Microtest
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# Test Report

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|---|---|
| **Report No.:** | MTi210719019-04E2 |
| **Date of issue:** | Aug. 16, 2021 |
| **Applicant:** | Linpo Electronic (Dongguan) Co., Ltd. |
| **Product:** | MAGNETIC POWER BANK |
| **Model(s):** | GZ005, GZ005WH, GZ005BL |
| **FCC ID:** | 2A2P6-GZ005 |

Shenzhen Microtest Co., Ltd.

http://www.mtitest.com

Address: 101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Tel: (86-755)88850135 Fax: (86-755) 88850136 Web: www.mtitest.com E-mail: mti@51mti.com

# Instructions

1. This test report shall not be partially reproduced without the written consent of the laboratory.

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

| Test Result Certification | |
|---|---|
| **Applicant:** | **Linpo Electronic (Dongguan) Co., Ltd.** |
| Address: | No. 8, Jinshagang 1st Road, Shixia Village, Dalang, Dongguan, Guangdong Province, China. |
| **Manufacturer:** | **Linpo Electronic (Dongguan) Co., Ltd.** |
| Address: | No. 8, Jinshagang 1st Road, Shixia Village, Dalang, Dongguan, Guangdong Province, China. |
| **Product description** | |
| Product name: | MAGNETIC POWER BANK |
| Trademark: | GAINZY |
| Model name: | GZ005 |
| Serial Model: | GZ005WH, GZ005BL |
| Standards: | FCC CFR 47 PART 1, § 1.1310 |
| Test method: | KDB 680106 v03r01 |
| **Date of Test** | |
| Date of test: | Aug. 03, 2021 ~ Aug. 16, 2021 |
| Test result: | Pass |

**Test Engineer :** Cindy Qin

(Cindy Qin)

**Reviewed By:** : Leon Chen

(Leon Chen)

**Approved By:** : Tom Xue

(Tom Xue)

# 1 General Description

## 1.1 Description of the EUT

| | |
|---|---|
| Product name: | MAGNETIC POWER BANK |
| Model name: | GZ005 |
| Series Model: | GZ005WH, GZ005BL |
| Model difference: | All the models are the same circuit and RF module, except the color of appearance. |
| Electrical rating: | Type-C Input: PD3.0\QC3.0 DC 5V/3A, 9V/2A, 12V/1.5A<br>Wireless Output: 5W/7.5W/10W<br>Type-C Output: PD3.0\QC3.0 DC 5V/3A, 9V/2A, 12V/1.5A<br>Battery: DC 3.7V 4000mAh |
| Accessories: | USB-C to USB-C cable (0.5m) |
| EUT serial number: | MTi210719019-04-S0001 |
| **RF specification:** | |
| Operation frequency: | 115 kHz – 205 kHz |
| Modulation type: | ASK |
| Antenna type: | Coil Antenna |

## 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 |
|---|---|
| **For mobile exposure conditions** | |
| Mode 1 | Stand-by mode |
| Mode 2 | Charging + wireless charging (5W) |
| Mode 3 | wireless charging (7.5W) |
| Mode 4 | wireless charging (10W) |
| **The test data only show worst test mode:** Mode 4 | |
| **For portable exposure conditions** | |
| Mode 1 | Stand-by mode |
| Mode 2 | wireless charging (5W) |
| Mode 3 | wireless charging (7.5W) |
| Mode 4 | wireless charging (10W) |
| **The test data only show worst test mode:** Mode 4 | |

### 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 |
| Smart phone | A2404 | F17DLCK70DYN | Apple |
| Smart phone | SM-G9650/DS | R28K34V79NT | Samsung |
| Adapter | HW-090200CH0 | B98788L5F02610 | HUAWEI |
| **Support cable list** | | | |
| Description | Length (m) | From | To |
| / | / | / | / |

# 2 Test facilities and accreditations

## 2.1 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 |

# 3 List of test equipment

| No. | Equipment | Manufacturer | Model | Serial No. | Cal. date | Cal. Due |
|---|---|---|---|---|---|---|
| MTI-E115 | Electric and Magnetic Field Probe – Analyzer | Narda | EHP-200A | 101166 | 2021/06/02 | 2022/06/01 |

# 4 Test result

### 4.1.1 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 ($mW/cm^2$) | Averaging time (minutes) |
|---|---|---|---|---|
| **(i) Limits for Occupational/Controlled Exposure** | | | | |
| 0.3-3.0 | 614 | 1.63 | *(100) | ≤6 |
| 3.0-30 | 1842/f | 4.89/f | *($900/f^2$) | <6 |
| 30-300 | 61.4 | 0.163 | 1.0 | <6 |
| 300-1500 | | | f/300 | <6 |
| 1500-100000 | | | 5 | <6 |
| **(ii) Limits for General Population/Uncontrolled Exposure** | | | | |
| 0.3-1.34 | 614 | 1.63 | *(100) | <30 |
| 1.34-30 | 824/f | 2.19/f | *($180/f^2$) | <30 |
| 30-300 | 27.5 | 0.073 | 0.2 | <30 |
| 300-1500 | | | f/1500 | <30 |
| 1500-100000 | | | 1.0 | <30 |

