

RF Exposure Report

Report No.: SA170614C23

FCC ID: K7SF8J200

Test Model: F8J200

Received Date: Jun. 14, 2017

Test Date: Sep. 14 ~ Sep. 15, 2017

Issued Date: Sep. 26, 2017

Applicant: Belkin International., Inc

Address: 12045 East Waterfront Drive, Playa Vista, CA 90094

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)



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Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 General Information	5
2.1 General Description of EUT	5
3 RF Exposure	6
2.1 Description of Support Units	6
3.1.1 Configuration of System under Test	6
2.2 Test Setup	6
2.3 Test Instruments	7
2.4 Limits for Maximum Permissible Exposure (MPE).....	8
2.5 Test Point Description	8
4 Calculation Result of Maximum Conducted Power	9
5 Photographs of the Test Configuration	13

Release Control Record

Issue No.	Description	Date Issued
SA170614C23	Original release	Sep. 26, 2017

1 Certificate of Conformity

Product: Belkin PowerHouse Charging Dock

Brand: belkin

Test Model: F8J200

Sample Status: Engineering sample

Applicant: Belkin International., Inc

Test Date: Sep. 14 ~ Sep. 15, 2017

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 EMC characteristics under the conditions specified in this report.

Prepared by : Celine Chou , Date: Sep. 26, 2017
Celine Chou / Specialist

Approved by : Ken Liu , Date: Sep. 26, 2017
Ken Liu / Senior Manager

2 General Information

2.1 General Description of EUT

Product	Belkin PowerHouse Charging Dock
Test Model	F8J200
Sample Status	Engineering sample
Power Supply Rating	12Vdc (adapter)
Modulation Type	FSK
Operating Frequency	326.5kHz
Antenna Type	Coil antenna
Field Strength	42.3dBuV/m
Dimensions	7.95cm ² (diameter = 31.82mm)
Accessory Device	Adapter
Data Cable Supplied	NA
Maximum Power Output from the Charging Coil	Less than 5W

Note:

1. The EUT uses following adapter.

Brand	HONOTO/belkin
Model	ADS-25SGP-12 12019E
Input Power	100-240Vac, 50/60Hz, Max 0.7A
Output Power	12Vdc, 1.6A
Power Line	1.5m non-shielded DC cable without core attached on adapter

2. The EUT has a wireless inductive charging coil for charging Apple watch.

3 RF Exposure

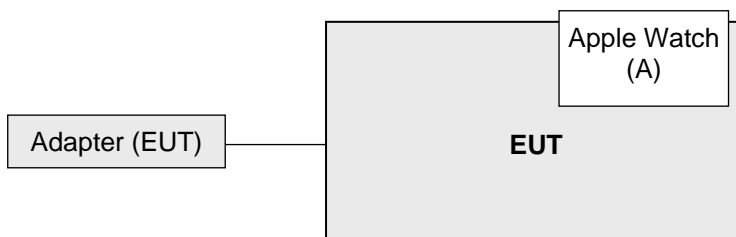
2.1 Description of Support Units

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.

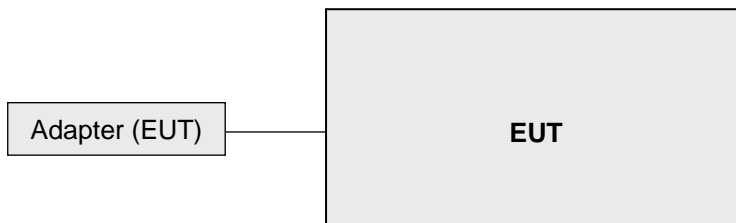
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Apple Watch	APPLE	A1554	NA	NA	-

