

RF Exposure Report

Report No.: SA200116C09

FCC ID: KA2WL8720APA1

Test Model: DWL-8720AP

Received Date: Jan. 16, 2020

Date of Evaluation: May 25, 2020

Issued Date: Jun. 02, 2020

Applicant: D-Link Corporation

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



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Release Control Record

| Issue No. | Description | Date Issued |
|-------------|------------------|---------------|
| SA200116C09 | Original Release | Jun. 02, 2020 |

1 Certificate of Conformity

Product: Unified AC Dual-band Outdoor PoE Access Point

Brand: D-Link

Test Model: DWL-8720AP

Sample Status: Engineering Sample

Applicant: D-Link Corporation


Date of Evaluation: May 25, 2020

Standards: FCC Part 2 (Section 2.1091)

References Test Guidance : KDB 447498 D01 General RF Exposure Guidance v06
IEEE C95.3 -2002

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:** Jun. 02, 2020
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Approved by :  _____, **Date:** Jun. 02, 2020
Dylan Chiou / Senior 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 | | | | |
| 0.3-1.34 | 614 | 1.63 | (100)* | 30 |
| 1.34-30 | 824/f | 2.19/f | (180/f ²)* | 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/cm²

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 23.2cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Calculation Result of Maximum Conducted Power

| Band | Frequency Band (MHz) | Max Power (dBm) | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|------------------|----------------------|-----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| CDD Mode | | | | | | |
| WLAN | 2412-2462 | 28.15 | 6.51 | 23.2 | 0.432 | 1.00 |
| | 5180-5240 | 26.81 | 9.01 | 23.2 | 0.565 | 1.00 |
| | 5745-5825 | 26.20 | 9.01 | 23.2 | 0.491 | 1.00 |
| Beamforming Mode | | | | | | |
| WLAN | 2412-2462 | 23.44 | 6.51 | 23.2 | 0.146 | 1.00 |
| | 5180-5240 | 23.80 | 9.01 | 23.2 | 0.282 | 1.00 |
| | 5745-5825 | 23.19 | 9.01 | 23.2 | 0.245 | 1.00 |

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- 2.4GHz: Directional gain = 3.5 dBi + 10log(2) = 6.51 dBi
5.0GHz:
[For U-NII-1 band & For U-NII-3 band](#): Directional gain = 6dBi + 10log(2) = 9.01 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

$$\text{WLAN 2.4GHz} + \text{WLAN 5GHz} = 0.432 + 0.565 = 0.997$$

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

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