

# TEST REPORT

Report No.: BCTC2009000683-2E

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Applicant: ZAGG Inc.

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Product Name: Dual wireless charging pad

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Model/Type Ref.: HALO-DWCP

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Tested Date: Sep. 08, 2020 to Sep. 18, 2020

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Issued Date: Sep. 15, 2020

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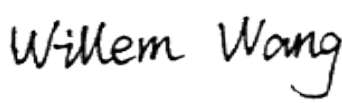
**Shenzhen BCTC Testing Co., Ltd.**




# FCC TEST REPORT

## FCC ID: QTG-DUALR



Product Name: Dual wireless charging pad  
Trademark: HALO  
Model/Type Ref.: HALO-DWCP  
Prepared For: ZAGG Inc.  
Address: West Legacy Center Way, Midvale, Utah 84047, USA.  
Manufacturer: ZAGG Inc.  
Address: West Legacy Center Way, Midvale, Utah 84047, USA.  
Prepared By: Shenzhen BCTC Testing Co., Ltd.  
Address: 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China  
Sample Received Date: Sep. 08, 2020  
Sample tested Date: Sep. 08, 2020 to Sep. 18, 2020  
Issue Date: Sep. 18, 2020  
Report No.: BCTC2009000683-2E  
Test Standards FCC CFR 47 part1, 1.1307(b), 1.1310  
Test Results PASS

Compiled by:  
  
\_\_\_\_\_

Willem Wang

Reviewed by:  
  
\_\_\_\_\_

Eric Yang

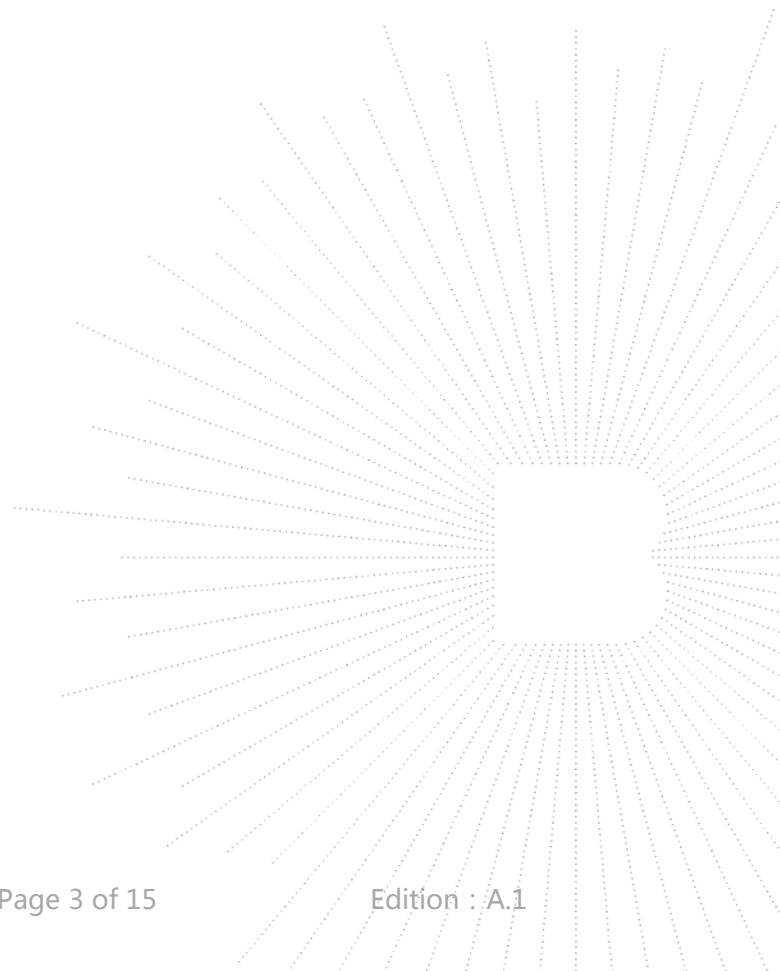
Approved by:  
  
