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 Hsin Chu Laboratory
Lab Address:	No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.
Test Location (1):	No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.
Test Location (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

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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 : _____ , **Date:** May 21, 2015

Lori Chung / Specialist

Approved by : _____ , **Date:** May 21, 2015

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^2)	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^2

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	Connecter Type
1	Chain (0)	HL Technology Group Limited	290-20208	2.5	2.4~2.4835	70	Dipole	NA
2	Chain (1)		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	Connecter Type
3	Chain (0)	HL Technology Group Limited	290-20207	2.5	5.15~5.85	70	Dipole	NA
4	Chain (1)		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^2)	Limit (mW/cm^2)
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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