RF Exposure Report

Report No.:	SA190423C25
FCC ID:	K7SF8J237V2
Test Model:	F8J237V2
Received Date:	Apr. 23, 2019
Test Date:	Apr. 29, 2019
Issued Date:	May 06, 2019
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
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)
FCC Registration / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
SA190423C25	Original release	May 06, 2019

1 Certificate of Conformity

Product:	PowerHouse™ Charge Dock for Apple Watch + iPhone
Brand:	belkin
Test Model:	F8J237V2
Sample Status:	Engineering sample
Applicant:	Belkin International, Inc.
Test Date:	Apr. 29, 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 : Celine Chou , **Date:** May 06, 2019

Celine Chou / Senior Specialist

Approved by : Bruce Chen , **Date:** May 06, 2019

Bruce Chen / Project Engineer

2 General Information

2.1 General Description of EUT

Product	PowerHouse™ Charge Dock for Apple Watch + iPhone
Test Model	F8J237V2
Sample Status	Engineering sample
Power Supply Rating	12Vdc (Adapter)
Modulation Type	FSK
Operating Frequency	326.5 kHz
Antenna Type	Coil antenna
Field Strength	50.5dBuV/m
Dimension for Apple watch inductive coil	7.95cm^2 (diameter = 31.82mm)
Accessory Device	Adapter
Data Cable Supplied	NA
Maximum Power Output for Apple watch inductive coil	Less than 5W

Note:

1. The EUT uses following adapter.

Brand	HOIOTO
Model	ADS-25SGP-12 12019E
Input Power	100-240Vac, 50/60Hz, 0.7A Max
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 and a USB board to charge iPhone.
3. After the evaluation of the metal and plastic band on Apple Watch, the metal band was found to be the worst case test mode and therefore was been presented in the test report.

3 RF Exposure

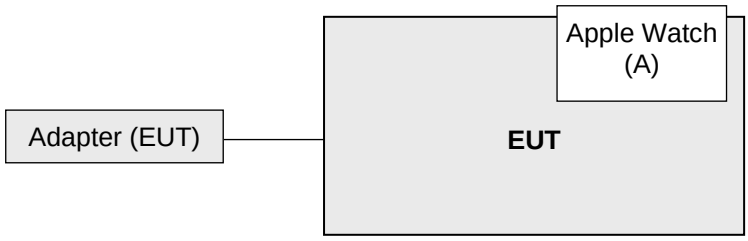
2.1 Description of Support Units

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.

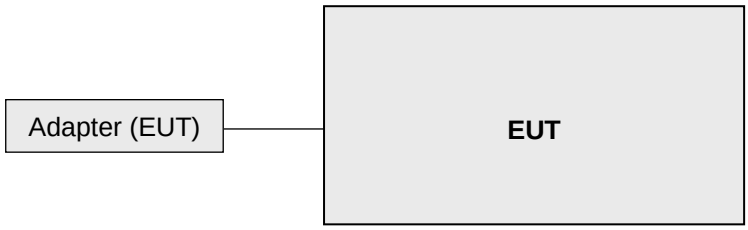
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Apple Watch	APPLE	A1554	NA	NA	-

