

Atlas Copco (Wuxi) Compressor Co., Ltd.

MPE ASSESSMENT REPORT

Report Type:

FCC MPE assessment report

Model:

ZBP 2000, ZBP 2000 PREDEFINED

REPORT NUMBER:

230900297SHA-002

ISSUE DATE:

December 14, 2023

DOCUMENT CONTROL NUMBER:

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Applicant: Atlas Copco (Wuxi) Compressor Co., Ltd.
No.45 Ximei Road, Xinwu District, Wuxi, Jiangsu, China

Manufacturer: Atlas Copco (Wuxi) Compressor Co., Ltd.
No.45 Ximei Road, Xinwu District, Wuxi, Jiangsu, China

Factory: Atlas Copco (Wuxi) Compressor Co., Ltd.
No.45 Ximei Road, Xinwu District, Wuxi, Jiangsu, China

FCC ID: 2BBHM-ZBP2000

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:

KDB447498 D01 General RF Exposure Guidance v06
FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

PREPARED BY:

REVIEWED BY:



Project Engineer
Sky Yang

Reviewer
Eric Li

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Revision History

Report No.	Version	Description	Issued Date
230900297SHA-002	Rev. 01	Initial issue of report	November 17, 2023
230900297SHA-002	Rev. 02	Modify the EUT rating.	December 14, 2023

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	LITHIUM-ION POWER STATION
Type/Model:	ZBP 2000 PREDEFINED, ZBP 2000
Description of EUT:	The EUT is a mobile energy storage power supply with WIFI function. Two models are electrically identical except that ZBP 2000 doesn't have heating film.
Rating:	AC Input: 120VAC, 50Hz/60Hz, 15A Max Solar Input: 12~60VDC, 15A Max AC Output: 120VAC, 50/60Hz, 16.6A Max 120VAC, 50/60Hz, 15A (when input is connected with AC mains together) USB-A Output: 5V/3A, 9V/2A, 12V/1.5A, 18W Max USB-C Output: 5V/3A, 9V/2A, 12V/1.5A, 18W Max USB-A+C Output: 5V/2A, 10W
EUT type:	<input type="checkbox"/> Table top <input checked="" type="checkbox"/> Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	March 13, 2023
Date of test:	March 15, 2023 ~ April 21, 2023

1.2 Technical Specification

Frequency Band:	2400MHz ~ 2483.5MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20
Type of Modulation:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n-HT20: OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Channel Number:	11 Channels for 802.11b, 802.11g and 802.11n(HT20)
Data Rate:	IEEE 802.11b: Up to 11 Mbps IEEE 802.11g: Up to 54 Mbps IEEE 802.11n-HT20: Up to MCS7
Channel Separation:	5 MHz

Antenna information:			
No.	Antenna Type	Gain (dBi)	Note
1	PCB Antenna	-1.27	-

1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN0175
	IC Registration Lab CAB identifier.: CN0014
	VCCI Registration Lab Member No.: 3598 (Registration No.: R-14243, G-10845, C-14723, T-12252)
	A2LA Accreditation Lab Certificate Number: 3309.02

TEST REPORT

2 MPE Assessment

Test result: Pass

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (uT)	Equivalent plane wave power density S_{eq} (W/m ²)
0-1 Hz	-	$3,2 \times 10^4$	4×10^4	-
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	-
8-25 Hz	10 000	4 000/f	5 000/f	-
0,025-0,8 kHz	250/f	4/f	5/f	-
0,8-3 kHz	250/f	5	6,25	-
3-150 kHz	87	5	6,25	-
0,15-1 MHz	87	0,73/f	0,92/f	-
1-10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	-
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375 f^{1/2}$	$0,0037 f^{1/2}$	$0,0046 f^{1/2}$	f/200
2-300 GHz	61	0,16	0,20	10

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0**

2.2 Assessment Results

Power density (S) is calculated according to the formula:

$$S = P / (4\pi R^2)$$

Where S = power density in mW/cm²

P = Radiated transmit power in mW

R = distance (cm)

As we can see from the test report 230900297SHA-001:

Here R is chosen to be 20cm,

Mode	Frequency Range	Power		R	S	Limits
	(MHz)	dBm	mW	(cm)	(mW/cm ²)	(mW/cm ²)
WIFI	2412 - 2462	10.59	11.455	20	0.0023	1

Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

***** END *****