

# Test Report

**Report No.:** MTi241015014-06E2

**Date of issue:** 2024-11-26

**Applicant:** Shenzhen Xiangdangwen Technology Co., Ltd.

**Product:** LISEN P103 Qi2 10000mAh Power Bank

**Model(s):** 2E429

**FCC ID:** 2AW73-2E429

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.cn>

## Instructions

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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

<b>1</b>	<b>General Description .....</b>	<b>5</b>
1.1	Description of the EUT .....	5
1.2	Description of test modes .....	5
1.3	Description of support units .....	6
<b>2</b>	<b>Measurement uncertainty .....</b>	<b>6</b>
<b>3</b>	<b>Test facilities and accreditations .....</b>	<b>7</b>
3.1	Test laboratory .....	7
<b>4</b>	<b>List of test equipment .....</b>	<b>8</b>
<b>5</b>	<b>Test result .....</b>	<b>9</b>
5.2	Test setup .....	10
5.3	Test Procedures .....	10
5.4	Information of test equipment .....	11
5.5	Test results .....	12
	<b>Photographs of the Test Setup .....</b>	<b>20</b>
	<b>Photographs of the EUT .....</b>	<b>20</b>

**Test Result Certification**

<b>Applicant:</b>	Shenzhen Xiangdangwen Technology Co., Ltd.
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<b>Manufacturer:</b>	Huizhou Yimai Electronic Technology Co., Ltd
<b>Address:</b>	3rd Floor, Building B, Huakai High-tech Industrial Park, Electronic City Road, Longxi Street, Boluo Country, Huizhou City, Guangdong, China.
<b>Factory:</b>	Shenzhen Hasmine Technology Co., Ltd
<b>Address:</b>	201-205, 5th Floor, Building 8, Building 6, No. 387 Huating Road, Langkou Community, Dalang Street, Longhua District, Shenzhen, China
<b>Product description</b>	
<b>Product name:</b>	LISEN P103 Qi2 10000mAh Power Bank
<b>Trademark:</b>	LISEN, AINOPE, VEICO
<b>Model name:</b>	2E429
<b>Series Model:</b>	N/A
<b>Standards:</b>	47 CFR PART 1, § 1.1310
<b>Test method:</b>	KDB 680106 D01 Wireless Power Transfer v04
<b>Date of Test</b>	
<b>Date of test:</b>	2024-10-24 to 2024-11-05
<b>Test result:</b>	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)

## 1 General Description

### 1.1 Description of the EUT

Product name:	LISEN P103 Qi2 10000mAh Power Bank
Model name:	2E429
Series Model(s):	N/A
Model difference:	N/A
Electrical rating:	Input:DC 5V/3A, 9V/2A, 12V/1.5A Wireless output:15W max Type-C output:5V/3A, 9V/3A,12V/2.5A, 15V/2A, 20V/1.5A 30W(MAX)
Accessories:	N/A
Hardware version:	ABN-222
Software version:	GPM8FD3331B-V1.0
Test sample(s) number:	MTi241015014-06S1001
<b>RF specification</b>	
Operating frequency range:	115-205kHz&360kHz
Modulation type:	ASK
Antenna(s) type:	Coil

### 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
Mode1	Charging+Wireless Output(5W)
Mode2	Wireless Output(5W)
Mode3	Wireless Output(7.5W)
Mode4	Wireless Output(10W)
Mode5	Wireless Output(15W)
Mode6	Standby

### 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	S9+	R28K34V79NT	Samsung
Mobile phone	iPhone 15	KXPWNQFK90	Apple
HUAWEI QUICK CHARGE(65W)	HW-200325CP1	FL8606P8500764	HUAWEI
Support cable list			
Description	Length (m)	From	To
/	/	/	/

## 2 Measurement uncertainty

Parameter	Expanded Uncertainty
Magnetic field measurements(3kHz~10MHz)	$\pm 14.8\%$
Electric field measurements(3kHz~10MHz)	$\pm 17.5\%$

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

### 3 Test facilities and accreditations

#### 3.1 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

#### 4 List of test equipment

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
MTI-E143	Near-field Electric and Magnetic Field Sensor System	SPEAG	MAGPy-8H3D +ED3	3101	2024/3/12	2027/3/11

No.	Equipment	Manufacturer	Model	Software version:	Cal. date	Cal. Due
MTI-E016S	MPE test software	SPEAG	MAGPY 2.6	2.6	/	/



