RF EXPOSURE REPORT FOR CERTIFICATION
On Behalf of

mophie LLC

mophie 3-in-1 travel charger with MagSafe

Model Number: 3N1-TRVL-MS-A

FCC ID: 2ACWB-TRVLMSA

Applicant:	mophie LLC
Address:	6244 Technology Ave. Kalamazoo,MI 49009,
	United States of America.
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
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Report Number:	ESTE-R2307326
Date of Test:	Jul. 15-30, 2023
Date of Report:	Jul. 31, 2023

TABLE OF CONTENTS

Description Page

EST Technology Co., Ltd.

Applicant: **Address:**	mophie LLC 6244 Technology Ave. Kalamazoo,MI 49009, United States of America.
Manufacturer: **Address:**	mophie LLC 6244 Technology Ave. Kalamazoo,MI 49009, United States of America.
E.U.T:	mophie 3-in-1 travel charger with MagSafe
Model Number:	3N1-TRVL-MS-A
Power Supply:	Input: DC 5V/3A, DC 9V/3A Output: Apple Watch Module: 3.5W Apple MagSafe Module: 15W Wireless Charging Pad (AirPods/ AirPods Pro): 3W
Trade Name:	mophie Serial No.: ------
Date of Receipt:	Jul. 15, 2023 Date of Test: Jul. 15-30, 2023
Test Specification:	FCC CFR 47 Part 1.1307(b)&1.1310 KDB 680106 D01 RF Exposure Wireless Charging Apps v03r01
Test Result:	The device described above is tested by EST Technology Co., Ltd. The measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC CFR 47 Part 1.1307(b)&1.1310 requirements.This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd. **Date:** Jul. 31, 2023

Prepared by:	Reviewed by:	Approved by:
Emily Cai / Assistant	Seven Wang / Engineer	Iceman Hu / Manager

Other Aspects:
None.

Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested

This test report is based on a single evaluation of one sample of above mentioned products ,It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.

1. SUMMARY OF TEST

1.1. Summary of test result

No.	Description of Test Item	FCC Standard Section	Results
1	Maximum Permissible Exposure	Part 1.1307(b)&1.1310	PASS

1.2. Test Mode

Test Item	Test Mode
Maximum Permissible Exposure	Wireless Charging with Empty Load
	Wireless Charging with Half Load
	Wireless Charging with Full Load
Note: The worst Full Load status is recorded in the report All charging combinations have been tested, worst Full Load status is recorded in the report.	

1.3. Test Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Electric and Magnetic Field Probe-Analyzer	Narda S.T.S./PMM	EHP-200A	EST-E106	June 12,23	1 Year
mobile phone	Apple	A2634	N/A	N/A	N/A
watches	Apple	A1889	N/A	N/A	N/A
headset	Apple	A2083	N/A	N/A	N/A
Test Software	Narda	EHP200-TS	Rel 1.92	N/A	N/A

2. MAXIMUM PERMISSIBLE EXPOSURE

2.1. Limit

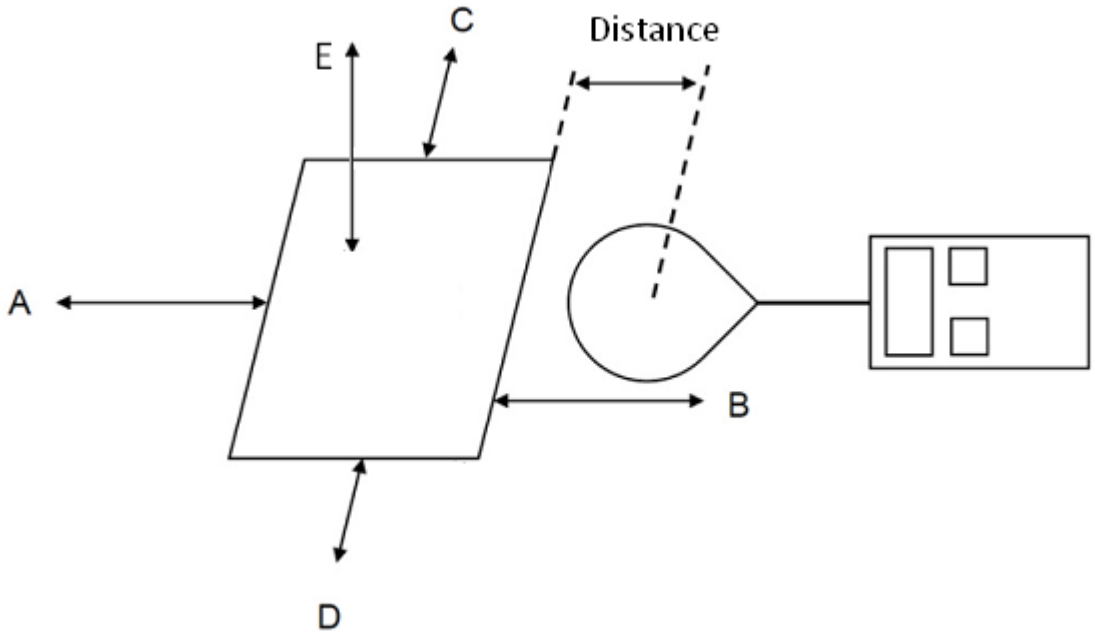
Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm2)	Averaging time (minutes)
(A) 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
300-1,500			f/300	6
1,500-100,000			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
300-1,500			f/1500	30
1,500-100,000			1.0	30

