

## RF Exposure Report

**Report No.:** SA190417E03

**FCC ID:** JNZMR0077

**Test Model:** MR0077

**Received Date:** Apr. 17, 2019

**Test Date:** Apr. 24 to 29, 2019

**Issued Date:** May 22, 2019

**Applicant:** LOGITECH FAR EAST LTD.

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**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Hsin Chu Laboratory

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Taiwan R.O.C.

**Test Location:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
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**FCC Registration /  
Designation Number:** 723255 / TW2022

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### Release Control Record

Issue No.	Description	Date Issued
SA190417E03	Original release.	May 22, 2019

## 1 Certificate of Conformity

**Product:** Wireless Mouse

**Brand:** logitech

**Test Model:** MR0077

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** LOGITECH FAR EAST LTD.

**Test Date:** Apr. 24 to 29, 2019

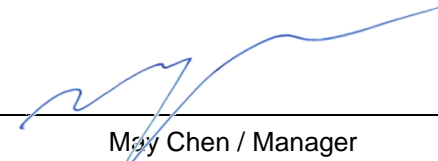
**Standards:** FCC Part 2 (Section 2.1093)

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:** May 22, 2019  
Claire Kuan / Specialist

**Approved by :**  , **Date:** May 22, 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  $\leq 50$  mm are determined by:  
$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$
  - $f(\text{GHz})$  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  $\leq 50$  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  $\leq 6$  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  $[1 + \log(100/f(\text{MHz}))]$  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  $\frac{1}{2}$  for test separation distances  $\leq 50$  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)	Avg. Power	
		(mW)	(dBm)
1	2403	2.891	4.61
8	2444	2.871	4.58
12	2481	2.825	4.51

#### For GFSK SAR Test Exclusion Thresholds

Frequency (MHz)	Max Avg. Power (dBm)	Max Time Avg. Power (mW)	Min. test separation distance (mm)	SAR test exclusion calculation value <sup>(NOTE 1)</sup>	10-g SAR test exclusion thresholds	Result
2403~2481	4.61	2.891	5	0.896	7.5	Pass

**Note:** 1. Calculate SAR test exclusion thresholds from condition "1" formulas.

#### BT-LE 5.0 1M Avg. Power Table

Channel	Frequency (MHz)	Avg. Power	
		(mW)	(dBm)
0	2402	2.904	4.63
19	2440	2.877	4.59
39	2480	2.825	4.51

#### BT 5.0 2M Avg. Power Table

Channel	Frequency (MHz)	Avg. Power	
		(mW)	(dBm)
1	2404	2.897	4.62
19	2440	2.877	4.59
38	2478	2.78	4.44

#### For BT 5.0 SAR Test Exclusion Thresholds

Frequency (MHz)	Max Avg. Power (dBm)	Max Avg. Power (mW)	Min. test separation distance (mm)	SAR test exclusion calculation value <sup>(NOTE 1)</sup>	10-g SAR test exclusion thresholds	Result
2402~2480	4.63	2.904	5	0.9	7.5	Pass

**Note:** 1. Calculate SAR test exclusion thresholds from condition "1" formulas.

### 4 Conclusion

The device of GFSK and BT-LE technology can't transmit simultaneously. Since Source-base time average power is below SAR test exclusion power thresholds, the SAR evaluation is not required.

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