



Shenzhen CTL Testing Technology Co., Ltd.  
Tel: +86-755-89486194 Fax: +86-755-26636041

## RF EXPOSURE REPORT

Report Reference No.....: **CTL1906131021-MPE**

Compiled by

( position+printed name signature)....:

Happy Guo  
(File administrators)

*Happy Guo*

Supervised by

( position+printed name+signature)....:

Nice Nong  
(Test Engineer)

*Nice Nong*

Approved by

( position+printed name+signature)....:

Ivan Xie  
(Manager)

*Ivan Xie*

Applicant's name.....: **Design Pool Ltd**

Address.....: 2/F East Town Bldg, 41 Lockhart Road, Wan Chai, Hong Kong

Testing Laboratory Name .....: **Shenzhen CTL Testing Technology Co., Ltd.**

Address.....: Floor 1-A, Baisha Technology Park, No. 3011, Shaheixi Road, Nanshan, Shenzhen 518055 China.

Test specification .....:

Standard .....: **FCC CFR 47 part1, 1.1307(b), 1.1310**

TRF Originator.....: Shenzhen CTL Testing Technology Co., Ltd.

Master TRF.....: Dated 2011-01

Test item description .....: Drop Wireless Charger

FCC ID.....: **X3Q-DROP03**

Trade Mark .....: Native Union

Model/Type reference.....: DROP03

List Model(s) .....: DROP-GRY-FB-V2, DROP-ROSE-FB-V2, DROP-IND-FB-V2

Transmit Frequency.....: 115~205KHz

Antenna type .....: Loop antenna

Date of receipt of test item .....: Jun. 20, 2019

Date of sampling.....: Jun. 20, 2019

Date of Test Date .....: Jun. 20, 2019–Jul. 02, 2019

Data of Issue .....: Jul. 09, 2019

Result.....: **Pass**

**Shenzhen CTL Testing Technology Co., Ltd. All rights reserved.**

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen CTL Testing Technology Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen CTL Testing Technology Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

**TEST REPORT**

|                                            |                                |
|--------------------------------------------|--------------------------------|
| <b>Test Report No. :</b> CTL1906131021-MPE | Jul. 09, 2019<br>Date of issue |
|--------------------------------------------|--------------------------------|

Equipment under Test : Drop Wireless Charger

Model /Type : DROP03

List Model(s) : DROP-GRY-FB-V2, DROP-ROSE-FB-V2, DROP-IND-FB-V2

**Applicant** : **Design Pool Ltd**

Address : 2/F East Town Bldg, 41 Lockhart Road, Wan Chai, Hong Kong

**Manufacturer** : **ShenZhen XinJi Technologies Ltd.**

Address : XinHe Avenue70, ShangMuGu, PingHu, LongGang, ShenZhen, GuangDong, China.

|                    |             |
|--------------------|-------------|
| <b>Test Result</b> | <b>PASS</b> |
|--------------------|-------------|

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.

## Contents

|                            |                                           |                 |
|----------------------------|-------------------------------------------|-----------------|
| <b><u>1.</u></b>           | <b><u>SUMMARY .....</u></b>               | <b><u>4</u></b> |
| 1.1.                       | EUT configuration                         | 4               |
| <b><u>2.</u></b>           | <b><u>TEST ENVIRONMENT .....</u></b>      | <b><u>4</u></b> |
| 2.1.                       | Address of the test laboratory            | 4               |
| 2.2.                       | Test Facility                             | 4               |
| 2.3.                       | Environmental conditions                  | 4               |
| 2.4.                       | Statement of the measurement uncertainty  | 5               |
| <b><u>3.</u></b>           | <b><u>METHOD OF MEASUREMENT .....</u></b> | <b><u>5</u></b> |
| 3.1.                       | Applicable Standard                       | 5               |
| 3.2.                       | Limit                                     | 5               |
| <b><u>4.</u></b>           | <b><u>TEST RESULT .....</u></b>           | <b><u>6</u></b> |
| 4.1.                       | Test Setup                                | 6               |
| 4.2.                       | Test Equipment                            | 6               |
| <b><u>HI3637 .....</u></b> |                                           | <b><u>6</u></b> |
| 4.3.                       | Measurement Procedure                     | 6               |
| 4.4.                       | Equipment Approval Considerations         | 6               |
| 4.5.                       | E and H field Strength                    | 7               |
| <b><u>5.</u></b>           | <b><u>TEST SETUP PHOTO .....</u></b>      | <b><u>8</u></b> |

## **1. SUMMARY**

### **1.1. EUT configuration**

|                 |                       |
|-----------------|-----------------------|
| Kind of Product | Drop Wireless Charger |
| Model Name      | DROP03                |
| Frequency Range | 115-205KHz            |
| Antenna Type    | Loop Antenna          |
| FCC ID          | X3Q-DROP03            |

## **2. TEST ENVIRONMENT**

### **2.1. Address of the test laboratory**

**Shenzhen CTL Testing Technology Co., Ltd.**

Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road, Nanshan District, Shenzhen, China 518055

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 (2013) and CISPR Publication 22.

