RF Exposure Report

Report No.:	SA180802E09
FCC ID:	JNZYR0069
Test Model:	Y-R0069
Received Date:	Aug. 02, 2018
Test Date:	Aug. 07, 2018
Issued Date:	Aug. 22, 2018
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

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Release Control Record

Issue No.	Description	Date Issued
SA180802E09	Original release.	Aug. 22, 2018

1 Certificate of Conformity

Product:	Wireless Keyboard
Brand:	logitech G
Test Model:	Y-R0069
Sample Status:	ENGINEERING SAMPLE
Applicant:	LOGITECH FAR EAST LTD.
Test Date:	Aug. 07, 2018
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 : Mary Ko , **Date:** Aug. 22, 2018

Mary Ko / Specialist

Approved by : , **Date:** Aug. 22, 2018

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

BT-LE 1M (BT 4.0) Avg. Power Table

Channel	Frequency (MHz)	Avg. Power	
		(mW)	(dBm)
0	2402	2.924	4.66
19	2440	3.281	5.16
39	2480	3.606	5.57

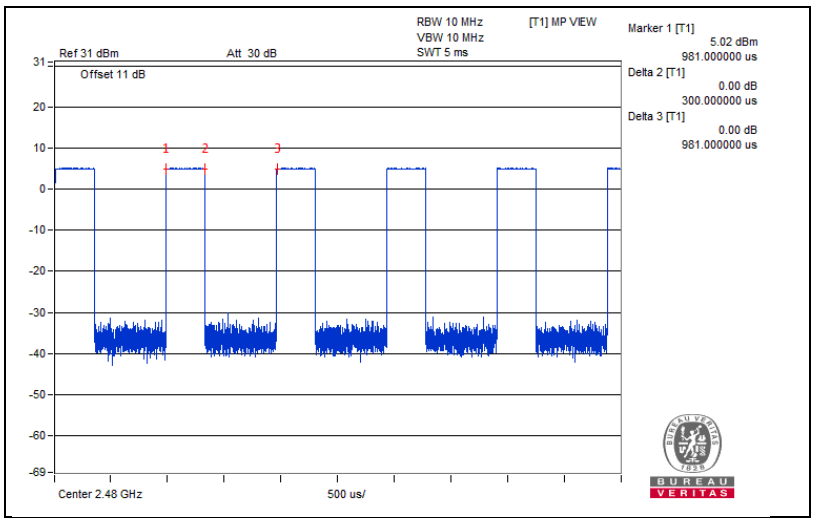
For BT-LE 1M (BT 4.0) SAR Test Exclusion Thresholds

Frequency (MHz)	Max Avg. Power (dBm)	*Max Time Avg. Power (dBm)	Max Time Avg. Power (mW)	SAR test exclusion calculation value(NOTE 1)	1-g SAR test exclusion thresholds	Result
2402 ~ 2480	5.57	0.42	1.102	0.347	3	Pass

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

BT-LE 1M (BT 4.0) Duty Cycle of Test Signal

Duty Cycle	Tx on (ms)	Tx total (ms)	Duty Factor (dB)
	0.3	0.981	-5.15
Duty Factor =10 * log(Tx on / Tx total)			



BT-LE 2M (BT 5.0) Avg. Power Table

Channel	Frequency (MHz)	Avg. Power	
		(mW)	(dBm)
1	2404	2.951	4.70
19	2440	3.258	5.13
38	2478	3.597	5.56

