



# **RF EXPOSURE Test Report**

**Report No.:** MTi210615008-01E2

**Date of issue:** July 02, 2021

**Applicant:** Gigastone Corp.

**Product name:** Magnetic Wireless Charging Pad

**Model(s):** WP-8320

**FCC ID:** PLE-WP-8320

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>



## Instructions

1. The report shall not be partially reproduced without the written consent of the laboratory;
2. The test results of this report are only responsible for the samples submitted;
3. This report is invalid without the seal and signature of the laboratory;
4. This report is invalid if transferred, altered or tampered with in any form without authorization;
5. Any objection to this report shall be submitted to the laboratory within 15 days from the date of receipt of the report.



## TEST RESULT CERTIFICATION

|                                                                                                                                                                                                                                                                |                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Applicant's name .....                                                                                                                                                                                                                                         | Gigastone Corp.                                                                                                |
| Address .....                                                                                                                                                                                                                                                  | 4F., No. 166, Xinhua 2nd Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)                                    |
| Manufacturer's Name .....                                                                                                                                                                                                                                      | Shenzhen U-Angel Technology Co., Ltd.                                                                          |
| Address .....                                                                                                                                                                                                                                                  | Block C, 4th Floor, Phase 2 Of HongMen Hi-Tech Park, Jihua Road, Longgang District, Shenzhen, Guangdong, China |
| <b>Product description</b>                                                                                                                                                                                                                                     |                                                                                                                |
| Product name .....                                                                                                                                                                                                                                             | Magnetic Wireless Charging Pad                                                                                 |
| Trademark .....                                                                                                                                                                                                                                                | Gigastone                                                                                                      |
| Model Name .....                                                                                                                                                                                                                                               | WP-8320                                                                                                        |
| Serial Model .....                                                                                                                                                                                                                                             | N/A                                                                                                            |
| Standards .....                                                                                                                                                                                                                                                | FCC CFR 47 PART 1 , 1.1310                                                                                     |
| Test procedure .....                                                                                                                                                                                                                                           | KDB 680106 D01 RF Exposure Wireless Charging Apps v03r01                                                       |
| <b>Date of Test</b>                                                                                                                                                                                                                                            |                                                                                                                |
| Date (s) of performance of tests .....                                                                                                                                                                                                                         | June 17, 2021 ~June 29, 2021                                                                                   |
| Test Result .....                                                                                                                                                                                                                                              | Pass                                                                                                           |
| This device described above has been tested by Shenzhen Microtest Co., Ltd. and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report. |                                                                                                                |

**Testing Engineer**

:

*Cindy Qin*

(Cindy Qin)

**Technical Manager**

:

*Leo Su*

(Leo Su)

**Authorized Signatory**

:

*Tom Xue*

(Tom Xue)



## Table of Contents

|          |                                     |           |
|----------|-------------------------------------|-----------|
| <b>1</b> | <b>GENERAL INFORMATION.....</b>     | <b>5</b>  |
| 1.1      | DESCRIPTION OF EUT .....            | 5         |
| 1.2      | ANCILLARY EQUIPMENT LIST .....      | 5         |
| 1.3      | MEASUREMENT UNCERTAINTY .....       | 5         |
| <b>2</b> | <b>TESTING SITE .....</b>           | <b>6</b>  |
| <b>3</b> | <b>LIST OF TEST EQUIPMENT .....</b> | <b>7</b>  |
| <b>4</b> | <b>TEST RESULTS .....</b>           | <b>8</b>  |
| 4.4      | MAXIMUM PERMISSIBLE EXPOSURE.....   | 8         |
| 4.4.1    | <i>Limit .....</i>                  | <i>8</i>  |
| 4.4.2    | <i>Test Procedures.....</i>         | <i>8</i>  |
| 4.4.3    | <i>Test Setup.....</i>              | <i>9</i>  |
| 4.4.4    | <i>Test Result.....</i>             | <i>9</i>  |
| 4.4.5    | <i>MPE Setup photo .....</i>        | <i>11</i> |



## 1 General Information

### 1.1 Description of EUT

|                            |                                  |
|----------------------------|----------------------------------|
| Product name:              | Magnetic Wireless Charging Pad   |
| Brand name:                | Gigastone                        |
| Model name:                | WP-8320                          |
| Series model:              | N/A                              |
| Deference in serial model: | N/A                              |
| Operation frequency:       | 115–205 kHz                      |
| Operational mode:          | Wireless charging                |
| Modulation type:           | ASK                              |
| Antenna type:              | Coil Antenna                     |
| Power source:              | DC 12V from adapter AC 120V/60Hz |
| Input:                     | 5V/2A, 9V/2A, 12V/1.5A           |
| Battery:                   | N/A                              |
| Adapter information:       | N/A                              |

### 1.2 Ancillary equipment list

| Equipment | Model     | S/N | Manufacturer       |
|-----------|-----------|-----|--------------------|
| Adapter   | MDY-11-EX | /   | Xiaomi Corporation |
| Load      | /         | /   | /                  |

### 1.3 Measurement uncertainty

Measurement Uncertainty for a Level of Confidence of 95 %,  $U=2xU_c(y)$

|                                 |                |
|---------------------------------|----------------|
| Radiated emission(150kHz~30MHz) | $\pm 2.5$ dB   |
| Radiated emission(30MHz~1GHz)   | $\pm 4.2$ dB   |
| Radiated emission (above 1GHz)  | $\pm 4.3$ dB   |
| Temperature                     | $\pm 1$ degree |
| Humidity                        | $\pm 5$ %      |



## 2 Testing site

|                       |                                                                                                                                         |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Test Site             | 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. |
| FCC Registration No.: | 448573                                                                                                                                  |

Address: 101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao' an District, Shenzhen, Guangdong, China.



