# FCC Test Report

**Test Report**
**On Behalf of**
**ShangXing Technology(ShenZhen) Co.,Ltd.**
**For**
**Magnetic 3-in-1 Foldable Travel Wireless Charger**
**Model No.: X55S**

**FCC ID: 2APDM-X55S**

**Prepared For :** ShangXing Technology(ShenZhen) Co.,Ltd.
Room 408, 4th Floor, Building 30.Wisdomland Business Park, Guankou 2nd road, Nantou, Nanshan, Shenzhen, China

**Prepared By :** Shenzhen HUAK Testing Technology Co., Ltd.
1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

**Date of Test:** Apr. 23, 2024 ~ Apr. 30, 2024
**Date of Report:** Apr. 30, 2024
**Report Number:** HK2404231999-2E

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

# Test Result Certification

**Applicant's Name**..... : ShangXing Technology(ShenZhen) Co.,Ltd.

Address..... : Room 408, 4th Floor, Building 30.Wisdomland Business Park, Guankou 2nd road, Nantou, Nanshan, Shenzhen, China

**Manufacturer's Name** ..... : ShangXing Technology(ShenZhen) Co.,Ltd.

Address..... : Room 408, 4th Floor, Building 30.Wisdomland Business Park, Guankou 2nd road, Nantou, Nanshan, Shenzhen, China

**Product Description**

Trade Mark ..... : N/A

Product Name ..... : Magnetic 3-in-1 Foldable Travel Wireless Charger

Model and/or type reference : X55S

**Standards** ..... : FCC CFR 47 PART 18, KDB 680106 D01

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen HUAK Testing Technology Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen HUAK 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.

**Date of Test** .....:

Date (s) of performance of tests .....: **Apr. 23, 2024 ~ Apr. 30, 2024**

Date of Issue.....: **Apr. 30, 2024**

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

Testing Engineer Len Liao

Len Liao

Technical Manager Sliver Wan

Sliver Wan

Authorized Signatory Jason Zhou

Jason Zhou

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2.

| Channel List | | | | | | | |
|---|---|---|---|---|---|---|---|
| Channel | Frequency (KHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
| 01 | 139 | 02 | 128 | 03 | 128 | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

The EUT antenna is Coil Antenna. No antenna other than that furnished by the responsible party shall be used with the device.

## 2. Summary of Test Results

### 2.1. Test procedures according to the technical standards:

FCC KDB 680106 D01 Wireless Power Transfer v04

| FCC CFR 47 | | | |
|---|---|---|---|
| Standard Section | Test Item | Judgment | Remark |
| FCC CFR 47 part1, 1.1310 KDB 680106 D01v04 | Electric Field Strength (E) (V/m) | PASS | |
| | Magnetic Field Strength (H) (A/m) | PASS | |

### 2.2. Measurement Uncertainty

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

| No. | Item | Uncertainty |
|---|---|---|
| 1 | All Emissions, Radiated(<30M)(9KHz-30MHz) | ±3.90dB |
| 2 | Temperature | ±0.5°C |
| 3 | Humidity | ±2% |

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

## 2.3. Test Instruments

| Description | Brand | Model No. | S/N | Calibrated Date | Calibrated Until |
|---|---|---|---|---|---|
| Electric and Magnetic Field Analyzer | narda | EHP-200AC | 180ZX11028 | Feb. 20, 2024 | Feb. 19, 2025 |

NOTE: 1. The calibration interval of the above test instruments is 12 months.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

