RF TEST REPORT

For

Shenzhen Zhenpin Technology Co.,Ltd

Product Name: Wireless charger

Model(s).: D2

Report Reference No.	:	**POCE231212004RF002**
FCC ID	:	**2BD8P-WC02**
Applicant's Name	:	Shenzhen Zhenpin Technology Co.,Ltd
Address	:	South 3F Block 2, Tongfuyu Industrial Park, Zhenmei Community, Xinhu Street, Guanming District,Shenzhen City
Testing Laboratory	:	Shenzhen POCE Technology Co., Ltd.
Address	:	102 Building H1 & 1/F., Building H, Hongfa Science & Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China
Test Specification Standard	:	**FCC CFR Title 47 Part 15 Subpart C**
Date of Receipt	:	December 12, 2023
Date of Test	:	December 12, 2023 to December 26, 2023
Data of Issue	:	December 26, 2023
Result	:	**Pass**

1 GENERAL INFORMATION

1.1 Description of Device (EUT)

Product Name:	Wireless charger
Model/Type reference:	D2
Series Model:	D2S,D1,D3,D3S,D5S,D6,D6S,D7,D8,D9,D10,D11,D12,D13,D13S,D15,D16,D17,D18,D19,D20
Model Different:	The product has many models, only the model name is different, and the other parts such as the circuit principle, pcb and electrical structure are the same.
Trade Mark:	N/A
Power Supply:	DC 9V/3A from adapter
Operation Frequency:	mobile phone/Airpods:110KHz~205KHz Iwatch:321.9KHz~336.9KHz
Number of Channels:	N/A
Modulation Type:	MSK
Antenna Type:	Inductive loop coil Antenna
Antenna Gain:	0dBi (Max)
Hardware Version:	V1.0
Software Version:	V1.0

1.2 Description of Test Modes

No	Title	Description
TM1	Full load test(Folding triad)	Keep the EUT in wireless charging mode
TM2	half load test(Folding triad)	Keep the EUT in wireless charging mode
TM3	No-load load test(Folding triad)	Keep the EUT in wireless charging mode
TM4	Full load test(mobile phone)	Keep the EUT in wireless charging mode
TM5	half load test(mobile phone)	Keep the EUT in wireless charging mode
TM6	No-load load test(mobile phone)	Keep the EUT in wireless charging mode
TM7	Full load test(Watch)	Keep the EUT in wireless charging mode
TM8	half load test(Watch)	Keep the EUT in wireless charging mode
TM9	No-load load test(Watch)	Keep the EUT in wireless charging mode
TM10	Full load test(Earbuds)	Keep the EUT in wireless charging mode
TM11	half load test(Earbuds)	Keep the EUT in wireless charging mode
TM12	No-load load test(Earbuds)	Keep the EUT in wireless charging mode
Remark:TM1,TM4,TM7,TM10, is the full load mode, and the full load mode is the worst mode,Only the data of the worst mode would be recorded in this report.		

Test channel	Frequency (KHz)
Cellphone loop coil Antenna/Airpods	144.6
Iwatch	325.5KHz

1.3 Description of Support Units

Title	Manufacturer	Model No.	Serial No.
AC Adapter	UGREEN	CD212	N/A
Wireless Charging Load Module	N/A	N/A	Wireless Intput Power:5W/7.5W/10W//15W
Watch	Apple	Apple watch	N/A
mobile phone	Huawei	p40pro	N/A
Earbuds	Apple	/	N/A

1.4 Test Instruments list

Test Equipment	Manufacturer	Model No.	SN.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
Exposure Level Tester	Narda	ELT-400	N-0231	2023-12-14	2024-12-13
Magnetic field probe 100cm^2	Narda	ELT probe 100cm^2	M0675	2023-12-14	2024-12-13

1.5 Statement Of The Measurement Uncertainty

Test Item	Measurement Uncertainty
Exposure Level Tester	0.8dB
Note: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

1.6 Identification of Testing Laboratory

Company Name:	Shenzhen POCE Technology Co., Ltd.
Address:	101-102 Building H5 & 1/F., Building H, Hongfa Science & Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China
Phone Number:	+86-13267178997
Fax Number:	86-755-29113252

Identification of the Responsible Testing Location

Company Name:	Shenzhen POCE Technology Co., Ltd.
Address:	101-102 Building H5 & 1/F., Building H, Hongfa Science & Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, Guangdong, China
Phone Number:	+86-13267178997
Fax Number:	86-755-29113252
FCC Registration Number:	0032847402
Designation Number:	CN1342

