RF Exposure Report

Report No.:	SABHJS-WTW-P20090518
FCC ID:	PD5-NWA1000
Test Model:	NWA1000
Received Date:	Sep. 23, 2020
Test Date:	Sep. 29, 2020 ~ Jun. 18, 2021
Issued Date:	Jun. 21, 2021
Applicant:	Delta Electronics, Inc.
Address:	31-1 Shien Pan Rd., Kuei San Industrial Zone, Taoyuan City, 333 Taiwan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

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Release Control Record

Issue No.	Description	Date Issued
SABHJS-WTW-P20090518	Original release	Jun. 21, 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. 29, 2020 ~ Jun. 18, 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.

Prepared by : Polly Chien , **Date:** Jun. 21, 2021

Polly Chien / Specialist

Approved by : Bruce Chen , **Date:** Jun. 21, 2021

Bruce Chen / Senior 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/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 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
5260-5320	23.59	9.93	31	0.186	1
5500-5700	23.86	9.93	31	0.198	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
5260-5320	20.05	9.93	31	0.082	1
5500-5700	19.93	9.93	31	0.080	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	
5180-5240	16.91	5	31	0.013	1
5260-5320	17.04	5	31	0.013	1
5500-5700	16.92	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[($10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]= 10.01dBi
5GHz: Directional Gain = 10 log[($10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$]= 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 + ……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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