

FCC MPE TEST REPORT

FCC ID: 2BHCS-YR-1

Sample : Mobile Phone Wireless Charging
Bluetooth Camera Handle

Trade Mark : N/A

Main Model : YR-1

Additional Model : N/A

Report No. : UNIA24070128ER-63

Prepared for

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Prepared by

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TEST RESULT CERTIFICATION

Applicant.....: Shenzhen Yuran Technology Co., Ltd.
Address.....: 2B11, Xianhua Mingyuan, Qinghu Road, Qinghua Community,
Longhua Street, Longhua, Shenzhen, China
Manufacturer: Shenzhen Yuran Technology Co., Ltd.
Address.....: 2B11, Xianhua Mingyuan, Qinghu Road, Qinghua Community,
Longhua Street, Longhua, Shenzhen, China

Product description

Product: Mobile Phone Wireless Charging Bluetooth Camera Handle
Trade Mark.....: N/A
Model Name.....: YR-1

Standards: FCC KDB680106 D01 Wireless Power Transfer v04

This device described above has been tested by Shenzhen United Testing Technology Co., Ltd., and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Date of Test

Date (s) of performance of tests: Jul. 02, 2024 ~ Jul. 12, 2024
Date of Issue: Jul. 15, 2024
Test Result: Pass

Edited by:



Jason Ye

Reviewed by:



Kelly Cheng

Approved by:



Liuze

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1 TEST SUMMARY

1.1 TEST PROCEDURES AND RESULTS

FCC KDB680106 D01 Wireless Power Transfer v04

FCC CFR 47			
Standard Section	Test Item	Result	Remark
FCC CFR 47 part1, 1.1310 KDB680106 D01 v04	Electric Field Strength (E) (V/m)	PASS	--
	Magnetic Field Strength (H) (A/m)	PASS	--

Note: "N/A" denotes test is not applicable in this Test Report.

Compliant with FCC KDB680106 D01 Wireless Power Transfer v04 section 5.2:

- 1) The power transfer frequency is below 1MHz.
Yes, the working frequency is: 112-205kHz.
- 2) The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.
Yes, the maximum output power is 15 watts.
- 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)
Yes, the maximum permitted load is placed in physical contact with the transmitter.
- 4) Only § 2.1091-Mobile exposure conditions apply (i.e., this provision does not cover § 2.1093-Portable exposure conditions).
Yes, This is a portable device.
- 5) The 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.

Yes, 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.

Yes, The transfer system is a charging system with only one main coil..

1.2 TEST FACILITY

Test Firm : Shenzhen United Testing Technology Co., Ltd.
Address : D101&D401, No. 107, Kaicheng High-Tech Park, Taoyuan Community, Dalang Sub-District, Longhua District, Shenzhen, Guangdong, China

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19. The testing quality system of our laboratory meets with ISO/IEC-17025 requirements. This approval result is accepted by MRA of APLAC.

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

A2LA Certificate Number: 4747.01

The EMC Laboratory has been accredited by A2LA, and in compliance with ISO/IEC 17025:2017 General Requirements for testing Laboratories.

FCC Registration Number: 674885

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission.

IC Registration Number: 31584

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada.

1.3 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded 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	Radiated Measurement (9KHz-30MHz)	$\pm 2.50\text{dB}$
2	Temperature	$\pm 0.5^\circ\text{C}$
3	Humidity	$\pm 2\%$

1.4 ENVIRONMENTAL CONDITIONS

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

Temperature:	15~35 °C
Relative Humidity:	30~60 %
Air Pressure:	950~1050 hPa

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product:	Mobile Phone Wireless Charging Bluetooth Camera Handle
Trade Mark:	N/A
Main Model:	YR-1
Additional Model:	N/A
Model Difference:	N/A
FCC ID:	2BHCS-YR-1
Operation Frequency:	112-205kHz
Modulation Type:	ASK
Antenna Type:	Coil Antenna
Antenna Gain:	0dBi
Battery:	DC 3.6V, 4500mAh
Adapter:	N/A
Power Source:	DC 5V/9V/12V from adapter or DC 3.6V from Li-battery

2.2 CARRIER FREQUENCY OF CHANNELS

Test Channel	
Channel	Frequency (KHz)
01	138.6

2.3 TEST MODE

NO.	TEST MODE DESCRIPTION
1	Wireless charging Mode(battery status >95%)
2	Wireless charging Mode(battery status <50%)
3	Wireless charging Mode(battery status <1%)
Note: The mode 1 was the worst case and only the data of the worst case record in this report.	