## 2.4. Test Mode

| Test Item | Test Mode | Description |
|---|---|---|
| MPE Test Cases | Mode 1 | AC/DC Adapter + EUT + Mobile phone (Battery Status: <1%) + Earphones (Battery Status: <1%) + Watch (Battery Status: <1%) |
| | Mode 2 | AC/DC Adapter + EUT + Mobile phone (Battery Status: <50%) + Earphones (Battery Status: <50%) + Watch (Battery Status: <1%) |
| | Mode 3 | AC/DC Adapter + EUT + Mobile phone (Battery Status: >95%) + Earphones (Battery Status: >95%) + Watch (Battery Status: <1%) |
| | Mode 4 | AC/DC Adapter + EUT + Mobile phone (Battery Status: <1%) + Earphones (Battery Status: <1%) + Watch (Battery Status: <50%) |
| | Mode 5 | AC/DC Adapter + EUT + Mobile phone (Battery Status: <50%) + Earphones (Battery Status: <50%) + Watch (Battery Status: <50%) |
| | Mode 6 | AC/DC Adapter + EUT + Mobile phone (Battery Status: >95%) + Earphones (Battery Status: >95%) + Watch (Battery Status: <50%) |
| | Mode 7 | AC/DC Adapter + EUT + Mobile phone (Battery Status: <1%) + Earphones (Battery Status: <1%) + Watch (Battery Status: >95%) |
| | Mode 8 | AC/DC Adapter + EUT + Mobile phone (Battery Status: <50%) + Earphones (Battery Status: <50%) + Watch (Battery Status: >95%) |
| | Mode 9 | AC/DC Adapter + EUT + Mobile phone (Battery Status: >95%) + Earphones (Battery Status: >95%) + Watch (Battery Status: >95%) |
| | Mode 10 | AC/DC Adapter + EUT + Mobile phone (Battery Status: <1%) |
| | Mode 11 | AC/DC Adapter + EUT + Mobile phone (Battery Status: <50%) |
| | Mode 12 | AC/DC Adapter + EUT + Mobile phone (Battery Status: >95%) |
| | Mode 13 | AC/DC Adapter + EUT + Earphones (Battery Status: <1%) |
| | Mode 14 | AC/DC Adapter + EUT + Earphones (Battery Status: <50%) |
| | Mode 15 | AC/DC Adapter + EUT + Earphones (Battery Status: >95%) |
| | Mode 16 | AC/DC Adapter + EUT + Watch (Battery Status: <1%) |
| | Mode 17 | AC/DC Adapter + EUT + Watch (Battery Status: <50%) |
| | Mode 18 | AC/DC Adapter + EUT + Watch (Battery Status: >95%) |
| | Mode 19 | AC/DC Adapter + EUT (Null Load) |

Note: 1. All modes and configurations above have been tested, the worst-case configuration is Mode 1.

2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

3. The Mobile Phone, Earphones and Watch provided by Lab.

4. According to the manufacturer's design principle, the wireless charging power will reach its maximum when the client device's battery level is between 1% and 10%.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

# 3. Maximum Permissible Exposure

**Limit of Maximum Permissible Exposure**

| Limits for Occupational / Controlled Exposure | | | | |
|---|---|---|---|---|
| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm²) | Averaging Time \|E\|²,\|H\|² 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/ cm²) | Averaging Time \|E\|²,\|H\|² 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 |

Note 1: f = frequency in MHz; *Plane-wave equivalent power density.

Note 2: For the applicable limit, see FCC 1.1310, 680106 D01 Wireless Power Transfer v04.

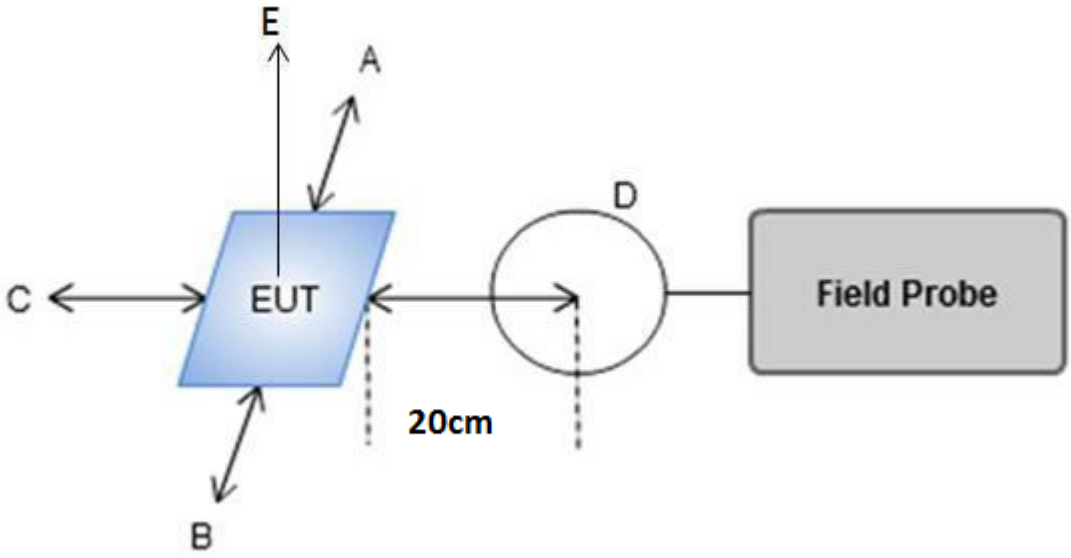
Note 3: Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

# 4. Test Procedure

a. For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of (H-field & E- field strengths for all sides is 20cm).
E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 20 cm measured from the center of the probe(s) to the edge of the device.