  
Zero Zhou/Manager

*The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.*

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(Note: N/A means not applicable)



## 1. VERSION

| Report No.        | Issue Date    | Description | Approved |
|-------------------|---------------|-------------|----------|
| BCTC2009000683-2E | Sep. 18, 2020 | Original    | Valid    |
|                   |               |             |          |

## 2. PRODUCT INFORMATION

### 2.1 Product Information

|                       |   |
|-----------------------|---|
| Model(s):             | HALO-DWCP   |
| Model differences:    | N/A   |
| Product Description:  | Wireless Charging System  |
| Operation Frequency:  | 115kHz-205kHz   |
| Antenna installation: | Inductive loop coil antenna   |
| Ratings:              | Input: DC 19V 1.58A<br>Output(Qi): 10W*2 Output(USB-A): DC 5V1A                     |
| Adapter               | Model No.:PYS-000153<br>Input: AC 100-240V 50/60Hz Max 1.0A<br>Output: DC 19V 1.58A |

### 2.2 Support Equipment

| Device Type  | Brand   | Model       | Series No. | Data Cable | Remark    |
|--------------|---------|-------------|------------|------------|-----------|
| Mobile phone | SAMSUNG | SM-G9600/DS | N/A        | N/A        | Auxiliary |

#### **Notes:**

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

### 2.3 Test Mode

|            |                          |
|------------|--------------------------|
| Test Modes | keeping TX+Charging mode |
|------------|--------------------------|

## 2.4 Copy of marking plate

HALO Dual wireless charging pad | M/N: HALO-DWCP  
Input: 19V $\equiv$ 1.58A | Output (Qi): 10W x 2 | Output (USB-A): 5V $\equiv$ 1A  
MADE IN CHINA 110-07140-A FCC ID: QTG-DUALR  
ZAGG Inc | 910 Legacy Center Way, Ste. 500, Midvale, Utah 84047  
ZAGG International | 103 Shannon Industrial Estate, Shannon Co. Clare, V14 PH21, Ireland

SN:000000000000

### 3. TEST FACILITY AND TEST INSTRUMENT USED

#### 3.1 Test Facility

All measurement facilities used to collect the measurement data are located at 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: 712850

