FCC Test Report

Applicant	:	**Shenzhen Minsuo Industrial Co.,Ltd**
Address	:	**12th floor, Block B, Tengyao Building, No. 268 Gushu 2nd road,Xixiang Town, Bao'an, Shenzhen, Guangdong, China**
Product Name	:	**3-IN-1 FOLDABLE MAGNETIC WIRELESS CHARGER**
Report Date	:	**Aug. 21, 2024**

Shenzhen Anbotek Compliance Laboratory Limited

Contents

TEST REPORT

Applicant	:	Shenzhen Minsuo Industrial Co.,Ltd
Manufacturer	:	Shenzhen Minsuo Industrial Co.,Ltd
Product Name	:	3-IN-1 FOLDABLE MAGNETIC WIRELESS CHARGER
Model No.	:	MP-273, FMWC-12/2393
Trade Mark	:	N/A
Rating(s)	:	Input: 9V⎓ 3A; 5V⎓ 3A Output for phone: 5W, 7.5W, 10W, 15W MAX. Output for airpods: 3W MAX. Output for apple watch: 2W MAX. Total Output: 20W MAX.
Test Standard(s)	:	**FCC Part 1.1310, 1.1307(b)**
Test Method(s)	:	**KDB 680106 D01 Wireless Power Transfer v04**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 1.1307 & KDB680106 D01 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt Jul. 22, 2024

Date of Test Jul. 22, 2024 to Aug. 02, 2024

Prepared By Nianxiu Chen

(Nianxiu Chen)

Approved & Authorized Signer Edward pan

(Edward Pan)

Revision History

Report Version	Description	Issued Date
R00	Original Issue.	Aug. 21, 2024

1. General Information

1.1. Client Information

Applicant	:	Shenzhen Minsuo Industrial Co.,Ltd
Address	:	12th floor, Block B, Tengyao Building, No. 268 Gushu 2nd road,Xixiang Town, Bao'an, Shenzhen, Guangdong, China
Manufacturer	:	Shenzhen Minsuo Industrial Co.,Ltd
Address	:	12th floor, Block B, Tengyao Building, No. 268 Gushu 2nd road,Xixiang Town, Bao'an, Shenzhen, Guangdong, China
Factory	:	Shenzhen Minsuo Industrial Co.,Ltd
Address	:	12th floor, Block B, Tengyao Building, No. 268 Gushu 2nd road,Xixiang Town, Bao'an, Shenzhen, Guangdong, China

1.2. Description of Device (EUT)

Product Name	:	3-IN-1 FOLDABLE MAGNETIC WIRELESS CHARGER
Model No.	:	MP-273, FMWC-12/2393 (Note: All samples are the same except the model number, so we prepare "MP-273" for test only.)
Trade Mark	:	N/A
Test Power Supply	:	DC 9V from adapter input AC 120V/60Hz
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)
Adapter	:	N/A
RF Specification		
Operation Frequency	:	112-205kHz for mobile phone and Earphone 325kHz for watch
Modulation Type	:	FSK
Antenna Type	:	Inductive loop coil Antenna
Remark: 1) All of the RF specification are provided by customer. 2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.		

1.3. Auxiliary Equipment Used During Test

Title	Manufacturer	Model No.	Serial No.
Xiaomi 33W adapter	Xiaomi	MDY-11-EX	SA62212LA04358J
Apple Watch	Apple	/	/
Apple AirPods	Apple	AirPods Pro	/
Wireless charging load	Shenzhen Ouju Technology Co., Ltd.	CD2577	/

1.4. Description of Test Modes

Pretest Modes	Descriptions
TM1	WPT Mode (load (15W) + Watch (2W) + Earphone (3W))
TM2	WPT Mode (load (10W) + Watch (2W) + Earphone (3W))
TM3	WPT Mode (load (7.5W) + Watch (2W) + Earphone (3W))
TM4	WPT Mode (load (5W) + Watch (2W) + Earphone (3W))
TM5	WPT Mode (load (15W) + Watch (2W))
TM6	WPT Mode (load (10W) + Watch (2W))
TM7	WPT Mode (load (7.5W) + Watch (2W))
TM8	WPT Mode (load (5W) + Watch (2W))
TM9	WPT Mode (load (15W) + Earphone (3W))
TM10	WPT Mode (load (10W) + Earphone (3W))
TM11	WPT Mode (load (7.5W) + Earphone (3W))
TM12	WPT Mode (load (5W) + Earphone (3W))
TM13	WPT Mode (Watch (2W) + Earphone (3W))
TM14	WPT Mode (load (15W))
TM15	WPT Mode (load (10W))
TM16	WPT Mode (load (7.5W))
TM17	WPT Mode (load (5W))
TM18	WPT Mode (Watch (2W))
TM19	WPT Mode (Earphone (3W))
TM20	Standby Mode

Note: 1%, 50%, and 99% load cases were pre-tested for all modes, but we only recorded the worst case in this report.