2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Note
E-1	Mobile Phone Wireless Charging Bluetooth Camera Handle	N/A	YR-1	EUT
E-2	Adapter	Xiaomi	MDY-11-EX	AE
E-3	Phone	SAMSUNG	SM-G9350	AE

Note:

1. The support equipment was authorized by Declaration of Confirmation.
2. All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

2.4 TEST INSTRUMENTS

Description	Brand	Model No.	Frequency Range	Calibrated Until
Electric and Magnetic Field Analyzer	Narda	EHP-200A	180ZX20511	Jul. 04, 2025

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

3 MAXIMUM PERMISSIBLE EXPOSURE

3.1 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/ cm ²)	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/ cm ²)	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

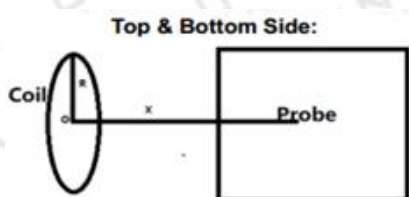
Note 1: f = frequency in MHz ; *Plane-wave equivalent power density.

2: For the applicable limit, see FCC 1.1310, 680106 D01 RF Exposure Wireless Charging Apps v04.

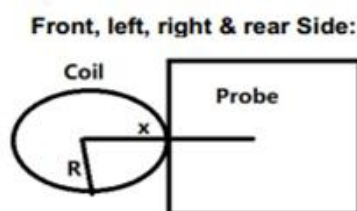
3: Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

3.2 TEST PROCEDURE

- 1) The RF exposure test was performed in an echoic chamber;
- 2) The measurement probe was placed at test distance (15 cm from edges, 20 cm and 15 cm from top) Which is between the edge of the charger and the geometric center of probe, for test setup A;
- 3) In addition to what is described in KDB 680106 D01, please measure and provide magnetic and electrical field strength at a distance 0 cm to 20 cm at 2 cm iteration, i.e. at a distance of 0 cm, 2 cm, 4 cm, 20 cm. Which is between the edge of the charger and the edge of of probe, for test setup B;
- 4) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed;
- 5) Use **Biot-Savart Law**, the value of 0 cm can be estimated through the results of 2 cm, according to the formula:



$$B = \frac{\mu_0 * I * N * R^2}{2 * (R^2 + x^2)^{3/2}}$$



$$B = \frac{\mu_0 * I * N}{2 * x}$$

Remark:

B: H-field (Unit: T)

μ_0 : Space permeability = $4 * \pi * 10^{-7}$

I (Unit: A): The current element passing through a radiated coil.

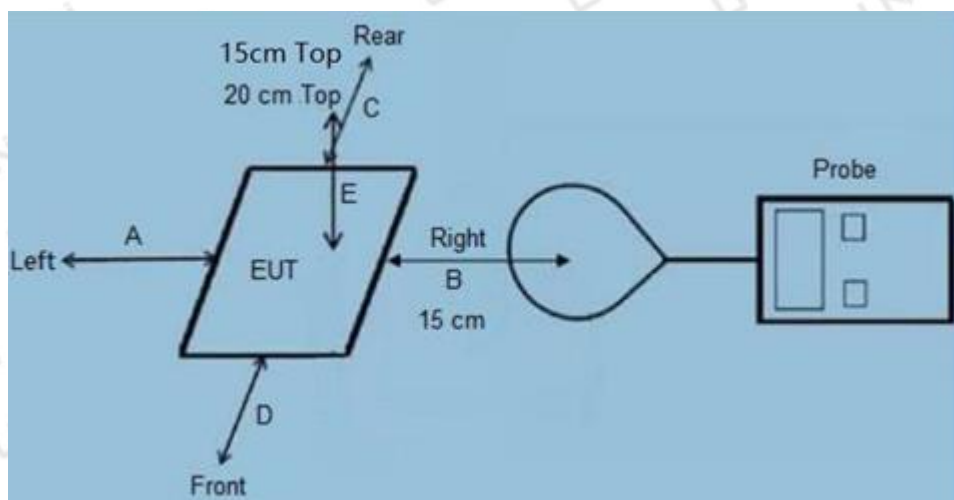
R: Radius of radiated coil, according to the coil specification: R = 0.02 m

