FCC Test Report

Test Report
On Behalf of
Shenzhen Xiaodong Innovation Technology Co.,Ltd
For
Multifunctional Wireless Charging Station
Model No.: XD-CE03, XD-CE30, XD-CE31, XD-CE32, XD-CE33

FCC ID: 2BBW7-XD-CE03

Prepared For :	**Shenzhen Xiaodong Innovation Technology Co.,Ltd** **C1513 Chuangxin Plaza, No. 2007, Pingshandadao, Pingshan District, 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:	**Feb. 21, 2024 ~ Feb. 29, 2024**
Date of Report:	**Feb. 29, 2024**
Report Number:	**HK2401100197-2E**

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Test Result Certification

Applicant's Name..... : Shenzhen Xiaodong Innovation Technology Co.,Ltd

Address..... : C1513 Chuangxin Plaza, No. 2007, Pingshandadao, Pingshan District, Shenzhen, China

Manufacturer's Name ..... : Shenzhen Xiaodong Innovation Technology Co.,Ltd

Address..... : C1513 Chuangxin Plaza, No. 2007, Pingshandadao, Pingshan District, Shenzhen, China

Product Description

Trade Mark ..... : N/A

Product Name ..... : Multifunctional Wireless Charging Station

Model and/or type reference : XD-CE03, XD-CE30, XD-CE31, XD-CE32, XD-CE33

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

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Date of Test .....:

Date (s) of performance of tests .....: **Feb. 21, 2024 ~ Feb. 29, 2024**

Date of Issue.....: **Feb. 29, 2024**

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

Testing Engineer

Len Liao

Technical Manager

Sliver Wan

Authorized Signatory

Jason Zhou

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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	148	02	120	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%

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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.

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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 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%.

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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.

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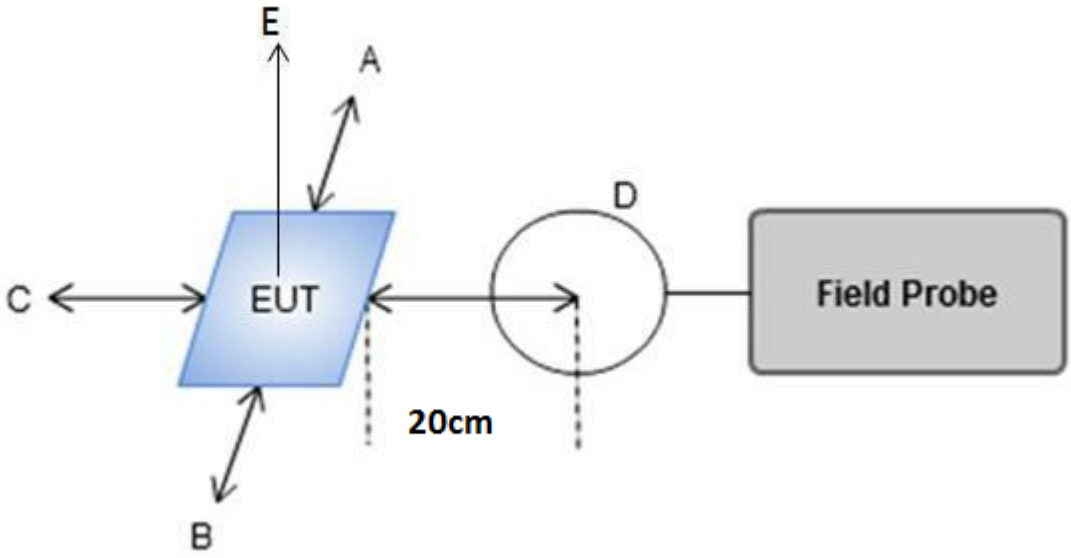
4. Test Procedure

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

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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% (148 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	0.9445	1.1910	1.3052	1.3021	1.0290	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	0.0461	0.0606	0.0682	0.0643	0.0515	1.63

ANT 2: Earphone

Watch battery charge is less than 1% (120 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	0.8599	1.2000	1.3381	1.3092	1.0936	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	0.0488	0.0565	0.0573	0.0508	0.0381	1.63

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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	0.2221	0.2911	0.2911	0.2890	0.2490	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	0.0231	0.0301	0.0335	0.0319	0.0262	1.63

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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 10W

- The maximum output power of ANT2 is 3.5W

- The maximum output power of ANT3 is 2.5W

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.