1.5. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Electric and Magnetic field Analyzer	NARDA	EHP-200A	180ZX10202	Oct. 16, 2023	1 Year

1.6. Measurement Uncertainty

Magnetic Field Reading(A/m)	:	+/-0.04282(A/m)
Electric Field Reading(V/m)	:	+/-0.03679(V/m)
The measurement uncertainty and decision risk evaluated according to AB/WI-RF-F-032. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.		

1.7. Description of Test Facility

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

FCC-Registration No.: 434132

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 434132.

ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.
1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.

1.8. Disclaimer

1. The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
2. The test report is invalid if there is any evidence and/or falsification.
3. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
4. This document may not be altered or revised in any way unless done so by Anbotek 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 authenticity of the information provided by the customer is the responsibility of the customer and the laboratory is not responsible for its authenticity.

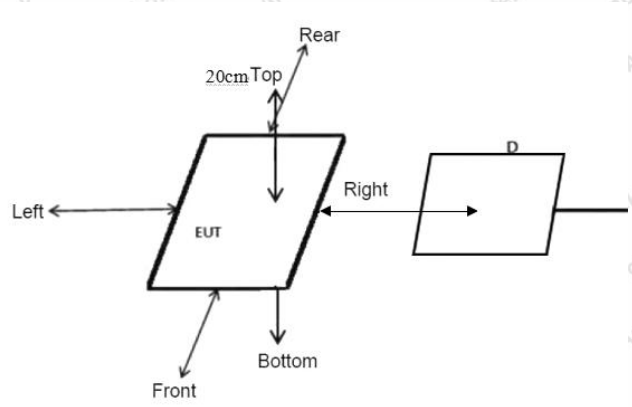
The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2. Measurement and Result

2.1. 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)
(A) Limits for Occupational/Controlled Exposures				
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
1500-100,000	/	/	5	6
(B) 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
1500-100,000	/	/	1.0	30
F=frequency in MHz *=Plane-wave equivalent power density RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).				

2.2. Test Setup



Note: Measurements should be made at 20 cm surrounding the EUT and 20cm above the top surface of the EUT.

2.3. Test Procedure

1) The RF exposure test was performed in anechoic chamber.

2) The measurement probe was placed at required test distance 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.(A is the right, B is the back, C is the left, D is the front, and E is the top.)

4) The EUT was measured according to the dictates of KDB 680106 D01 v04.

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

2.4. Test Result

Environmental evaluation and exposure limit according to FCC CFR 47 part 1, 1.1307(b), 1.1310

Temperature:	23.4°C	Relative Humidity:	50 %
Pressure:	101 kPa	Test Voltage:	DC 9V from adapter input AC 120V/60Hz

E-Field Strength at 20 cm surrounding the EUT and 20cm above the top surface of the EUT

Test Mode	Frequency Range (kHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limits Test (V/m)
TM1 (1%)	112-125, 325	3.398	3.648	3.098	3.148	3.298	614
TM1 (50%)	112-125, 325	1.384	1.484	1.534	1.584	1.434	614
TM1 (99%)	112-125, 325	0.690	0.715	0.680	0.695	0.710	614
TM20	112-125, 325	0.344	0.344	0.394	0.394	0.344	614

H-Field Strength at 20 cm surrounding the EUT and 20cm above the top surface of the EUT

Test Mode	Frequency Range (kHz)	Test Position A	Test Position B	Test Position C	Test Position D	Test Position E	Limits Test (A/m)
TM1 (1%)	112-125, 325	0.680	0.730	0.620	0.630	0.660	1.63
TM1 (50%)	112-125, 325	0.277	0.297	0.307	0.317	0.287	1.63
TM1 (99%)	112-125, 325	0.138	0.143	0.136	0.139	0.142	1.63
TM20	112-125, 325	0.069	0.069	0.079	0.079	0.069	1.63

Note: All modes has been tested, only the worst data(TM1: WPT Mode (load (15W) 1% + Watch (2W) 1% + Earphone (3W) 1%); WPT Mode (load (15W) 50% + Watch (2W) 50% + Earphone (3W) 50%); WPT Mode (load (15W) 99% + Watch (2W) 99% + Earphone (3W) 99%)) was recorded in the report.

APPENDIX I -- TEST SETUP PHOTOGRAPH

Please refer to separated files Appendix I -- Test Setup Photograph_MPE

APPENDIX II -- EXTERNAL PHOTOGRAPH

Please refer to separated files Appendix II -- External Photograph

APPENDIX III -- INTERNAL PHOTOGRAPH

Please refer to separated files Appendix III -- Internal Photograph

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