

RF Exposure Report

Report No.: SABEBW-WTW-P20110211

FCC ID: KA2APX2850A1

Test Model: DAP-X2850

Received Date: Nov. 06, 2020

Test Date: Nov. 20, 2020

Issued Date: Dec. 24, 2020

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:** 723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
SABEBW-WTW-P20110211	Original release.	Dec. 24, 2020

1 Certificate of Conformity

Product: Nuclias Connect AX3600 Access Point
Brand: D-Link
Test Model: DAP-X2850
Sample Status: Engineering sample
Applicant: D-Link Corporation
Test Date: Nov. 20, 2020
Standards: FCC Part 2 (Section 2.1091)
IEEE C95.3 -2002
References Test Guidance: 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.

Prepared by : Vivian Huang, **Date:** Dec. 24, 2020
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Approved by : [Signature], **Date:** Dec. 24, 2020
Clark Lin / Technical 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/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 42 cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Antenna No.	RF Chain No.	Brand	Model	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type	Cable Length (mm)
1	chain0	M.gear	C037-511532-A	2.59	2.4~2.4835GHz	PIFA	i-pex(MHF)	194
2	chain1	M.gear	C037-511532-A	2.72	2.4~2.4835GHz	PIFA	i-pex(MHF)	150
3	chain2	M.gear	C037-511532-A	3.77	2.4~2.4835GHz	PIFA	i-pex(MHF)	75
4	chain3	M.gear	C037-511532-A	3.57	2.4~2.4835GHz	PIFA	i-pex(MHF)	157
5	Chain0	M.gear	C037-511532-A	5.39	5.15~5.85GHz	PIFA	i-pex(MHF)	131
6	Chain1	M.gear	C037-511532-A	5.08	5.15~5.85GHz	PIFA	i-pex(MHF)	186
7	Chain2	M.gear	C037-511532-A	5.46	5.15~5.85GHz	PIFA	i-pex(MHF)	118
8	Chain3	M.gear	C037-511532-A	5.3	5.15~5.85GHz	PIFA	i-pex(MHF)	73

*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.

2.5 Calculation Result

Operation Mode	Evaluation Frequency (MHz)	Max. Average Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN (2.4GHz)	2412~2462	880.485	9.20	42	0.33038	1
WLAN (U-NII-1)	5180-5240	313.331	11.33	42	0.192	1
WLAN (U-NII-3)	5745-5825	881.993	11.33	42	0.54045	1

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- 2.4GHz: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.2\text{dBi}$
- 5GHz: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 11.33\text{dBi}$

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

$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.33038 / 1 + 0.54045 / 1 = 0.87083$

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

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