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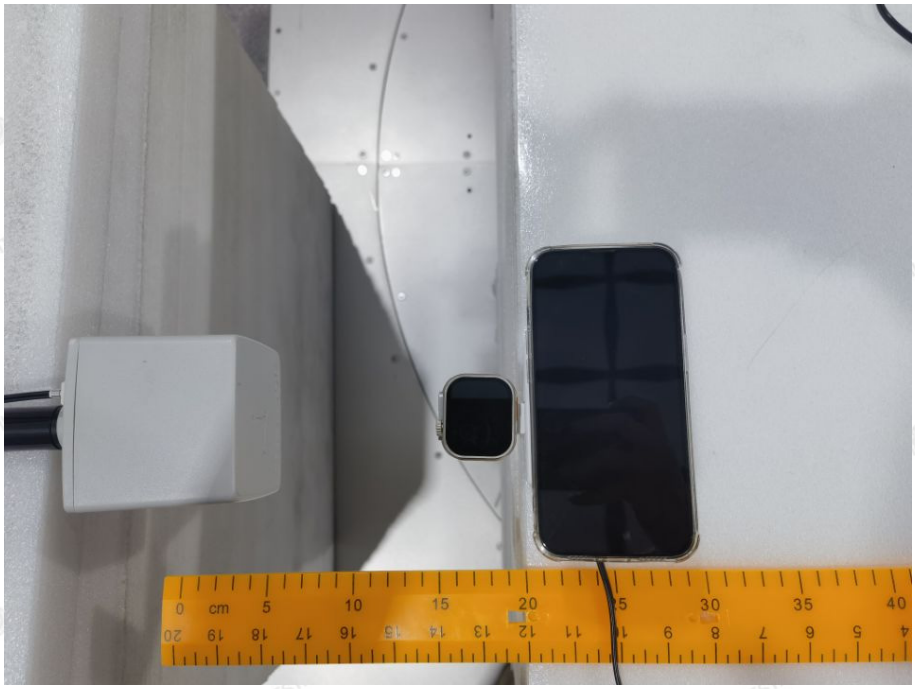
Photographs of Test

A



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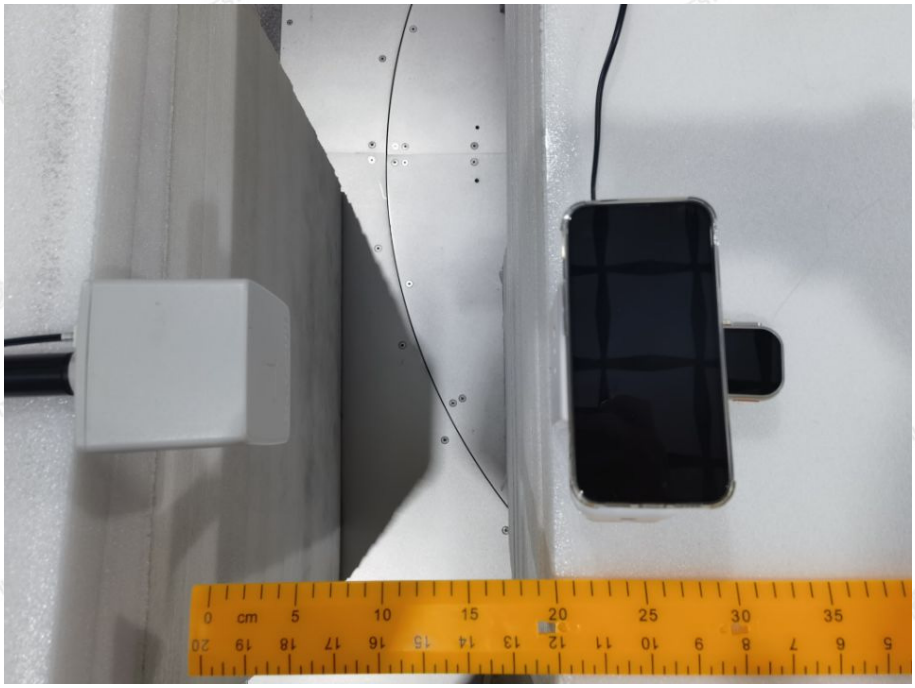

