

RF Exposure Report

Report No.: SA160914E10

FCC ID: KA2AP1655A1

Test Model: DAP-1655, COVR-1300E

Received Date: Sep. 14, 2016

Test Date: Oct. 20, 2016

Issued Date: Apr. 13, 2017

Applicant: D-Link Corporation

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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Release Control Record

Issue No.	Description	Date Issued
SA160914E10	Original release.	Apr. 13, 2017

1 Certificate of Conformity

Product: Covr AC1300 Wi-Fi Range Extender
Brand: D-Link
Test Model: DAP-1655, COVR-1300E
Sample Status: MASS-PRODUCTION
Applicant: D-Link Corporation
Test Date: Oct. 20, 2016
Standards: FCC Part 2 (Section 2.1091)
KDB 447498 D01 General RF Exposure Guidance v06

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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Approved by : May Chen , **Date:** Apr. 13, 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 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

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

where

Pd = power density in mW/cm²

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 20cm away from the body of the user.

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

2.4 Antenna Gain

Antenna No.	Chain No.	Model	Antenna Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type
1	Chain 0	NA	1.43	2.4~2.4835	PIFA	I-pex (MHF)
			2.99	5.15~5.85		
2	Chain 1	NA	1.99	2.4~2.4835	PIFA	I-pex (MHF)
			2.99	5.15~5.85		

2.5 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	324.61	4.72	20	0.19147	1
5180-5240	250.367	6.00	20	0.19829	1
5745-5825	279.463	6.00	20	0.22134	1

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 4.72\text{dBi}$

5GHz: Directional gain = $2.99\text{dBi} + 10\log(2) = 6\text{dBi}$

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

$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.19147 / 1 + 0.22134 / 1 = 0.41281$

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

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