



## RF Exposure Report

**Report No.:** SA150428E01

**FCC ID:** KA2IR822A1

**Test Model:** DIR-822

**Received Date:** Apr. 28, 2015

**Test Date:** May 04, 2015

**Issued Date:** May 21, 2015

**Applicant:** D-Link Corporation

**Address:** No.289, Sinhu 3rd Rd., Neihu District, Taipei City 114, Taiwan, R.O.C.

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
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**Lab Address:** No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin  
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**Test Location (1):** No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin  
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**Test Location (2):** No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin  
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### Release Control Record

Issue No.	Description	Date Issued
SA150428E01	Original release.	May 21, 2015



## 1 Certificate of Conformity

**Product:** AC1200 Wi-Fi Router

**Brand:** D-Link

**Test Model:** DIR-822

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** D-Link Corporation

**Test Date:** May 04, 2015

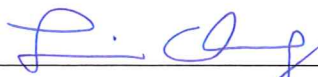
**Standards:** FCC Part 2 (Section 2.1091)

KDB 447498 D03

IEEE C95.1

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 :**

  
Lori Chung / Specialist

**Date:**

May 21, 2015

**Approved by :**

  
May Chen / Manager

**Date:**

May 21, 2015

## 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				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 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 24cm away from the body of the user.

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

## 3 Antenna Gain

The antenna provided to the EUT, please refer to the following table:

2.4GHz Band								
No.	Transmitter Circuit	Brand	Model	Ant. Gain(dBi) <Including cable loss>	Frequency range (GHz to GHz)	Cable Length (mm)	Antenna Type	Connector Type
1	Chain (0)	HL Technology	290-20208	2.5	2.4~2.4835	70	Dipole	NA
2	Chain (1)	Group Limited	290-20210	2.5	2.4~2.4835	260		
5GHz Band								
No.	Transmitter Circuit	Brand	Model	Ant. Gain(dBi) <Including cable loss>	Frequency range (GHz to GHz)	Cable Length (mm)	Antenna Type	Connector Type
3	Chain (0)	HL Technology	290-20207	2.5	5.15~5.85	70	Dipole	NA
4	Chain (1)	Group Limited	290-20209	2.5	5.15~5.85	280		

**4 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	726.158	5.51	24	0.35678	1
5180-5240	208.543	5.51	24	0.10246	1
5745-5825	264.383	5.51	24	0.12990	1

NOTE:

2.4GHz : Directional gain = 2.5dBi + 10log(2) = 5.51dBi

5GHz : Directional gain = 2.5dBi + 10log(2) = 5.51dBi

**Conclusion:**

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + .....etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz = 0.35678 + 0.12990 = 0.487

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

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