

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

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 723255 / TW2022

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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.

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Vivian Huang / Specialist

Approved by : Clark Lin , **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/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 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 = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 5.23 \text{ dBi}$

5GHz:

U-NII-1: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 5.77 \text{ dBi}$

U-NII-2A: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 5.88 \text{ dBi}$

U-NII-2C: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 6.09 \text{ dBi}$

U-NII-3: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 6.09 \text{ dBi}$

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

$WLAN\ 2.4GHz + WLAN\ 5GHz + Bluetooth = 0.21102 / 1 + 0.25315 / 1 + 0.00131 / 1 = 0.46548$

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

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