Note:

1. f = frequency in MHz * = Plane-wave equivalent power density.
2. 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.

2.2. Test Setup



2.3. Test Procedure

a. The test was performed on 360 degree turn table in anechoic chamber.
b. The probe was placed at 15 cm surrounding the device and 20 cm above the top of the charger and the geometric centre of the probe, for test setup .
d. The highest emission level was recorded and compared with limit as soon as measurement of each point; A, B, C, D, E were completed.

2.4. Equipment Approval Considerations

Inductive wireless power transfer applications with supporting field strength results and meeting all of the following requirements are not required to submit a KDB inquiry for devices approved using SDoC or a PAG for equipment approved using certification to address RF exposure compliance.

1	Power transfer frequency is less that 1 MHz
	YES; the device operated in the frequency range from 110.5-360KHz.
2	Output power from each primary coil is less than or equal to 15 watts.
	YES, Wireless Output: Apple Watch Module: 3.5W ； Apple MagSafe Module: 15W ； Wireless Charging Pad (AirPods/ AirPods Pro): 3W
3	The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time.
	YES; the transfer system includes only single primary and secondary coils.
4	Client device is placed directly in contact with the transmitter.
	YES; Client device is placed directly in contact with the transmitter.
5	Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).
	YES.
6	The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.
	YES; The EUT field strength levels are 50% x MPE limts.

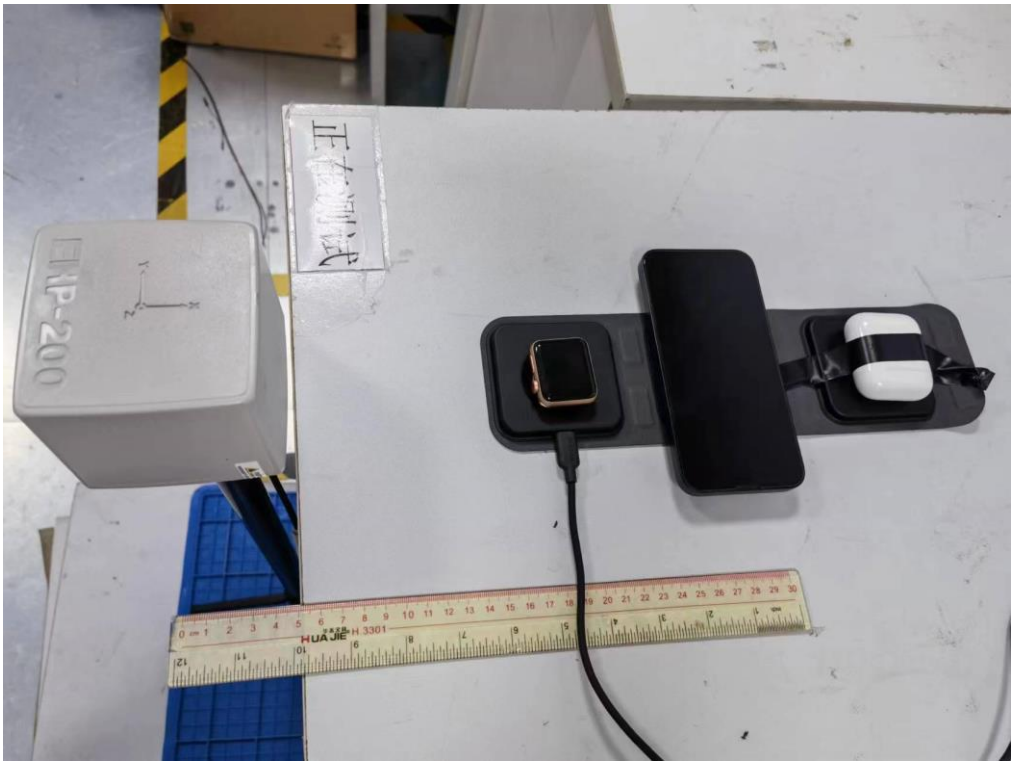
2.5. Test Result for Test setup :

