

## RF Exposure Report

**Report No.:** SA180227E06

**FCC ID:** KA2IR2680A1

**Test Model:** DIR-2680

**Received Date:** Feb. 27, 2018

**Test Date:** Mar. 22 to 24, 2018

**Issued Date:** Apr. 26, 2018

**Applicant:** D-Link Corporation

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

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Taiwan R.O.C.

**Test Location :** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
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**FCC Registration /  
Designation Number:** 723255 / TW2022

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### Release Control Record

Issue No.	Description	Date Issued
SA180227E06	Original release.	Apr. 26, 2018

## 1 Certificate of Conformity

**Product:** D-Fend AC2600 Wi-Fi Router

**Brand:** D-Link Corporation

**Test Model:** DIR-2680

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** D-Link Corporation

**Test Date:** Mar. 22 to 24, 2018

**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.

**Prepared by :** Wendy Wu , **Date:** Apr. 26, 2018  
Wendy Wu / Specialist

**Approved by :** May Chen , **Date:** Apr. 26, 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

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

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 50cm away from the body of the user.

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

### 2.4 Antenna Gain

Ant No.	PCB No.	Brand	Model	Antenna Gain (dBi)	Frequency rang (MHz)	Antenna type	Connector type
1	AJ5 (2.4GHz_4 5GHz_1)	Whayu	C641-510203-A	3.6	2400~2500	Dipole	i-pex(MHF)
				4.9	5150~5825		
2	AJ6 (2.4GHz_3 5GHz_2)	Whayu	C641-510204-A	3.8	2400~2500	Dipole	i-pex(MHF)
				4.6	5150~5825		
3	AJ7 (2.4GHz_2 5GHz_3)	Whayu	C641-510205-A	3.9	2400~2500	Dipole	i-pex(MHF)
				4.9	5150~5825		
4	AJ8 (2.4GHz_1 5GHz_4)	Whayu	C641-510206-A	3.9	2400~2500	Dipole	i-pex(MHF)
				4.8	5150~5825		

## 2.5 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	993.019	9.82	50	0.30325	1
5180-5240	650.182	10.82	50	0.24997	1
5745-5825	988.682	10.82	50	0.38011	1

NOTE:

2.4GHz: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.82\text{dBi}$

5GHz: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 10.82\text{dBi}$

### 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

$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.30325 / 1 + 0.38011 / 1 = 0.68336$

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

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