RF Exposure Report

Report No.:	SA180731E05
FCC ID:	NKR-LRV5-100
Test Model:	LRV5-100
Received Date:	Aug. 02, 2018
Test Date:	Aug. 06, 2018
Issued Date:	Sep. 03, 2018
Applicant:	Wistron NeWeb Corp.
Address:	20 Park Avenue II, Hsinchu Science Park,Hsinchu 308, 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
SA180731E05	Original release.	Sep. 03, 2018

1 Certificate of Conformity

Product:	Router
Brand:	Verizon Wireless
Test Model:	LRV5-100
Sample Status:	ENGINEERING SAMPLE
Applicant:	Wistron NeWeb Corp.
Test Date:	Aug. 06, 2018
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:** Sep. 03, 2018

Wendy Wu / Specialist

Approved by : _____ , **Date:** Sep. 03, 2018

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				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	…	…	f/1500	30
1500-100,000	…	…	1.0	30

f = Frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

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

where

Pd = power density in mW/cm^2

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 29 cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

WiFi Antenna Information

Frequency Range (GHz)	Directional Antenna Gain (dBi)	Antenna Type	Antenna Connector
2.4~2.4835	3.05	Dipole	i-pex(MHF)
5.15~5.25	6.43		
5.25~5.35	6.43		
5.47~5.725	6.47		
5.725~5.85	6.47		
Note: More detailed information, please refer to opearating description.			

LTE Antenna Information

Function Band	Frequency Range (MHz)	Antenna Gain (dBi)	Antenna Type
LTE B2	1850.7~1909.3	1.35	Monopole
LTE B4	1710.7~1754.3	1.45	
LTE B5	824.7~848.3	2.45	
LTE B13	779.5~784.5	1.39	

2.5 Calculation Result of Maximum Conducted Power

Operation Mode	Evaluation Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WiFi 2.4G	2412	854.346	3.05	29	0.16316	1
WiFi 5G B4	5755	893.395	6.47	29	0.37500	1
WiFi 5G B1	5230	673.319	6.43	29	0.28004	1
LTE B5 < Worst case band >	829	272.27	2.45	29	0.04529	0.5527*

Note: *Limit of Power Density = F/1500

Conclusion:

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz (Low Band) + WLAN 5GHz (High Band) + LTE = 0.16316 / 1 + 0.37500 / 1 + 0.28004 /1 + 0.04529 / 0.5527 = 0.90015

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

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Appendix

Operation Mode	Evaluation Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
LTE B2	1860	270.4	1.35	29	0.03491	1
LTE B4	1720	285.1	1.45	29	0.03767	1
LTE B5	829	272.27	2.45	29	0.04529	0.5527*
LTE B13	779.5	342.77	1.39	29	0.04467	0.5197*

Note: *Limit of Power Density = F/1500