MPE REPORT

Certificate No.	:	TB180719448
Applicant	:	
Equipment Under Test (EUT)		
EUT Name	:	Wireless charger Bluetooth speaker
Model No.	:	SL240
Serial Model No.	:	SL249, P328.031, P328.032, P328.033, SL249, 7198-64
Brand Name	:	N/A
Receipt Date	:	2018-07-04
Test Date	:	2018-07-05 to 2018-07-19
Issue Date	:	2018-07-20
Standards	:	EN 62311: 2008
Conclusions	:	**PASS**

In the configuration tested, the EUT complied with the standards specified above. The EUT technically complies with the Council Directive 2014/53/EU relating to radio equipment.

Test/Witness Engineer	:	Jason Xu
Engineer Supervisor	:	Ivan Su
Engineer Manager	:	Ray Lai

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This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

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Revision History

Report No.	Version	Description	Issued Date
TB-HEA161077	Rev.01	Initial issue of report	2018-07-20

1 General Information

1.1 Client Information

Applicant	:	
Address	:	
Manufacturer	:	
Address	:	

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Wireless charger Bluetooth speaker	
Model No.	:	SL240, SL249, P328.031, P328.032, P328.033, SL249, 7198-64	
Model Difference	:	All these models are identical in the same PCB layout and electrical circuit, the only difference is appearance.	
Product Description	:	Operational Mode	110 kHz to 250 kHz
			☐ Mode 1: base station in stand-by, idle mode. ☐ Mode 2: Communication before charging, adjustment charging mode/position. ☒ Mode 3: Communication. ☒ Mode 4: energy transmission.
		Antenna information	Coil Antenna: 0 dBi
Power Rating	:	DC 3.7V 400mAh by Li-ion Battery. Input: DC 5V by USB Cable. Wireless Output: DC 5V/0.8A	
Software Version	:	1.0	
Hardware Version	:	1.0	
Connecting I/O Port(S)	:	Please refer to the User's Manual	

Note:

(1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

(2) More information about test, please refer to the RF test report.

1.3 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025：2005 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.

IC Registration No.: (11950A-1)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-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 √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	-	$3,2\times10^4$	4×10^4	-
1-8Hz	1000	$3,2\times10^4/f^2$	$4\times10^4/f^2$	-
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.

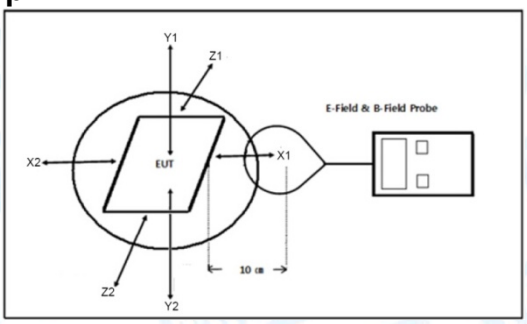
3 Rf Exposure Evaluation

3.1. Test Equipment

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

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
1	EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul. 18, 2018	Jul. 17, 2019
2	Triple-Loop Antenna	EVERFINE	LLA-2	1001003B	Jul. 18, 2018	Jul. 17, 2019

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: Wireless Charging mode

Frequency (MHz)	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)
0.11~0.205	0.10	0.09	0.09	0.08	0.08	0.124
$H=\sqrt{H_X^2+H_Y^2+H_Z^2}=\sqrt{0.10^2+0.09^2+0.08^2}=0.124$						
Limit(min):	0.73/0.205A/m=3.56A/m					
Note: All test modes have been tested and only record the worst result.						

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