

RF Exposure Report

Report No.: SA200601E14

FCC ID: PY320100490

Test Model: RAX40v2

Series Model: RAX38v2, RAX35v2

Received Date: June 01, 2020

Test Date: June 14, 2020

Issued Date: June 23, 2020

Applicant: NETGEAR, Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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Test Location: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
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**FCC Registration /
Designation Number:** 723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
SA200601E14	Original release.	June 23, 2020

1 Certificate of Conformity

Product: Nighthawk AX4 AX3000 4-Stream WiFi Router

Brand: NETGEAR

Test Model: RAX40v2

Series Model: RAX38v2, RAX35v2

Sample Status: ENGINEERING SAMPLE

Applicant: NETGEAR, Inc.

Test Date: June 14, 2020

Standards: FCC Part 2 (Section 2.1091)

IEEE C95.3-2002

References Test KDB 447498 D01 General RF Exposure Guidance v06

Guidance:

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:** June 23, 2020
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Approved by : Clark Lin , **Date:** June 23, 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 23 cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Antenna NO.	Chain No.	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type	Cable Length (mm)	Cable Loss (dB)
Dual_Ant0	2.4G_Ant0 5G_Ant1	1.87	2.4~2.4835GHz	Diople	i-pex(MHF)	65	0.4
		2.84	5.15~5.25GHz				0.5
		3.04	5.25~5.35GHz				0.5
		3.23	5.47~5.725GHz				0.5
		2.91	5.725~5.85GHz				0.5
Dual_Ant1	2.4G_Ant1 5G_Ant0	1.87	2.4~2.4835GHz	Diople	i-pex(MHF)	65	0.4
		2.84	5.15~5.25GHz				0.5
		3.04	5.25~5.35GHz				0.5
		3.23	5.47~5.725GHz				0.5
		2.91	5.725~5.85GHz				0.5

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	880.166	4.88	23	0.40729	1
WLAN 5GHz (U-NII-1)	5180~5250	825.158	5.85	23	0.47739	1
WLAN 5GHz (U-NII-2A)	5250~5320	222.375	6.05	23	0.13472	1
WLAN 5GHz (U-NII-2C)	5500~5720	222.715	6.24	23	0.14096	1
WLAN 5GHz (U-NII-3)	5745~5825	895.617	5.92	23	0.52657	1

Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
 2.4GHz: $1.87 \text{ dBi} + 10\log(2) = 4.88 \text{ dBi}$
 5GHz: For U-NII-1: $2.84 \text{ dBi} + 10\log(2) = 5.85 \text{ dBi}$
 For U-NII-2A: $3.04 \text{ dBi} + 10\log(2) = 6.05 \text{ dBi}$
 For U-NII-2C: $3.23 \text{ dBi} + 10\log(2) = 6.24 \text{ dBi}$
 For U-NII-3: $2.91 \text{ dBi} + 10\log(2) = 5.92 \text{ dBi}$

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

$$\text{WLAN 2.4GHz} + \text{WLAN 5GHz} = 0.40729 / 1 + 0.52657 / 1 = 0.93386$$

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

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