

RF Exposure Report

Report No.: SABEBW-WTW-P20120765

FCC ID: KA2BGX1000A1

Test Model: DBG-X1000

Received Date: Jan. 13, 2021

Date of Evaluation: Apr. 13, 2021

Issued Date: Sep. 02, 2021

Applicant: D-Link Corporation

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
SABEBW-WTW-P20120765	Original Release	Sep. 02, 2021

1 Certificate of Conformity

Product: Nuclias Cloud-Managed Wireless VPN Gateway

Brand: D-Link Corporation

Test Model: DBG-X1000

Sample Status: Mass product


Applicant: D-Link Corporation

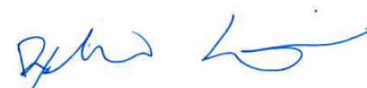
Date of Evaluation: Apr. 13, 2021

Standards: FCC Part 2 (Section 2.1091)

References Test Guidance : KDB 447498 D01 General RF Exposure Guidance v06
IEEE C95.3 -2002

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 RF characteristics under the conditions specified in this report.

Prepared by :  , **Date:** Sep. 02, 2021
Gina Liu / Specialist

Approved by :  , **Date:** Sep. 02, 2021
Dylan Chiou / Senior Project Engineer

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/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 Calculation Result of Maximum Conducted Power

Band	Frequency Band (MHz)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN	2412-2462	25.90	6.51	20	0.347	1.00
	5180-5240	27.29	7.51	20	0.601	1.00
	5745-5825	27.24	7.51	20	0.594	1.00

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible
3. 2.4GHz: Directional gain = 3.5 dBi + 10log(2) = 6.51 dBi
5GHz: Directional gain = 4.5 dBi + 10log(2) = 7.51 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 = $0.347/1 + 0.601/1 = 0.948$

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

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