RF Exposure Report

Report No.:	SA191227E08C
FCC ID:	Q87-08151
Test Model:	MR7350
Series Model:	MR7340, MR7320, MR7310
Received Date:	Jan. 13, 2020
Test Date:	May 07, 2020
Issued Date:	June 12, 2020
Applicant:	LINKSYS LLC
Address:	121 Theory Drive Irvine California 92617 United States
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
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan
FCC Registration / Designation Number:	723255 / TW2022

.

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
SA191227E08C	Original release.	June 12, 2020

1 Certificate of Conformity

Product:	Linksys Dual-Band 802.11ax Wireless Router
Brand:	Linksys
Test Model:	MR7350
Series Model:	MR7340, MR7320, MR7310
Sample Status:	ENGINEERING SAMPLE
Applicant:	LINKSYS LLC
Test Date:	May 07, 2020
Standards:	FCC Part 2 (Section 2.1091) IEEE C95.3-2002
References Test Guidance:	KDB 447498 D01 General RF Exposure Guidance v06

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 : Vivian Huang , **Date:** June 12, 2020

Vivian Huang / Specialist

Approved by : , **Date:** June 12, 2020

Clark Lin / Technical 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 35cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Antenna No.	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
WiFi 1	2.05	2.4~2.4835	Dipole	i-pex(MHF)	330
	2.44	5.15~5.25			
	2.71	5.25~5.35			
	3.07	5.47~5.725			
	3.02	5.725~5.85			
WiFi 2	2.39	2.4~2.4835	Dipole	i-pex(MHF)	80
	3.07	5.15~5.25			
	3.03	5.25~5.35			
	3.08	5.47~5.725			
	3.13	5.725~5.85			
BT	3.6	2.4~2.4835	Metal	none	NA

2.5 Calculation Result of Maximum Conducted Power

For 2.4GHz, 5GHz (U-NII-1 & U-NII-3 band) data was copied from the original test report (Report No.: SA191227E08)

Operation Mode	Evaluation Frequency (MHz)	Max. Average Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
WLAN 2.4GHz	2412~2462	974.252	5.23	35	0.21102	1
WLAN 5GHz U-NII-1	5180~5250	918.001	5.77	35	0.22516	1
WLAN 5GHz U-NII-2A	5260~5320	240.165	5.88	35	0.06042	1
WLAN 5GHz U-NII-2C	5500~5720	236.902	6.09	35	0.06255	1
WLAN 5GHz U-NII-3	5745~5825	958.805	6.09	35	0.25315	1
BT-EDR	2402~2480	8.81	3.6	35	0.00131	1
BT-LE	2402~2480	4.102	3.6	35	0.00061	1

NOTE:
2.4GHz: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.23 dBi
5GHz:
U-NII-1: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.77 dBi
U-NII-2A: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.88 dBi
U-NII-2C: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.09 dBi
U-NII-3: The directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 6.09 dBi

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 + Bluetooth = 0.21102 / 1 + 0.25315 / 1 + 0.00131 / 1 = 0.46548
Therefore the maximum calculations of above situations are less than the "1" limit.

--- END ---