### **2.2. Test Facility**

The test facility is recognized, certified, or accredited by the following organizations:

#### **CNAS-Lab Code: L7497**

Shenzhen CTL Testing Technology Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

#### **A2LA-Lab Cert. No. 4343.01**

Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

#### **IC Registration No.: 9518B**

#### **CAB identifier: CN0041**

The 3m alternate test site of Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements with Registration No.: 9518B on Jan. 22, 2019.

#### **FCC-Registration No.: 399832**

#### **Designation No.: CN1216**

Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 399832, December 08, 2017.

### **2.3. Environmental conditions**

During the measurement the environmental conditions were within the listed ranges:

|                       |                     |
|-----------------------|---------------------|
| Temperature:          | <u>15-35 ° C</u>    |
| Humidity:             | <u>30-60 %</u>      |
| Atmospheric pressure: | <u>950-1050mbar</u> |

## 2.4. Statement of the measurement uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

| Parameter                     | Uncertainty             |
|-------------------------------|-------------------------|
| Radio Frequency               | $\pm 1 \times 10^{-5}$  |
| total RF power, conducted     | $\pm 1,5$ dB            |
| RF power density, conducted   | $\pm 3$ dB              |
| spurious emissions, conducted | $\pm 3$ dB              |
| all emissions, radiated       | $\pm 6$ dB              |
| temperature                   | $\pm 1^{\circ}\text{C}$ |
| humidity                      | $\pm 5$ %               |
| DC and low frequency voltages | $\pm 3$ %               |

## 3. Method of measurement

### 3.1. 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 §2.1091 RF exposure is calculated.

According KDB 680106 D01 RF Exposure Wireless Charging Pad App v03

### 3.2. Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

| Frequency Range(MHz)                        | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density (mW/cm <sup>2</sup> ) | Averaging Time (minute) |
|---------------------------------------------|------------------------------|------------------------------|-------------------------------------|-------------------------|
| Limits for Occupational/Controlled Exposure |                              |                              |                                     |                         |
| 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 Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

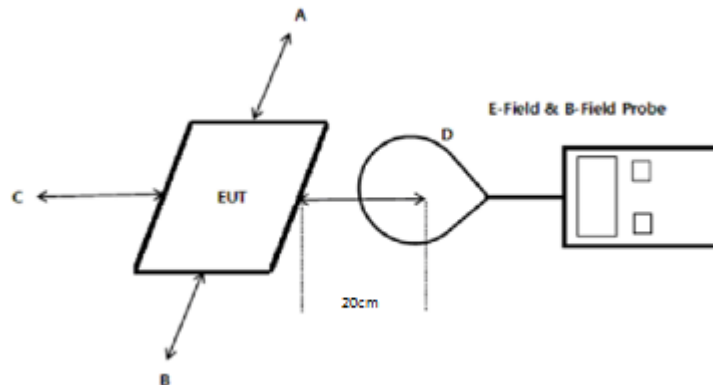
| Frequency Range(MHz)                        | Electric Field Strength(V/m) | Magnetic Field Strength(A/m) | Power Density (mW/cm <sup>2</sup> ) | Averaging Time (minute) |
|---------------------------------------------|------------------------------|------------------------------|-------------------------------------|-------------------------|
| Limits for Occupational/Controlled Exposure |                              |                              |                                     |                         |
| 0.3 – 3.0                                   | 614                          | 1.63                         | (100) *                             | 30                      |
| 3.0 – 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                              | /                            | /                            | 1.0                                 | 30                      |

F=frequency in MHz

\*=Plane-wave equivalent power density

## 4. Test Result

### 4.1. Test Setup



Note: A, B, C, D, E, F for six surfaces of the product.