1.7 Announcement

(1) The test report reference to the report template version v0.
(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
(3) The test report is invalid if there is any evidence and/or falsification.
(4) This document may not be altered or revised in any way unless done so by POCE and all revisions are duly noted in the revisions section.
(5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
(6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2 Evaluation Results (Evaluation)

2.1 Maximum Permissible Exposure

Test Requirement:	Per KDB 680106 D01 Section 3. RF Exposure Requirements; 1) Consumer wireless power transfer devices approved under Part 18 in some cases have to demonstrate compliance with RF exposure requirements. The potential for exposure must be assessed according to the operating configurations of the wireless system and the exposure conditions of users and bystanders. RF exposure must be evaluated with the client device(s) being charged by the primary at maximum output power. The RF exposure requirements must be determined in conjunction with the device operating characteristics, according to the mobile and portable exposure requirements in Section 2.1091 and Section 2.1093 of the rules. SAR and MPE limits do not cover the frequency range for wireless power transfer applications which operate below 100 kHz and 300 kHz respectively; therefore, RF exposure compliance needs to be determined with respect to 1.1307 (c) and (d) of the FCC rules. 2) Based on the design and implementation of the power transfer application, it must be clearly identified if mobile or portable RF exposure conditions apply. Devices that are installed to provide separation of at least 20 cm from users and bystanders may qualify for mobile exposure conditions. For some conditions where users and bystanders may be exposed at closer than 20 cm, section 2.1091(d) (4) of the rules may apply. 3) For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 15 cm. 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 15 cm measured from the center of the probe(s) to the edge of the device. 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. 4) Portable exposure conditions from 100 kHz to 6 GHz are determined with respect to SAR requirements. Existing SAR systems and test procedures are generally intended for measurements above 100 MHz. While numerical modeling can be an alternative, the constraints of substantial computational resources at low frequencies could introduce further limitations. Under these circumstances, including operations below 100 kHz, the Commission may consider a combination of analytical analysis, field strength, radiated and conducted power measurements, in conjunction with some limited numerical modeling to assess compliance. 5) Depending on the operating frequency, existing SAR and MPE measurement procedures may be adapted to evaluate wireless power transfer devices for compliance with respect to mobile or portable exposure conditions. If the grantee or its test lab have any questions regarding RF exposure evaluation they should contact the FCC Laboratory with sufficient system operating configuration details to determine if RF exposure evaluation is necessary and, if required, how to apply specific test procedures. Below 100 MHz, when SAR testing is required and the device is operating at close proximity to persons, information on device design, implementation, operating configurations, exposure conditions of users and bystanders are needed to determine the evaluation and testing requirements. In addition, the influence of nearby objects may also need consideration according to the wireless power transfer system implementation; for example, the effects of placing the device, its coils or radiating elements on or near metallic surfaces

Test 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/cm²)	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/f²	6
30-300	61.4	0.163	1.0	6
300-1,500	/	/	f/300	6
1,500-100,000	/	/	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/cm²)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f²	30
30-300	27.5	0.073	0.2	30
300-1,500	/	/	f/1500	30
1,500-100,000	/	/	1.0	30

According to FCC KDB 680106 D01 Section 3. RF Exposure Requirements clause 3 the Emission-Limits in the frequency range from 100 KHz to 300 KHz should be assessed versus the limits at 300 KHz in Table 1 of CFR 47 – Section1.310 as following (measured distance shall be 15cm from the center of the probe to the edge of the device):

Frequency	E-Field(V/m)	A/m	uT
0.3 MHz – 3.0 MHz	614	1.613	2.0
3.0 MHz – 30 MHz	824/f	2.19/f	--

Procedure:

1) The RF exposure test was performed in anechoic chamber.
2) The measurement probe was placed at test distance (15 cm from all sides and 20 cm from the top) which is between the edge of the charger and the geometric center of probe.
3) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
4) The EUT was measured according to the dictates of KDB 680106 v03r01.

Remark: 1. The EUT's test position A, B, C, D and E is valid for the E and H field measurements.