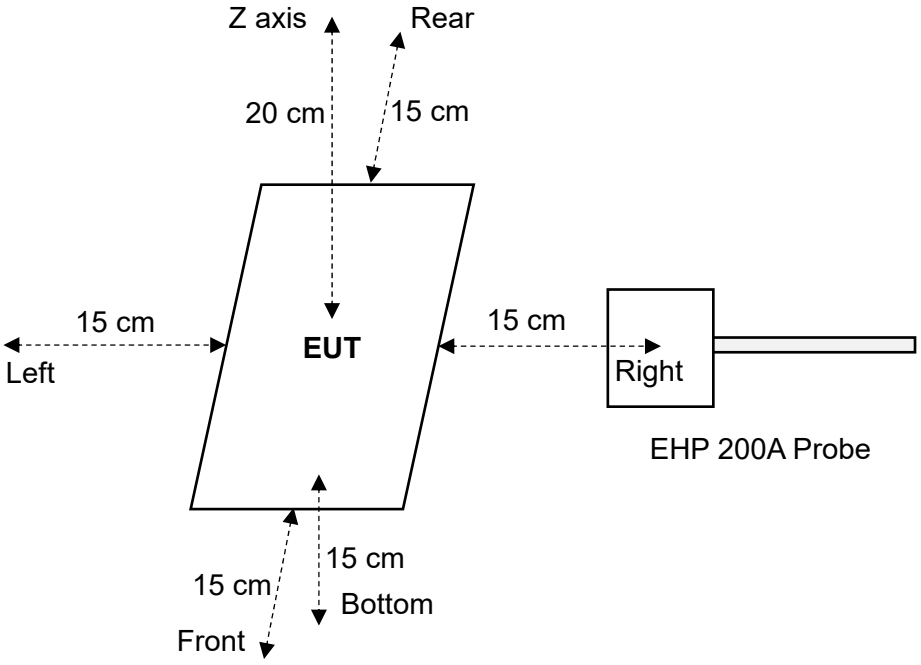
f = frequency in MHz
* = Plane-wave equivalent power density

**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.

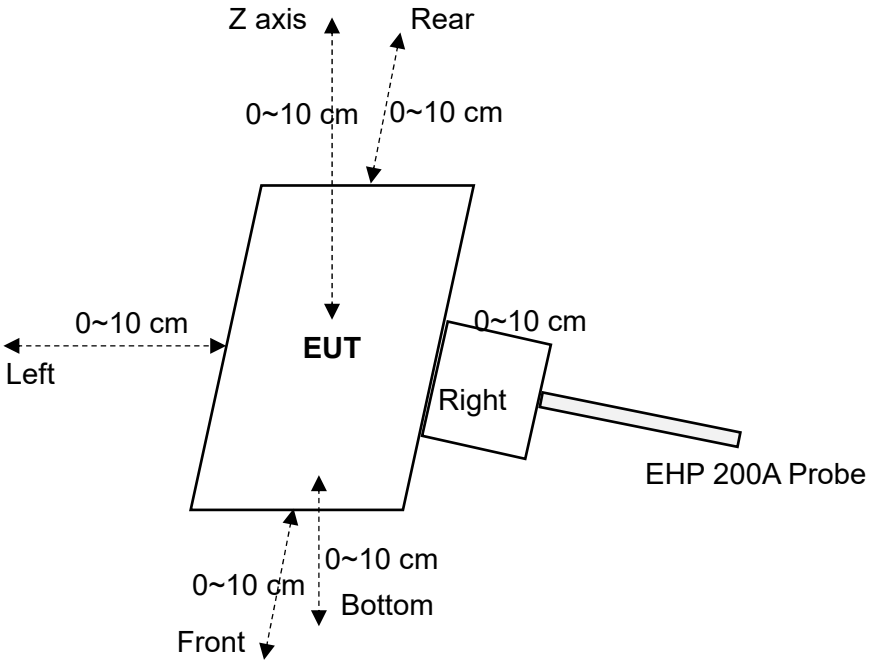
**Note 2:** General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

### 4.2 Test setup

For mobile exposure conditions:




For portable exposure conditions:



### 4.3 Test Procedures

**For mobile exposure conditions:**

a. The RF exposure test was performed in anechoic chamber.

b. E and H-field measurements should be made with the center of the probe at a distance of 15 cm surrounding the EUT and 20 cm above the top surface of the primary/client pair.

c. The highest emission level was recorded and compared with limit.

d. The EUT was measured according to the dictates of KDB 680106 v03r01.

**For portable exposure conditions:**

a. The RF exposure test was performed in anechoic chamber.

b. E and H-field measurements should be made with the probe at 0~10 cm for all side of the EUT.

c. The highest emission level was recorded and compared with limit.

