RF Exposure Test Report

Report No.:	SA190709C07 R1
FCC ID:	K7SF8J183V2
Test Model:	F8J183V2
Received Date:	Jul. 9, 2019
Test Date:	Jul. 15, 2019
Issued Date:	Sep. 4, 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 Lin Kou Laboratories
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

Testing Laboratory
2021

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Report Issue History Record

Issue No.	Description	Date Issued
SA190709C07	Original release.	Aug. 6, 2019
SA190709C07 R1	Modify product name.	Sep. 4, 2019

Release Control Record

Issue No.	Description	Date Issued
SA190709C07	Original release.	Aug. 6, 2019
SA190709C07 R1	Modify product name.	Sep. 4, 2019

1 Certificate of Conformity

Product:	Charge Dock for Apple Watch + iPhone
Brand:	belkin
Test Model:	F8J183V2
Sample Status:	Engineering sample
Applicant:	Belkin International, Inc.
Test Date:	Jul. 15, 2019
Standards:	FCC Part 2 (Section 2.1091) FCC Part 1 (Section 1.1307(c) and (d), Section 1.1310) KDB 680106 D01 RF Exposure Wireless Charging v03

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:** Sep. 4, 2019

Celia Chen / Supervisor

Approved by :  , **Date:** Sep. 4, 2019

Rex Lai / Associate Technical Manager

2 General Information

2.1 General Description of EUT

Product	Charge Dock for Apple Watch + iPhone
Test Model	F8J183V2
Sample Status	Engineering sample
Rating	12Vdc (Adapter)
Modulation Type	FSK
Operating Frequency	326.5 kHz
Antenna Type	Coil antenna
Field Strength	52.86dBuV/m
Dimensions	3.80cm^2 (diameter = 22mm)
Accessory Device	Adapter
Data Cable Supplied	N/A
Maximum Power Output from the Charging Coil	5W

Note:

1. The EUT has a wireless inductive charging coil for charging Apple Watch.
2. 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	1.45m non-shielded DC cable without core attached on adapter

3. After the evaluation of the metal and plastic band on Apple Watch, the metal band was the worst case for final test and therefore only its test data was recorded in this report.
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

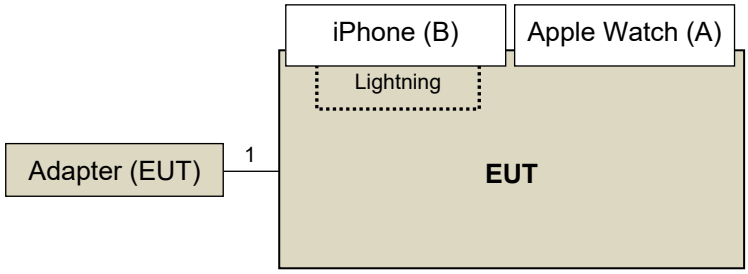
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Apple Watch	Apple	A1554	NA	NA	Supplied by client
B.	iPhone XS Max	Apple	A2101	NA	NA	Supplied by client

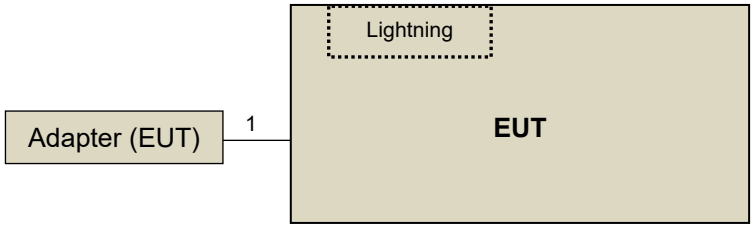
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC cable	1	1.45	N	0	Supplied by client

