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**Test Model:** DBA-1520P

**Received Date:** Nov. 15, 2019

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**Applicant:** D-Link Corporation

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**Test Location:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
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**FCC Registration /  
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### Release Control Record

Issue No.	Description	Date Issued
SA191115E06	Original release.	Feb. 24, 2020

## 1 Certificate of Conformity

**Product:** Business Cloud Wave 2 Access Point, Nuclias Cloud-Managed AC1750 Wave 2 Access Point

**Brand:** D-Link

**Test Model:** DBA-1520P

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** D-Link Corporation

**Test Date:** Dec. 20, 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 :** Joyce Kuo , **Date:** Feb. 24, 2020  
Joyce Kuo / Specialist

**Approved by :** Clark Lin , **Date:** Feb. 24, 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

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

where

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

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

## 2.4 Antenna Gain

Antenna NO.	Brand	Model	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type	Cable Length (mm)
ANT_1	Hongbo	290-20404	4.58	2.4~2.4835GHz	PIFA	i-pex(MHF)	80
			3.86	5.15~5.25GHz			
			4.69	5.25~5.35GHz			
			4.95	5.47~5.725GHz			
			4.95	5.725~5.85GHz			
ANT_2	Hongbo	290-20405	3.33	2.4~2.4835GHz	PIFA	i-pex(MHF)	90
			4.81	5.15~5.25GHz			
			4.55	5.25~5.35GHz			
			4.54	5.47~5.725GHz			
			4.82	5.725~5.85GHz			
ANT_3	Hongbo	290-20406	2.81	2.4~2.4835GHz	PIFA	i-pex(MHF)	120
			4.71	5.15~5.25GHz			
			4.75	5.25~5.35GHz			
			4.68	5.47~5.725GHz			
			4.73	5.725~5.85GHz			

## 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 <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
WLAN (2.4GHz)	2437	801.158	8.38	32	0.42875	1
WLAN (U-NII-1)	5230	555.87	9.24	32	0.36263	1
WLAN (U-NII-3)	5745	687.313	9.61	32	0.48825	1

**Note:**

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- 2.4GHz: The directional gain =  $10 \log[(10^{\text{Chain0}/20} + 10^{\text{Chain1}/20} + 10^{\text{Chain2}/20})^2 / 3] = 8.38\text{dBi}$
- 5GHz: For U-NII-1: The directional gain =  $10 \log[(10^{\text{G0}/20} + 10^{\text{G1}/20} + 10^{\text{G2}/20})^2 / 3] = 9.24\text{dBi}$   
 For U-NII-3: The directional gain =  $10 \log[(10^{\text{G0}/20} + 10^{\text{G1}/20} + 10^{\text{G2}/20})^2 / 3] = 9.61\text{dBi}$

**Conclusion:**

The formula of calculated the MPE is:

$$\text{CPD1} / \text{LPD1} + \text{CPD2} / \text{LPD2} + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

$$\text{WLAN 2.4GHz} + \text{WLAN 5GHz} = 0.42875 / 1 + 0.48825 / 1 = 0.91700$$

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

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