RF Exposure Test Report

Report No.:	SA190115D09
FCC ID:	K7SF7U070
Test Model:	F7U070
Series Model:	F7U069
Received Date:	Jan. 15, 2019
Test Date:	Jan. 25, 2019
Issued Date:	Feb. 20, 2019
Applicant:	Belkin International., Inc
Address:	12045 East Waterfront Drive, Playa Vista, CA. 90094, USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
FCC Registration / Designation Number:	198487 / TW2021

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Report Issue History Record

Issue No.	Description	Date Issued
SA190115D09	Original release.	Feb. 20, 2019

Release Control Record

Issue No.	Description	Date Issued
SA190115D09	Original release	Feb. 20, 2019

1 Certificate of Conformity

Product:	BOOST↑UP™ Wireless Charging Stand 5W
Brand:	belkin
Test Model:	F7U070
Series Model:	F7U069
Sample Status:	Engineering sample
Applicant:	Belkin International., Inc
Test Date:	Jan. 25, 2019
Standards:	FCC Part 1 (Section 1.1307(b), 1.1310)

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** Feb. 20, 2019

Celia Chen / Supervisor

Approved by : _____ , **Date:** Feb. 20, 2019

Rex Lai / Associate Technical Manager

2 General Information

2.1 General Description of EUT

Product	BOOST↑UP™ Wireless Charging Stand 5W
Brand	belkin
Test Model	F7U070
Series Model	F7U069
Model Difference	Refer to table as below
Sample Status	Engineering sample
Rating	Input: 5Vdc, 2A, Output: 5W
Modulation Type	FSK
Operating Frequency	111-148kHz
Antenna Type	Coil antenna
Field Strength	84.73dBuV/m
Dimensions	18.76 cm^2 (39.5mm x 47.5mm) (rectangle)
Accessory Device	Adapter
Data Cable Supplied	1.2m shielded USB cable
Maximum Power Output from the Charging Coil	5W

Note:

1. The EUT is a wireless inductive charging coil.
2. The EUT has two configuration could be chosen as the following.

Model	Configuration	Difference
F7U069	Wireless charging pad + USB cable + AC power supply	Marketing purpose
F7U070	Wireless charging pad + USB cable	

3. The EUT consumes power from a switching power adapter, as the following:

Brand	Model	Specification
belkin	DSA-10PFL-05 FUS 050200 a	Input: 100-240Vac, 50/60Hz, 0.3A (AC 2 Pin) Output: +5Vdc, 2A

4. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3 RF Exposure

3.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Load	N/A	N/A	N/A	N/A	Supplied by client (5W max load)

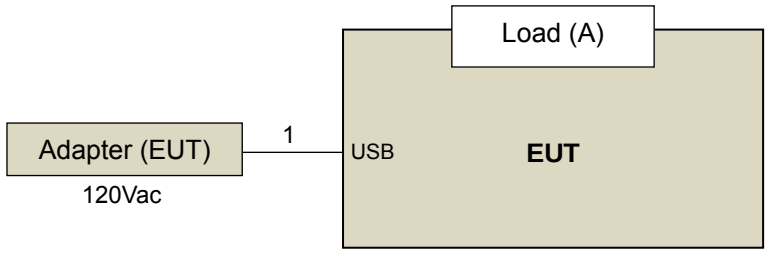
Note: All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB cable	1	1.3	Y	0	Supplied by client

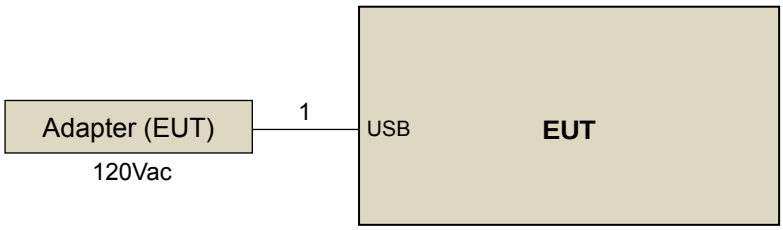
Note: The core(s) is(are) originally attached to the cable(s).