## 5 Test result

### 5.1.1 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 <sup>2</sup> )	Averaging time (minutes)
<b>(i) 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
300-1500			f/300	<6
1500-100000			5	<6
<b>(ii) 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
300-1500			f/1500	<30
1500-100000			1.0	<30

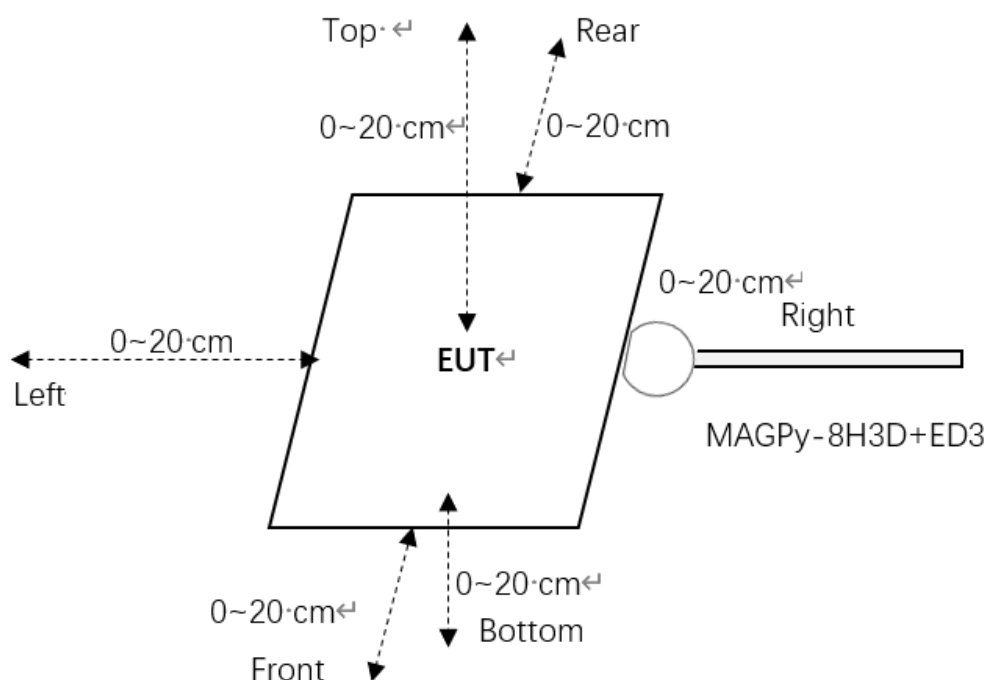
f = frequency in MHz

\* = 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.

## 5.2 Test setup

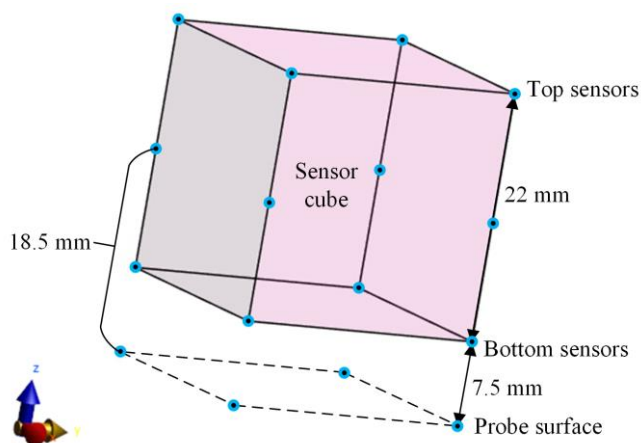


Note: tips mode of the test probe is used for 0cm measurement.

