



# RF EXPOSURE Test Report

**Report No.:** MTi240628002-01E3  
**Date of issue:** 2024-08-05  
**Applicant:** Shenzhen BYD Electronics Co., Ltd.  
**Product:** 1200W Portable Power Station  
**Model(s):** G1200  
**FCC ID:** 2BH4V-G1200

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.cn>

# 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 BYD Electronics Co., Ltd.
Address:	No.1 Yan'an Road, Kuichong Street, Dapeng New District, Shenzhen, China
<b>Manufacturer:</b>	Shenzhen BYD Electronics Co., Ltd.
Address:	No.1 Yan'an Road, Kuichong Street, Dapeng New District, Shenzhen, China
<b>Product description</b>	
Product name:	1200W Portable Power Station
Trademark:	N/A
Model name:	G1200
Series Model:	N/A
Standards:	N/A
Test procedure:	KDB 447498 D01 v06
<b>Date of Test</b>	
Date of test:	2024-07-19 to 2024-07-31
Test result:	Pass

<b>Test Engineer</b>	:	<i>Yanice Xie</i>
		(Yanice.Xie)
<b>Reviewed By</b>	:	<i>David. Lee</i>
		(David Lee)
<b>Approved By</b>	:	<i>Leon Chen</i>
		(Leon Chen)

## 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: 3.75 dBi

R=20cm

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

Antenna gain Numeric= $10^{(dBi/10)}=10^{(3.75/10)}=2.37$

### 2.4G WIFI:

Operation Frequency: 802.11b/g/n20: 20 MHz, 802.11n40: 40 MHz

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

Antenna Type: PCB Antenna

Antenna gain:3.75 dBi

R=20cm

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

Antenna gain Numeric= $10^{(dBi/10)}=10^{(3.75/10)}=2.37$

### BLE:

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max		Antenna		Evaluation result (mW/cm <sup>2</sup> )	Power density Limits (mW/cm <sup>2</sup> )
				tune-up power		Gain			
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK-1M	3.02	3±1	4	2.512	3.75	2.37	0.0012	1
2440		3.53	3±1	4	2.512	3.75	2.37	0.0012	1
2480		3.37	3±1	4	2.512	3.75	2.37	0.0012	1
2402	GFSK-2M	2.71	3±1	4	2.512	3.75	2.37	0.0012	1
2440		3.23	3±1	4	2.512	3.75	2.37	0.0012	1
2480		2.91	3±1	4	2.512	3.75	2.37	0.0012	1

**2.4G WiFi:**

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna		Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain		Power density(mW/cm2 )	(mW/cm2)
		Ant A	Ant A	(dBm)	(mW)	(dBi)	Numeric		
2412	802.11b	22.21	22±1	23	199.526	3.75	2.37	0.09413	1
2437		22.12	22±1	23	199.526	3.75	2.37	0.09413	1
2462		21.91	22±1	23	199.526	3.75	2.37	0.09413	1
2412	802.11g	21.25	22±1	23	199.526	3.75	2.37	0.09413	1
2437		22.28	22±1	23	199.526	3.75	2.37	0.09413	1
2462		21.99	22±1	23	199.526	3.75	2.37	0.09413	1
2412	802.11n H20	20.25	21±1	22	158.489	3.75	2.37	0.07477	1
2437		20.26	21±1	22	158.489	3.75	2.37	0.07477	1
2462		20.19	21±1	22	158.489	3.75	2.37	0.07477	1
2422	802.11n H40	19.55	19±1	20	100.000	3.75	2.37	0.04718	1
2437		18.98	19±1	20	100.000	3.75	2.37	0.04718	1
2452		18.93	19±1	20	100.000	3.75	2.37	0.04718	1

**Conclusion:**

BT and 2.4G WiFi cannot work at the same time.

For the max result:  $0.09413 \leq 1.0$  test exclusion threshold, No SAR is required.

**----END OF REPORT----**