## 4.1 Test Setup




## 4.2 Result of Maximum Permissible Exposure

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

All test modes complete the test. Only the full load test was the worst results reported below:

## ANT 1: Mobile phone

Mobile phone battery charge is less than 1% (139 KHz)

E-Field Strength at 20 cm from the edges surrounding the EUT (V/m)

| Field strength | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limits (V/m) |
|---|---|---|---|---|---|---|
| V/m | 2.2149 | 2.1210 | 1.9559 | 1.1876 | 1.4410 | 614 |

H-Field Strength at 20 cm from the edges surrounding the EUT (A/m)

| Field strength | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limits (A/m) |
|---|---|---|---|---|---|---|
| A/m | 0.0385 | 0.3451 | 0.0218 | 0.0041 | 0.0153 | 1.63 |

## ANT 2: Earphones

Watch battery charge is less than 1% (128 KHz)

E-Field Strength at 20 cm from the edges surrounding the EUT (V/m)

| Field strength | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limits (V/m) |
|---|---|---|---|---|---|---|
| V/m | 0.7787 | 0.5478 | 0.2162 | 0.6415 | 0.2005 | 614 |

H-Field Strength at 20 cm from the edges surrounding the EUT (A/m)

| Field strength | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limits (A/m) |
|---|---|---|---|---|---|---|
| A/m | 0.0263 | 0.0159 | 0.0045 | 0.0222 | 0.0189 | 1.63 |

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

ANT 3: Watch

Earphones battery charge is less than 1% (128 KHz)

E-Field Strength at 20 cm from the edges surrounding the EUT (V/m)

| Field strength | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limits (V/m) |
|---|---|---|---|---|---|---|
| V/m | 0.4703 | 0.3202 | 0.1661 | 0.2536 | 0.1869 | 614 |

H-Field Strength at 20 cm from the edges surrounding the EUT (A/m)

| Field strength | Test Position A | Test Position B | Test Position C | Test Position D | Test Position E | Limits (A/m) |
|---|---|---|---|---|---|---|
| A/m | 0.0233 | 0.0106 | 0.0058 | 0.0184 | 0.0034 | 1.63 |

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

Remark: According KDB 680106 D01 Wireless Power Transfer v04, section 5.2). The aggregate H-field strengths at 20 cm surrounding the device from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit. The E- field evaluation conducted assuming a user separation distance of 20 cm according to the KDB 680106 D01 Wireless Power Transfer v04, section 5.2).

Result: The device comply with the RF exposure requirement according to 680106 D01 v04, section 5.2):

(1) The power transfer frequency is below 1MHz.
- The device operate in the frequency range for 112KHz~ 205KHz

(2) The output power from each transmitting element (e .g., coil) is less than or equal to 15 watts.
- The maximum output power of ANT1 is 15W

- The maximum output power of ANT2 is 5W

- The maximum output power of ANT3 is 3W

3) A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact)
-The EUT is placed directly in contact with the transmitter

(4) Only 2.1091-Mobile exposure conditions apply (i.e., this provision does not cover 2.093-porable exposure conditions).
- Yes, mobile device only.

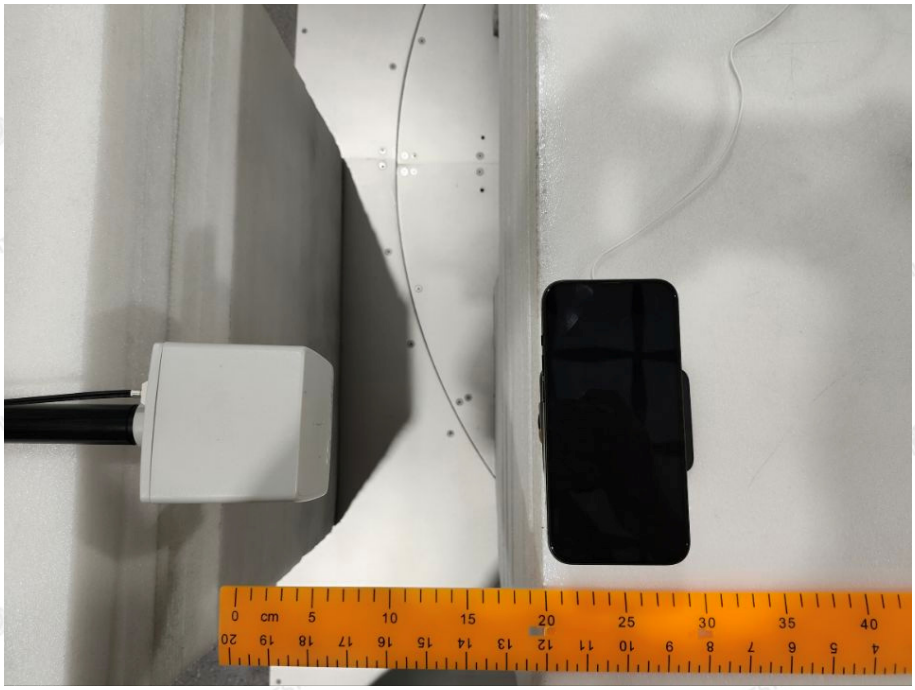
(5) The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a 1/d (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes. The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coils or antennas) that by design can simultaneously transmit are energized at their nominal maximum power.
- The EUT meet the conditions.