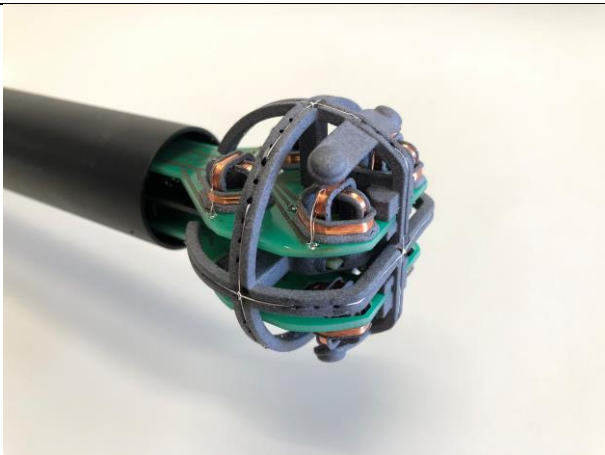
## 5.3 Test Procedures

- H-field measurements should be taken 0 cm ~ 20 cm with 2 cm increments from the center of the probe.
- The center of the probe to the tip surface of the probe is 18.5 mm, so the directly testing can be performed at the probe center from 2 cm to 20 cm.
- To measure the 0 cm H-field, the probe tip mode is used. The total H-field at the tip-surface  $H_{tip-surface}$  can be extrapolated using the total H-field measured at the top and bottom sensors,  $H_{top}$  and  $H_{bottom}$ , as well as the normalized H-field gradient  $G_n$ . The field extrapolation formula is a polynomial function of  $G_n$  ( $\Delta d = 18.5$  mm)

$$H_{tip-surface} = \frac{H_{bottom} + H_{top}}{2} \sum_{i=0}^7 ci(G_n \Delta d)^i$$



## 5.4 Information of test equipment

Test equipment: MAGPy-8H3D+ED3	
Diameter	60mm
8 isotropic H-field sensors	Concentric loops of 1cm <sup>2</sup> arranged at the corner of a cube of 22mm side length
1 isotropic E-field sensor	Orthogonal dipole/monopole (arm length: 50mm)
Measurement center	18.5mm from the probe tip
Dimensions	110*635*35mm (MAGPy-8H3D+E3D V2 & MAGPy-DAS V2)
	
Test probe, without the casing	

Item	Requirement	Specification
Test frequency range:	3kHz ~ 10MHz	3kHz ~ 10MHz
Probe sensitivity	$\leq 1$ V/m for E-field measurements $\leq 1$ A/m for H-field measurements against the NS-based reference level $\leq 0.1/f_{\text{MHz}}$ A/m for H-field measurements against the SAR-based reference level	E-filed: 0.08-2000 V/m H-filed: 0.1-3200 A/m
Probe level response	$\pm 1\text{dB}$	E-filed: $\pm 1\text{dB}$ H-filed: $\pm 1\text{dB}$
Probe linear range	-10dB ~ 5dB	E-filed: 0.08-2000 V/m H-filed: 0.1-3200 A/m
linearity error	$\pm 0.5\text{dB}$	E-filed: $\pm 0.3\text{dB}$ H-filed: $\pm 0.3\text{dB}$
Antenna size	Dp(E-filed): 50mm Dp(H-filed): 38.1mm	
Isotropy	$\pm 1\text{dB}$	E-filed: $\pm 0.8\text{dB}$ H-filed: $\pm 0.6\text{dB}$

Note: It is the understanding of the TCB Council that SPEAG is currently the only manufacturer whose probe meets all requirements of SPR-002 Issue 2.

## 5.5 Test results

**Test condition 1: Mode 4 operating mode with client device (1 % battery status of client device)**  
**-estimated value: 0cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	1.06	1.63	67.48%
Left	0.97		
Right	1.08		
Front	0.98		
Rear	1.10		
Bottom	0.82		

**Test condition 2: Mode 3 operating mode with client device (1 % battery status of client device)**  
**- Test distance: 2cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.77	1.63	59.51%
Left	0.41		
Right	0.95		
Front	0.59		
Rear	0.97		
Bottom	0.18		

**Test condition 3: Mode 3 operating mode with client device (1 % battery status of client device)**
**- Test distance 4cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.56	1.63	52.76%
Left	0.23		
Right	0.86		
Front	0.34		
Rear	0.83		
Bottom	0.11		

**Test condition 4: Mode 3 operating mode with client device (1 % battery status of client device)**
**- Test distance 6cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.43	1.63	43.56%
Left	0.17		
Right	0.62		
Front	0.24		
Rear	0.71		
Bottom	0.08		

**Test condition 5: Mode 3 operating mode with client device (1 % battery status of client device)**
**- Test distance 8cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.31	1.63	26.99%
Left	0.12		
Right	0.38		
Front	0.15		
Rear	0.44		
Bottom	0.06		

**Test condition 6: Mode 3 operating mode with client device (1 % battery status of client device)**
**- Test distance 10cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.17	1.63	10.43%
Left	0.07		
Right	0.11		
Front	0.08		
Rear	0.15		
Bottom	0.01		

