



Test Report No.: FM2101WDG0121



# RF EXPOSURE TEST REPORT



Applicant	Belkin International, Inc
Address	12045 East Waterfront Drive, Playa Vista, CA 90094, USA

Manufacturer or Supplier	Belkin International, Inc
Address	12045 East Waterfront Drive, Playa Vista, CA 90094, USA
Product	BOOST↑CHARGE™ Magnetic Portable Wireless Charger
Brand Name	belkin
Model	BPD001
Additional Model & Model Difference	N/A
Date of tests	Jan. 12, 2021 ~ Feb. 04, 2021

The submitted sample of the above equipment has been tested according to the requirements of the following standard:

- 47 CFR PART 1, Subpart I, Section 1.1310
- KDB 680106 D01

**CONCLUSION: The submitted sample was found to COMPLY with the test requirement**

Tested by Lucas Chen Project Engineer / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	
	Data: Mar. 09, 2021

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Test Report No.: FM2101WDG0121

## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FM2101WDG0121	Original release	Mar. 09, 2021



# 1. GENERAL INFORMATION

## 1.1. GENERAL DESCRIPTION OF EUT

<b>FCC ID</b>	K7SBPD001
<b>PRODUCT</b>	BOOST↑CHARGE™ Magnetic Portable Wireless Charger
<b>MODEL NO.</b>	BPD001
<b>ADDITIONAL MODEL</b>	N/A
<b>POWER SUPPLY</b>	Input USB-C: 5.0V=3.0A, 9.0V=2.0A Output USB-A: 5.0V=2.4A Output USB-C: 5.0V=3.0A, 9.0V=2.0A, 12.0V=1.5A Output (USB-A and USB-C shared): total 5.0V=3.0A, 15.0W Output wireless: 5V=5W, 7.5V=7.5W, 9V=10W Cell Capacity: 37Wh, 3.7V 10000mAh
<b>MODULATION TECHNOLOGY</b>	FSK
<b>OPERATING FREQUENCY RANGE</b>	111KHz ~ 148KHz
<b>ANTENNA TYPE</b>	Coil Antenna
<b>I/O PORTS</b>	Refer to user's manual
<b>CABLE SUPPLIED</b>	See notes 4

### NOTES:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.
- Please refer to the EUT photo document (Reference No.: 2101WDG0121) for detailed product photo.
- The cable supplied is as follows:

ID	Descriptions	Qty.	Length(m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	EUT USB-C to USB-C black cable	1	1.0m	Y	0	BPD001btBK
2	EUT USB-C to USB-C white cable	1	1.0m	Y	0	BPD001btWH

Note: Cable 1 and cable 2 are identical except the color of appearance, cable 1 was selected for all test.



## 2. RF EXPOSURE MEASUREMENT

### 2.1 LIMITS

§ 1.1310 The criteria listed in table 1 shall be used to evaluate the environmental impact of human exposure to radiofrequency(RF) radiation as specified in § 1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of § 2.1093 of this chapter.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3–3.0 .....	614	1.63	*(100)	6
3.0–30 .....	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300 .....	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3–1.34 .....	614	1.63	*(100)	30
1.34–30 .....	824/f	2.19/f	*(180/f <sup>2</sup> )	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

NOTE 1 TO TABLE 1: Occupational/controlled 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. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

### Reference KDB 680106 D01 RF Exposure Wireless Charging App v03

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.