X: The distance from the sensing elements of the probe to the edge of the radiated coil (the dimensions of EUT and load are taken into account) (Unit: m)

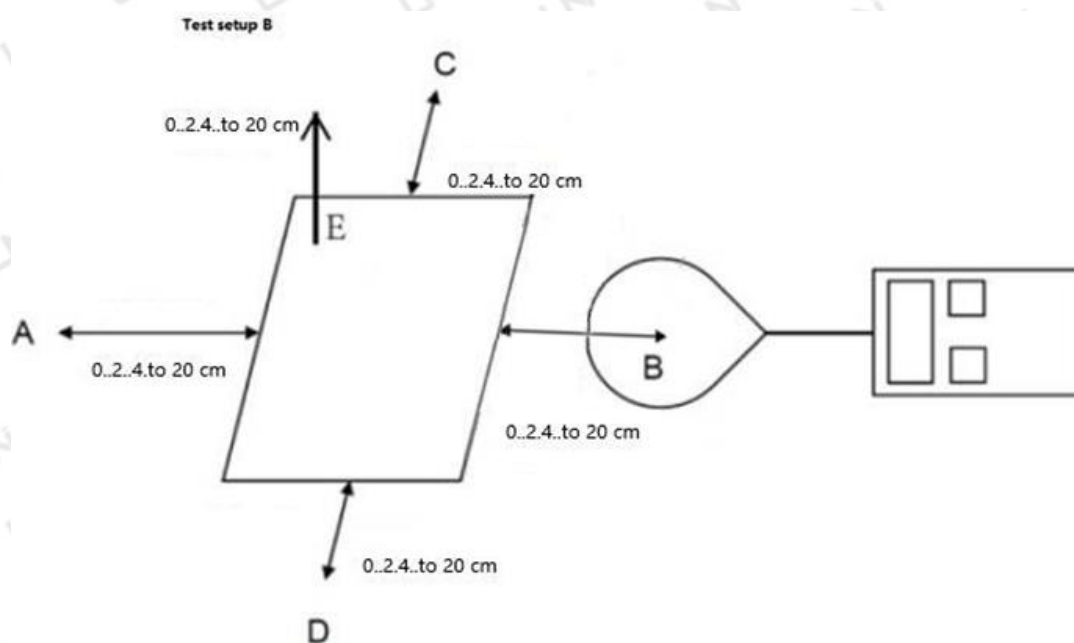
N: Turns of the radiated coil, according to the coil specification: N = 14.

3.3 TEST SETUP

Test Setup A:



Test Setup B:



3.3 RESULT OF MAXIMUM PERMISSIBLE EXPOSURE

Test setup A:

E-Filed Strength at (15 cm from edges A, B, C, D, 20 cm and 15cm from top E) surrounding the EUT (V/m)

Charging Load Worse case	Test Position A (V/m)	Test Position B (V/m)	Test Position C (V/m)	Test Position D (V/m)	Test Position E (V/m)20cm	Test Position E (V/m)15cm	Limits (V/m)
battery status >95%	0.50	0.65	0.68	0.71	0.66	0.76	307
battery status <50%	0.45	0.74	0.55	0.63	0.88	0.63	307
battery status <1%	0.34	0.54	0.57	0.51	0.69	0.63	307

H-Filed Strength at (15 cm from edges A, B, C, D, 20 cm and 15cm from top E) surrounding the EUT (A/m)

Charging Load Worse case	Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)20cm	Test Position E(A/m)15cm	Limits (A/m)
battery status >95%	0.030	0.025	0.034	0.028	0.026	0.027	0.815
battery status <50%	0.025	0.026	0.021	0.027	0.027	0.025	0.815
battery status <1%	0.021	0.027	0.029	0.024	0.022	0.026	0.815