**Test condition 7: Mode 3 operating mode with client device (1 % battery status of client device)**
**- Test distance 12cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.15	1.63	9.20%
Left	0.06		
Right	0.10		
Front	0.07		
Rear	0.14		
Bottom	0.01		

**Test condition 8: Mode 3 operating mode with client device (1 % battery status of client device)**
**- Test distance 14cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.12	1.63	7.36%
Left	0.05		
Right	0.08		
Front	0.06		
Rear	0.11		
Bottom	0.01		

**Test condition 9: Mode 3 operating mode with client device (1 % battery status of client device)**
**- Test distance 16cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.09	1.63	5.52%
Left	0.04		
Right	0.06		
Front	0.04		
Rear	0.08		
Bottom	0.01		

**Test condition 10: Mode 3 operating mode with client device (1 % battery status of client device)**
**- Test distance 18cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.07	1.63	4.29%
Left	0.03		
Right	0.04		
Front	0.03		
Rear	0.06		
Bottom	0.004		

**Test condition 11: Mode 3 operating mode with client device (1 % battery status of client device)**
**- Test distance 20cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.05	1.63	3.07%
Left	0.02		
Right	0.04		
Front	0.03		
Rear	0.05		
Bottom	0.003		

**Test condition 1: Mode 4 operating mode with client device (1 % battery status of client device)**  
**-estimated value: 0cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	1.30	1.63	98.16%
Left	0.29		
Right	1.28		
Front	1.60		
Rear	1.16		
Bottom	0.66		

**Test condition 2: Mode 4 operating mode with client device (1 % battery status of client device)**  
**- Test distance: 2cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	1.17	1.63	88.34%
Left	0.26		
Right	1.15		
Front	1.44		
Rear	1.04		
Bottom	0.59		

**Test condition 3: Mode 4 operating mode with client device (1 % battery status of client device)**  
**- Test distance 4cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	1.05	1.63	79.51%
Left	0.23		
Right	1.04		
Front	1.30		
Rear	0.94		
Bottom	0.53		



**Test condition 4: Mode 4 operating mode with client device (1 % battery status of client device)**
**- Test distance 6cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.95	1.63	71.56%
Left	0.21		
Right	0.93		
Front	1.17		
Rear	0.85		
Bottom	0.48		

**Test condition 5: Mode 4 operating mode with client device (1 % battery status of client device)**
**- Test distance 8cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.85	1.63	64.40%
Left	0.19		
Right	0.84		
Front	1.05		
Rear	0.76		
Bottom	0.43		

**Test condition 6: Mode 4 operating mode with client device (1 % battery status of client device)**
**- Test distance 10cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.77	1.63	57.96%
Left	0.171		
Right	0.756		
Front	0.945		
Rear	0.685		
Bottom	0.39		

**Test condition 7: Mode 4 operating mode with client device (1 % battery status of client device)**
**- Test distance 12cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.51	1.63	31.29%
Left	0.12		
Right	0.34		
Front	0.35		
Rear	0.27		
Bottom	0.11		

**Test condition 8: Mode 4 operating mode with client device (1 % battery status of client device)**
**- Test distance 14m**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.46	1.63	28.22%
Left	0.09		
Right	0.18		
Front	0.19		
Rear	0.13		
Bottom	0.06		

**Test condition 9: Mode 4 operating mode with client device (1 % battery status of client device)**
**- Test distance 16m**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.29	1.63	17.29%
Left	0.05		
Right	0.09		
Front	0.11		
Rear	0.04		
Bottom	0.02		

**Test condition 10: Mode 4 operating mode with client device (1 % battery status of client device)**  
**- Test distance 18cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.16	1.63	9.82%
Left	0.01		
Right	0.02		
Front	0.04		
Rear	0.009		
Bottom	0.008		

**Test condition 11: Mode 4 operating mode with client device (1 % battery status of client device)**  
**- Test distance 20cm**

Probe Position	H-field (A/m)		
	Measurement	Limit	Max. Percentage (%)
Z axis	0.08	1.63	4.91%
Left	0.006		
Right	0.008		
Front	0.009		
Rear	0.006		
Bottom	0.01		

## Photographs of the Test Setup

See the Appendix - Test Setup Photos.

## Photographs of the EUT

See the Appendix - EUT Photos.

**----End of Report----**