

RF Exposure Report

Report No.: SA200723C06

FCC ID: PY320100480

Test Model: RAX10

Series Model: R6700AX, WAX204

Received Date: Jul. 23, 2020

Test Date: Aug. 04 ~ Aug. 05, 2020

Issued Date: Aug. 07, 2020

Applicant: NETGEAR, 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
SA200723C06	Original release.	Aug. 07, 2020

1 Certificate of Conformity

Product: AX1800 WiFi Router, WiFi 6 AX1800 Dual Band Wireless Access Point

Brand: NETGEAR

Test Model: RAX10

Series Model: R6700AX, WAX204

Sample Status: Engineering sample

Applicant: NETGEAR, INC.

Test Date: Aug. 04 ~ Aug. 05, 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 RF characteristics under the conditions specified in this report.

Prepared by : Pettie Chen, **Date:** Aug. 07, 2020
Pettie Chen / Senior Specialist

Approved by : Bruce Chen, **Date:** Aug. 07, 2020
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 20cm 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 Power (dBm)	Directional Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
CDD Mode					
2412-2462	27.04	5.43	20	0.351	1
5180-5240	27.67	5.70	20	0.432	1
5745-5825	27.30	6.04	20	0.429	1
Beamforming Mode					
2412-2462	24.63	5.43	20	0.202	1
5180-5240	27.67	5.70	20	0.432	1
5745-5825	27.30	6.04	20	0.429	1

For 2412-2462MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 5.43\text{dBi}$

For 5180-5240MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 5.70\text{dBi}$

For 5745-5825MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 6.04\text{dBi}$

*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.

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

Conclusion:

Both of the WLAN 2.4G & WLAN 5G can transmit simultaneously, the formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

$WLAN\ 2.4G + 5G = 0.351 / 1 + 0.432 / 1 = 0.783$

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

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