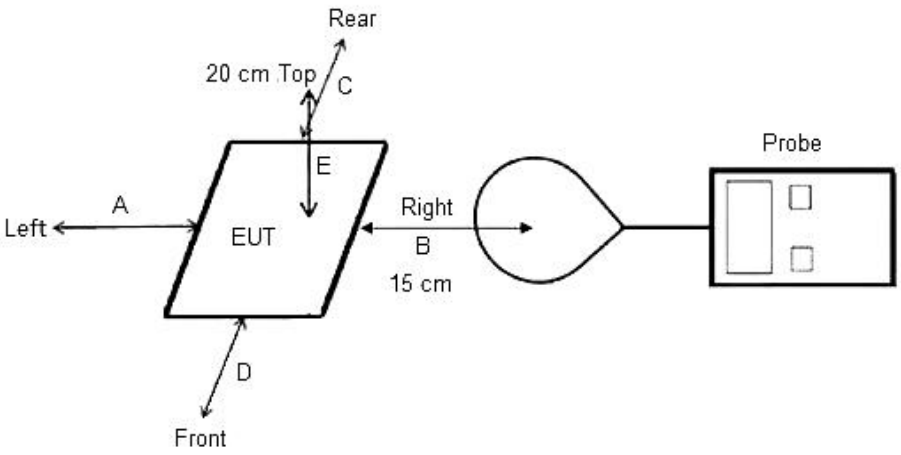
2. A/m=uT/1.25=(mT/1000)/1.25, V/m=$10^{(((20\lg(A/m*10^{6})+51.5)-120)/20)}$

2.1.1

2.1.2 E.U.T. Operation:

Operating Environment:					
Temperature:	23.2 °C	Humidity:	51.9 %	Atmospheric Pressure:	102 kPa
Pre test mode:	TM1,TM4,TM7,TM10				
Final test mode:	TM1,TM4,TM7,TM10				

2.1.3 Test Setup Diagram:



2.1.4 Test Data:

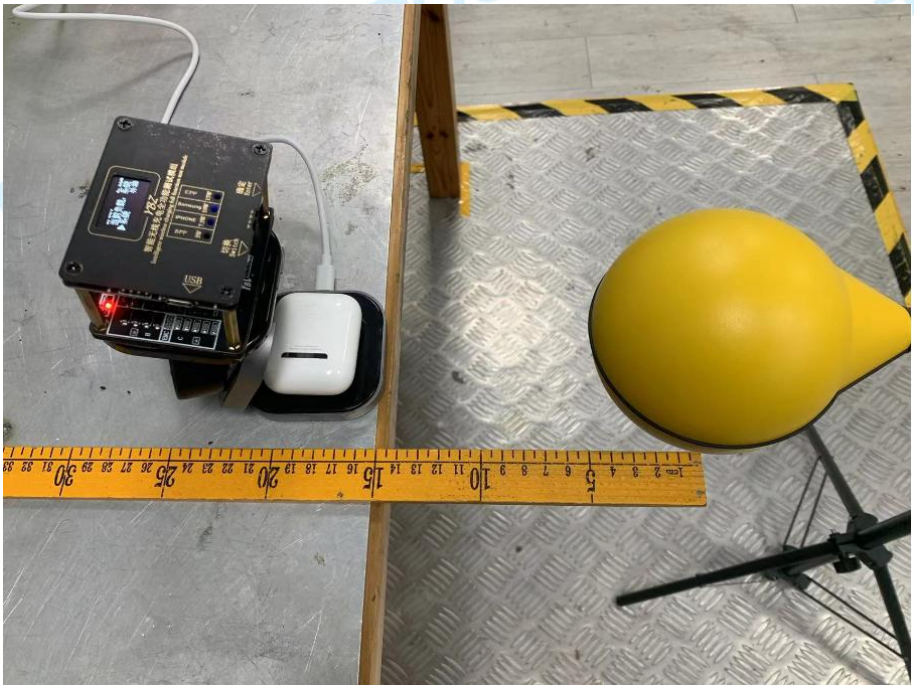
Field Strength surrounding the EUT.

Battery Status Level: <1%									
Load mode	Frequency (KHz)	Field strength (uT) (V/m) (A/m)	Test Position A(15cm)	Test Position B(15cm)	Test Position C(15cm)	Test Position D(15cm)	Test Position E(20cm)	50% Limits	Limits
TM1	144.6	uT	0.461	0.770	0.381	0.551	0.366	--	--
TM1	144.6	A/m	0.369	0.616	0.305	0.441	0.293	0.815	1.63
TM1	144.6	V/m	138.502	231.366	114.615	165.575	109.952	307.0	614.0
TM4	144.6	uT	0.776	0.306	0.769	0.340	0.486	--	--
TM4	144.6	A/m	0.620	0.245	0.615	0.272	0.389	0.815	1.63
TM4	144.6	V/m	233.180	92.086	231.222	102.262	146.166	307.0	614.0
TM7	325.5	uT	0.507	0.343	0.360	0.312	0.414	--	--
TM7	325.5	A/m	0.405	0.274	0.288	0.249	0.331	0.815	1.63
TM7	325.5	V/m	152.354	103.020	108.340	93.749	124.518	307.0	614.0
TM10	144.6	uT	0.309	0.435	0.304	0.526	0.637	--	--
TM10	144.6	A/m	0.247	0.348	0.243	0.421	0.510	0.815	1.63
TM10	144.6	V/m	92.991	130.866	91.326	158.253	191.581	307.0	614.0
Results: Pass									