### 4.4 Equipment Approval Considerations item 5 b) of KDB 680106 D01 v03r01

| Requirement | Device |
|---|---|
| 1. Power transfer frequency is less than 1 MHz. | Yes. The operating frequencies: 115 kHz – 205 kHz |
| 2. Output power from each primary coil is less than or equal to 15 watts | Yes. The maximum output power: 10W |
| 3. The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time. | Yes. The EUT have one source primary coils. |
| 4. Client device is placed directly in contact with the transmitter. | Yes. The client device is placed directly in contact with the transmitter. |
| 5. Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion). | No. The EUT can be used as mobile exposure conditions and potable exposure conditions |
| 6. The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit. | No.<br>For the mobile exposure conditions,<br>the measurement was taken based on KDB 680106 D01.<br>For the portable exposure conditions,<br>the measurement was taken based on the KDB inquiry.<br>See the test result in item 4.5. |

### 4.5 Test results

**For mobile exposure conditions:**

**Note:** operating modes with client device (1 %, 50%, 99% battery status of client device) have been test, only show the data of worst case of 1% battery status of client device.

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

| Antenna | Probe Position | E –field (V/m) | | | H–field (A/m) | | |
|---|---|---|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.2328 | 614 | 0.07% | 0.0432 | 1.63 | 3.13% |
| | Left | 0.3277 | | | 0.0511 | | |
| | Right | 0.4169 | | | 0.0428 | | |
| | Front | 0.3407 | | | 0.0438 | | |
| | Rear | 0.3215 | | | 0.0502 | | |
| | Bottom | 0.3486 | | | 0.0463 | | |

**For portable exposure condition:**

**Note:** operating modes with client device (1 %, 50%, 99% battery status of client device) have been test, only show the data of worst case of 1% battery status of client device.

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

| Antenna | Probe Position | E –field (V/m) | | | H–field (A/m) | | |
|---|---|---|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.7532 | 614 | 2.10% | 0.9590 | 1.63 | 58.83% |
| | Left | 2.4262 | | | 0.8877 | | |
| | Right | 1.5147 | | | 0.9189 | | |
| | Front | 12.866 | | | 0.4684 | | |
| | Rear | 11.158 | | | 0.1208 | | |
| | Bottom | 1.9652 | | | 0.6752 | | |

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

| Antenna | Probe Position | E –field (V/m) | | | H–field (A/m) | | |
|---|---|---|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 1.9772 | 614 | 0.34% | 0.8717 | 1.63 | 53.48% |
| | Left | 1.0132 | | | 0.3617 | | |
| | Right | 1.1139 | | | 0.2463 | | |
| | Front | 0.9913 | | | 0.1994 | | |
| | Rear | 0.9587 | | | 0.0568 | | |
| | Bottom | 2.112 | | | 0.2421 | | |

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

| Antenna | Probe Position | E –field (V/m) | | | H–field (A/m) | | |
|---|---|---|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.977 | 614 | 0.22% | 0.2962 | 1.63 | 18.17% |
| | Left | 0.5948 | | | 0.2006 | | |
| | Right | 0.9132 | | | 0.1183 | | |
| | Front | 0.6984 | | | 0.1183 | | |
| | Rear | 0.7544 | | | 0.0521 | | |
| | Bottom | 1.369 | | | 0.1110 | | |

**Test condition 4: Mode 4 operating mode with client device (99 % battery status of client device) - Test distance 6cm**

| Antenna | Probe Position | E –field (V/m) | | | H–field (A/m) | | |
|---|---|---|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.6711 | 614 | 0.13% | 0.1175 | 1.63 | 7.21% |
| | Left | 0.4069 | | | 0.0911 | | |
| | Right | 0.5715 | | | 0.1005 | | |
| | Front | 0.4069 | | | 0.0498 | | |
| | Rear | 0.4242 | | | 0.0485 | | |
| | Bottom | 0.7895 | | | 0.0482 | | |

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

| Antenna | Probe Position | E –field (V/m) | | | H–field (A/m) | | |
|---|---|---|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.6482 | 614 | 0.11% | 0.0835 | 1.63 | 5.12% |
| | Left | 0.3931 | | | 0.0589 | | |
| | Right | 0.4988 | | | 0.0766 | | |
| | Front | 0.3691 | | | 0.0465 | | |
| | Rear | 0.4005 | | | 0.0465 | | |
| | Bottom | 0.4936 | | | 0.0482 | | |

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

| Antenna | Probe Position | E –field (V/m) | | | H–field (A/m) | | |
|---|---|---|---|---|---|---|---|
| | | Measurement | Limit | Max. Percentage (%) | Measurement | Limit | Max. Percentage (%) |
| 1 | Z axis | 0.4253 | 614 | 0.07% | 0.0460 | 1.63 | 3.21% |
| | Left | 0.3348 | | | 0.0524 | | |
| | Right | 0.4403 | | | 0.0478 | | |
| | Front | 0.3539 | | | 0.0482 | | |
| | Rear | 0.374 | | | 0.0510 | | |
| | Bottom | 0.3894 | | | 0.0495 | | |

## Photographs of the test setup

See the APPENDIX – Test Setup Photos.

## Photographs of the EUT

See the APPENDIX - EUT Photos.

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