RF Exposure Test Report

Report No.:	SA19231E04
FCC ID:	JNZF00008
Test Model:	F00008
Received Date:	Dec. 31, 2019
Test Date:	Feb. 15, 2020
Issued Date:	Feb. 21, 2020
Applicant:	LOGITECH FAR EAST LTD.
Address:	#2 Creation Rd. 4, Science-Based Ind. Park Hsinchu Taiwan, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SA191231E04	Original release.	Feb. 21, 2020

1 Certificate of Conformity

Product:	Powered Wireless Charging Stand
Brand:	Logitech
Test Model:	F00008
Sample Status:	ENGINEERING SAMPLE
Applicant:	LOGITECH FAR EAST LTD.
Test Date:	Feb. 15, 2020
Standards:	FCC Part 2 (Section 2.1091) FCC Part 1 (Section 1.1307(c) and (d), Section 1.1310)
References Test Guidance:	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 : Vivian Huang , **Date:** Feb. 21, 2020

Vivian Huang / Specialist

Approved by : , **Date:** Feb. 21, 2020

Clark Lin / Technical Manager

2 General Information

2.1 General Description of EUT

Product	Powered Wireless Charging Stand
Brand	Logitech
Test Model	F00008
Sample Status	ENGINEERING SAMPLE
Rating	DC 19V from power adapter
Operating Frequency	127.795 kHz
Antenna Type	Coil Antenna
Field Strength	91.76 dBuV/m
Dimensions	85mm x 89mm x 111mm
Accessory Device	Adapter x1
Data Cable Supplied	NA
Maximum Power Output from the Charging Coil	10W

Note:

1. The EUT may have a lot of colors for marketing requirement.
2. The EUT could be supplied with a power adapter as the following table:

Brand	Model No.	Spec.
logi	AD2103320	Input: 100-240Vac, 50/60Hz, 0.7A Output: 19V, 1.32A DC cable: 1.5 m

3. 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

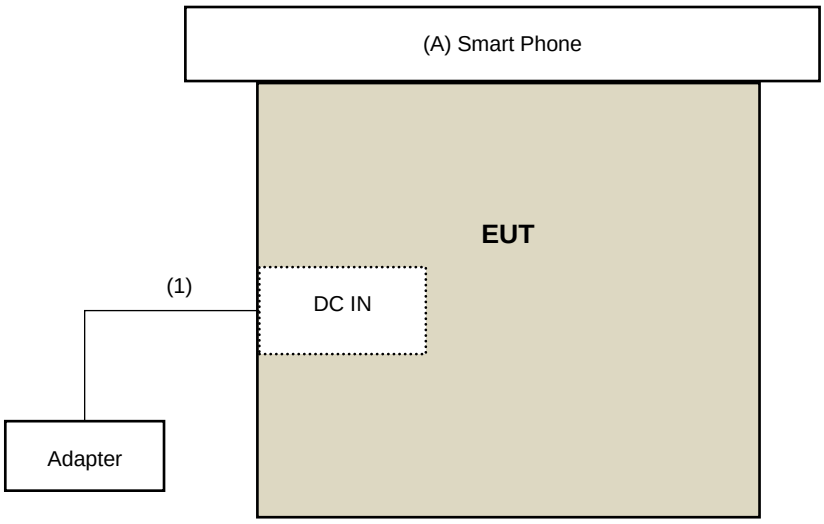
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Smart Phone	Apple	A2101	NA	NA	Supplied by client