E-field strength			
Frequency range (KHz)	110.5 to 360 kHz		
Test Mode	Full Load	Half Load	Empty Load
Position A(V/m)	0.319	0.318	0.319
Position B(V/m)	0.307	0.325	0.354
Position C(V/m)	0.299	0.312	0.328
Position D(V/m)	0.318	0.308	0.311
Position E(V/m)	0.326	0.299	0.281
Limits (V/m)	614		
50% Limits(V/m)	307		
H-field strength			
Frequency range (KHz)	110.5 to 360 kHz		
Test Mode	Full Load	Half Load	Empty Load
Position A(A/m)	0.045	0.046	0.049
Position B(A/m)	0.042	0.045	0.048
Position C(A/m)	0.050	0.046	0.044
Position D(A/m)	0.052	0.043	0.040
Position E(A/m)	0.048	0.048	0.050
Limits (A/m)	1.630		
50% Limits (A/m)	0.815		

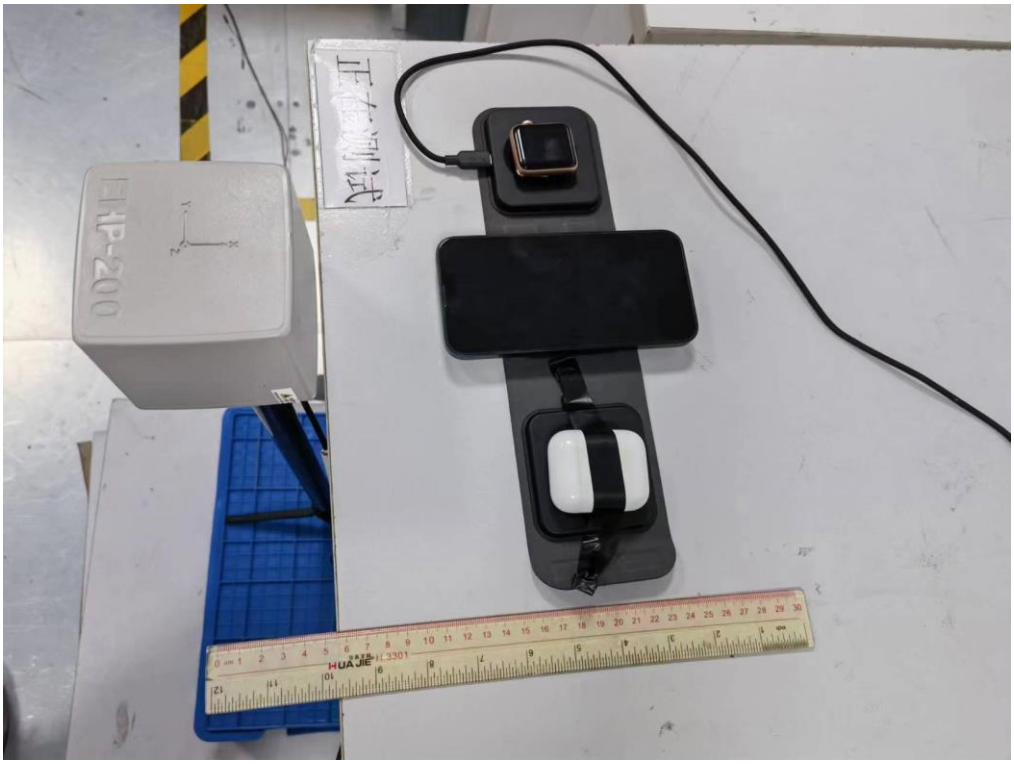
3. TEST SETUP PHOTO

A

B



C



D

E

End of Test Report