IC Registered No.: 23583

#### 3.2 Test Instrument Used

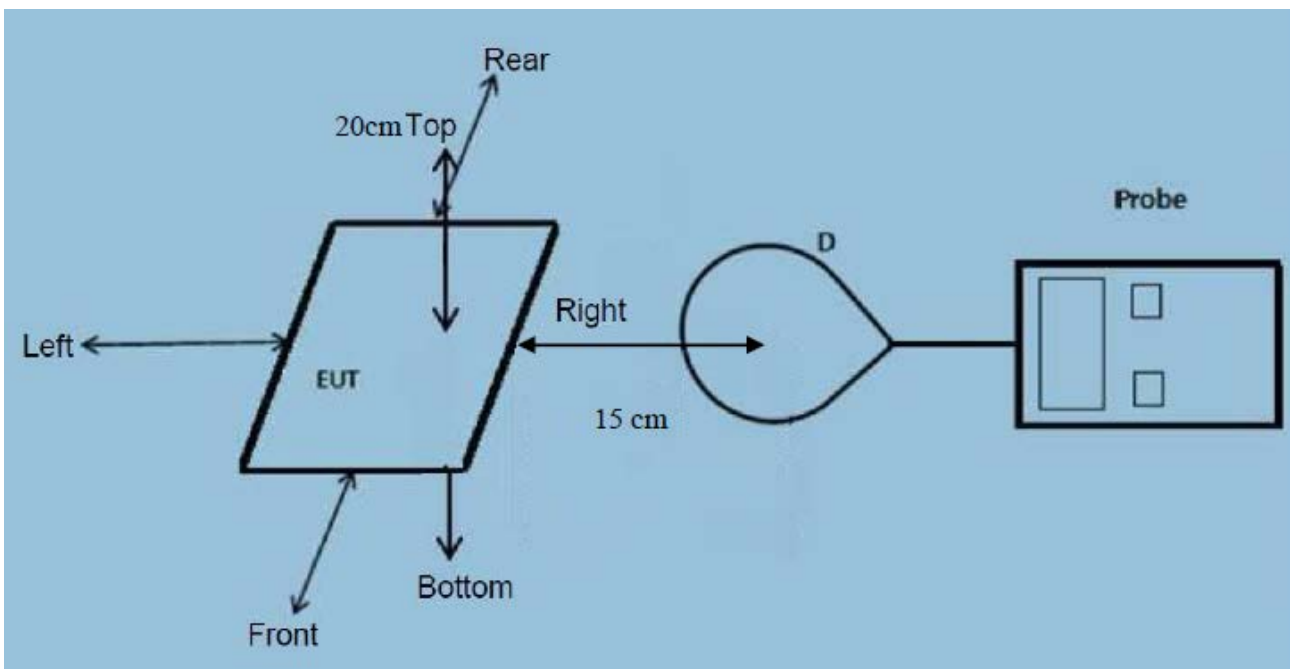
| Equipment                               | Manufacturer | Model No.                        | Serial No. | Last Cal.     | Next Cal.     |
|---|--------------|----------------------------------|------------|---------------|---------------|
| Exposure Level Tester                   | Narda        | ELT-400                          | N-0231     | Jul. 15, 2020 | Jul. 14, 2021 |
| Electric and Magnetic Field Analyzer    | Narda        | EHP-200A                         | 170WX91016 | Jul. 15, 2020 | Jul. 14, 2021 |
| Magnetic field probe 100cm <sup>2</sup> | Narda        | B-Field Probe 100cm <sup>2</sup> | M0675      | Jul. 15, 2020 | Jul. 14, 2021 |
| 843 Chamber                             | ETS          | 843                              | 84301      | Aug. 27, 2020 | Aug. 26, 2023 |

## 4. METHOD OF MEASUREMENT

### 4.1 Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines. According to §1.1310 and §2.1093 RF exposure is calculated. According KDB680106 D01v03: RF Exposure Wireless Charging Apps v02.

### 4.2 Block Diagram Of Test Setup



Note: Measurements should be made from all sides and the top of the primary/client pair, with the 15 cm measured from the center of the probe(s) to the edge of the device



### 4.3 Limit

| Limits for Occupational / Controlled Exposure |                                   |                                   |  |  |
|---|-----------------------------------|-----------------------------------|--|--|
| Frequency Range (MHz)                         | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm <sup>2</sup> ) | Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes) |
| 0.3-3.0                                       | 614                               | 1.63                              | (100)*                                   | 6  |
| 3.0-30  | 1842 / f                          | 4.89 / f                          | (900 / f)*                               | 6  |
| 30-300  | 61.4                              | 0.163                             | 1.0                                      | 6  |
| 300-1500                                      |                                   |                                   | F/300                                    | 6  |
| 1500-100,000                                  |                                   |                                   | 5  | 6  |

| Limits for General Population / Uncontrolled Exposure |                                   |                                   |  |  |
|---|-----------------------------------|-----------------------------------|--|--|
| Frequency Range (MHz)                                 | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm <sup>2</sup> ) | Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes) |
| 0.3-1.34  | 614                               | 1.63                              | (100)*                                   | 30   |
| 1.34-30   | 824/f                             | 2.19/f                            | (180 / f)*                               | 30   |
| 30-300  | 27.5                              | 0.073                             | 0.2                                      | 30   |
| 300-1500  |                                   |                                   | F/1500                                   | 30   |
| 1500-100,000  |                                   |                                   | 1  | 30   |

### 4.4 Test procedure

- a) The RF exposure test was performed on 360 degree turn table in anechoic chamber.
- b) The measurement probe was placed at test distance (15cm) which is between the edge of the charger and the geometric centre of probe.
- c) The turn table was rotated 360d degree to search of highest strength.
- d) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
- e) The EUT were measured according to the dictates of KDB 680106D01v03.

