

RF Exposure Report

Report No.: SABDUI-WTW-P20110876A

FCC ID: KA2R15A1

Test Model: R15

Received Date: Feb. 20, 2021

Date of Evaluation: Aug. 24, 2021

Issued Date: May 24, 2022

Applicant: D-Link Corporation

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 788550 / TW0003
Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
SABDUI-WTW-P20110876A	Original Release	May 24, 2022

1 Certificate of Conformity

Product: AX1500 Wi-Fi 6 AI Router, AX1500 SMART ROUTER

Brand: D-Link

Test Model: R15

Sample Status: Engineering Sample

Applicant: D-Link Corporation


Date of Evaluation: Aug. 24, 2021

Standards: FCC Part 2 (Section 2.1091)

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 RF characteristics under the conditions specified in this report.


Prepared by : _____, **Date:** May 24, 2022
Lena Wang / Specialist


Approved by : _____, **Date:** May 24, 2022
Jeremy Lin / 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

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

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 21cm 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 Average Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN					
CDD Mode					
2412-2462	27.92	7.81	21	0.675	1
5180-5240	23.83	8.31	21	0.295	1
5260-5320	23.71	8.31	21	0.287	1
5500-5720	23.46	8.31	21	0.271	1
5745-5825	24.03	8.31	21	0.309	1
Beamforming Mode					
2412-2462	22.00	7.81	21	0.173	1
5180-5240	20.71	8.31	21	0.144	1
5260-5320	20.70	8.31	21	0.144	1
5500-5720	20.45	8.31	21	0.136	1
5745-5825	21.02	8.31	21	0.155	1

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

Note:

1. Directional gain:

2.4GHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 7.81 \text{ dBi}$

5GHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}] = 8.31 \text{ dBi}$

2. 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.

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

The simultaneous operation mode was determined by client.

WLAN 2.4G+ 5GHz = $0.675/1 + 0.309/1 = 0.984$

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

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