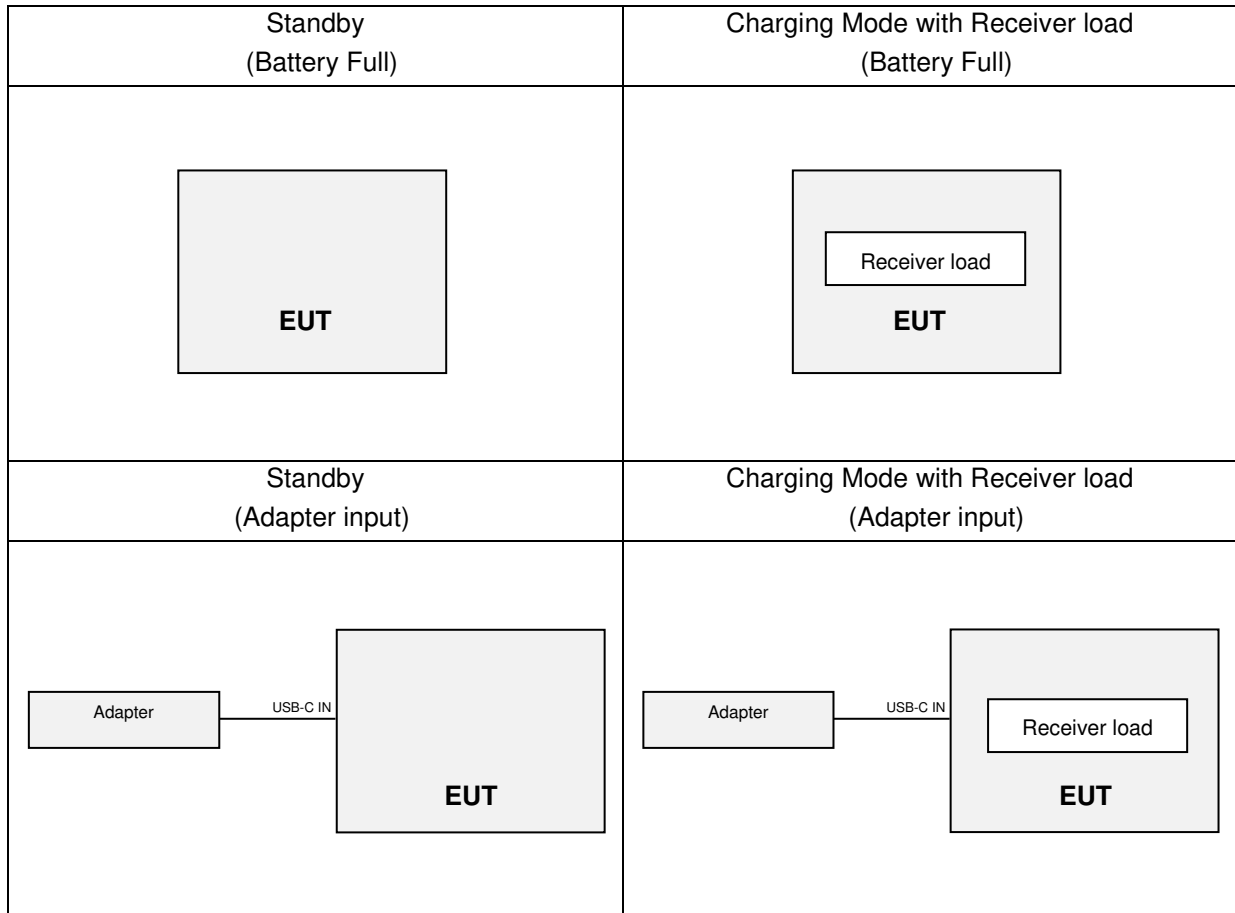
### 2.2 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested with associated equipment below

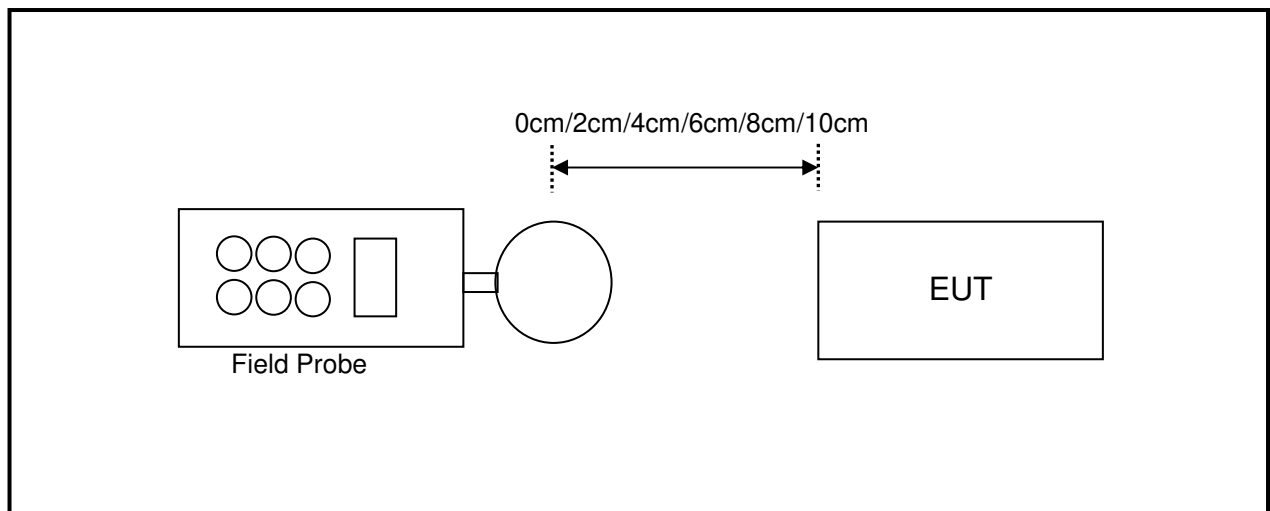
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Receiver load	N/A	N/A	N/A	N/A



### 2.3 CONFIGURATION OF SYSTEM UNDER TEST



### 2.4 TEST SETUP FOR WPC



Note: Measurements should be made from all sides and the top of the primary/client pair, with the 0cm, 2 cm, 4cm, 6cm, 8cm, or 10 cm measured from the center of the probe(s) to the edge of the device.

