

RF Exposure Report

Report No.: SA190515E04

FCC ID: Q87-03448

Test Model: MX5300

Received Date: May 15, 2019

Test Date: July 03, 2019

Issued Date: July 19, 2019

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
SA190515E04	Original release.	July 19, 2019

1 Certificate of Conformity

Product: Velop

Brand: Linksys

Test Model: MX5300

Sample Status: ENGINEERING SAMPLE

Applicant: Linksys LLC

Test Date: July 03, 2019

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 : Wendy Wu , **Date:** July 19, 2019
Wendy Wu / Specialist

Approved by : May Chen , **Date:** July 19, 2019
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

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 28cm away from the body of the user.
So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Frequency Range (GHz)	Directional Antenna Gain (dBi)	Antenna Type	Antenna Connector
2.4~2.4835 (Bluetooth+Zigbee)	1.97	Dipole	i-pex(mhf)
2.4~2.4835 (WLAN)	3.98		
5.15~5.25	5.18		
5.25~5.35	5.98		
5.47~5.725	4.72		
5.725~5.85	5.73		
Note: More detailed information, please refer to operating description.			

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)
WLAN 2.4GHz	2437	986.923	3.98	28	0.25047	1
Zigbee	2475	198.153	1.97	28	0.03166	1
Bluetooth	2402	23.605	1.97	28	0.00377	1
WLAN 5GHz (U-NII-1)	5240	922.721	5.18	28	0.30870	1
WLAN 5GHz (U-NII-3)	5755	671.308	5.73	28	0.25491	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 + Zigbee + Bluetooth + WLAN 5GHz (low band) + WLAN 5GHz (high band) = $0.25047 / 1 + 0.03166 / 1 + 0.00377 / 1 + 0.30870 / 1 + 0.25491 / 1 = 0.84951$

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

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