Test setup B:

Battery status >95%, battery status <50%, battery status <1% all have been tested, only worse case Max load (Battery status >95%) is reported. H-Filed Strength at (distance 0cm to 20cm at 2cm iteration, i.e. at a distance of 20cm, 18cm, 16cm, 0cm, Which is between the edge of the charger and the edge of of probe,) surrounding the EUT (A/m)

Test distance (cm)	Test Position A(A/m)	Test Position B(A/m)	Test Position C(A/m)	Test Position D(A/m)	Test Position E(A/m)	Test Position F(A/m)	Limits (A/m)
2	0.389	0.288	0.154	0.119	0.137	0.129	1.63
4	0.353	0.242	0.132	0.099	0.112	0.110	1.63
6	0.323	0.229	0.115	0.099	0.102	0.120	1.63
8	0.322	0.215	0.094	0.087	0.095	0.110	1.63
10	0.271	0.215	0.088	0.087	0.092	0.110	1.63
12	0.273	0.201	0.074	0.071	0.084	0.100	1.63
14	0.251	0.144	0.097	0.098	0.083	0.116	1.63
16	0.249	0.118	0.117	0.126	0.123	0.112	1.63
18	0.202	0.199	0.102	0.117	0.097	0.099	1.63
20	0.211	0.167	0.088	0.093	0.095	0.072	1.63

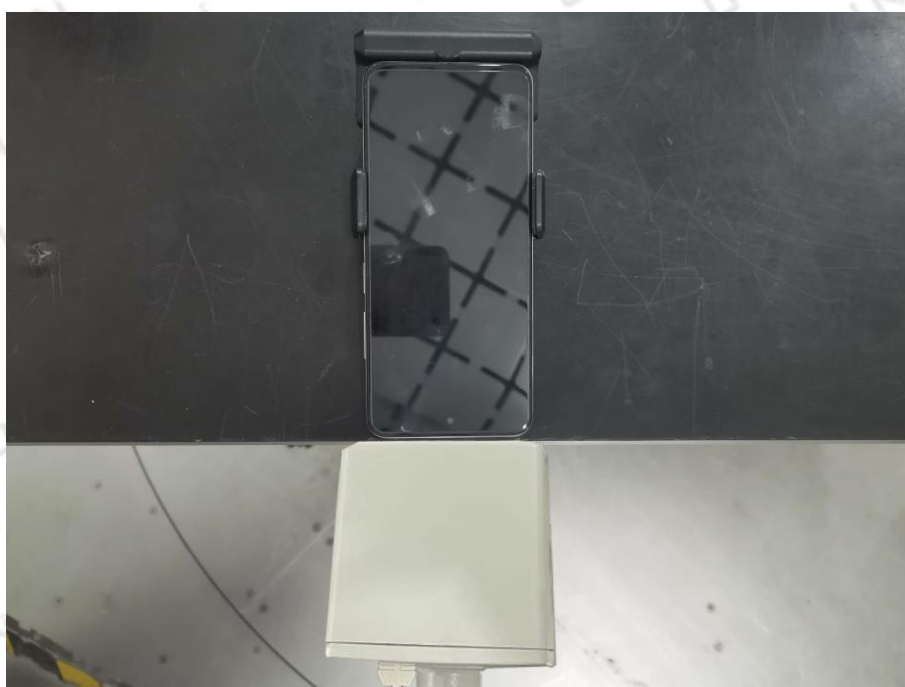
Use the Biot-Savart Law to estimated the results of 2cm through 4 cm.