(6) For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 15 W: in this case, both scenarios shall be tested.
- The transfer system including a charging system with three primary coils, the coil pairs can be powered on at the same time.

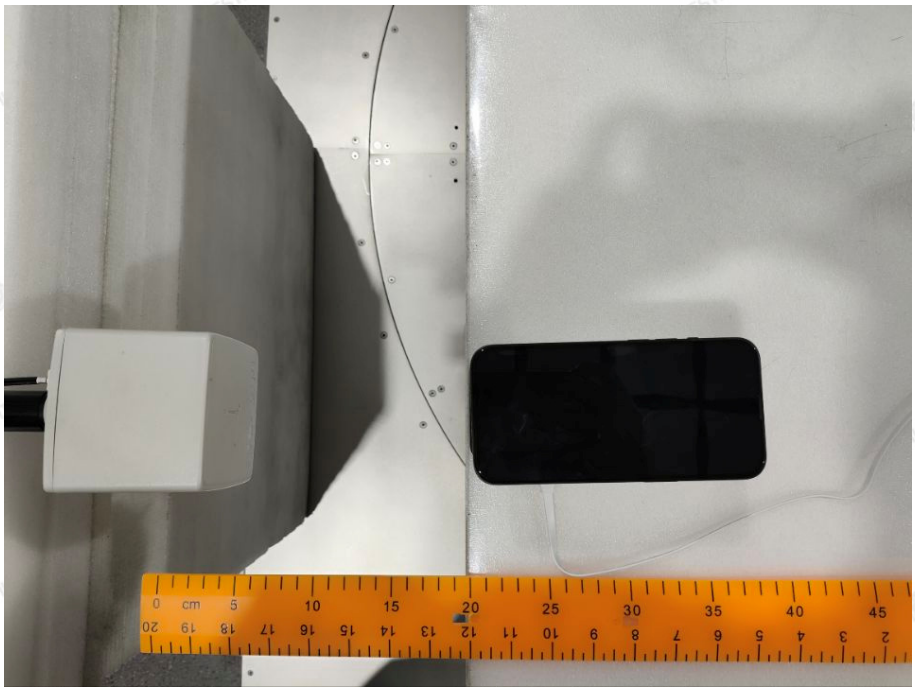
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

