

## RF Exposure Report

**Report No.:** SA190604C42A

**FCC ID:** KA2IR1950A1

**Original FCC ID:** KA2IR1750A1

**Test Model:** DIR-1950

**Received Date:** Jun. 04, 2019

**Test Date:** Jun. 21 ~ Jul. 04, 2019

**Issued Date:** Jul. 08, 2019

**Applicant:** D-Link Corporation

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**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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**Test Location:** No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

**FCC Registration /  
Designation Number:** 788550 / TW0003



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### Release Control Record

Issue No.	Description	Date Issued
SA190604C42A	Original release	Jul. 08, 2019

## 1 Certificate of Conformity

**Product:** AC1900 Gigabit Wi-Fi Router

**Brand:** D-Link

**Test Model:** DIR-1950

**Sample Status:** Engineering sample

**Applicant:** D-Link Corporation

**Test Date:** Jun. 21 ~ Jul. 04, 2019

**Standards:** FCC Part 2 (Section 2.1091)  
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 RF characteristics under the conditions specified in this report.

**Prepared by :** Celine Chou , **Date:** Jul. 08, 2019  
Celine Chou / Senior Specialist

**Approved by :** Bruce Chen , **Date:** Jul. 08, 2019  
Bruce Chen / Project Engineer

## 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				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 2.2 MPE Calculation Formula

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

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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 28cm away from the body of the user. So, this device is classified as **Mobile Device**.

### 3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
CDD Mode					
2412-2462	29.08	8.77	28	0.619	1
5180-5240	25.34	9.77	28	0.329	1
5745-5825	24.53	9.77	28	0.273	1
Beamforming Mode					
2412-2462	26.99	8.77	28	0.382	1
5180-5240	25.34	9.77	28	0.329	1
5745-5825	24.53	9.77	28	0.273	1

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.4GHz: Directional gain = 4dBi + 10log(3) = 8.77dBi

5GHz: Directional gain = 5dBi + 10log(3) = 9.77dBi

#### Conclusion:

Both of the WLAN 2.4G & WLAN 5G can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + .....etc. < 1

CPD = Calculation power density

LPD = Limit of power density

2.4G + 5G = 0.619 / 1 + 0.329 / 1 = 0.948

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

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