Prüfbericht-Nr.: *Test report no.*:	**CN24Y0QT 002**	**Auftrags-Nr.:** *Order no.*:	168474698	Seite 1 von 11 *Page 1 of 11*
Kunden-Referenz-Nr.: *Client reference no.*:	N/A	**Auftragsdatum:** *Order date:*	2024-03-19	
Auftraggeber: *Client*:	Xiamen Ampace Technology Limited No.600 Hongtang Road, Tongxiang High-tech Zone, Torch High-tech District, Xiamen City, Fujian 361106, China			
Prüfgegenstand: *Test item*:	Portable Power Station			
Bezeichnung / Typ-Nr.: *Identification / Type no.*:	Andes 1500 X (X = A to Z or blank, difference on the model name and appearance colors only for marketing purpose, no technical difference)			
Auftrags-Inhalt: *Order content*:	Test Report			
Prüfgrundlage: *Test specification*:	CFR47 FCC Part 2: Section 2.1091 CFR47 FCC Part 1: Section 1.1310 RSS-102 Issue 6 December 2023			

Wareneingangsdatum: *Date of sample receipt*:	2024-05-29	Please refer to Photo Document
Prüfmuster-Nr.: *Test sample no:*	A003723392-005~006	
Prüfzeitraum: *Testing period*:	2024-06-14 - 2024-07-11	
Ort der Prüfung: *Place of testing*:	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüfergebnis*: *Test result**:	Pass	

geprüft von: tested by:	X Lin Lin	**genehmigt von:** *authorized by*:	X Bell Hu Bell Hu
Datum: *Date:* 2024-07-18		**Ausstellungsdatum:** *Issue date:* 2024-07-18	
Stellung / Position:	Sachverständige(r)/Expert	**Stellung** / Position:	Sachverständige(r)/Expert

Sonstiges / *Other*: FCC ID: 2BB9O-ANDES1500
IC: 32540-ANDES1500, HVIN: Andes 1500

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery*: Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged*

* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*P(ass) = passed a.m. test specification(s)*	*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. *The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system.* *Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.*
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3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. *Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report.* *Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.*
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. *The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.*

Test Summary

3.1.1 RF EXPOSURE COMPLIANCE

RESULT: Pass

Contents

1. Test Sites

1.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.
No.362, Huanguan Middle Road, Songyuansha Community, Guanhu Subdistrict, Longhua District, Shenzhen 518110, Guangdong, China

A2LA Certificate Number: 5162.01

FCC Accreditation Designation No.: CN1260

ISED Wireless Device Testing Laboratory: 25069

1.2 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

1.3 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

1.4 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendixes of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

1.5 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. facility located at No.362, Huanguan Middle Road, Songyuansha Community, Guanhu Subdistrict, Longhua District, Shenzhen 518110, Guangdong, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

2. General Product Information

2.1 General Description

The product is Portable Power Station which supports 2.4GHz Band Wi-Fi and Bluetooth dual mode wireless functions.

Note: This product contains transmitter module, FCC ID: 2AC7Z-ESP32WROVER; IC: 21098-ESP32WROVER with additional type of antenna, and the RF output power test data referred to test report RKS170517002-00A, RKS170517002-00B, RSHD200715001-08A and RSHD200715001-08B issued by Bay Area Compliance Laboratories Corp. (Kunshan).

For details refer to the User Manual, Technical Description and Circuit Diagram.

2.2 Rating and System details

Table 1: Technical Specification of EUT

General Information of EUT	**Value**
Kind of Equipment	Portable Power Station
Type Designation	Andes 1500 X (X = A to Z or blank, difference on the model name and appearance colors only for marketing purpose, no technical difference)
FCC ID	2BB9O-ANDES1500
IC	32540-ANDES1500
HVIN	Andes 1500
Input	AC 120V, 60Hz (1800W) or DC 11-60V, 12A (600W)
Output	Output1: AC (*4) 120V 60Hz (2400W); AC (*4) 120V 60Hz (1800W, Bypass mode) Output2: Car Charger (*1)+DC 5521(*2)12.6V/9.5A(120W) Output3:USB-A (*4): 5V/3A 9V/2A 12V/1.5A (18W); USB-C (*2): 5V/3A 9V/3A 12V/3A 15V/3A 20V/5A (100W)
Battery Capacity	1462Wh (32.65Ah, 44.8V)
Technical Specification of Bluetooth dual mode	
Operating Frequency	2402 - 2480 MHz
Type of Modulation	GFSK, π/4-DQPSK, 8DPSK
Channel Number	BR & EDR mode:79 channels, Low Energy mode:40 channels
Channel Separation	BR & EDR mode:1 MHz, Low Energy mode:2 MHz
Data Rate	BR & EDR mode: 1Mbps, 2Mbps, 3Mbps Low Energy mode: 1Mbps
Antenna Type	Metal Antenna
Antenna Gain	Max. 4.26 dBi (Provided by the Client)
Technical Specification of 2.4GHz Wi-Fi	
Operating Frequency	2412 - 2462 MHz for 802.11b/g/n(HT20) 2422 - 2452 MHz for 802.11n(HT40)
Type of Modulation	DSSS(DBPSK/DQPSK/CCK) OFDM(BPSK/QPSK/16QAM/64QAM)

