

## RF Exposure Report

**Report No.:** SA200603E15

**FCC ID:** K7S-03580

**Test Model:** MX4200

**Series Model:** MX4050, MX4000, MX4200C

**Received Date:** June 03, 2020

**Test Date:** July 01 to 02, 2020

**Issued Date:** July 17, 2020

**Applicant:** Belkin International, Inc.

**Address:** 12045 East Waterfront Drive Playa Vista, CA. 90094, USA

**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

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## Table of Contents

<b>Release Control Record</b> .....	<b>3</b>
<b>1 Certificate of Conformity</b> .....	<b>4</b>
<b>2 RF Exposure</b> .....	<b>5</b>
2.1 Limits for Maximum Permissible Exposure (MPE).....	5
2.2 MPE Calculation Formula .....	5
2.3 Classification .....	5
2.4 Antenna Gain .....	6
2.5 Calculation Result of Maximum Conducted Power.....	7

### Release Control Record

Issue No.	Description	Date Issued
SA200603E15	Original release.	July 17, 2020

## 1 Certificate of Conformity

**Product:** Velop AX4200 WiFi 6 System  
**Brand:** Linksys  
**Test Model:** MX4200  
**Series Model:** MX4050, MX4000, MX4200C  
**Sample Status:** ENGINEERING SAMPLE  
**Applicant:** Belkin International, Inc.  
**Test Date:** July 01 to 02, 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 :** Phoenix Huang, **Date:** July 17, 2020  
Phoenix Huang / Specialist

**Approved by :** Clark Lin, **Date:** July 17, 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 <sup>2</sup> )	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 <sup>2</sup> )*	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

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

where

Pd = power density in mW/cm<sup>2</sup>

P<sub>out</sub> = 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 38 cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 2.4 Antenna Gain

Ant. No.	Transmitter Circuit	Ant.Net Gain (dBi)	Freq. Range (GHz)	Ant. Type	Connector Type
WiFi LB_1	Dual A	3.1	2.4~2.4835	PCB	i-pex(MHF)
		3.5	5.15~5.25		
		5	5.25~5.35		
		3.7	5.47~5.725		
		4.6	5.725~5.85		
WiFi LB_2	Dual B	2.8	2.4~2.4835	PCB	i-pex(MHF)
		4.8	5.15~5.25		
		5.1	5.25~5.35		
		5	5.47~5.725		
		4.7	5.725~5.85		
WiFi HB_1	5/6G A	3	5.15~5.25	PCB	i-pex(MHF)
		3.8	5.25~5.35		
		3.7	5.47~5.725		
		3.7	5.725~5.85		
WiFi HB_2	5/6G B	3.3	5.15~5.25	PCB	i-pex(MHF)
		4.1	5.25~5.35		
		3.3	5.47~5.725		
		3.3	5.725~5.85		
WiFi HB_3	5/6G C	2.6	5.15~5.25	PCB	i-pex(MHF)
		3.6	5.25~5.35		
		4.1	5.47~5.725		
		3.9	5.725~5.85		
WiFi HB_4	5/6G D	2.4	5.15~5.25	PCB	i-pex(MHF)
		2.9	5.25~5.35		
		2.6	5.47~5.725		
		3.8	5.725~5.85		
BT	-	2.1	2.4~2.4835	PCB	i-pex(MHF)

Note: The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

## 2.5 Calculation Result of Maximum Conducted Power

Operation Mode	Evaluation Frequency (MHz)	Max. Average Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
WLAN (2.4GHz)	2412~2462	799.923	5.96	38	0.17389	1
WLAN (U-NII-1)	5180~5260	648.459	7.18	38	0.18668	1
WLAN (U-NII-3)	5745~5825	961.375	9.70	38	0.49444	1
BT-LE	2402~2480	104.954	2.10	38	0.00938	1

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- 2.4GHz: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 5.96 \text{ dBi}$
- 5GHz:
  - U-NII-1: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 7.18 \text{ dBi}$
  - U-NII-3: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.7 \text{ dBi}$

### 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

$$\text{WLAN 2.4GHz} + \text{WLAN 5GHz (U-NII-1)} + \text{WLAN 5GHz (U-NII-3)} + \text{Bluetooth} = 0.17389 / 1 + 0.18668 / 1 + 0.49444 / 1 + 0.00938 / 1 = 0.86439$$

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

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