HEALTH TEST REPORT

For

Bottle with wireless charging

Test Model: 62143

Additional Model No.: 62140

Prepared for	:	
Address	:	

Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample	:	August 29, 2018
Number of tested samples	:	1
Serial number	:	Prototype
Date of Test	:	August 29, 2018~September 04, 2018
Date of Report	:	September 12, 2018

CE

HEALTH TEST REPORT
EN 62311: 2008

Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz)

Report Reference No.	**: LCS180828032AEC**
Date of Issue.....	: September 12, 2018
Testing Laboratory Name	**: Shenzhen LCS Compliance Testing Laboratory Ltd.**
Address.....	: 1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China
Testing Location/ Procedure	: Full application of Harmonised standards ■ Partial application of Harmonised standards ☐ Other standard testing method ☐
Applicant's Name	:
Address.....	:
Test Specification	
Standard.....	: EN 62311: 2008
Test Report Form No.	: LCSEMC-1.0
TRF Originator.....	: Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF	: Dated 2017-06

Test Item Description.....	**: Bottle with wireless charging**
Trade Mark.....	: N/A
Test Model.....	: 62143
Ratings	: 5V⎓, by Rechargeable Li-ion Battery (5000mAh) Recharge Voltage: by 5V⎓ 2.1A USB Output: 5V⎓ 2.1A Wireless Output: 5W⎓
Result	**: Positive**

Compiled by:	**Supervised by:**	**Approved by:**
Aking Jin	Calvin Weng	
Aking Jin/ Administrators	Calvin Weng/ Technique principal	Gavin Liang/ Manager

HEALTH --TEST REPORT

Test Report No. : LCS180828032AEC	September 12, 2018 Date of issue

Test Model.....	: 62143
EUT.....	: Bottle with wireless charging
Applicant.....	**:**
Address.....	:
Telephone.....	: /
Fax.....	: /
Manufacturer.....	**:**
Address.....	:
Telephone.....	: /
Fax.....	: /
Factory.....	**:**
Address.....	:
Telephone.....	: /
Fax.....	: /

Test Result	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Report Version	Issue Date	Revisions	Revised By
000	September 12, 2018	Initial Issue	Gavin Liang

1. GENERAL INFORMATION

1.1. Product Description for Equipment Under Test (EUT)

EUT	:	Bottle with wireless charging
Test Model	:	62143
Additional Model	:	62140
Model Declaration	:	PCB board, structure and internal of these model(s) are the same, So no additional models were tested
Hardware Version	:	V1.3
Software Version	:	v1.0
Charging Station Base		
Operating Frequency	:	110.0~205.0KHz
Modulation Type	:	CW (Continuous Wave)
Antenna Type	:	Coil Antenna
Input/Output	:	5V⎓, by Rechargeable Li-ion Battery (5000mAh) Recharge Voltage: by 5V⎓ 2.1A USB Output: 5V⎓ 2.1A Wireless Output: 5W⎓

1.2. Objective

According to its specifications, the EUT must comply with the requirements of the following standards:
EN 62311: 2008 –Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)

1.3. Test Methodology

All measurements contained in this report were conducted with EN 62311: 2008.

1.4. Description of Test Facility

FCC Registration Number. is 254912.
Industry Canada Registration Number. is 9642A-1.
ESMD Registration Number. is ARCB0108.
UL Registration Number. is 100571-492.
TUV SUD Registration Number. is SCN1081.
TUV RH Registration Number. is UA 50296516-001.
NVLAP Registration Code is 600167-0.

1.5. Support Equipment List

Manufacturer	Description	Model	Serial Number	Certificate
LCS	Adapter (Supplied by lab)	EQ-24BEU	--	CE
Apple	Mobile Phone	iPhone X	--	CE

1.6. External I/O

I/O Port Description	Quantity	Cable
Micro USB	1	N/A
USB	1	N/A

1.7. Equipment

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements. Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

1.8. Measurement Uncertainty(95% confidence levels, k=2)

Test Item		Uncertainty
Radio Frequency	:	0.9×10^{-4}
Total RF Power, Conducted	:	1.0 dB
RF Power Density, Conducted	:	1.8 dB
Spurious Emissions, Conducted	:	1.8 dB
All Emissions, Radiated	:	3.1 dB
Temperature	:	0.5 ℃
Humidity	:	1 %
DC And Low Frequency Voltages	:	1 %

2. HUMAN EXPOSURE TO THE ELECTROMAGNETIC FIELDS

2.1 Basic Restrictions Reference levels

Council Recommendation 1999/519/EC Annex III

Basic restrictions for electric, magnetic and electromagnetic fields (0Hz to 300GHz)

Frequency range	Magnetic flux density (mT)	Current density (Ma/m2) (rms)	Whole body average SAR (W/kg)	Localised SAR (head and trunk) (W/kg)	Localised SAR (limbs) (W/kg)	Power density (W/m2)
0Hz	40	-	-	-	-	-
>0-1Hz	-	8	-	-	-	-
1-4Hz	-	8/f	-	-	-	-
4-1000Hz	-	2	-	-	-	-
1000Hz-100kHz	-	f/500	-	-	-	-
100kHz-10MHz	-	f/500	0.08	2	4	-
10MHz-10GHz	-	-	0.08	2	4	-
10-300GHz	-	-	-	-	-	10

Note:

