

RF EXPOSURE REPORT FOR CERTIFICATION
On Behalf of

mophie LLC

magsafe wireless stand-extendable-arm

Model Number: MAGSFE-3IN1-EXT-STND

FCC ID: 2ACWB-EXTSTND

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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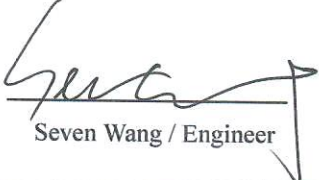
Report Number:	ESTE-R2305100
Date of Test:	May 09~22, 2023
Date of Report:	May 24, 2023

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Applicant:	mophie LLC		
Address:	6244 Technology Ave. Kalamazoo, MI 49009, United States of America.		
Manufacturer:	mophie LLC		
Address:	6244 Technology Ave. Kalamazoo, MI 49009, United States of America.		
Factory 1:	Shenzhen Reflying Electronic Co., Ltd.		
Address:	Second Floor of Building 4, Floor 201-501, Building B6, Gaoxin Industrial Park, Fuyuan First Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen City		
Factory 2:	RX Tech Electronic Vina Co., Ltd.		
Address:	355 Yen Phong Industrial Zone, Yen Trung Village, Yen Phong District, Bac Ninh Province. Vietnam		
E.U.T:	magsafe wireless stand-extendable-arm		
Model Number:	MAGSFE-3IN1-EXT-STND		
Power Supply:	Input: 12V==3A, 36W Output 1: AirPods/ AirPods Pro (Qi 5W), Output2: iwatch 3.5W Output3: Magsafe Charger 15W		
Trade Name:	mophie	Serial No.:	-----
Date of Receipt:	May 09, 2023	Date of Test:	May 09~22, 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.		
Prepared by:		Reviewed by:	Date: May 24, 2023
 Ring Yang / Assistant		 Seven Wang / Engineer	 Iceman Hu / Manager
Other Aspects:			
None.			
<i>Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested</i>			
<i>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.</i>			

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 Full Load 23.5W(Qi:5W,Magsafe:15W,iwatch:3.5W)
Note: The 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 13,22	1 Year
Simulated load	/	/	EST-306	N/A	N/A
Simulated load	/	/	EST-307	N/A	N/A
iPhone 13 Pro max	APPLE	-	-	-	-
Air Pods	APPLE	A1938	-	-	-
Watch	APPLE	Apple iwatch S7	-	-	-
Test Software	Narda	EHP200-TS	Rel 1.92	N/A	N/A

2. MAXIMUM PERMISSIBLE EXPOSURE

2.1. Limit

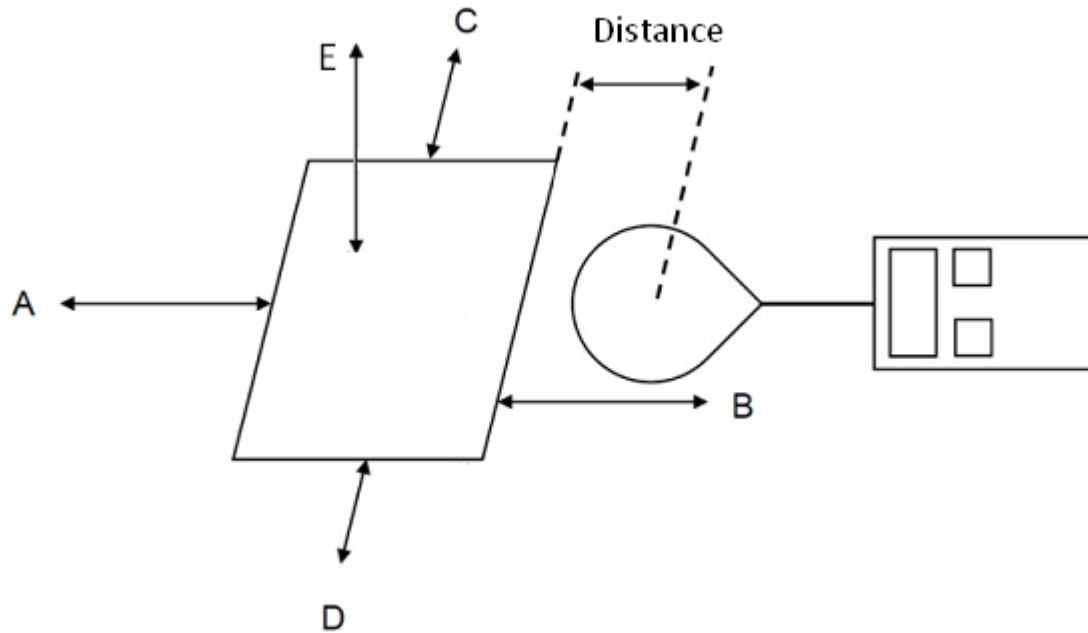
Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	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 as 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 A



