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
Address:	17595 Mt. Herrmann, Fountain Valley, California, United States, 92708
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)
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

Table of Contents

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^2)	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

$Pd = (Pout*G) / (4*pi*r^2)$
where
Pd = power density in mW/cm^2
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 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^2)	Limit (mW/cm^2)
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.

---END---