#### 4.5 Equipment Approval Considerations

The EUT does comply with item 5(b) of KDB 680106 D01v03

1) Power transfer frequency is less than 1MHz

Yes, the device operate in the frequency range from 115-205KHz

2) Output power from each primary coil is less than or equal to 10 watts.

Yes, the maximum output power of the primary coil is 10W.

3) The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that able to detect and allow coupling onlybetween individual pair of coils.

Yes, the transfer system includes only single primary and secondary coils.

4) Client device is inserted in or placed directly in contact with the transmitter.

Yes, client device is placed directly in contact with the transmitter.

5) Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).

Yes, the EUT is a mophie 4 device charging mat.

6) The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

Yes, the EUT field strength levels are 10% x MPE limit.

#### 4.6 E and H field Strength

(The worst data)

E-Field Strength at 15 cm surrounding the EUT and 20cm above the top surface of the EUT

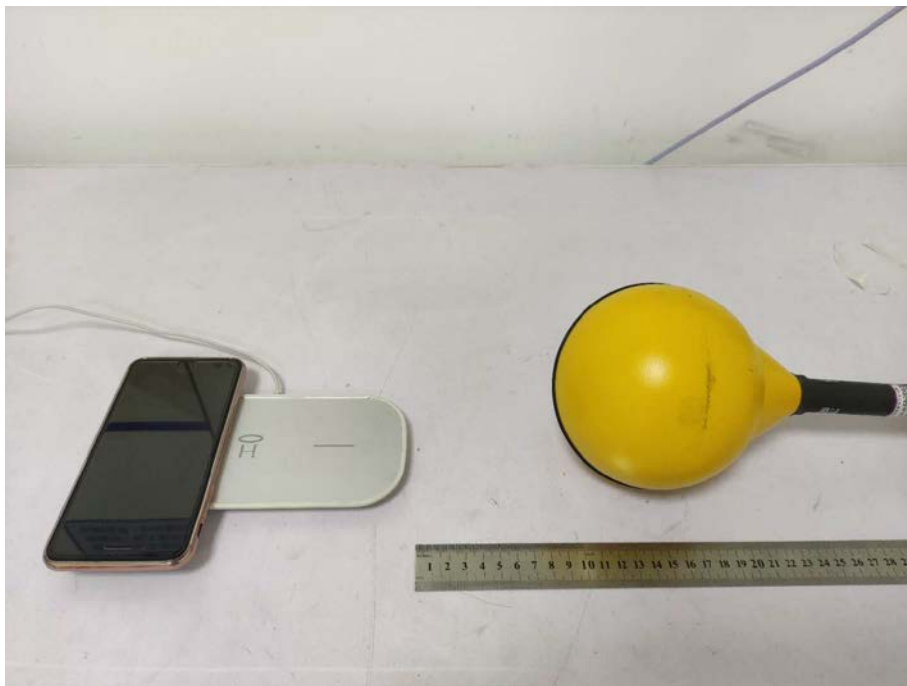
| Battery level | Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | 10% Limits Test (A/m) | Limits Test (A/m) |
|---------------|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------------|-------------------|
| 1%            | 0.115-0.205           | 0.76            | 0.77            | 0.78            | 0.59            | 0.54            | 61.4                  | 614               |
| 50%           | 0.115-0.205           | 0.64            | 0.66            | 0.65            | 0.52            | 0.55            | 61.4                  | 614               |
| 99%           | 0.115-0.205           | 0.63            | 0.63            | 0.64            | 0.56            | 0.72            | 61.4                  | 614               |

