

Test Report

Report No.: MTi211102003-07E2-R1

Date of issue: 2022-11-02

Applicant: Ningbo Youdian Electronic Technology Co., Ltd.

Product: Invisible Wireless Charger

Model(s): W18

FCC ID: 2AZKB-W18

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

Instructions

1. This test report shall not be partially reproduced without the written consent of the laboratory.
2. The test results in this test report are only responsible for the samples submitted
3. This test report is invalid without the seal and signature of the laboratory.
4. This test report is invalid if transferred, altered, or tampered with in any form without authorization.
5. Any objection to this test report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

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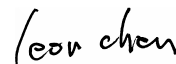
Test Result Certification	
Applicant:	Ningbo Youdian Electronic Technology Co., Ltd.
Address:	Room 1902, 19th Floor, East area of Weijiachuangyi Building, No.35 of Shucheng Road, Hongshan District, Wuhan, Hubei, China
Manufacturer:	Ningbo Youdian Electronic Technology Co., Ltd.
Address:	Room 1902, 19th Floor, East area of Weijiachuangyi Building, No.35 of Shucheng Road, Hongshan District, Wuhan, Hubei, China
Factory:	Ningbo Youdian Electronic Technology Co., Ltd.
Address:	Room 1902, 19th Floor, East area of Weijiachuangyi Building, No.35 of Shucheng Road, Hongshan District, Wuhan, Hubei, China
Product description	
Product name:	Invisible Wireless Charger
Trademark:	N/A
Model name:	W18
Serial Model:	N/A
Standards:	FCC CFR 47 PART 1, § 1.1310
Test method:	KDB 680106 DR04
Date of Test	
Date of test:	2021-11-10 ~ 2022-09-02
Test result:	Pass

Test Engineer :



(Yanice Xie)

Reviewed By :



(Leon Chen)

Approved By :



(Tom Xue)

1 General Description

1.1 Description of the EUT

Product name:	Invisible Wireless Charger
Model name:	W18
Series Model:	N/A
Model difference:	N/A
Electrical rating:	Input: 12V2A Output: 10W(Max)
Accessories:	N/A
Hardware version:	WE9013-WEF-20200812
Software version:	38F5
Test sample number:	MTi211102003-07-S0001
RF specification:	
Operation frequency:	115 kHz – 150 kHz
Modulation type:	ASK
Antenna type:	Coil Antenna

1.2 Description of test modes

All the test modes were carried out with the EUT in normal operation, the final test mode of the EUT was the worst test mode for emission test, which was shown in this report and defined as:

No.	Emission test modes
Mode 1	Operating mode (5W)
Mode 2	Operating mode (7.5W)
Mode 3	Operating mode (10W)
Mode 4	Stand-by mode

The test data only show worst test mode: Mode 3

1.3 Description of support units

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.

Support equipment list			
Description	Model	Serial No.	Manufacturer
Mobile phone	S9+	/	SAMSUNG
Adapter	OLD120200ACN4DC	/	/
Support cable list			
Description	Length (m)	From	To
/	/	/	/

2 Measurement uncertainty

Parameter	Expanded Uncertainty
Magnetic field measurements(9kHz~30MHz)	$\pm 7.8\%$
Electric field measurements(9kHz~30MHz)	$\pm 7.8\%$

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$

3 Test facilities and accreditations

3.1 Test laboratory

Test laboratory:	Shenzhen Microtest Co., Ltd.
Test site location:	101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	(86-755)88850135
Fax:	(86-755)88850136
CNAS Registration No.:	CNAS L5868
FCC Registration No.:	448573

4 List of test equipment

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
MTI-E115	Electric and Magnetic Field Probe – Analyzer	Narda	EHP-200A	101166	2022/05/05	2023/05/04

5 Test result

5.1.1 Requirement

§1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter.

Table 1 to §1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f ²)	<6
30-300	61.4	0.163	1.0	<6
300-1500			f/300	<6
1500-100000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f ²)	<30
30-300	27.5	0.073	0.2	<30
300-1500			f/1500	<30
1500-100000			1.0	<30