Data Rate	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0 ~ MCS7 for 802.11n
Channel Number	11 channels for 802.11b/g/n(HT20) 7 channels for 802.11n(HT40)
Channel Separation	5 MHz
Antenna Type	Metal Antenna
Antenna Gain	Max. 4.26 dBi (Provided by the Client)

3. Test Results

3.1 Transmitter Requirements & Test Suites

3.1.1 RF Exposure Compliance

RESULT: **Pass**

Test standard	:	47 CFR FCC Part 2.1091 RSS-102 Issue 6
Limit	:	Table 1 of 47 CFR FCC Part 1.1310 Section 6.6 of RSS-102 Issue 6
Kind of test site	:	Shielded room

This device is mobile device, and the applicant declares that the minimum separation distance is greater than 20cm. Therefore, MPE measurement or computational modelling should be used to determine compliance.

3.1.1.1 RF Exposure Compliance Requirement for FCC

➢ **Radio Frequency Exposure Limit**

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)
300-1,500	--	--	f/1500
1,500-100,000	--	--	1.0

➢ **Radio Frequency Exposure Calculation Formula**

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g., mW)
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

or:

$$S = \frac{EIRP}{4\pi R^2}$$

where: EIRP = equivalent (or effective) isotropically radiated power

Table 2: Test Results of RF Exposure Calculations for FCC, stand-alone mode

Operating Mode	Measured RF Output Power (dBm)	Max. EIRP (dBm)	Distance (cm)	MPE P_d (mW/cm^2)	Limit (mW/cm^2)	Verdict
Bluetooth BR & EDR	3.56	7.82	20	0.001	1.0	Pass
Bluetooth LE	6.24	10.50	20	0.002	1.0	Pass
2.4G Wi-Fi	22.36	26.62	20	0.091	1.0	Pass

Note1: Max. Antenna Gain is 4.26 dBi for Bluetooth & 2.4GHz Wi-Fi.
Note2: The Bluetooth and 2.4GHz Wi-Fi share a same antenna and cannot transmitting sync.
Note3: The Conducted RF output power test data referred to test report RKS170517002-00A, RKS170517002-00B, RSHD200715001-08A and RSHD200715001-08B issued by Bay Area Compliance Laboratories Corp. (Kunshan).

3.1.1.2 RSS-102 Exemption Limits for Routine Evaluation – RF Exposure Evaluation

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);

- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz;

- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);

- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2}\ f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

Table 3: Test Results of RF Exposure Calculations for ISED, Stand-alone mode

Operating Mode	Max. EIRP incl. tune-up (dBm)	Distance (cm)	Maximum EIRP (W)	Threshold power (W)	Verdict
Bluetooth BR & EDR	7.82	20	0.0061	2.68	Pass
Bluetooth LE	10.50	20	0.0112	2.68	Pass
2.4G Wi-Fi	26.62	20	0.4592	2.68	Pass

Note1: Max. Antenna Gain is 4.26 dBi for Bluetooth & 2.4GHz Wi-Fi.
Note2: The Bluetooth and 2.4GHz Wi-Fi share a same antenna and cannot transmitting sync.
Note3: The Conducted RF output power test data referred to test report RKS170517002-00A, RKS170517002-00B, RSHD200715001-08A and RSHD200715001-08B issued by Bay Area Compliance Laboratories Corp. (Kunshan).

➢ **Conclusion**

Therefore the maximum calculations result of above are meet the requirement of Radio Frequency Exposure (MPE) limit.

“RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons.”

4. List of Tables