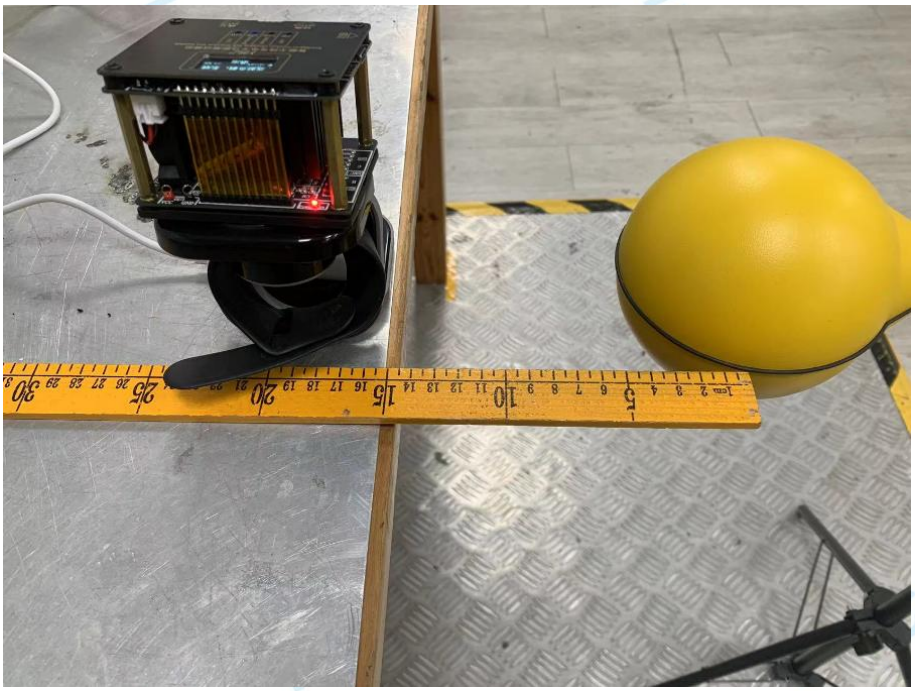
3 TEST SETUP PHOTOS

Position A

Position B

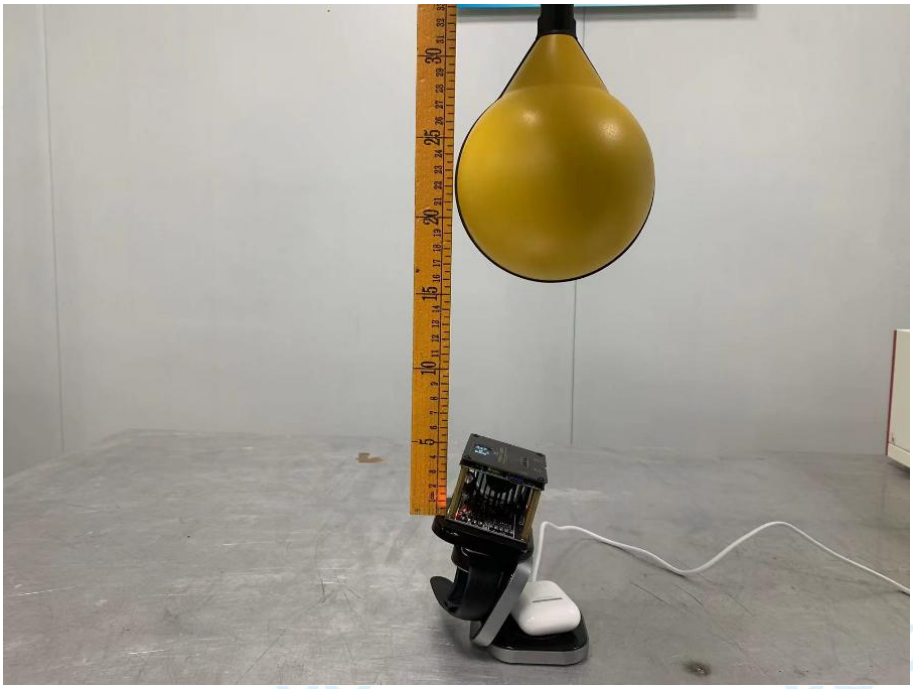


Position C



Position D

Position E



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