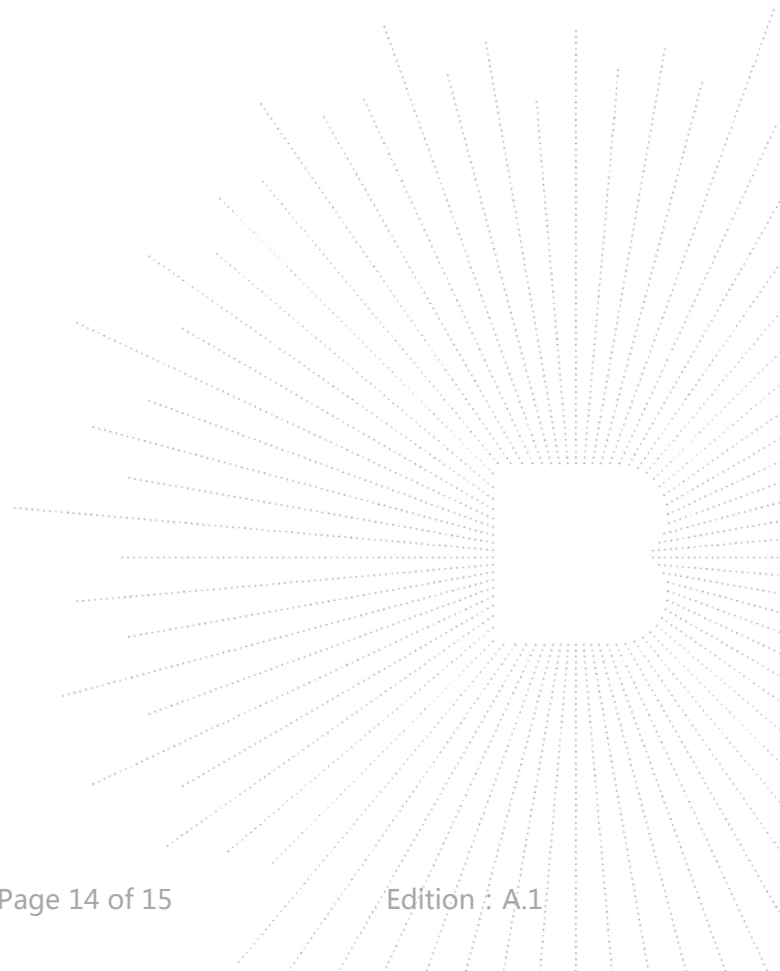
H-Field Strength at 15 cm surrounding the EUT and 20cm above the top surface of the EUT

| Battery level | Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | 10% Limits Test (A/m) | Limits Test (A/m) |
|---------------|-----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------------|-------------------|
| 1%            | 0.115-0.205           | 0.062           | 0.104           | 0.073           | 0.066           | 0.098           | 0.163                 | 1.63              |
| 50%           | 0.115-0.205           | 0.054           | 0.056           | 0.074           | 0.082           | 0.085           | 0.163                 | 1.63              |
| 99%           | 0.115-0.205           | 0.036           | 0.067           | 0.052           | 0.064           | 0.054           | 0.163                 | 1.63              |

## 5. EUT TEST SETUP PHOTOGRAPHS







## STATEMENT

- 1.The equipment lists are traceable to the national reference standards.
- 2.The test report can not be partially copied unless prior written approval is issued from our lab.
- 3.The test report is invalid without stamp of laboratory.
- 4.The test report is invalid without signature of person(s) testing and authorizing.
- 5.The test process and test result is only related to the Unit Under Test.
- 6.The quality system of our laboratory is in accordance with ISO/IEC17025.
- 7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

1-2F, East of B Building, Pengzhou Industrial Park, Fuyuan 1st Road, Qiaotou, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

TEL : 400-788-9558

P. C.: 518103

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Website : <http://www.bctc-lab.com>

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\*\*\*\*\* END \*\*\*\*\*