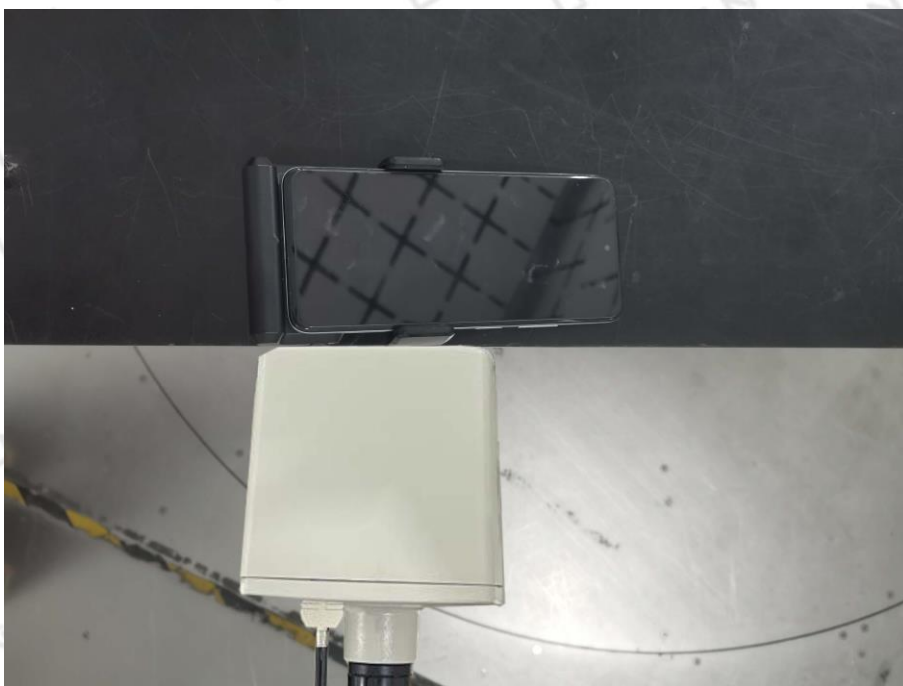
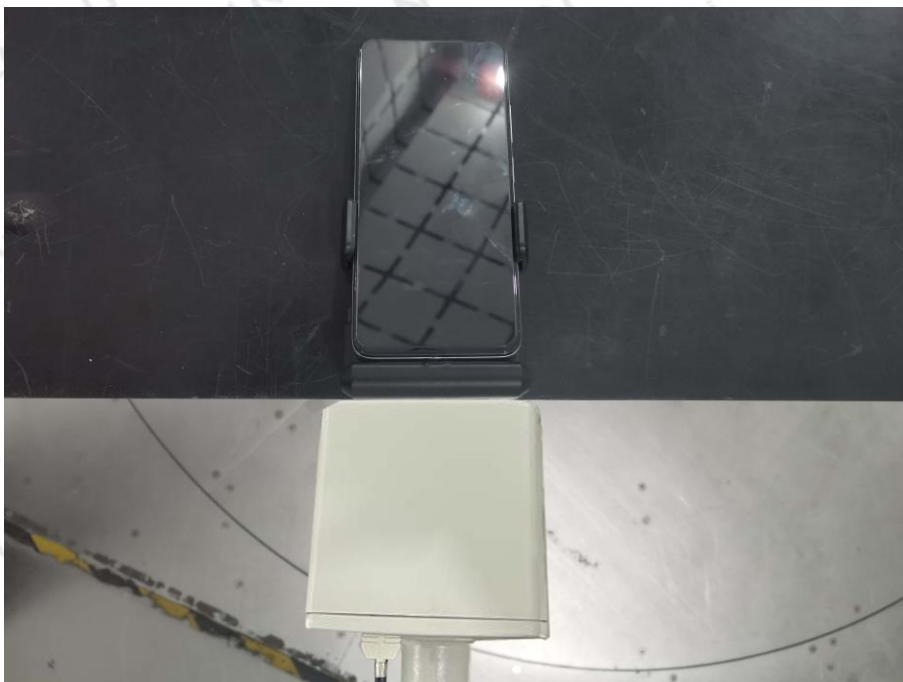
Test position	Measure Value(A/m)	Estimated Value (A/m)	Agreement Ratio	Limits
A	0.353	0.389	10.20%	30%
B	0.242	0.288	19.01%	30%
C	0.132	0.154	16.67%	30%
D	0.099	0.119	20.20%	30%
E	0.112	0.137	22.32%	30%
F	0.110	0.129	17.27%	30%

As the model is sufficient, the value of 0cm can be estimated through the results of 2 cm

Test position	Estimated Value (A/m)	Limits(A/m)
A	0.430	1.63
B	0.346	
C	0.181	
D	0.142	
E	0.169	
F	0.154	

3.5 TEST PHOTO







***End of Report**