3.1.1 Configuration of System Under Test

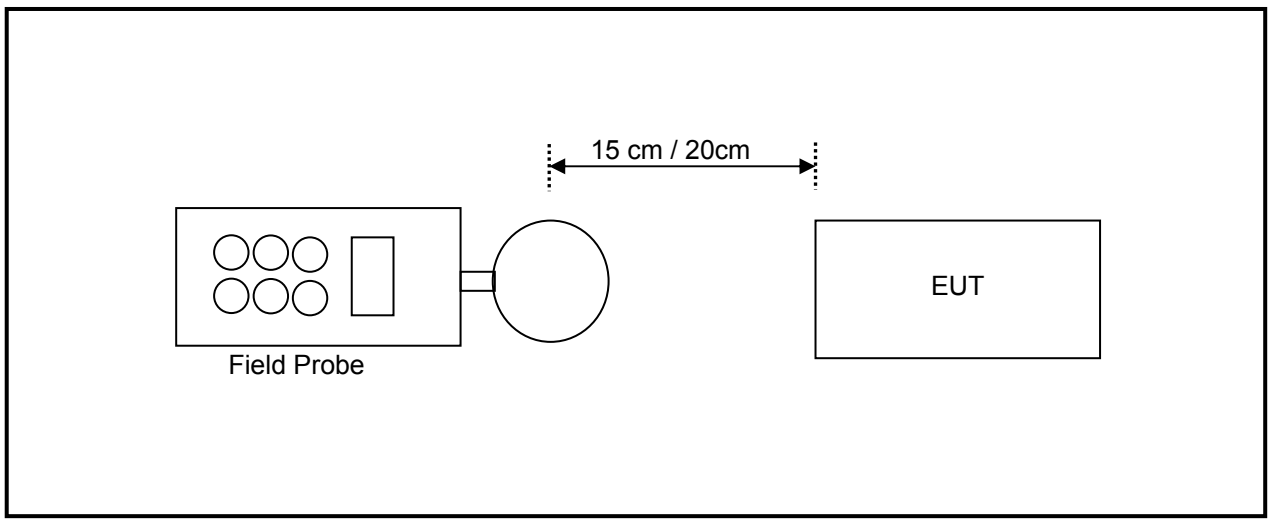
For Charging Mode:



For Standby Mode:



3.2 Test Setup



Note: Measurements should be made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device.

3.3 Test Instruments

Description	Brand	Model No.	Frequency Range	Calibrated Date	Calibrated Until
Broadband Field Meter	NARDA	NBM-550	-	Mar. 28, 2018	Mar. 27, 2020
Magnetic Field Meter	NARDA	ELT-400	1 – 400kHz	Apr. 12, 2018	Apr. 11, 2020
Magnetic Probe	NARDA	HF-3061	300kHz – 30MHz	Apr. 16, 2018	Apr. 15, 2020
Magnetic Probe	NARDA	HF-0191	27 – 1000MHz	Apr. 17, 2018	Apr. 16, 2020
Broadband Field Meter	NARDA	NBM-550	-	Mar. 28, 2018	Mar. 27, 2020
Electric Field Meter	COMBINOVA	EFM 200	5Hz – 400kHz	Dec. 6, 2017	Dec. 5, 2019
E-Field Probe	NARDA	EF-0391	100kHz – 3GHz	Mar. 28, 2018	Mar. 27, 2020
E-Field Probe	NARDA	EF-6091	100MHz – 60GHz	Mar. 29, 2018	Mar. 28, 2020

NOTE: 1. The calibration interval of the above test instruments is 12/24 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Chia Pau RF Chamber

3.4 Limits for Maximum Permissible Exposure (MPE)

§ 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^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

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.

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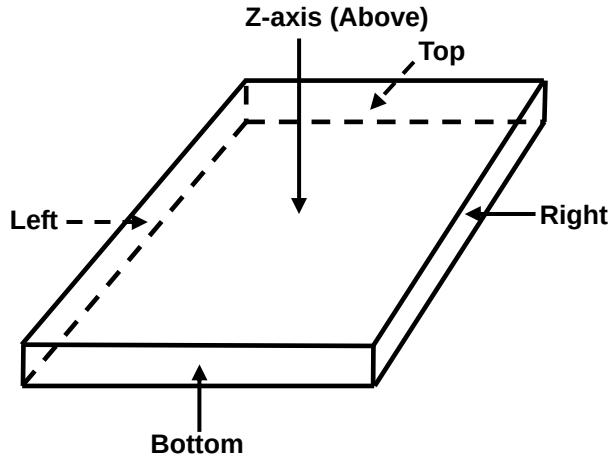
The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