### 3 List of test equipment

| Equipment No. | Equipment Name                               | Manufacturer                     | Model    | Serial No. | Calibration date | Due date   |
|---------------|----------------------------------------------|----------------------------------|----------|------------|------------------|------------|
| MTI-E115      | Electric and Magnetic Field Probe - Analyzer | Narda Safety Test Solutions GmbH | EHP-200A | /          | 2021/06/02       | 2022/06/01 |

## 4 Test Results

### 4.4 Maximum permissible exposure

#### 4.4.1 Limit

| Frequency range(MHz)                                    | Electric field strength(V/m) | Magnetic field strength(A/m) | Power density(mW/cm <sup>2</sup> ) | Averaging time(minutes) |
|---------------------------------------------------------|------------------------------|------------------------------|------------------------------------|-------------------------|
| (A) Limits for Occupational/Controlled Exposure         |                              |                              |                                    |                         |
| 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                              | 6                       |
| 300-1500                                                |                              |                              | f/300                              | 6                       |
| 1500-100000                                             |                              |                              | 5                                  | 6                       |
| (B) 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 <sup>2</sup>                | 30                      |
| 30-300                                                  | 27.5                         | 0.073                        | 0.2                                | 30                      |
| 300-1500                                                |                              |                              | f/1500                             | 30                      |
| 1500-100000                                             |                              |                              | 1                                  | 30                      |

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

#### 4.4.2 Test Procedures

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

These measurements should be repeated for three different client battery levels, 1%, 50%, and 99%.

Record the test results.

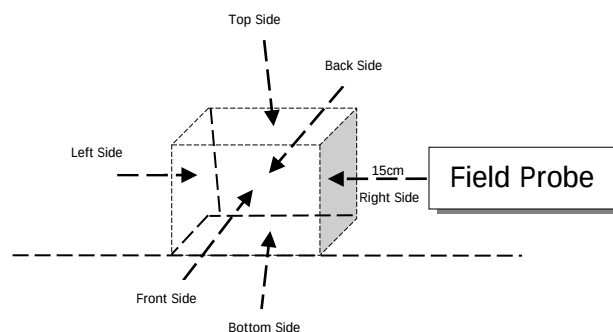
KDB 680106 D01 RF Exposure Wireless Charging Apps v03r01:

- (1) Power transfer frequency is less than 1 MHz
- (2) Output power from each primary coil is less than or equal to 15 watts.
- (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.
- (4) Client device is placed directly in contact with the transmitter.
- (5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
- (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.

Note: The device is in compliance with KDB 680106 D01 RF Exposure Wireless Charging Apps v03r01 6 conditions.



#### 4.4.3 Test Setup



#### 4.4.4 Test Result

| Maximum permissible Exposure |            |                   |                |              |
|------------------------------|------------|-------------------|----------------|--------------|
| Battery levels               | Test sides | Test distance(cm) | E – field(V/m) | H–field(A/m) |
| <1%                          | Top        | 20                | 0.8831         | 0.0475       |
| <1%                          | Bottom     | 15                | 0.8832         | 0.0482       |
| <1%                          | Left       | 15                | 0.8835         | 0.0477       |
| <1%                          | Right      | 15                | 0.8837         | 0.0496       |
| <1%                          | Front      | 15                | 0.8836         | 0.0489       |
| <1%                          | Back       | 15                | 0.8834         | 0.0486       |
| Limit                        |            |                   | 614            | 1.63         |
| Margin Limit (%)             |            |                   | 0.069%         | 7.12%        |



| Maximum permissible Exposure |            |                   |                |              |
|------------------------------|------------|-------------------|----------------|--------------|
| Battery levels               | Test sides | Test distance(cm) | E – field(V/m) | H–field(A/m) |
| <50%                         | Top        | 20                | 0.8823         | 0.0472       |
| <50%                         | Bottom     | 15                | 0.8835         | 0.0485       |
| <50%                         | Left       | 15                | 0.8832         | 0.0476       |
| <50%                         | Right      | 15                | 0.8825         | 0.0482       |
| <50%                         | Front      | 15                | 0.8833         | 0.0484       |
| <50%                         | Back       | 15                | 0.8830         | 0.0481       |
| Limit                        |            |                   | 614            | 1.63         |
| Margin Limit (%)             |            |                   | 0.069%         | 7.30%        |

| Maximum permissible Exposure |            |                   |                |              |
|------------------------------|------------|-------------------|----------------|--------------|
| Battery levels               | Test sides | Test distance(cm) | E – field(V/m) | H–field(A/m) |
| <99%                         | Top        | 20                | 0.8830         | 0.0471       |
| <99%                         | Bottom     | 15                | 0.8832         | 0.0484       |
| <99%                         | Left       | 15                | 0.8837         | 0.0479       |
| <99%                         | Right      | 15                | 0.8833         | 0.0494       |
| <99%                         | Front      | 15                | 0.8836         | 0.0489       |
| <99%                         | Back       | 15                | 0.8838         | 0.0487       |
| Limit                        |            |                   | 614            | 1.63         |
| Margin Limit (%)             |            |                   | 0.070%         | 7.36%        |

#### 4.4.5 MPE Setup photo



----END OF REPORT----