# Photographs of Test

A



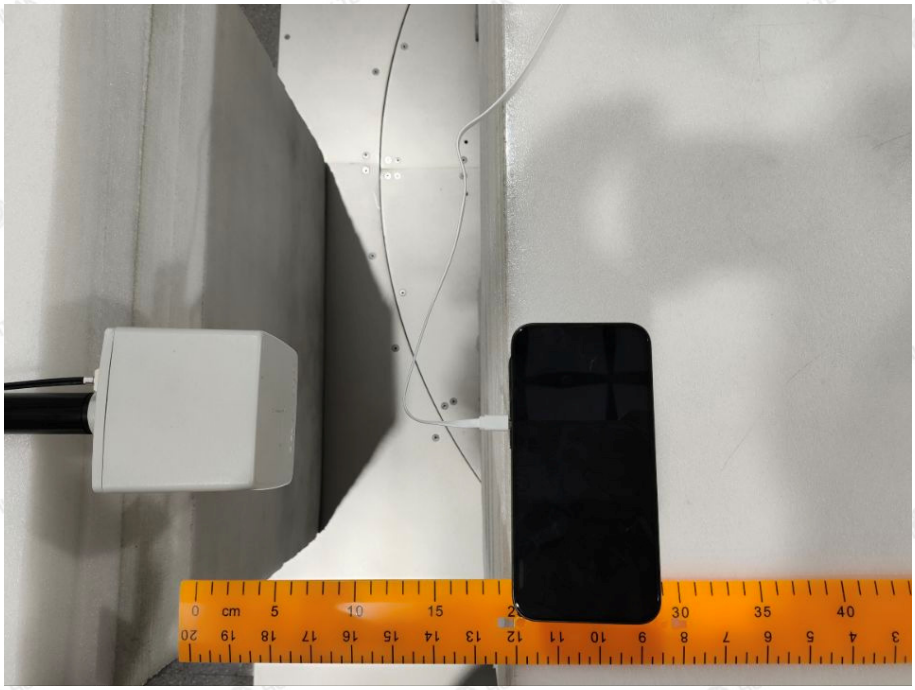
B



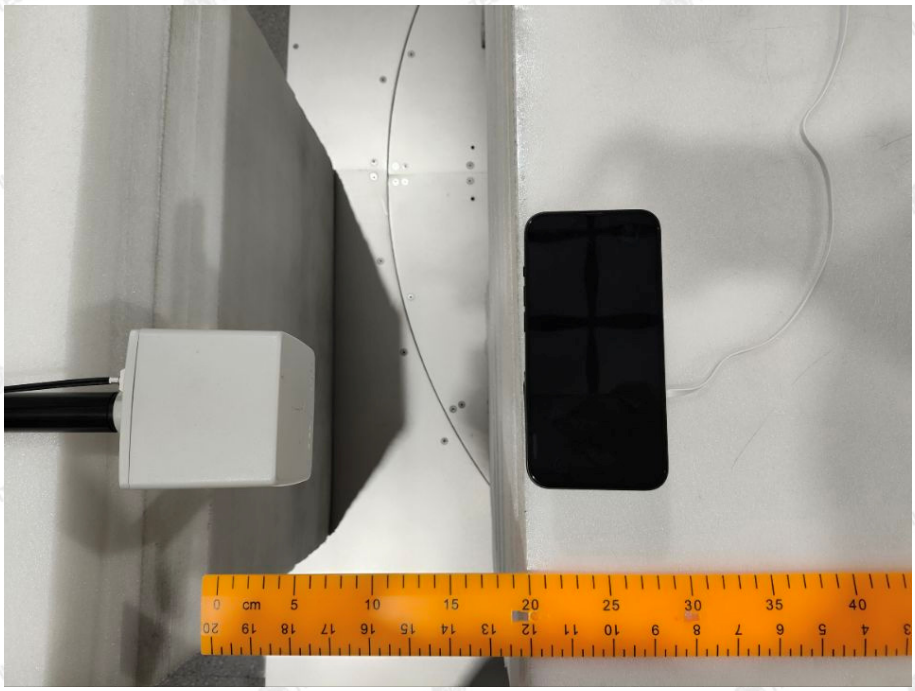
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

C



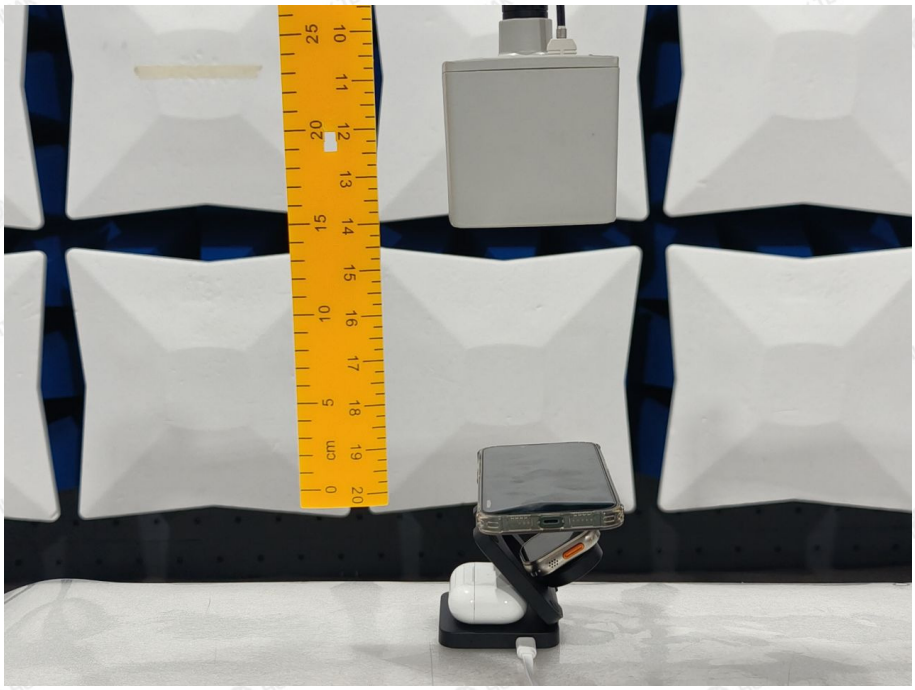
D



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

E



※※※※※THE END※※※※※

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannot be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com
Add: 1-2F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China