

# MPE REPORT

Wireless charger

MODEL No.: YW08, YW01, YW02, YW03, YW04, YW05, YW06, YW07, YW09,  
YW10

FCC ID: 2BDHU-YW08

REPORT NO.:NCT23044266E-2

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*Prepared for*

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**TEST REPORT DESCRIPTION**

Applicant : Shenzhen Youxg Technology Co.,Ltd.  
Address : Floor 5 Building C, Yonghengxin Industrial Park, Qiaotou, Fuyong Town, Baoan District, Shenzhen, China.  
Manufacturer : Shenzhen Youxg Technology Co.,Ltd.  
Address : Floor 5 Building C, Yonghengxin Industrial Park, Qiaotou, Fuyong Town, Baoan District, Shenzhen, China.  
EUT : Wireless charger  
Model Name : YW08, YW01, YW02, YW03, YW04, YW05, YW06, YW07, YW09, YW10  
Trademark : N/A

**Measurement Procedure Used:**

FCC Part 1(1.1310) and Part 2(2.1091)  
680106 D01 RF Exposure Wireless Charging App v03r01

The device described above is tested by Shenzhen NCT Testing Technology Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen NCT Testing Technology Co., Ltd. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen NCT Testing Technology Co., Ltd.

Test Engineer:



Keven Wu / Engineer

Technical Manager:



Henry Wang / Manager



## 1. SUMMARY OF TEST RESULT

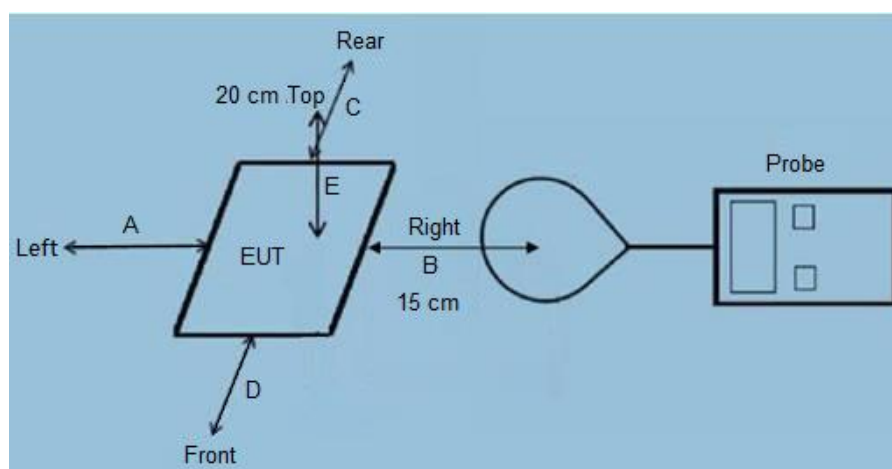
| EMISSION                                         |                                                                                                 |         |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------|---------|
| Description of Test Item                         | Standard & Limits                                                                               | Results |
| MPE                                              | FCC Part 1(1.1310) and Part 2(2.1091)<br>680106 D01 RF Exposure Wireless<br>Charging App v03r01 | Pass    |
| Note: N/A is an abbreviation for Not Applicable. |                                                                                                 |         |

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

|                             |   |                                                                                                                         |
|-----------------------------|---|-------------------------------------------------------------------------------------------------------------------------|
| EUT                         | : | Wireless charger                                                                                                        |
| Model Number                | : | YW08                                                                                                                    |
| Serial Number               | : | YW01, YW02, YW03, YW04, YW05, YW06, YW07, YW09, YW10                                                                    |
| Model difference            | : | All the same except the model number and the colour.                                                                    |
| Power Rating                | : | Input: 9V/2A QC3.0 or PD<br>Output: 1 Top: 3W Max for watch<br>2 Front: 15W Max for phone<br>3 Back: 5W Max for headset |
| Operation Frequency for WPT | : | 110-205 KHz for Phone<br>324 KHz for Watch                                                                              |
| Modulation                  | : | MSK                                                                                                                     |
| Antenna Type:               | : | Coil Antenna                                                                                                            |
| Date of Received            | : | Oct. 31, 2023                                                                                                           |
| Date of Test                | : | Oct. 31, 2023 to Nov. 10, 2023                                                                                          |

### 2.2. Test Setup



## 2.3. Description of Test Facility

### Site Description

EMC Lab. : Accredited by CNAS, 2022-09-27  
The certificate is valid until 2028.01.07  
The Laboratory has been assessed and proved to be in compliance with  
CNAS-CL01:2006 (identical to ISO/IEC 17025:2017)  
The Certificate Registration Number is L8251

Designation Number: CN1347  
Test Firm Registration Number: 894804  
Accredited by A2LA, June 14, 2023  
The Certificate Registration Number is 6837.01

