

## RF Exposure Report

**Report No.:** SA161220E09

**FCC ID:** JNZMR0067

**Test Model:** M-R0067

**Received Date:** Dec. 20, 2016

**Test Date:** Dec. 22, 2016

**Issued Date:** Dec. 30, 2016

**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.

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by any government agencies.

## Table of Contents

<b>Release Control Record</b> .....	<b>3</b>
<b>1 Certificate of Conformity</b> .....	<b>4</b>
<b>2 Evaluation Result</b> .....	<b>5</b>
<b>3 SAR Test Exclusion Thresholds</b> .....	<b>6</b>
<b>4 Conclusion</b> .....	<b>7</b>

### Release Control Record

Issue No.	Description	Date Issued
SA161220E09	Original release.	Dec. 30, 2016

## 1 Certificate of Conformity

**Product:** Cordless Mouse

**Brand:** Logitech

**Test Model:** M-R0067

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** LOGITECH FAR EAST LTD.

**Test Date:** Dec. 22, 2016

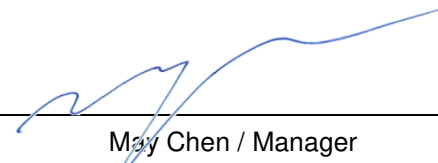
**Standards:** FCC Part 2 (Section 2.1093)

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:** Dec. 30, 2016  
Claire Kuan / Specialist

**Approved by :**  , **Date:** Dec. 30, 2016  
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:  
$$\left[ \frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot \sqrt{f(\text{GHz})}$$
$$\leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$
  - $f(\text{GHz})$  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	2405	2.427	3.85
8	2444	2.489	3.96
12	2474	2.393	3.79

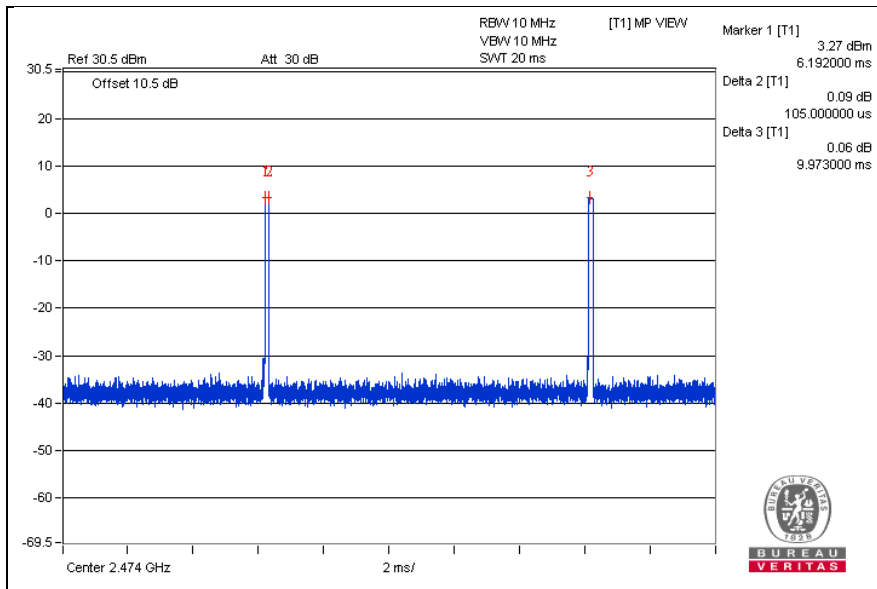
**For GFSK SAR Test Exclusion Thresholds**

Frequency (MHz)	Max Avg. Power (dBm)	*Max Time Avg. Power (dBm)	Max Time Avg. Power (mW)	SAR test exclusion calculation value <sup>(NOTE 1)</sup>	10-g extremity SAR test exclusion thresholds	Result
2405 ~ 2474	3.96	-15.82	0.026	0.00805916	7.5	Pass

**NOTE:** 1. Calculate SAR test exclusion thresholds from condition "1" formulas.  
 2. \*Time Avg. Power= Avg. Power+Duty factor

**GFSK Duty Cycle of Test Signal**

Duty Cycle	Tx on (ms)	Tx total (ms)	Duty Factor (dB)
		0.105	9.973



### BT-LE Avg. Power Table

Channel	Frequency (MHz)	Avg. Power	
		(mW)	(dBm)
0	2402	2.41	3.82
19	2440	2.489	3.96
39	2480	2.36	3.73

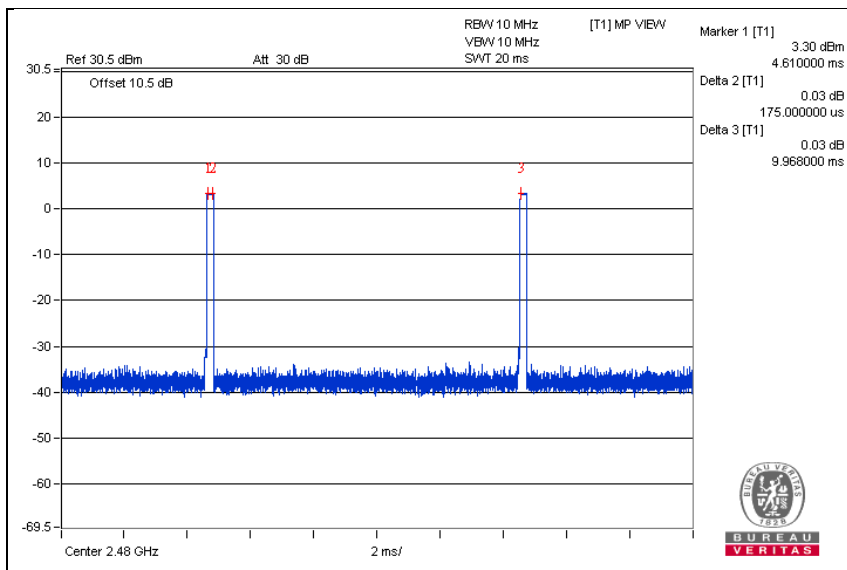
### For BT-LE SAR Test Exclusion Thresholds

Frequency (MHz)	Max Avg. Power (dBm)	*Max Time Avg. Power (dBm)	Max Time Avg. Power (mW)	SAR test exclusion calculation value <sup>(NOTE 1)</sup>	10-g extremity SAR test exclusion thresholds	Result
2402 ~ 2480	3.96	-13.60	0.044	0.01363858	7.5	Pass

**NOTE:** 1. Calculate SAR test exclusion thresholds from condition "1" formulas.  
 2. \*Time Avg. Power=Avg. Power+Duty factor

### BT-LE Duty Cycle of Test Signal

Duty Cycle	Tx on (ms)	Tx total (ms)	Duty Factor (dB)
	0.175	9.968	-17.56



## 4 Conclusion

Since Source-base time average power is below SAR test exclusion power thresholds, the SAR evaluation is not required.

--- END ---