3.5 Test Point Description



4 Calculation Result of Maximum Conducted Power

Charging Mode with 10% Load

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	2.1200	2.1400	2.1300	2.1600	2.1900
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-611.8800	-611.8600	-611.8700	-611.8400	-611.8100
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-304.8800	-304.8600	-304.8700	-304.8400	-304.8100

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.1990	0.1980	0.2510	0.2480	0.2070
Max H-field (A/m)	0.1592	0.1584	0.2008	0.1984	0.1656
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.4708	-1.4716	-1.4292	-1.4316	-1.4644
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.6558	-0.6566	-0.6142	-0.6166	-0.6494

Measurements were made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Charging Mode with 50% Load

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	2.4800	2.5100	2.5200	2.5400	2.5600
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-611.5200	-611.4900	-611.4800	-611.4600	-611.4400
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-304.5200	-304.4900	-304.4800	-304.4600	-304.4400

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.2060	0.2060	0.2570	0.2560	0.2130
Max H-field (A/m)	0.1648	0.1648	0.2056	0.2048	0.1704
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.4652	-1.4652	-1.4244	-1.4252	-1.4596
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.6502	-0.6502	-0.6094	-0.6102	-0.6446

Measurements were made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Charging Mode with max Load

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	2.5300	2.5400	2.5600	2.5900	2.6100
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-611.4700	-611.4600	-611.4400	-611.4100	-611.3900
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-304.4700	-304.4600	-304.4400	-304.4100	-304.3900

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.2080	0.2090	0.2590	0.2600	0.2150
Max H-field (A/m)	0.1664	0.1672	0.2072	0.2080	0.1720
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.4636	-1.4628	-1.4228	-1.4220	-1.4580
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.6486	-0.6478	-0.6078	-0.6070	-0.6430

Measurements were made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Charging Mode with 10% Load (With 3mm airgap)

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	2.5200	2.5400	2.5400	2.5500	2.5900
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-611.4800	-611.4600	-611.4600	-611.4500	-611.4100
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-304.4800	-304.4600	-304.4600	-304.4500	-304.4100

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.2110	0.2090	0.2620	0.2610	0.2180
Max H-field (A/m)	0.1688	0.1672	0.2096	0.2088	0.1744
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.4612	-1.4628	-1.4204	-1.4212	-1.4556
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.6462	-0.6478	-0.6054	-0.6062	-0.6406

Measurements were made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Charging Mode with 50% Load (With 3mm airgap)

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	2.6100	2.6400	2.6600	2.6700	2.6900
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-611.3900	-611.3600	-611.3400	-611.3300	-611.3100
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-304.3900	-304.3600	-304.3400	-304.3300	-304.3100

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.2540	0.2520	0.3050	0.3040	0.2610
Max H-field (A/m)	0.2032	0.2016	0.2440	0.2432	0.2088
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.4268	-1.4284	-1.3860	-1.3868	-1.4212
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.6118	-0.6134	-0.5710	-0.5718	-0.6062

Measurements were made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Charging Mode with max Load (With 3mm airgap)

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	2.8200	2.8500	2.8700	2.8800	2.9000
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-611.1800	-611.1500	-611.1300	-611.1200	-611.1000
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-304.1800	-304.1500	-304.1300	-304.1200	-304.1000

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.2590	0.2570	0.3100	0.3090	0.2660
Max H-field (A/m)	0.2072	0.2056	0.2480	0.2472	0.2128
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.4228	-1.4244	-1.3820	-1.3828	-1.4172
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.6078	-0.6094	-0.5670	-0.5678	-0.6022

Measurements were made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

Standby Mode

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	0.1400	0.1700	0.1900	0.2000	0.2200
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-613.8600	-613.8300	-613.8100	-613.8000	-613.7800
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-306.8600	-306.8300	-306.8100	-306.8000	-306.7800

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.1030	0.1010	0.1540	0.1530	0.1100
Max H-field (A/m)	0.0824	0.0808	0.1232	0.1224	0.0880
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.5476	-1.5492	-1.5068	-1.5076	-1.5420
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.7326	-0.7342	-0.6918	-0.6926	-0.7270

Measurements were made from all sides and the top of the primary/client pair, with the 15 cm or 20 cm measured from the center of the probe(s) to the edge of the device. The highest emission level was recorded.

5 Photographs of the Test Configuration

Please refer to the attached file (Test Setup Photo).

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