Accredited by Industry Canada, November 09, 2018  
The Conformity Assessment Body Identifier is CN0150  
Company Number: 30806

Name of Firm : Shenzhen NCT Testing Technology Co., Ltd.  
Site Location : A101&2F B2, Fuqiao 6th Area, Xintian Community, Fuhai Street, Baoan  
District, Shenzhen, People's Republic of China

## 2.4. Measurement Uncertainty

| Parameter                          | Uncertainty              |
|------------------------------------|--------------------------|
| RF output power, conducted         | ±1.0dB                   |
| Power Spectral Density, conducted  | ±2.2dB                   |
| Radio Frequency                    | ± 1 x 10 <sup>-6</sup>   |
| Bandwidth                          | ± 1.5 x 10 <sup>-6</sup> |
| Time                               | ±2%                      |
| Duty Cycle                         | ±2%                      |
| Temperature                        | ±1°C                     |
| Humidity                           | ±5%                      |
| DC and low frequency voltages      | ±3%                      |
| Conducted Emissions (150kHz~30MHz) | ±3.24dB                  |
| Radiated Emission(30MHz~1GHz)      | ±5.03dB                  |
| Radiated Emission(1GHz~25GHz)      | ±4.74dB                  |

### 3. MEASURING DEVICE AND TEST EQUIPMENT

#### 3.1. For MPE Measurement

| Used                                | Equipment                         | Manufacturer | Model No. | Serial No. | Last Cal.  | Cal. Interval |
|-------------------------------------|-----------------------------------|--------------|-----------|------------|------------|---------------|
| <input checked="" type="checkbox"/> | Exposure Level Tester(1Hz-400KHz) | Narda        | EHP-200A  | 180ZX00634 | 2023.06.21 | 2024.06.20    |

## **4. RF EXPOSURE**

### **4.1. Measuring Standard**

FCC Part 1(1.1310) and Part 2(2.1091)

### **4.2. Requirments**

Three different categories of transmitters are defined by the FCC in OET Bulletin 65. These categories are fixed installation, mobile, and portable and are defined as follows:

- o Fixed Installations: fixed location means that the device, including its antenna, is physically secured at a permanent location and is not able to be easily moved to another location. Additionally, distance to humans from the antenna is maintained to at least 2 meters.
- o Mobile Devices: a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to be generally used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structures and the body of the user or nearby persons. Transmitters designed to be used by consumers or workers that can be easily re-located, such as a wireless modem operating in a laptop computer, are considered mobile devices if they meet the 20 centimeter separation requirement. The FCC rules for evaluating mobile devices for RF compliance are found in 47 CFR §2.1091.
- o Portable Devices: a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user. Portable device requirements are found in Section 2.1093 of the FCC's Rules (47 CFR§2.1093). The FCC also categorizes the use of the device as based upon the user's awareness and ability to exercise control over his or her exposure. The two categories defined are Occupational/ Controlled Exposure and General Population/Uncontrolled Exposure. These two categories are defined as follows:
  - Occupational/Controlled Exposure: In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Awareness of the potential for RF exposure in a workplace or similar environment can be provided through specific training as part of a RF safety program. If appropriate, warning signs and labels can also be used to establish such awareness by providing prominent information on the risk of potential exposure and instructions on methods to minimize such exposure risks.
  - General Population/Uncontrolled Exposure: The general population / uncontrolled exposure limits are applicable to 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 made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity. Warning labels placed on low-power consumer devices such as cellular telephones are not considered sufficient to allow the device to be considered under the occupational/controlled category, and the general population/uncontrolled exposure limits apply to these devices.

#### 4.3. Test configuration

- 1) The field strength of both E-field and H-field was measured at 15cm(the 15 cm measured from the center of the probe(s) to the edge of the device) using the equipment list above for determining compliance with the MPE requirements of FCC Part 1.1310.
- 2) The RF power density was measured at 3 different charge conditions: min load, mid load, max load.
- 3) Maximum E-field and H-field measurements were made 15cm from each side of the EUT. Along the side of the EUT and still 15cm away from the edge of the EUT, the field probes were positioned at the location where there is maximum field strength. The maximum E-field and H-field is reported below.
- 4) Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.
- 5) This device uses a wireless charging circuit for power transfer operating at the frequency of 325kHz. Thus, the 300kHz limits were used: E-field Limit = 614 (V/m); H-field limit = 1.63 (A/m).