1. f is the frequency in Hz.
2. The basic restriction on the current density is intended to protect against acute exposure effects on central nervous system tissues in the head and trunk of the body and includes a safety factor. The basic restrictions for ELF fields are based on established adverse effects on the central nervous system. Such acute effects are essentially instantaneous and there is no scientific justification to modify the basic restrictions for exposure of short duration. However, since the basic restriction refers to adverse effects on the central nervous system, this basic restriction may permit higher current densities in body tissues other than the central nervous system under the same exposure conditions.
3. Because of electrical inhomogeneity of the body, current densities should be averaged over a cross section of 1cm2 perpendicular to the current direction.
4. For frequencies up to 100 kHz, peak current density values can be obtained by multiplying the rms value by $\sqrt{2}$(=1.414). For pulses of duration tp the equivalent frequency to apply in the basic restrictions should be calculated as=1/(2tp)
5. For frequencies up to 100kHz and for pulsed magnetic fields, the maximum current density associated with the pulses can be calculated from the rise/fall times and the maximum rate of change of magnetic flux density. The induced current density can then be compared with the appropriate basic restriction.
6. All SAR values are to be averaged over any six-minute period.
7. Localised SAR averaging mass is any 10g of contiguous tissue; the maximum SAR so obtained should be the value used for the estimation of exposure. These 10g of tissue are intended to be a mass of contiguous tissue with nearly homogeneous electrical properties. In specifying a contiguous mass of tissue, it is recognised that this concept can be used in computational dosimetry but may present difficulties for direct physical measurements. A simple geometry such as cubic tissue mass can be used provided that the calculated dosimetric quantities have conservation values relative to the exposure guidelines.

8. For pulses of duration tp the equivalent frequency to apply in the basic restrictions should be calculated as=1/(2tp). Additionally, for pulsed exposures, in the frequency range 0,3 to 10GHz and for localised exposure of the head, in order to limit and avoid auditory effects caused by thermoelastic expansion, an additional basic restriction is recommended. This is that SA should not exceed 2mJ kg-1 averaged over 10g of tissue.

2.2 Reference Levels

Council Recommendation 1999/519/EC Annex III
Reference levels for electric, magnetic and electromagnetic fields (0Hz to 300GHz)

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density Seq (W/m2)
0-1Hz	-	$3,2 \times 10^4$	4×10^4	-
1-8Hz	1000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	-
8-25Hz	1000	4000/f	5000/f	-
0.025Hz-0,8kHz	250/f	4/f	5/f6,25	-
0,8-3kHz	250/f	5	6,25	-
3-150kHz	87	5	6,25	-
0,15-1MHz	87	0.73/f	0,92/f	-
1-10MHz	$87/f^{1/2}$	0.73/f	0,92/f	-
10-400MHz	28	0.073	0,092	2
400-2000MHz	$1,375\ f^{1/2}$	$0,0037\ f^{1/2}$	$0,0046\ f^{1/2}$	f/200
2-300GHz	61	0,16	0,20	10

Note:
1. As indicated in the frequency range column.
2. For frequencies between 100kHz and 10GHz, Seq, E2, H2 and B2 are to be averaged over any six-minute period.
3. For frequencies exceeding 10GHz, Seq, E2, H2 and B2 are to be averaged over any 68/.1.05-minute period (.in GHz).
4. No E-field value is provided for frequencies <1Hz, which are effectively static electric fields. For most people the annoying perception of surface electric charges will not occur at field strengths less than 20kV/m. Spark discharges causing stress or annoyance should be avoided.

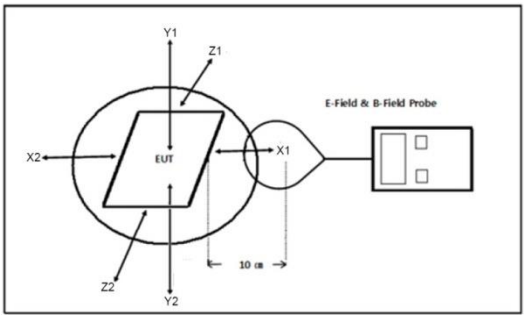
3. RF EXPOSURE EVALUATION

3.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Last Cal.	Due. Date
1	Broadband Field Meter	Narda	NBM-550	2018/06/17	2019/06/16
2	Exposure Level Tester	Narda	ELT-400	2018/06/17	2019/06/16

3.2. Block Diagram of Test Setup



*Note:
Position A: Back Side of the EUT
Position B: Left Side of the EUT
Position C: Front Side of the EUT
Position D: Right Side of the EUT
Position E: Top Side of the EUT
Position F: Bottom Side of the EUT

3.3. Test Results

H-field Strength Test Result:

Test condition: Charging mode with Bottle with wireless charging

Frequency Range(KHz)	Probe Position Hx1 (A/m)	Probe Position Hx2 (A/m)	Probe Position Hy (A/m)	Probe Position Hz1 (A/m)	Probe Position Hz2 (A/m)	Result H (A/m)	Limit (A/m)
121.1	0.05	0.05	0.07	0.05	0.05	0.099	4.650

$H = \sqrt{H_X^2 + H_Y^2 + H_Z^2} = \sqrt{0.05^2 + 0.07^2 + 0.05^2}$ A/m=0.099A/m

Limit=0.73/0.1570A/m=4.650A/m

Note: All test modes have been tested and only record the worst result.

----------THE END OF REPORT----------