2.3. Test Procedure

- The test was performed on 360 degree turn table in anechoic chamber.
- 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 A.
- 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.

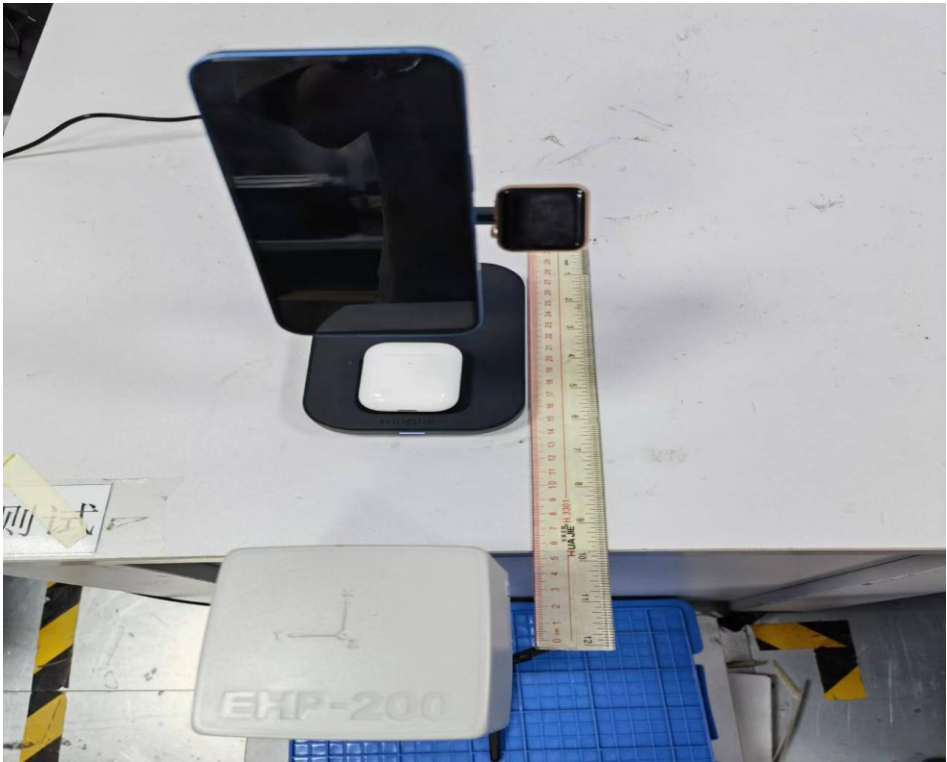
1	Power transfer frequency is less than 1 MHz
	YES; the device operated in the frequency range from 110.5-360KHz.
2	Output power from each primary coil is less than or equal to 15 watts.
	YES; the maximum output power of the primary coil is 15W. They all add up to 23.5W
3	The system may consist of more 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
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 limits.

2.5. Test Result for Test setup A:

E-field strength	
Frequency range (KHz)	110.5 to 360 kHz
Test Mode	Full Load
Position A(V/m)	1.548
Position B(V/m)	1.654
Position C(V/m)	1.541
Position D(V/m)	1.124
Position E(V/m)	3.141
Limits (V/m)	614
50% Limits(V/m)	307

H-field strength	
Frequency range (KHz)	110.5 to 360 kHz
Test Mode	Full Load
Position A(A/m)	0.135
Position B(A/m)	0.159
Position C(A/m)	0.142
Position D(A/m)	0.135
Position E(A/m)	0.154
Limits (A/m)	1.630
50% Limits (A/m)	0.815

3. TEST SETUP PHOTO



End of Test Report