3.1.1 Configuration of System under Test

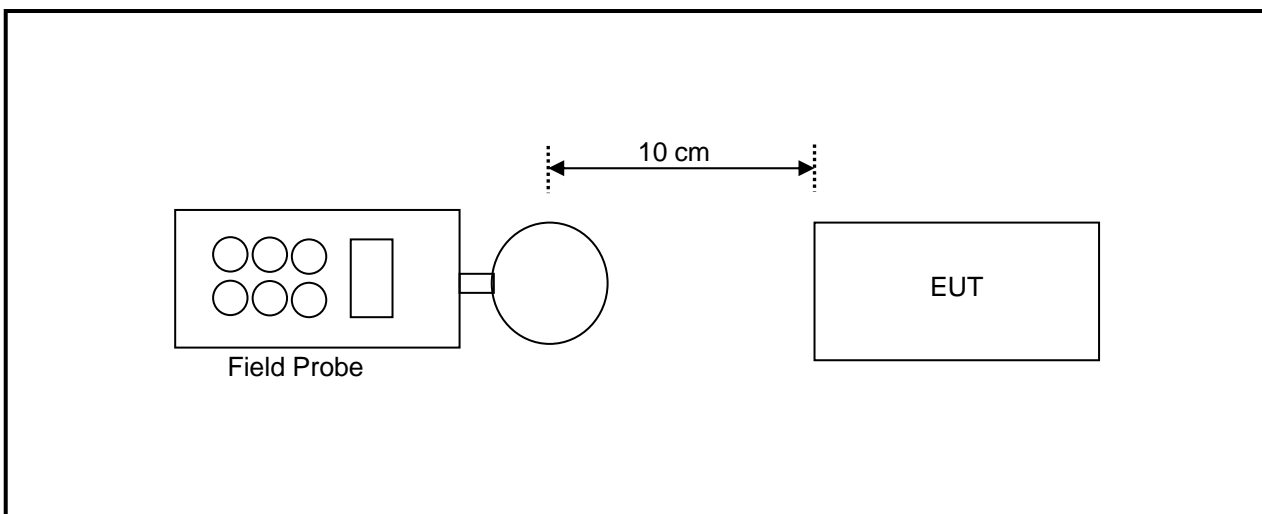
Charging Mode



Standby Mode



2.2 Test Setup



Note: Measurements should be 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.

2.3 Test Instruments

Description	Brand	Model No.	Frequency Range	Calibrated Date	Calibrated Until
Broadband Field Meter	NARDA	NBM-550	-	Feb. 9, 2016	Feb. 8, 2018
Magnetic Field Meter	NARDA	ELT-400	1 – 400kHz	Feb. 11, 2016	Feb. 10, 2018
Magnetic Probe	NARDA	HF 3061	300kHz – 30MHz	Feb. 9, 2016	Feb. 8, 2018
Magnetic Probe	NARDA	HF-0191	27 – 1000MHz	Feb. 9, 2016	Feb. 8, 2018
Broadband Field Meter	NARDA	NBM-550	-	Feb. 9, 2016	Feb. 8, 2018
Electric Field Meter	COMBINOVA	EFM 200	5Hz – 400kHz	Oct. 16, 2016	Oct. 15, 2017
E-Field Probe	NARDA	EF 0391	100kHz – 3GHz	Feb. 9, 2016	Feb. 8, 2018
E-Field Probe	NARDA	EF6091	100MHz – 60GHz	Feb. 9, 2016	Feb. 8, 2018

- 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 HwaYa RF Chamber

2.4 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

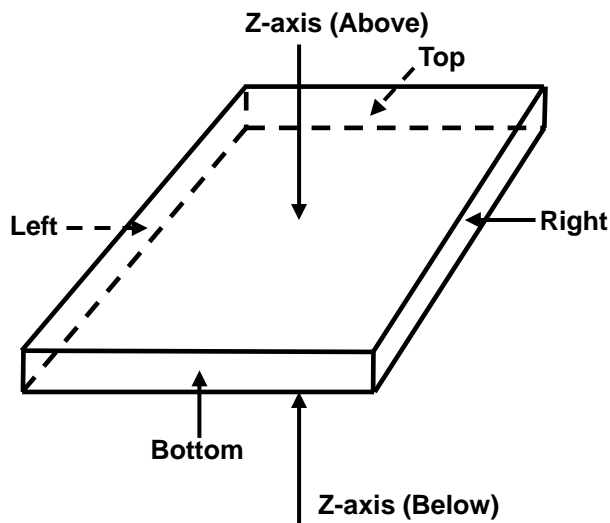
NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply 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.

680106 D01 RF Exposure Wireless Charging Apps v02

Aggregate leakage fields at 10 cm surrounding the device from all simultaneous transmitting coils are demonstrated to be less than 30% of the MPE limit.