#### 4.4. Limits

(A) 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                                                                 |

(B) 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          |                                   |                                   | 1.0                                      | 30                                                                |

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

**Test Mode:**

| Test Mode                                                                                          | Description                   | Remark() |
|----------------------------------------------------------------------------------------------------|-------------------------------|----------|
| Mode 1                                                                                             | EUT + Phone                   | 5%       |
| Mode 2                                                                                             |                               | 50%      |
| Mode 3                                                                                             |                               | 95%      |
| Mode 4                                                                                             | EUT + watch                   | 5%       |
| Mode 5                                                                                             |                               | 50%      |
| Mode 6                                                                                             |                               | 95%      |
| Mode 7                                                                                             | EUT + Headset                 | 5%       |
| Mode 8                                                                                             |                               | 50%      |
| Mode 9                                                                                             |                               | 95%      |
| Mode 10                                                                                            | EUT + Phone + watch           | 5%       |
| Mode 11                                                                                            |                               | 50%      |
| Mode 12                                                                                            |                               | 95%      |
| Mode 13                                                                                            | EUT + Phone + Headset         | 5%       |
| Mode 14                                                                                            |                               | 50%      |
| Mode 15                                                                                            |                               | 95%      |
| Mode 16                                                                                            | EUT + watch + Headset         | 5%       |
| Mode 17                                                                                            |                               | 50%      |
| Mode 18                                                                                            |                               | 95%      |
| Mode 19                                                                                            | EUT + Phone + watch + Headset | 5%       |
| Mode 20                                                                                            |                               | 50%      |
| Mode 21                                                                                            |                               | 95%      |
| Remark: All the modes have tested and recorded the worst mode 19 & mode 20 & mode 21 in the report |                               |          |

#### 4.5. Measuring Results

Test Mode: Mode 19

| Electric Field Emissions |                     |            |
|--------------------------|---------------------|------------|
| Test Position            | Measure Value (V/m) | Limit(V/m) |
| Top                      | 3.44                | 614        |
| Left                     | 2.51                | 614        |
| Right                    | 3.48                | 614        |
| Rear                     | 3.33                | 614        |
| Front                    | 2.71                | 614        |
| Magnetic Field Emissions |                     |            |
| Test Position            | Measure Value (A/m) | Limit(A/m) |
| Top                      | 0.0232              | 1.63       |
| Left                     | 0.0348              | 1.63       |
| Right                    | 0.0139              | 1.63       |
| Rear                     | 0.0175              | 1.63       |
| Front                    | 0.0172              | 1.63       |

Test Mode: Mode 20

| Electric Field Emissions |                     |            |
|--------------------------|---------------------|------------|
| Test Position            | Measure Value (V/m) | Limit(V/m) |
| Top                      | 2.62                | 614        |
| Left                     | 2.56                | 614        |
| Right                    | 2.57                | 614        |
| Rear                     | 2.61                | 614        |
| Front                    | 2.54                | 614        |
| Magnetic Field Emissions |                     |            |
| Test Position            | Measure Value (A/m) | Limit(A/m) |
| Top                      | 0.0239              | 1.63       |
| Left                     | 0.0227              | 1.63       |
| Right                    | 0.0157              | 1.63       |
| Rear                     | 0.0263              | 1.63       |
| Front                    | 0.0106              | 1.63       |

## Test Mode: Mode 21

| Electric Field Emissions |                     |            |
|--------------------------|---------------------|------------|
| Test Position            | Measure Value (V/m) | Limit(V/m) |
| Top                      | 1.41                | 614        |
| Left                     | 1.42                | 614        |
| Right                    | 1.22                | 614        |
| Rear                     | 1.18                | 614        |
| Front                    | 1.44                | 614        |
| Magnetic Field Emissions |                     |            |
| Test Position            | Measure Value (A/m) | Limit(A/m) |
| Top                      | 0.0116              | 1.63       |
| Left                     | 0.0139              | 1.63       |
| Right                    | 0.0108              | 1.63       |
| Rear                     | 0.0065              | 1.63       |
| Front                    | 0.0113              | 1.63       |

Remark: The device meets the mobile RF exposure limit at a 15cm separation distance as specified in §2.1091 of the FCC Rules. The maximum leakage fields at 15 cm surrounding the device from all simultaneous transmitting coils are demonstrated to be less than 30% of the MPE limit.

Requirement for KDB Publication 680106 D01 RF Exposure Wireless Charging App v03r01

| Condition Requirement                                                                                                                                                                           | Yes / No | Description                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------|
| Power transfer frequency is less than 1 MHz.                                                                                                                                                    | Yes      | The power transfer frequency is less than 1 MHz .                                    |
| Output power from each primary coil is less than or equal to 15 watts.                                                                                                                          | Yes      | Output power is 15W Max.                                                             |
| 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      | It has three coils and they are can Simultaneous emission at the same time.          |
| Client device is placed directly in contact with the transmitter.                                                                                                                               | Yes      | Client device is placed directly in contact with the transmitter.                    |
| Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).                                                                                               | Yes      | Mobile exposure conditions only                                                      |
| 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      | Please refer to the result of Electric Field Emissions and Magnetic Field Emissions. |

## 5. PHOTOGRAPHS OF TEST SETUP

