RF Exposure Report

Report No.: SA200113E05

FCC ID: JNZS00176

Test Model: S00176

Received Date: Jan. 13, 2020

Test Date: Feb. 04, 2020

Issued Date: Feb. 17, 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

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Release Control Record

Issue No.	Description	Date Issued
SA200113E05	Original release.	Feb. 17, 2020

1 Certificate of Conformity

Product:	Bluetooth Speaker
Brand:	ULTIMATE EARS
Test Model:	S00176
Sample Status:	ENGINEERING SAMPLE
Applicant:	LOGITECH FAR EAST LTD.
Test Date:	Feb. 04, 2020
Standards:	FCC Part 2 (Section 2.1091) IEEE C95.3 -2002
References Test Guidance:	KDB 447498 D01 General RF Exposure Guidance v06

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 EMC characteristics under the conditions specified in this report.

Prepared by : Vivian Huang , **Date:** Feb. 17, 2020

Vivian Huang / Specialist

Approved by : , **Date:** Feb. 17, 2020

Clark Lin / Technical Manager

2 Evaluation Result

Following FCC KDB 447498 D01 “General SAR test exclusion guidance”

The corresponding SAR Exclusion Threshold condition, listed below:

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
   [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where
   - f(GHz) is the RF channel transmit frequency in GHz.
   - Power and distance are rounded to the nearest mW and mm before calculation.
   - The result is rounded to one decimal place for comparison The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

2) At 100 MHz to 6 GHz and for test separation distances > 50 mm, the SAR test exclusion threshold is determined according to the following:
   a) [Threshold at 50 mm in step 1) + (test separation distance - 50mm)·(f(MHz)/150)] mW, at 100MHz to 1500 MHz
   b) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

3) At frequencies below 100 MHz, the following may be considered for SAR test exclusion.
   a) The threshold at the corresponding test separation distance at 100 MHz in step 2) is multiplied by [1 + log(100/f(MHz))] for test separation distances > 50 mm and < 200 mm.
   b) The threshold determined by the equation in a) for 50 mm and 100 MHz is multiplied by ½ for test separation distances ≤ 50 mm.
   c) SAR measurement procedures are not established below 100 MHz. When SAR test exclusion cannot be applied, a KDB inquiry is required to determine SAR evaluation requirements for any test results to be acceptable.

3 SAR Test Exclusion Thresholds

BT-EDR Avg. Power Table

GFSK

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	5.675	7.54
39	2441	5.585	7.47
78	2480	5.284	7.23

8DPSK

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	5.662	7.53
39	2441	5.445	7.36
78	2480	5.212	7.17

For BT-EDR SAR Test Exclusion Thresholds

Frequency (MHz)	Max Avg. Power (dBm)	Max Avg. Power (mW)	Min. test separation distance (mm)	SAR test exclusion calculation value(NOTE 1)	10-g SAR test exclusion thresholds	Result
2402 ~ 2480	7.54	5.675	5	1.787	7.5	Pass

Note: 1. Calculate SAR test exclusion thresholds from condition “1” formulas.

BT-LE Avg. Power Table

BT-LE 1M

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
0	2402	4.14	6.17
19	2440	4.027	6.05
39	2480	3.837	5.84

BT-LE 2M

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2404	4.121	6.15
19	2440	3.99	6.01
38	2478	3.776	5.77

For BT-LE SAR Test Exclusion Thresholds

Frequency (MHz)	Max Avg. Power (dBm)	Max Avg. Power (mW)	Min. test separation distance (mm)	SAR test exclusion calculation value(NOTE 1)	10-g SAR test exclusion thresholds	Result
2402 ~ 2480	6.17	4.14	5	1.304	7.5	Pass

Note: 1. Calculate SAR test exclusion thresholds from condition “1” formulas.

4 Conclusion

The device of Bluetooth and GFSK technology can't transmit simultaneously.
Since average power is below SAR test exclusion power thresholds, the SAR evaluation is not required.

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