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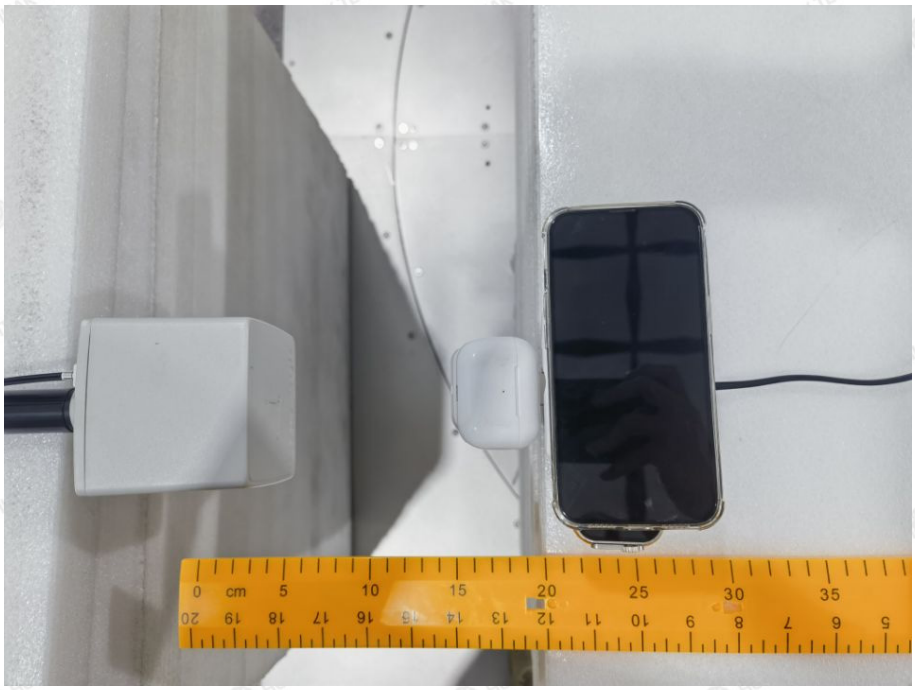
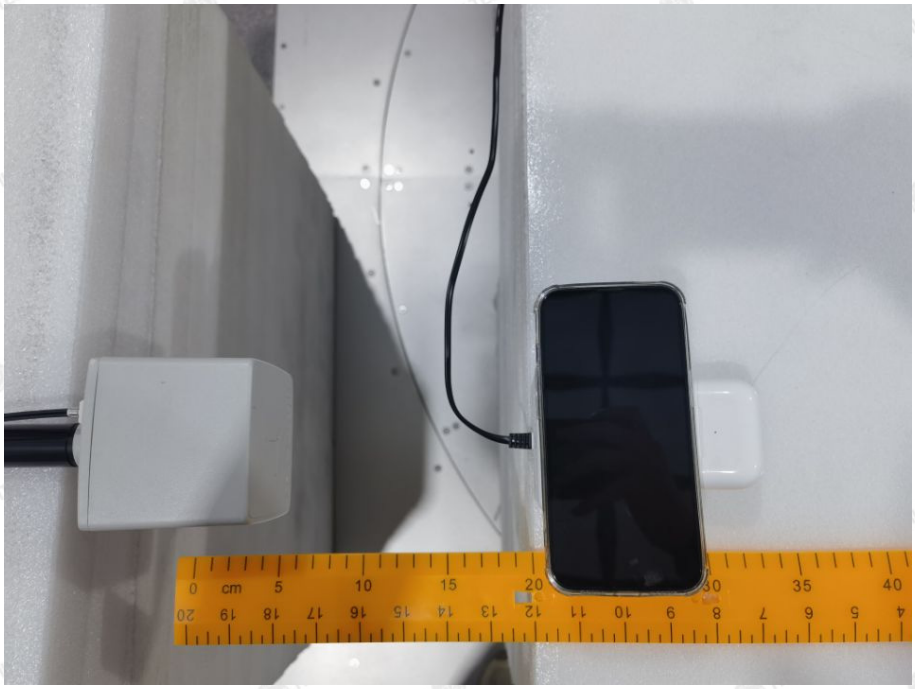
C



D



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E

※※※※※THE END※※※※※

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