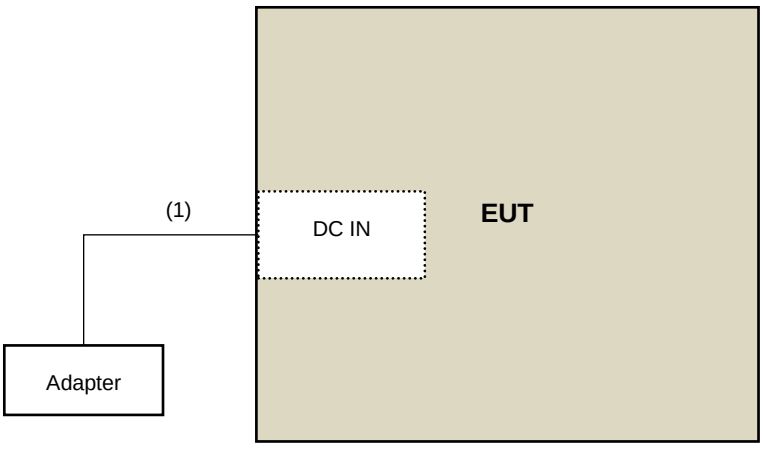
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.5	No	0	Supplied by client

3.1.1 Configuration of System under Test

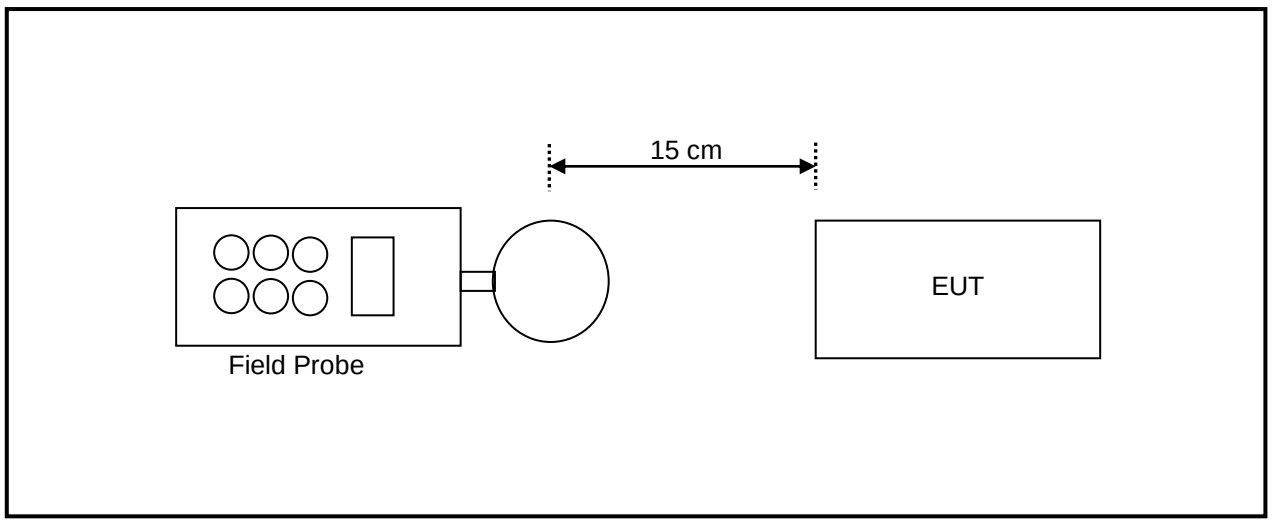
Charging Mode:



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 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
Magnetic Field Meter	NARDA	ELT-400	1Hz – 400kHz	Apr. 12, 2018	Apr. 11, 2020
Magnetic Probe	NARDA	M-0294	1Hz – 400kHz	Apr. 12, 2018	Apr. 11, 2020
Electric Field Meter	COMBINOVA	EFM 200	5Hz – 400kHz	Dec. 6, 2019	Dec. 5, 2021
E-Field Probe	NARDA	EF-0391	100kHz – 3GHz	Mar. 28, 2018	Mar. 27, 2020

NOTE: 1. The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. 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

