

RF Exposure Report

Report No.: SA160510E15

FCC ID: JNZNR0011

Test Model: N-R0011

Received Date: May 10, 2016

Test Date: May 26 to June 27, 2016

Issued Date: July 12, 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

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Release Control Record

Issue No.	Description	Date Issued
SA160510E15	Original release.	July 12, 2016

1 Certificate of Conformity

Product: Bridge

Brand: Logitech

Test Model: N-R0011

Sample Status: ENGINEERING SAMPLE

Applicant: LOGITECH FAR EAST LTD.


Test Date: May 26 to June 27, 2016


Standards: FCC Part 2 (Section 2.1091)

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:** July 12, 2016
Wendy Wu / Specialist

Approved by :  _____, **Date:** July 12, 2016
May Chen / Manager

2 RF Exposure

2.1 Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (minutes)
Limits For General Population / Uncontrolled Exposure				
300-1500	F/1500	30
1500-100,000	1.0	30

F = Frequency in MHz

2.2 MPE Calculation Formula

$$Pd = (Pout * G) / (4 * \pi * r^2)$$

where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user.

So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

The antennas provided to the EUT, please refer to the following table:

Antenna No	PCB Chain No.	Gain (dBi)	Frequency (GHz to GHz)	Antenna Connector	Antenna Type
1	Chain 0 (WiFi)	4.3	2.4~2.4835	PCB printed Antenna	PCB
2	Chain 1 (BT-LE)	4.2	2.4~2.4835	PCB printed Antenna	PCB

3 Calculation Result of Maximum Conducted Power

For 2.4GHz:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	112.46	4.3	20	0.06022	1

For BT-LE:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2402-2480	3.793	4.2	20	0.00198	1

Conclusion:

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

$WLAN\ 2.4GHz + BT-LE = 0.06022 / 1 + 0.00198 / 1 = 0.0622$

Therefore the maximum calculations of above situations are less than the "1" limit.

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