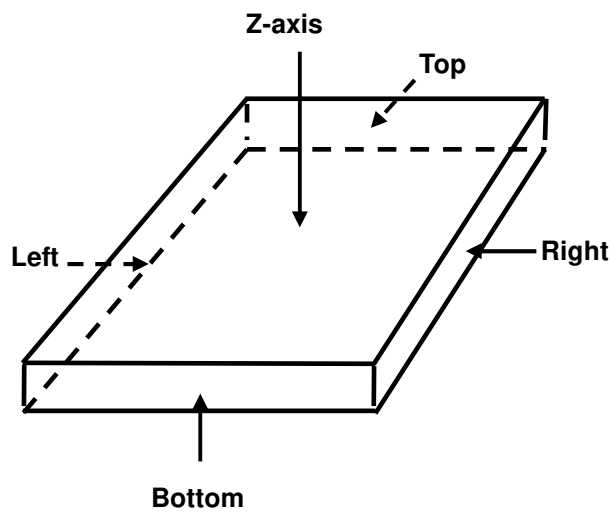


### 2.5 EQUIPMENTS USED DURING TEST

Item	Test Equipment	Manufacturer	Model No.	S/No	Due date.
1	3m Semi-Anechoic Chamber	ETS-LINDGRE N	7m*4m*3m	NSEMC003	2021-03-19
2	B-field Probe	Narda	Y2006	L-0017	2021-12-23
3	E-Field probe	Narda	NBM-520	2403/01B	2021-12-23

**NOTE:** 1. The test was performed in RS chamber.  
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

### 2.6 TEST POINT DESCRIPTION





## 2.7 TEST RESULTS

### Standby Mode 1: EUT USB-C port input + Standby (distance 0 cm)

E-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-Field(V/m)	4.62	3.61	1.99	2.66	5.01
Limit(V/m)	614	614	614	614	614
Margin (V/m)	-609.38	-610.39	-612.01	-611.34	-608.99
50% Limit (V/m)	307	307	307	307	307
50% Margin (V/m)	-302.38	-303.39	-305.01	-304.34	-301.99

H-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-Field(uT)	0.889	0.66	0.266	0.307	0.899
Max H-Field(A/m)	0.708	0.525	0.212	0.244	0.716
Limit(A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-0.922	-1.105	-1.418	-1.386	-0.914
50% Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50% Margin (A/m)	-0.107	-0.290	-0.603	-0.571	-0.099

Measurements was made from all sides and the top of the primary/client pair, with the 0 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

### Charging Mode 2: EUT USB-C port input + Receiver load operating (distance 0 cm)

E-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-Field(V/m)	4.86	4.42	3.79	4	6.81
Limit(V/m)	614	614	614	614	614
Margin (V/m)	-609.14	-609.58	-610.21	-610	-607.19
50% Limit (V/m)	307	307	307	307	307
50% Margin (V/m)	-302.14	-302.58	-303.21	-303	-300.19

H-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-Field(uT)	0.236	0.276	0.248	0.243	0.248
Max H-Field(A/m)	0.188	0.220	0.197	0.193	0.197
Limit(A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.442	-1.410	-1.433	-1.437	-1.433
50% Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50% Margin (A/m)	-0.627	-0.595	-0.618	-0.622	-0.618

Measurements was made from all sides and the top of the primary/client pair, with the 0 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.





**Charging Mode 3: EUT USB-C port input + Receiver load operating (distance 2 cm)**

E-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-Field(V/m)	3.81	2.61	2.1	2.47	4.59
Limit(V/m)	614	614	614	614	614
Margin (V/m)	-610.19	-611.39	-611.9	-611.53	-609.41
50% Limit (V/m)	307	307	307	307	307
50% Margin (V/m)	-303.19	-304.39	-304.9	-304.53	-302.41

H-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-Field(uT)	0.239	0.263	0.222	0.224	0.23
Max H-Field(A/m)	0.190	0.209	0.177	0.178	0.183
Limit(A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.440	-1.421	-1.453	-1.452	-1.447
50% Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50% Margin (A/m)	-0.625	-0.606	-0.638	-0.637	-0.632

Measurements was made from all sides and the top of the primary/client pair, with the 2 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

**Charging Mode 4: EUT USB-C port input + Receiver load operating (distance 4 cm)**

E-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-Field(V/m)	2.39	2.43	1.43	2.21	3.05
Limit(V/m)	614	614	614	614	614
Margin (V/m)	-611.61	-611.57	-612.57	-611.79	-610.95
50% Limit (V/m)	307	307	307	307	307
50% Margin (V/m)	-304.61	-304.57	-305.57	-304.79	-303.95

H-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-Field(uT)	0.227	0.222	0.218	0.224	0.225
Max H-Field(A/m)	0.181	0.177	0.174	0.178	0.179
Limit(A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.449	-1.453	-1.456	-1.452	-1.451
50% Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50% Margin (A/m)	-0.634	-0.638	-0.641	-0.637	-0.636

Measurements was made from all sides and the top of the primary/client pair, with the 4 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.