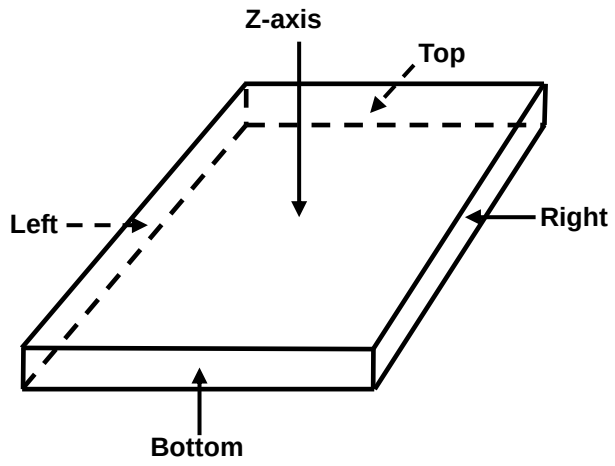
NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply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

680106 D01 RF Exposure Wireless Charging App v03

The aggregate H-field strengths at 15 cm surrounding the device and 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 Field Strength

Charging Mode

Charging mode with iPhone, battery 10% Charge

E-Field Measurement					
Distance	15cm				15cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	1.5000	1.4400	1.5300	1.3200	1.8100
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-612.5000	-612.5600	-612.4700	-612.6800	-612.1900
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-305.5000	-305.5600	-305.4700	-305.6800	-305.1900

H-Field Measurement					
Distance	15cm				15cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.3810	0.4040	0.4230	0.4320	0.4170
Max E-field (A/m)	0.3048	0.3232	0.3384	0.3456	0.3336
Limit (V/m)	1.63	1.63	1.63	1.63	1.63
Margin (V/m)	-1.3252	-1.3068	-1.2916	-1.2844	-1.2964
50 % Limit (V/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (V/m)	-0.5102	-0.4918	-0.4766	-0.4694	-0.4814

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

Charging mode with iPhone, battery 50% Charge

E-Field Measurement					
Distance	15cm				15cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	1.3900	1.2800	1.4000	1.1400	1.5700
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-612.6100	-612.7200	-612.6000	-612.8600	-612.4300
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-305.6100	-305.7200	-305.6000	-305.8600	-305.4300

H-Field Measurement					
Distance	15cm				15cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.3400	0.3600	0.3690	0.3580	0.3630
Max H-field (A/m)	0.2720	0.2880	0.2952	0.2864	0.2904
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.3580	-1.3420	-1.3348	-1.3436	-1.3396
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.5430	-0.5270	-0.5198	-0.5286	-0.5246

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

Charging mode with iPhone, battery 90% Charge

E-Field Measurement					
Distance	15cm				15cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	1.2000	1.1200	1.2600	0.9900	1.3000
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-612.8000	-612.8800	-612.7400	-613.0100	-612.7000
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-305.8000	-305.8800	-305.7400	-306.0100	-305.7000

H-Field Measurement					
Distance	15cm				15cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.2670	0.2890	0.3120	0.2950	0.2870
Max H-field (A/m)	0.2136	0.2312	0.2496	0.2360	0.2296
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.4164	-1.3988	-1.3804	-1.3940	-1.4004
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.6014	-0.5838	-0.5654	-0.5790	-0.5854

Measurements were made from all sides and the top of the primary/client pair, with the 15 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				15cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max E-field (V/m)	0.4000	0.4000	0.4900	0.4800	0.3900
Limit (V/m)	614	614	614	614	614
Margin (V/m)	-613.6000	-613.6000	-613.5100	-613.5200	-613.6100
50 % Limit (V/m)	307	307	307	307	307
50 % Margin (V/m)	-306.6000	-306.6000	-306.5100	-306.5200	-306.6100

H-Field Measurement					
Distance	15cm				15cm
EUT Side	Left	Right	Top	Bottom	Z-axis
Max H-field (uT)	0.0680	0.0660	0.1550	0.0810	0.0910
Max H-field (A/m)	0.0544	0.0528	0.1240	0.0648	0.0728
Limit (A/m)	1.63	1.63	1.63	1.63	1.63
Margin (A/m)	-1.5756	-1.5772	-1.5060	-1.5652	-1.5572
50 % Limit (A/m)	0.815	0.815	0.815	0.815	0.815
50 % Margin (A/m)	-0.7606	-0.7622	-0.6910	-0.7502	-0.7422

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