1.63	34.41%
	Left	0.5753			0.1225		
	Right	1.2250			0.3114		
	Front	1.1369			0.5609		
	Rear	0.7128			0.1074		
	Bottom	1.3466			0.3236		

Test condition 2: Mode 24 operating mode with client device (50 % battery status of client device)

Antenna	Probe Position	E –field (V/m)			H–field (A/m)		
		Measurement	Limit	Percentage (%)	Measurement	Limit	Percentage (%)
1	Z axis	1.0243	614	0.22%	0.3800	1.63	34.67%
	Left	0.5926			0.1254		
	Right	1.2164			0.3143		
	Front	1.1310			0.5651		
	Rear	0.7200			0.0980		
	bottom	1.3388			0.3277		

Test condition 3: Mode 24 operating mode with client device (99 % battery status of client device)

Antenna	Probe Position	E –field (V/m)			H–field (A/m)		
		Measurement	Limit	Percentage (%)	Measurement	Limit	Percentage (%)
1	Z axis	1.0214	614	0.22%	0.3713	1.63	34.25%
	Left	0.5565			0.1150		
	Right	1.2128			0.3049		
	Front	1.1275			0.5583		
	Rear	0.7053			0.1033		
	bottom	1.3342			0.3234		

Photographs of the Test Setup

See the Appendix - Test Setup Photos.

Photographs of the EUT

See the Appendix - EUT Photos.

----End of Report----