RF Exposure Report

Report No.: SA180123E04

FCC ID: KA2COVR2200A1

Test Model: COVR-2200

Received Date: Jan. 23, 2018

Test Date: Feb. 12, 2018

Issued Date: Mar. 09, 2018

Applicant: D-Link Corporation

Address: 17595 Mt. Herrmann, Fountain Valley, California, United States 92708

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

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FCC Registration / Designation Number: 723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
SA180123E04	Original release.	Mar. 09, 2018

1   Certificate of Conformity

Product: Tri Band Whole Home Wi-Fi Extender

Brand: D-Link

Test Model: COVR-2200

Sample Status: ENGINEERING SAMPLE

Applicant: D-Link Corporation

Test Date: Feb. 12, 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 : _____ , **Date:** _____ Mar. 09, 2018 _____

Wendy Wu / Specialist

Approved by : _____ , **Date:** _____ Mar. 09, 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^2)	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^2)*	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

$Pd = (Pout*G) / (4*pi*r^2)$

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 35cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Ant No.	Model	Antenna Gain (dBi)	Frequency rang (GHz)	Antenna type	Connector type
Dual-Ant 0	290-60110	5.23	2.4~2.4835	PCB	i-pex(MHF)
		3.76	5.15~5.25		
		3.04	5.25~5.35		
Dual-Ant 1	290-60111	4.76	2.4~2.4835	PCB	i-pex(MHF)
		5.45	5.15~5.25		
		5.31	5.25~5.35		
5g_Ant 1	290-60107	5.24	5.47~5.725	PCB	i-pex(MHF)
		5.23	5.725~5.85		
5g_Ant 1_B	290-60105	5.12	5.47~5.725	Dipole	i-pex(MHF)
		5.09	5.725~5.85		
5g_Ant 0	290-60108	3.84	5.47~5.725	PCB	i-pex(MHF)
		5.15	5.725~5.85		
5g_Ant 0_B	290-60106	3.45	5.47~5.725	Dipole	i-pex(MHF)
		3.48	5.725~5.85		

Condition	Antenna No.	
1	5g_Ant 1	5g_Ant 0
2	5g_Ant 1_B	5g_Ant 0_B
3	5g_Ant 1_B	5g_Ant 0
4	5g_Ant 1	5g_Ant 0_B

Note:
1. For Antenna Port Conducted Measurement, **Condition 1** was selected for final test.

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	694.376	8.01	35	0.28526	1
5180-5240	620.455	7.66	35	0.23516	1
5745-5825	993.819	8.20	35	0.42654	1

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 8.01dBi

5GHz:

UNII-1: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 7.66dBi

UNII-3: Directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 8.20dBi

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 (low band) + WLAN 5GHz (high band) = 0.28526 / 1 + 0.23516 / 1 + 0.42654 / 1 = 0.94696

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

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