3.1.1 Configuration of System under Test

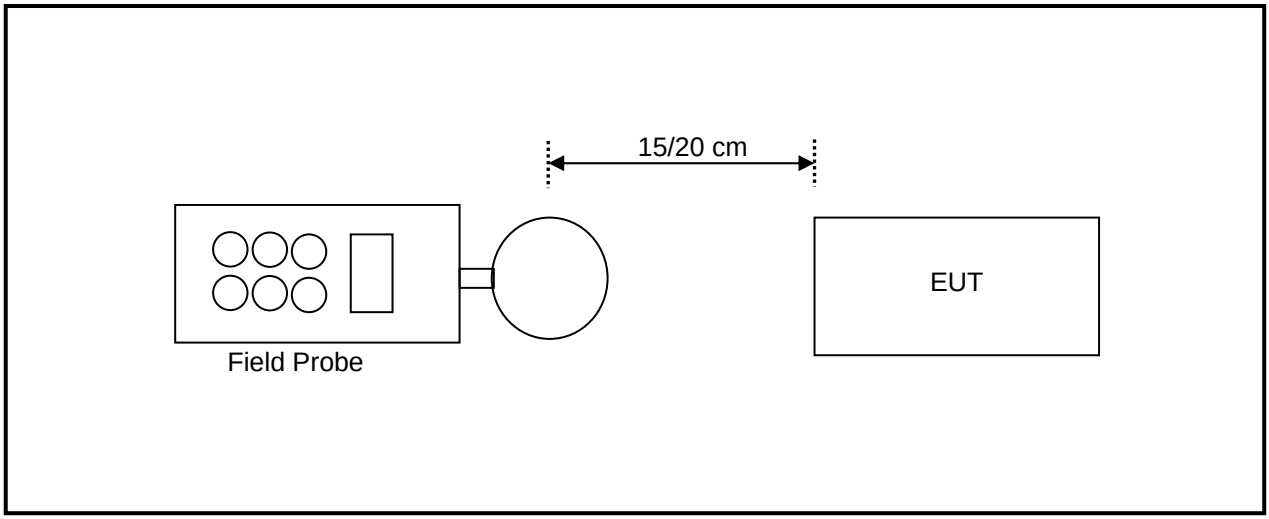
Charging Mode



Standby Mode



2.2 Test Setup



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

2.3 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
Magnetic Field Probe	NARDA	2300/90.10	1Hz – 400kHz	Apr. 12, 2018	Apr. 11, 2020
E-Field Probe	NARDA	EF 0391	100kHz – 3GHz	Apr. 16, 2018	Apr. 15, 2020
E-Field Probe	NARDA	EF6091	100MHz – 60GHz	Apr. 17, 2018	Apr. 16, 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 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/cm²)	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/f²)	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/f²)	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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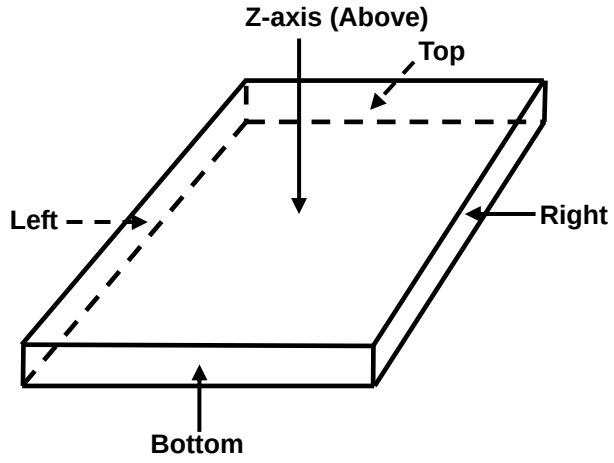
The aggregate H-fields strengths at 15 cm surrounding the device and 20cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

2.5 Test Point Description



4 Calculation Result of Maximum Conducted Power

Charging Mode with watch, battery 10% Charge

E-Field Measurement (15cm)						E-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max E-field (V/m)	0.8200	0.7500	0.8600	0.8100	0.5800
326.5	Limit (V/m)	614	614	614	614	614
326.5	Margin (V/m)	-613.1800	-613.2500	-613.1400	-613.1900	-613.4200
326.5	50 % Limit (V/m)	307	307	307	307	307
326.5	50 % Margin (V/m)	-306.1800	-306.2500	-306.1400	-306.1900	-306.4200

H-Field Measurement (15cm)						H-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max H-field (uT)	0.0650	0.0700	0.0660	0.0630	0.0650
326.5	Max H-field (A/m)	0.0520	0.0560	0.0528	0.0504	0.0520
326.5	Limit (A/m)	1.63	1.63	1.63	1.63	1.63
326.5	Margin (A/m)	-1.5780	-1.5740	-1.5772	-1.5796	-1.5780
326.5	50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
326.5	50 % Margin (A/m)	-0.7630	-0.7590	-0.7622	-0.7646	-0.7630

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

Charging Mode with watch, battery 50% Charge

E-Field Measurement (15cm)						E-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max E-field (V/m)	0.9100	0.7900	0.9900	0.9400	0.6100
326.5	Limit (V/m)	614	614	614	614	614
326.5	Margin (V/m)	-613.0900	-613.2100	-613.0100	-613.0600	-613.3900
326.5	50 % Limit (V/m)	307	307	307	307	307
326.5	50 % Margin (V/m)	-306.0900	-306.2100	-306.0100	-306.0600	-306.3900

H-Field Measurement (15cm)						H-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max H-field (uT)	0.0710	0.0730	0.0670	0.0650	0.0660
326.5	Max H-field (A/m)	0.0568	0.0584	0.0536	0.0520	0.0528
326.5	Limit (A/m)	1.63	1.63	1.63	1.63	1.63
326.5	Margin (A/m)	-1.5732	-1.5716	-1.5764	-1.5780	-1.5772
326.5	50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
326.5	50 % Margin (A/m)	-0.7582	-0.7566	-0.7614	-0.7630	-0.7622

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

Charging Mode with watch, battery 90% Charge

E-Field Measurement (15cm)						E-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max E-field (V/m)	1.0500	0.9100	1.0900	1.0700	0.7500
326.5	Limit (V/m)	614	614	614	614	614
326.5	Margin (V/m)	-612.9500	-613.0900	-612.9100	-612.9300	-613.2500
326.5	50 % Limit (V/m)	307	307	307	307	307
326.5	50 % Margin (V/m)	-305.9500	-306.0900	-305.9100	-305.9300	-306.2500

H-Field Measurement (15cm)						H-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max H-field (uT)	0.0730	0.0760	0.0690	0.0660	0.0680
326.5	Max H-field (A/m)	0.0584	0.0608	0.0552	0.0528	0.0544
326.5	Limit (A/m)	1.63	1.63	1.63	1.63	1.63
326.5	Margin (A/m)	-1.5716	-1.5692	-1.5748	-1.5772	-1.5756
326.5	50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
326.5	50 % Margin (A/m)	-0.7566	-0.7542	-0.7598	-0.7622	-0.7606

Measurements were made from all sides and the top of the primary/client pair, with the 15/20cm 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 (15cm)						E-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max E-field (V/m)	0.6900	0.6200	0.7400	0.7600	0.5900
326.5	Limit (V/m)	614	614	614	614	614
326.5	Margin (V/m)	-613.3100	-613.3800	-613.2600	-613.2400	-613.4100
326.5	50 % Limit (V/m)	307	307	307	307	307
326.5	50 % Margin (V/m)	-306.3100	-306.3800	-306.2600	-306.2400	-306.4100

H-Field Measurement (15cm)						H-Field Measurement (20cm)
Frequency (kHz)	EUT Side	Left	Right	Top	Bottom	Z-axis (Above)
326.5	Max H-field (uT)	0.0610	0.0640	0.0650	0.0620	0.0640
326.5	Max H-field (A/m)	0.0488	0.0512	0.0520	0.0496	0.0512
326.5	Limit (A/m)	1.63	1.63	1.63	1.63	1.63
326.5	Margin (A/m)	-1.5812	-1.5788	-1.5780	-1.5804	-1.5788
326.5	50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
326.5	50 % Margin (A/m)	-0.7662	-0.7638	-0.7630	-0.7654	-0.7638

Measurements were made from all sides and the top of the primary/client pair, with the 15/20cm 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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