

## RF Exposure Report

**Report No.:** SA191118E09

**FCC ID:** PY319400466

**Test Model:** RAX50

**Series Model:** RAX45

**Received Date:** Nov. 19, 2019

**Test Date:** Dec. 10 to 12, 2019

**Issued Date:** Dec. 27, 2019

**Applicant:** NETGEAR, Inc.

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

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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
SA191118E09	Original release.	Dec. 27, 2019

## 1 Certificate of Conformity

**Product:** Nighthawk AX6 AX5400 6-Stream WiFi Router, Nighthawk AX6 AX4300 6-Stream WiFi Router

**Brand:** NETGEAR

**Test Model:** RAX50

**Series Model:** RAX45

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** NETGEAR, Inc.

**Test Date:** Dec. 10 to 12, 2019

**Standards:** FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.3 -2002

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 :** Phoenix Huang, **Date:** Dec. 27, 2019  
Phoenix Huang / Specialist

**Approved by :** Clark Lin, **Date:** Dec. 27, 2019  
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 25 cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 2.4 Antenna Gain

1. The antennas provided to the EUT, please refer to the following table:

Antenna Operation 1	Antenna Operation 2
Dual_Ant0	Dual_Ant0
Dual_Ant1	Dual_Ant1
Single_Ant2	Dual_Ant2
Single_Ant3	Dual_Ant3

Note: From the above antenna conditions, the worst case was found in Antenna Operation 1. Therefore only the test data of the mode was recorded in this report.

2. The directional antenna gain, please refer to the following table:

Frequency Range (GHz)	Directional Antenna Gain (dBi)	Antenna Type	Antenna Connector
2.4~2.4835	3.73	Dipole	R-SMA
5.15 ~ 5.25	6.61		
5.25 ~ 5.35	6.53		
5.47 ~ 5.725	6.64		
5.725 ~ 5.85	6.66		

Note: More detailed information, please refer to antenna specification.

## 2.5 Calculation Result of Maximum Conducted Power

Operation Mode	Evaluation Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
WLAN (2.4GHz)	2412	917.02	3.73	25	0.27561	1
WLAN (U-NII-1)	5240	935.58	6.61	25	0.54575	1
WLAN (U-NII-3)	5745	997.865	6.66	25	0.58882	1

### Note:

- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- 2.4GHz: The directional gain = 3.73 dBi
- 5GHz:
  - U-NII-1: The directional gain = 6.61 dBi
  - U-NII-3: The directional gain = 6.66 dBi
- The Max. Power = Max. tune up power including tolerance.

### 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

$$\text{WLAN 2.4GHz} + \text{WLAN 5GHz} = 0.27561 / 1 + 0.58882 / 1 = 0.86443$$

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

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