



# RF EXPOSURE Test Report

**Report No.:** MTi230808010-13E2  
**Date of issue:** 2023-09-13  
**Applicant:** SHENZHEN POWEROAK NEWENER CO., LTD  
**Product:** Portable Power Station  
**Model(s):** AC70  
**FCC ID:** 2AYT3-AC70

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

# Instructions

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



<b>Test Result Certification</b>	
<b>Applicant:</b>	SHENZHEN POWEROAK NEWENER CO., LTD
<b>Address:</b>	F19, BLD No.1, Kaidaer, Tongsha Rd No.168, Xili Street, Nanshan, Shenzhen, China
<b>Manufacturer:</b>	SHENZHEN POWEROAK NEWENER CO., LTD
<b>Address:</b>	F19, BLD No.1, Kaidaer, Tongsha Rd No.168, Xili Street, Nanshan, Shenzhen, China
<b>Product description</b>	
<b>Product name:</b>	Portable Power Station
<b>Trademark:</b>	BLUETTI
<b>Model name:</b>	AC70
<b>Series Model:</b>	N/A
<b>Standards:</b>	N/A
<b>Test procedure:</b>	KDB 447498 D01 v06
<b>Date of Test</b>	
<b>Date of test:</b>	2023-08-25 to 2023-09-13
<b>Test result:</b>	Pass

**Test Engineer :**

*David. Lee*

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(David Lee)

**Reviewed By: :**

*Leon Chen*

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(Leon Chen)

**Approved By: :**

*Tom Xue*

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(Tom Xue)

## RF EXPOSURE EVALUATION

According to FCC 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)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f <sup>2</sup>	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

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

### MPE Calculation Method

Friis transmission formula:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

$P_d$  = Power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

$\pi$  = 3.1415926

R = distance between observation point and center of the radiator in cm (20cm)

$P_d$  the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.



## Measurement Result

### BLE:

Operation Frequency: 2402-2480MHz,

Power density limited: 1mW/ cm<sup>2</sup>

Antenna Type: PCB Antenna

Antenna gain: -2.31 dBi

R=20cm

$mW=10^{(dBm/10)}$

antenna gain Numeric= $10^{(dBi/10)}=10^{(-2.31/10)}=0.059$

### BLE:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
				tune-up power		Gain			
		(dBm)		(dBm)	(mW)	(dBi)	Numeric	(mW/cm <sup>2</sup> )	(mW/cm <sup>2</sup> )
2402	BLE-1M	0.71	0±1	1	1.259	-2.31	0.59	0.00015	1
2440		0.71	0±1	1	1.259	-2.31	0.59	0.00015	1
2480		0.19	0±1	1	1.259	-2.31	0.59	0.00015	1
2402	BLE- 2M	0.68	0±1	1	1.259	-2.31	0.59	0.00015	1
2440		0.69	0±1	1	1.259	-2.31	0.59	0.00015	1
2480		0.17	0±1	1	1.259	-2.31	0.59	0.00015	1

### Conclusion:

For the max result:  $0.00015 \leq 1.0$  SAR, No SAR is required.

----END OF REPORT----