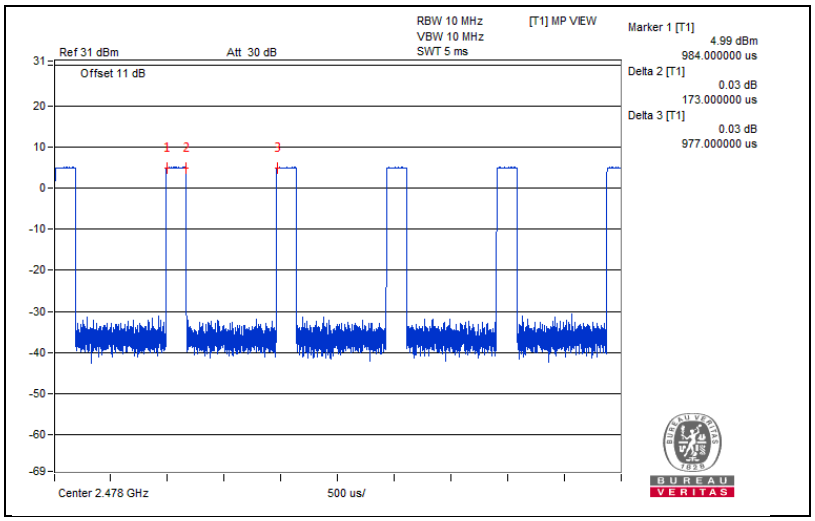
For BT-LE 2M (BT 5.0) SAR Test Exclusion Thresholds

Frequency (MHz)	Max Avg. Power (dBm)	*Max Time Avg. Power (dBm)	Max Time Avg. Power (mW)	SAR test exclusion calculation value(NOTE 1)	1-g SAR test exclusion thresholds	Result
2404 ~ 2478	5.56	-1.96	0.637	0.2005	3	Pass

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

BT-LE 2M (BT 5.0) Duty Cycle of Test Signal

Duty Cycle	Tx on (ms)	Tx total (ms)	Duty Factor (dB)
	0.173	0.977	-7.52
Duty Factor =10 * log(Tx on / Tx total)			



GFSK Avg. Power Table

Channel	Frequency (MHz)	Avg. Power	
		(mW)	(dBm)
0	2402	1.227	0.89
40	2442	3.304	5.19
79	2481	3.622	5.59

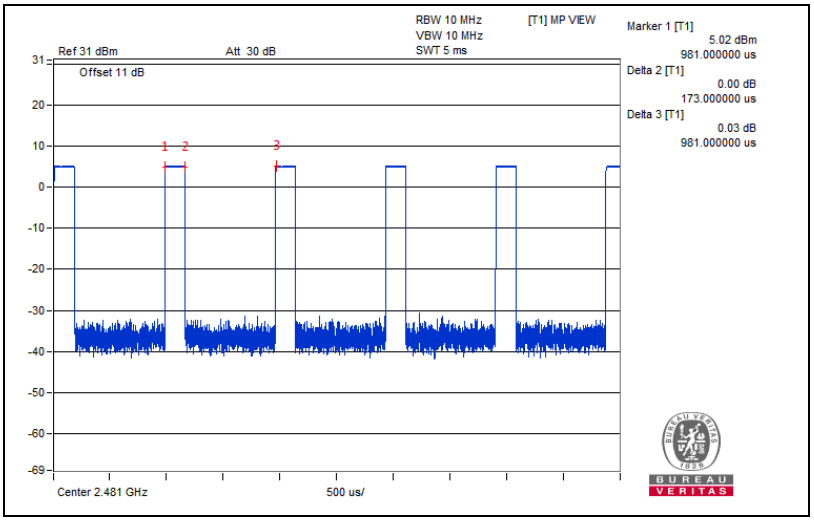
For GFSK SAR Test Exclusion Thresholds

Frequency (MHz)	Max Avg. Power (dBm)	*Max Time Avg. Power (dBm)	Max Time Avg. Power (mW)	SAR test exclusion calculation value(NOTE 1)	1-g SAR test exclusion thresholds	Result
2402 ~ 2481	5.59	-1.95	0.638	0.201	3	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)
	0.173	0.981	-7.54
Duty Factor =10 * log(Tx on / Tx total)			



4 Conclusion

The device of BT-LE and GFSK modulation type 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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