2.5 Test Point Description



4 Calculation Result of Maximum Conducted Power

Charging Mode with watch 10%

E-Field Measurement (10cm)						
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max E-field (V/m)	0.57	0.48	0.42	0.78	0.57
326.5	Limit (V/m)	614	614	614	614	614
326.5	Margin (V/m)	-613.43	-613.52	-613.58	-613.22	-613.43
326.5	70 % Limit (V/m)	429.8	429.8	429.8	429.8	429.8
326.5	70 % Margin (V/m)	-429.401	-429.464	-429.506	-429.254	-429.401

H-Field Measurement (10cm)						
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max H-field (uT)	0.241	0.239	0.239	0.24	0.241
326.5	Max H-field (A/m)	0.1928	0.1912	0.1912	0.192	0.1928
326.5	Limit (A/m)	1.63	1.63	1.63	1.63	1.63
326.5	Margin (A/m)	-1.4372	-1.4388	-1.4388	-1.438	-1.4372
326.5	70 % Limit (A/m)	1.141	1.141	1.141	1.141	1.141
326.5	70 % Margin (A/m)	-1.00604	-1.00716	-1.00716	-1.0066	-1.00604

Measurements were 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 with watch 50%

E-Field Measurement (10cm)						
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max E-field (V/m)	0.57	0.45	0.41	0.77	0.54
326.5	Limit (V/m)	614	614	614	614	614
326.5	Margin (V/m)	-613.43	-613.55	-613.59	-613.23	-613.46
326.5	70 % Limit (V/m)	429.8	429.8	429.8	429.8	429.8
326.5	70 % Margin (V/m)	-429.401	-429.485	-429.513	-429.261	-429.422

H-Field Measurement (10cm)						
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max H-field (uT)	0.242	0.241	0.243	0.24	0.241
326.5	Max H-field (A/m)	0.1936	0.1928	0.1944	0.192	0.1928
326.5	Limit (A/m)	1.63	1.63	1.63	1.63	1.63
326.5	Margin (A/m)	-1.4364	-1.4372	-1.4356	-1.438	-1.4372
326.5	70 % Limit (A/m)	1.141	1.141	1.141	1.141	1.141
326.5	70 % Margin (A/m)	-1.00548	-1.00604	-1.00492	-1.0066	-1.00604

Measurements were 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 with watch 90%

E-Field Measurement (10cm)						
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max E-field (V/m)	0.56	0.45	0.41	0.77	0.54
326.5	Limit (V/m)	614	614	614	614	614
326.5	Margin (V/m)	-613.44	-613.55	-613.59	-613.23	-613.46
326.5	70 % Limit (V/m)	429.8	429.8	429.8	429.8	429.8
326.5	70 % Margin (V/m)	-429.408	-429.485	-429.513	-429.261	-429.422

H-Field Measurement (10cm)						
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max H-field (uT)	0.245	0.242	0.244	0.24	0.242
326.5	Max H-field (A/m)	0.196	0.1936	0.1952	0.192	0.1936
326.5	Limit (A/m)	1.63	1.63	1.63	1.63	1.63
326.5	Margin (A/m)	-1.434	-1.4364	-1.4348	-1.438	-1.4364
326.5	70 % Limit (A/m)	1.141	1.141	1.141	1.141	1.141
326.5	70 % Margin (A/m)	-1.0038	-1.00548	-1.00436	-1.0066	-1.00548

Measurements were 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

E-Field Measurement (10cm)						
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max E-field (V/m)	0.37	0.43	0.37	0.49	0.38
326.5	Limit (V/m)	614	614	614	614	614
326.5	Margin (V/m)	-613.63	-613.57	-613.63	-613.51	-613.62
326.5	70 % Limit (V/m)	429.8	429.8	429.8	429.8	429.8
326.5	70 % Margin (V/m)	-429.541	-429.499	-429.541	-429.457	-429.534

H-Field Measurement (10cm)						
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max H-field (uT)	0.239	0.241	0.24	0.241	0.242
326.5	Max H-field (A/m)	0.1912	0.1928	0.192	0.1928	0.1936
326.5	Limit (A/m)	1.63	1.63	1.63	1.63	1.63
326.5	Margin (A/m)	-1.4388	-1.4372	-1.438	-1.4372	-1.4364
326.5	70 % Limit (A/m)	1.141	1.141	1.141	1.141	1.141
326.5	70 % Margin (A/m)	-1.00716	-1.00604	-1.0066	-1.00604	-1.00548

Measurements were 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.

5 Photographs of the Test Configuration

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

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