

RF Exposure Report

Report No.: SABHJS-WTW-P20080536

FCC ID: PD5-NWA1000

Test Model: NWA1000

Received Date: Aug. 27, 2020

Test Date: Sep. 04, 2020 ~ Jun. 11, 2021

Issued Date: Jun. 18, 2021

Applicant: Delta Electronics, Inc.

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



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Release Control Record

Issue No.	Description	Date Issued
SABHJS-WTW-P20080536	Original release	Jun. 18, 2021

1 Certificate of Conformity

Product: Wireless Access Point

Brand: Nile Global

Test Model: NWA1000

Sample Status: Engineering sample

Applicant: Delta Electronics, Inc.

Test Date: Sep. 04, 2020 ~ Jun. 11, 2021

Standards: FCC Part 2 (Section 2.1091)

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 RF characteristics under the conditions specified in this report.

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Polly Chien / Specialist

Approved by : Bruce Chen, **Date:** Jun. 18, 2021
Bruce Chen / 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

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

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 31cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Average Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN CDD Mode: QCN-5124 Module					
2412-2462	27.98	10.01	31	0.521	1
WLAN CDD Mode: QCN-5154 Module					
5180-5240	26.79	9.93	31	0.389	1
5745-5825	27.68	9.93	31	0.478	1
WLAN Beamforming Mode: QCN-5124 Module					
2412-2462	25.78	10.01	31	0.314	1
WLAN Beamforming Mode: QCN-5154 Module					
5180-5240	25.85	9.93	31	0.313	1
5745-5825	25.97	9.93	31	0.322	1
WLAN CDD Mode: QCA-9889 Module					
2412-2462	18.63	4.6	31	0.017	1
5180-5240	16.91	5	31	0.013	1
5745-5825	16.89	5	31	0.013	1
BT LE: CSR8811 Module					
2402-2480	8.13	4.4	31	0.001	1

*Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Note:

1. Directional gain:

2.4GHz: Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4]$ = 10.01dBi

5GHz: Directional Gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/4]$ = 9.93dBi

BT LE: Antenna gain: 4.4dBi

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.

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 and WLAN 5GHz technologies can transmit simultaneously except BT.

[QCN-5124 Module + QCN-5154 Module:](#)

$WLAN\ 2.4G + WLAN\ 5G = 0.521 / 1 + 0.478 / 1 = 0.999 < 1$

[QCA-9889 Module:](#)

$WLAN\ 2.4G + WLAN\ 5G = 0.017 / 1 + 0.013 / 1 = 0.030 < 1$

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

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