RF Exposure Report

Report No.:	SA190723E04
FCC ID:	JNZYR0072
Test Model:	YR0072
Received Date:	July 23, 2019
Test Date:	July 29 to 30, 2019
Issued Date:	Aug. 15, 2019
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 R.O.C.
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
FCC Registration / Designation Number:	723255 / TW2022

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SA190723E04	Original release.	Aug. 15, 2019

1 Certificate of Conformity

Product:	Wireless Keyboard
Brand:	logitech
Test Model:	YR0072
Sample Status:	ENGINEERING SAMPLE
Applicant:	LOGITECH FAR EAST LTD.
Test Date:	July 29 to 30, 2019
Standards:	FCC Part 2 (Section 2.1093) KDB 447498 D01 General RF Exposure Guidance v06 IEEE C95.1-1992

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 : _____ , **Date:** Aug. 15, 2019

Wendy Wu / Specialist

Approved by : _____ , **Date:** Aug. 15, 2019

May Chen / 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

GFSK Avg. Power Table

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2403	2.339	3.69
8	2444	2.291	3.60
12	2481	2.228	3.48

For GFSK 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)	1-g SAR test exclusion thresholds	Result
2403~2481	3.69	2.339	5	0.725	3	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	2.339	3.69
19	2440	2.296	3.61
39	2480	2.228	3.48

BT-LE 2M

Channel	Frequency (MHz)	Average Power (mW)	Average Power (dBm)
1	2404	2.333	3.68
19	2440	2.291	3.60
38	2478	2.223	3.47

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)	1-g SAR test exclusion thresholds	Result
2402 ~ 2480	3.69	2.339	5	0.725	3	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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