3.1.1 Configuration of System under Test

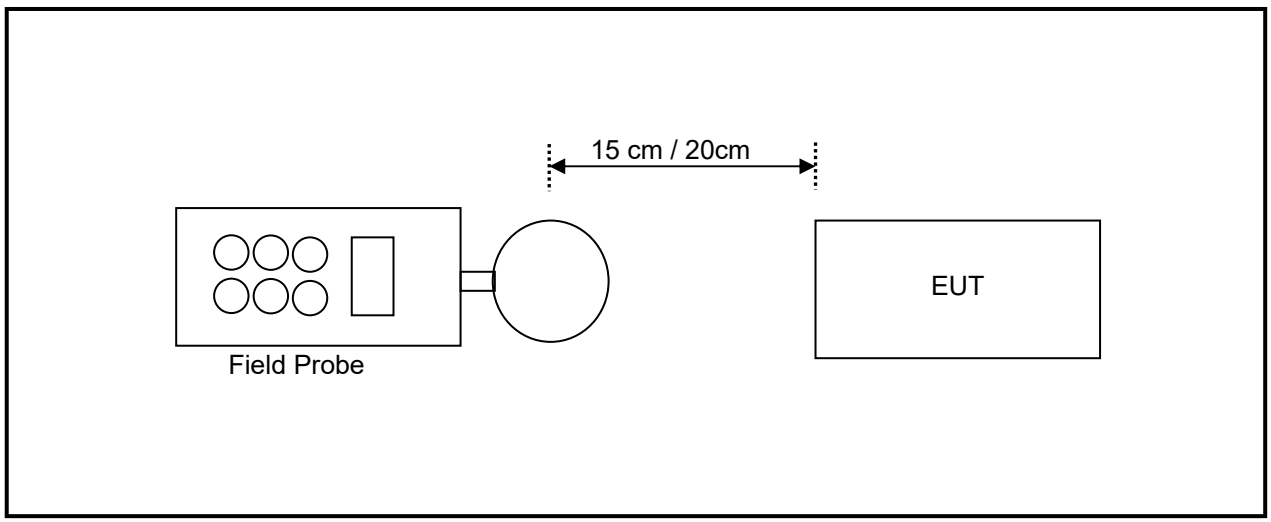
Charging Mode with Apple Watch



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. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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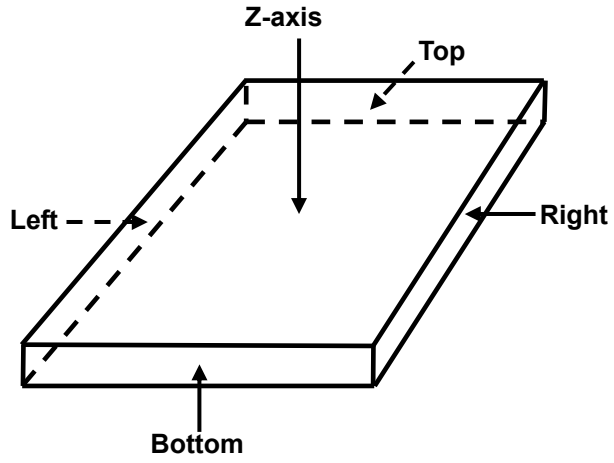
The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

3.5 Test Point Description



4 Calculation Result of Maximum Conducted Power

Charging Mode with Apple Watch

Charging Mode with Apple Watch, battery 10% Charge

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	0.2900	0.3100	0.4100	0.3500	0.3600
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-613.7100	-613.6900	-613.5900	-613.6500	-613.6400
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-306.7100	-306.6900	-306.5900	-306.6500	-306.6400

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.0830	0.0900	0.0930	0.0920	0.0980
Max H-field (A/m)	0.0664	0.0720	0.0744	0.0736	0.0784
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.5636	-1.5580	-1.5556	-1.5564	-1.5516
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.7486	-0.7430	-0.7406	-0.7414	-0.7366

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 Apple Watch, battery 50% Charge

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	0.3200	0.3500	0.4700	0.3800	0.4000
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-613.6800	-613.6500	-613.5300	-613.6200	-613.6000
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-306.6800	-306.6500	-306.5300	-306.6200	-306.6000

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.0860	0.0920	0.0960	0.0950	0.1020
Max H-field (A/m)	0.0688	0.0736	0.0768	0.0760	0.0816
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.5612	-1.5564	-1.5532	-1.5540	-1.5484
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.7462	-0.7414	-0.7382	-0.7390	-0.7334

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 Apple Watch, battery 90% Charge

E-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	0.3600	0.3800	0.5200	0.4500	0.4800
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-613.6400	-613.6200	-613.4800	-613.5500	-613.5200
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-306.6400	-306.6200	-306.4800	-306.5500	-306.5200

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.0900	0.0960	0.1010	0.0990	0.1060
Max H-field (A/m)	0.0720	0.0768	0.0808	0.0792	0.0848
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.5580	-1.5532	-1.5492	-1.5508	-1.5452
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.7430	-0.7382	-0.7342	-0.7358	-0.7302

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)	0.1100	0.2000	0.1200	0.2000	0.1700
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-613.8900	-613.8000	-613.8800	-613.8000	-613.8300
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-306.8900	-306.8000	-306.8800	-306.8000	-306.8300

H-Field Measurement					
Distance	15cm				20cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.0890	0.0910	0.0900	0.0940	0.0960
Max H-field (A/m)	0.0712	0.0728	0.0720	0.0752	0.0768
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.5588	-1.5572	-1.5580	-1.5548	-1.5532
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.7438	-0.7422	-0.7430	-0.7398	-0.7382

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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