**Charging Mode 5: EUT USB-C port input + Receiver load operating (distance 6 cm)**

E-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-Field(V/m)	1.69	1.76	1.12	1.5	2.48
Limit(V/m)	614	614	614	614	614
Margin (V/m)	-612.31	-612.24	-612.88	-612.5	-611.52
50% Limit (V/m)	307	307	307	307	307
50% Margin (V/m)	-305.31	-305.24	-305.88	-305.5	-304.52

H-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-Field(uT)	0.223	0.22	0.217	0.223	0.221
Max H-Field(A/m)	0.178	0.175	0.173	0.178	0.176
Limit(A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.452	-1.455	-1.457	-1.452	-1.454
50% Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50% Margin (A/m)	-0.637	-0.640	-0.642	-0.637	-0.639

Measurements was made from all sides and the top of the primary/client pair, with the 6 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

**Charging Mode 6: EUT USB-C port input + Receiver load operating (distance 10 cm)**

E-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-Field(V/m)	1.39	1.46	1.01	1.31	2.02
Limit(V/m)	614	614	614	614	614
Margin (V/m)	-612.61	-612.54	-612.99	-612.69	-611.98
50% Limit (V/m)	307	307	307	307	307
50% Margin (V/m)	-305.61	-305.54	-305.99	-305.69	-304.98

H-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-Field(uT)	0.22	0.219	0.218	0.219	0.218
Max H-Field(A/m)	0.175	0.174	0.174	0.174	0.174
Limit(A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.455	-1.456	-1.456	-1.456	-1.456
50% Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50% Margin (A/m)	-0.640	-0.641	-0.641	-0.641	-0.641

Measurements was made from all sides and the top of the primary/client pair, with the 10 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.



**Charging Mode 7: EUT USB-C port input + Receiver load operating (distance 10 cm)**

E-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-Field(V/m)	0.98	1.24	0.77	1	1.47
Limit(V/m)	614	614	614	614	614
Margin (V/m)	-613.02	-612.76	-613.23	-613	-612.53
50% Limit (V/m)	307	307	307	307	307
50% Margin (V/m)	-306.02	-305.76	-306.23	-306	-305.53

H-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-Field(uT)	0.218	0.218	0.217	0.218	0.212
Max H-Field(A/m)	0.174	0.174	0.173	0.174	0.169
Limit(A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.456	-1.456	-1.457	-1.456	-1.461
50% Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50% Margin (A/m)	-0.641	-0.641	-0.642	-0.641	-0.646

Measurements was made from all sides and the top of the primary/client pair, with the 10 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

**Standby Mode 8: Standby (Battery Full) (distance 0 cm)**

E-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-Field(V/m)	4.58	3.64	1.89	2.63	4.91
Limit(V/m)	614	614	614	614	614
Margin (V/m)	-609.42	-610.36	-612.11	-611.37	-609.09
50% Limit (V/m)	307	307	307	307	307
50% Margin (V/m)	-302.42	-303.36	-305.11	-304.37	-302.09

H-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-Field(uT)	0.882	0.663	0.264	0.312	0.882
Max H-Field(A/m)	0.702	0.528	0.210	0.248	0.702
Limit(A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-0.928	-1.102	-1.420	-1.382	-0.928
50% Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50% Margin (A/m)	-0.113	-0.287	-0.605	-0.567	-0.113

Measurements was made from all sides and the top of the primary/client pair, with the 0 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.



**Charging Mode 9: Receiver load operating (Battery Full) (distance 0 cm)**

E-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-Field(V/m)	4.42	4.37	3.65	4.01	6.37
Limit(V/m)	614	614	614	614	614
Margin (V/m)	-609.58	-609.63	-610.35	-609.99	-607.63
50% Limit (V/m)	307	307	307	307	307
50% Margin (V/m)	-302.58	-302.63	-303.35	-302.99	-300.63

H-Field Measurement					
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-Field(uT)	0.237	0.271	0.246	0.241	0.244
Max H-Field(A/m)	0.189	0.216	0.196	0.192	0.194
Limit(A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.441	-1.414	-1.434	-1.438	-1.436
50% Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50% Margin (A/m)	-0.626	-0.599	-0.619	-0.623	-0.621

Measurements was made from all sides and the top of the primary/client pair, with the 0 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.



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VERITAS**

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### 3. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (FCC MPE Test Photos, Reference No.: 2101WDG0121-1)

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