

RF EXPOSURE REPORT FOR CERTIFICATION
On Behalf of

Otter Products, LLC.

OtterBox Hardline Series Charging Station

Model Number: OBFTC-0104-A

FCC ID: 2AEEV-OBFTC-0104-A

Applicant:	Otter Products, LLC.
Address:	209 South Meldrum, Fort Collins, Colorado, Colorado, United States
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
Tel: 86-769-83081888-808	

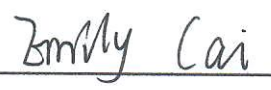
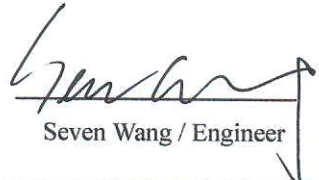
Report Number:	ESTE-R2205218
Date of Test:	Apr. 25~May. 26, 2022
Date of Report:	May. 27, 2022

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EST Technology Co., Ltd.

Applicant:	Otter Products, LLC.		
Address:	209 South Meldrum, Fort Collins, Colorado, Colorado, United States		
Manufacturer:	Dongguan Fuqiang Electronics Co., Ltd		
Address:	Room 101, Building 1, No. 136, Dongkeng Keji Road, Dong-keng Town, Dong-Guan City, Guang Dong Province, China		
Factory:	Fugang Electronic (Dongguan) Co., Ltd.		
Address:	Room 101, Building 1, No. 132, Dongkeng Avenue South, Dong Keng Town, DongGuan, Guang Dong, 523455 CN		
E.U.T:	OtterBox Hardline Series Charging Station		
Model Number:	OBFTC-0104-A		
Power Supply:	AC 100-240V, 50/60Hz		
Trade Name:	OTTERBOX	Serial No.:	-----
Date of Receipt:	Apr. 25, 2022	Date of Test:	Apr. 25~May. 26, 2022
Test Specification:	FCC CFR 47 Part 1.1307(b)&1.1310 KDB 680106 D01 RF Exposure Wireless Charging Apps v03 r01		
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. 27, 2022	
 Emily Cai / Assistant	 Seven Wang / Engineer	 Approved by:  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

Report Section	Description of Test Item	FCC Standard Section	Results
3	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: 1. The worst Full Load status is recorded in the report. 2. There are four coils, and the max output power of each coil is 15W. 3. Full load mode is that all four coils are 15W Full load.	

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 13,21	1 Year
Simulated load(Full)	/	/	EST-306	N/A	N/A
Simulated load(Half)	/	/	EST-307	N/A	N/A
Test Software	Narda	EHP200-TS	Rel 1.92	N/A	N/A

2. MAXIMUM PERMISSIBLE EXPOSURE

2.1. Limit

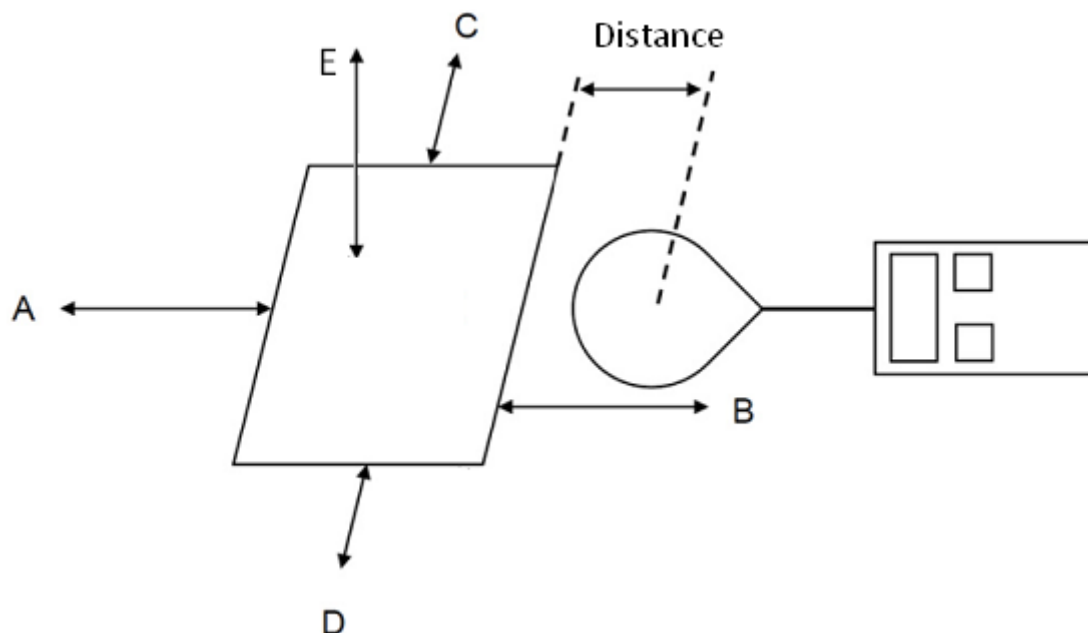
Limits for Maximum Permissible Exposure (MPE)

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

- 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 A.
- c. 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 110.5-205KHz.
2	Output power from each primary coil is less than or equal to 15 watts.
	YES; There are four coils, and the max output power of each coil is 15W.
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 205		
Test Mode	Full Load	Half Load	Empty Load
Position A(V/m)	0.291	0.283	0.292
Position B(V/m)	0.321	0.311	0.303
Position C(V/m)	0.327	0.321	0.311
Position D(V/m)	0.353	0.301	0.313
Position E(V/m)	2.064	2.041	2.011
Limits (V/m)	614		
50% Limits(V/m)	307		

H-field strength			
Frequency range (KHz)	110.5 to 205		
Test Mode	Full Load	Half Load	Empty Load
Position A(A/m)	0.049	0.047	0.041
Position B(A/m)	0.044	0.041	0.056
Position C(A/m)	0.047	0.043	0.078
Position D(A/m)	0.050	0.047	0.077
Position E(A/m)	0.067	0.058	0.086
Limits (A/m)	1.630		
50% Limits (A/m)	0.815		

3. TEST SETUP PHOTO



End of Test Report