### 4.2. Test Equipment

| Equipment     | Manufacturer | Model  | Serial no. | Calibrated date | Calibrated until |
|---------------|--------------|--------|------------|-----------------|------------------|
| E-Field Probe | HOLADAY      | HI3637 | 00052130   | 2019.5.20       | 2020.5.19        |
| H-Field Probe | HOLADAY      | HI3637 | 00052130   | 2019.5.20       | 2020.5.19        |

### 4.3. Measurement Procedure

- The RF exposure test was performed on 360 degree turn table in anechoic chamber.
- The measurement probe was placed at test distance (10cm) which is between the edge of the charger and the geometric centre of probe.
- The turn table was rotated 360d degree to search of highest strength.
- The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
- The EUT were measured according to the dictates of KDB 680106 D01 RF Exposure Wireless Charging Pad App v03.

### 4.4. Equipment Approval Considerations

The EUT does comply with KDB 680106 D01 RF Exposure Wireless Charging Pad App v03.

- Power transfer frequency is less than 1 MHz..
- Output power from each primary coil is less than or equal to 15 watts.
- The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.
- Client device is placed directly in contact with the transmitter.
- Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
- 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.

Remark: Meet all the above requirements.

#### 4.5. E and H field Strength

Test mode for wireless charger: Normal Operation (Charging mode)

##### E-Filed Strength at 15 cm from the edges surrounding the EUT

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Limits (V/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|--------------|
| 0.141                 | 1.43            | 1.32            | 1.35            | 1.37            | 614.0        |

##### E-Filed Strength at 20 cm from the top of the EUT (V/m)

| Frequency Range (MHz) | Test Position E | Limits (V/m) |
|-----------------------|-----------------|--------------|
| 0.141                 | 0.91            | 614.0        |

##### H-Filed Strength at 15 cm from the edges surrounding the EUT

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Limits (A/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|--------------|
| 0.141                 | 0.283           | 0.271           | 0.268           | 0.266           | 1.63         |

##### H-Filed Strength at 20 cm from the top of the EUT (V/m)

| Frequency Range (MHz) | Test Position E | Limits (A/m) |
|-----------------------|-----------------|--------------|
| 0.141                 | 0.175           | 1.63         |

Test mode for wireless charger: Normal Operation (No load mode)

##### E-Filed Strength at 15 cm from the edges surrounding the EUT

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Limits (V/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|--------------|
| 0.141                 | 0.43            | 0.45            | 0.38            | 0.36            | 614.0        |

##### E-Filed Strength at 20 cm from the top of the EUT (V/m)

| Frequency Range (MHz) | Test Position E | Limits (V/m) |
|-----------------------|-----------------|--------------|
| 0.141                 | 0.18            | 614.0        |

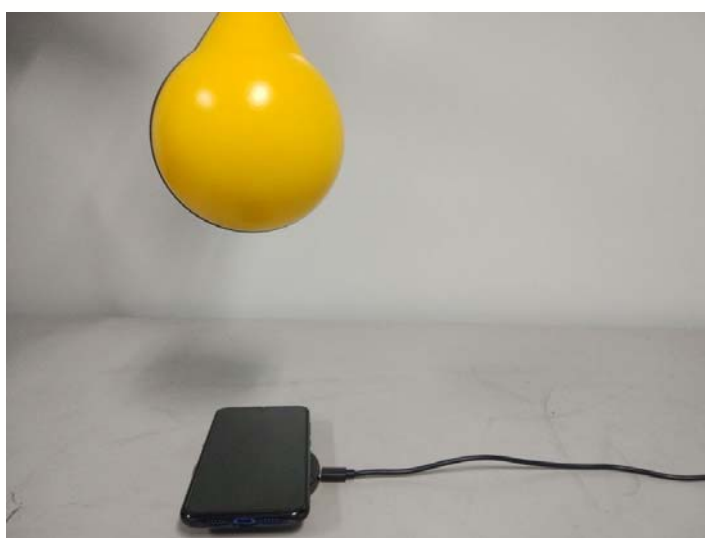
##### H-Filed Strength at 15 cm from the edges surrounding the EUT

| Frequency Range (MHz) | Test Position A | Test Position B | Test Position C | Test Position D | Limits (A/m) |
|-----------------------|-----------------|-----------------|-----------------|-----------------|--------------|
| 0.141                 | 0.092           | 0.086           | 0.091           | 0.087           | 1.63         |

##### H-Filed Strength at 20 cm from the top of the EUT (V/m)

| Frequency Range (MHz) | Test Position E | Limits (A/m) |
|-----------------------|-----------------|--------------|
| 0.141                 | 0.048           | 1.63         |

## 5. Test Setup Photo





.....End of Report.....