

**Report No.:** SA171024E05B

**FCC ID:** KA2AP2680A1

**Test Model:** DAP-2680

**Received Date:** Oct. 24, 2017

**Test Date:** Nov. 13 to 14, 2017

**Issued Date:** Jan. 25, 2018

**Applicant:** D-Link Corporation

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## Table of Contents

<b>Release Control Record</b> .....	<b>3</b>
<b>1 Certificate of Conformity</b> .....	<b>4</b>
<b>2 RF Exposure</b> .....	<b>5</b>
2.1 Limits for Maximum Permissible Exposure (MPE) .....	5
2.2 MPE Calculation Formula .....	5
2.3 Classification .....	5
2.4 Antenna Gain .....	6
2.5 Calculation Result .....	6

### Release Control Record

Issue No.	Description	Date Issued
SA171024E05B	Original release.	Jan. 25, 2018

## 1 Certificate of Conformity

**Product:** Wireless AC1750 Wave 2 Dual-Band PoE Access Point

**Brand:** D-Link

**Test Model:** DAP-2680

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** D-Link Corporation

**Test Date:** Nov. 13 to 14, 2017

**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.

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Wendy Wu / Specialist

**Approved by :** May Chen , **Date:** Jan. 25, 2018  
May Chen / 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 32cm away from the body of the user.

So, this device is classified as **Mobile Device**.

## 2.4 Antenna Gain

Antenna No.	Model	Antenna Gain (dBi)	Frequency range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
1	NYS3072	3.6	2.4~2.4835	PIFA	i-pex (MHF)	60
		4.2	5.15~5.85			
2	NYS3073	3.6	2.4~2.4835	PIFA	i-pex (MHF)	70
		4.2	5.15~5.85			
3	NYS3074	3.5	2.4~2.4835	PIFA	i-pex (MHF)	160
		4	5.15~5.85			

## 2.5 Calculation Result

For 2.4GHz, 5GHz (U-NII-1 & UNII-3 band) data was copied from the original test report (Report No.: SA171024E05)

Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	779.921	8.34	32	0.41356	1
5180-5240	676.99	8.91	32	0.40933	1
5260-5320	246.757	8.91	32	0.14920	1
5500-5700	246.496	8.91	32	0.14904	1
5745-5825	341.892	8.91	32	0.20672	1

### NOTE:

2.4GHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 3] = 8.34\text{dBi}$

5GHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 3] = 8.91\text{dBi}$

### 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

WLAN 2.4GHz + WLAN 5GHz =  $0.41356 / 1 + 0.40933 / 1 = 0.82289$

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

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