

## RF Exposure Report

**Report No.:** SA170815E02

**FCC ID:** KA2IR867A1

**Test Model:** DIR-867

**Received Date:** Jan. 16, 2017

**Test Date:** Aug. 24, 2017

**Issued Date:** Oct. 30, 2017

**Applicant:** D-Link Corporation

**Address:** 17595 Mt. Herrmann Street Fountain Valley, CA92708 USA

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

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Taiwan R.O.C.

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### Release Control Record

Issue No.	Description	Date Issued
SA170815E02	Original release.	Oct. 30, 2017

## 1 Certificate of Conformity

**Product:** AC1750 MU-MIMO Wi-Fi Gigabit Router

**Brand:** D-Link

**Test Model:** DIR-867

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** D-Link Corporation

**Test Date:** Aug. 24, 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.

**Prepared by :**



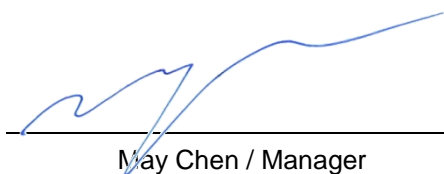
**Date:**

Oct. 30, 2017

Wendy Wu / Specialist

:

**Approved by**



**Date:**

Oct. 30, 2017

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

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

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 38cm away from the body of the user.

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

### 2.4 Antenna Gain

Antenna No.	Brand	Model	Ant. Gain(dBi) Including cable loss	Frequency range (MHz)	Antenna Type	Connector Type	Cable Length (mm)
1	RF link	RF21C02116A	4.75	2400~2483.5	Dipole	i-pex	130
			4.96	5150~5850			
2		RF21C02116A	4.75	2400~2483.5	Dipole	i-pex	130
			4.96	5150~5850			
3		RF21C02546A	5	2400~2483.5	Dipole	i-pex	160
4		RF21C02547A	5	5150~5850	Dipole	i-pex	160

## 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	600.792	9.61	38	0.30265	1
5180-5240	235.054	9.74	38	0.12201	1
5745-5825	549.499	9.74	38	0.28523	1

### NOTE:

2.4GHz: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20})^2 / 3] = 9.61\text{dBi}$

5GHz: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20})^2 / 3] = 9.74\text{dBi}$

### 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 =  $0.30265 / 1 + 0.28523 / 1 = 0.58788$

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

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