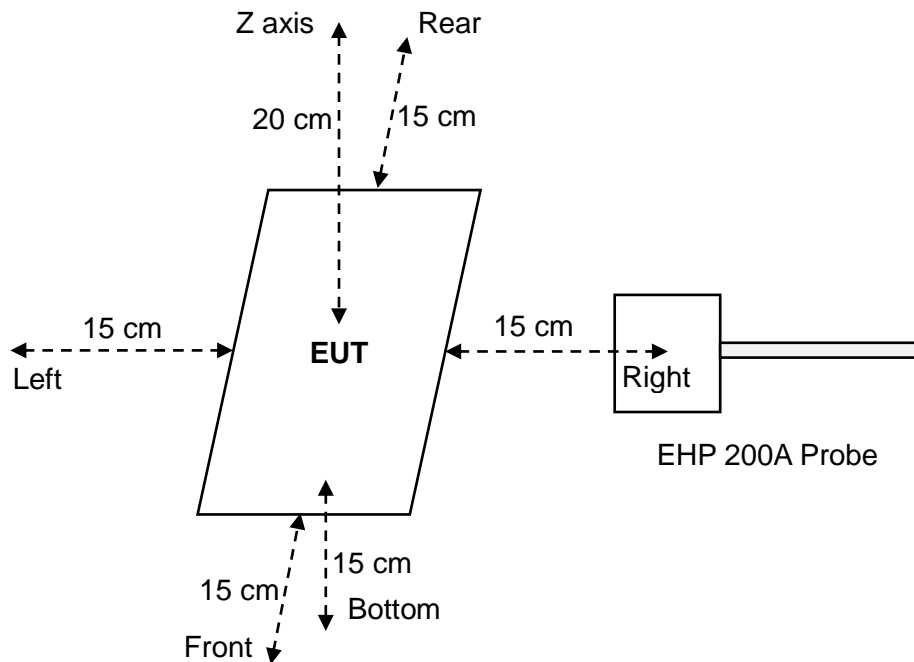
f = frequency in MHz

* = Plane-wave equivalent power density

Note 1: Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

Note 2: General population/uncontrolled exposure limits apply in 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 fully aware of the potential for exposure or cannot exercise control over their exposure.

5.2 Test setup



5.3 Test Procedures

For mobile exposure conditions:

- The RF exposure test was performed in anechoic chamber.
- E and H-field measurements should be made with the center of the probe at a distance of 15 cm surrounding the EUT and 20 cm above the top surface of the primary/client pair.
- The highest emission level was recorded and compared with limit.
- The EUT was measured according to the dictates of KDB 680106 DR04.

5.4 Equipment Approval Considerations item 5 b) of KDB 680106 D04

Requirement	Device
1. The power transfer frequency is below 1 MHz.	Yes. The operating frequencies: 115 kHz – 150 kHz
2. The output power from each primary coil is less than or equal to 15 watts.	Yes. The maximum output power: 10W
3. Each client device is placed directly in contact with the transmitter.	No. The EUT charge mobile phones at intervals of 6-18mm
4. Only mobile exposure conditions apply (portable exposure conditions are not covered by this exclusion).	Yes. Mobile exposure conditions only.
5. The aggregate H-field strength anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit.	Yes. See the test result in item 4.5.
6. For systems with more than one primary coil, the conditions specified in (5) must be met when the system is fully loaded and all coils are powered at the same time.	Yes. The EUT have one source primary coil and satisfy the conditions specified in (5).

5.5 Test results

Test condition 1: Mode 3 operating mode with client device (1 % battery status of client device)

Antenna	Probe Position	E –field (V/m)			H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)	Measurement	Limit	Max. Percentage (%)
1	Z axis	3.7561	614	1.11%	0.5617	1.63	34.46%
	Left	4.0674			0.2346		
	Right	3.1203			0.1674		
	Front	6.7923			0.2789		
	Rear	2.0397			0.1689		
	Bottom	3.0495			0.3411		

Test condition 2: Mode 3 operating mode with client device (50 % battery status of client device)

Antenna	Probe Position	E –field (V/m)			H–field (A/m)		
		Measurement	Limit	Percentage (%)	Measurement	Limit	Percentage (%)
1	Z axis	3.7646	614	1.10%	0.5583	1.63	34.25%
	Left	4.0864			0.2266		
	Right	3.1262			0.1617		
	Front	6.7805			0.2736		
	Rear	2.0477			0.1647		
	bottom	3.0543			0.3335		

Test condition 3: Mode 3 operating mode with client device (99 % battery status of client device)

Antenna	Probe Position	E –field (V/m)			H–field (A/m)		
		Measurement	Limit	Percentage (%)	Measurement	Limit	Percentage (%)
1	Z axis	3.7566	614	1.10%	0.5544	1.63	34.01%
	Left	4.0535			0.2282		
	Right	3.1367			0.166		
	Front	6.7726			0.2722		
	Rear	2.0596			0.1743		
	bottom	3.0493			0.3324		

Photographs of the Test Setup

See the Appendix - Test Setup Photos.

Photographs of the EUT

See the Appendix - EUT Photos.

----End of Report----