

## 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

**Address:** 17595 Mt. Herrmann Street Fountain Valley, CA92708 USA

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

**Lab Address:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan

**Test Location:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan

**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  
Vivian Hunag / Specialist

**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 <sup>2</sup> )	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 <sup>2</sup> )*	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<sup>2</sup>

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 <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
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:

$$\text{CPD1} / \text{LPD1} + \text{CPD2} / \text{LPD2} + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

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

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

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