

## RF Exposure Report

**Report No.:** SA190108E06

**FCC ID:** PY318400434

**Test Model:** RAX200

**Received Date:** Jan. 08, 2019

**Test Date:** May 09 to 10, 2019

**Issued Date:** June 06, 2019

**Applicant:** NETGEAR, Inc.

**Address:** 350 East Plumeria Drive San Jose, CA 95134

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

**Lab Address:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan R.O.C.

**Test Location:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan R.O.C.

**FCC Registration /  
Designation Number:** 723255 / TW2022

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### Release Control Record

| Issue No.   | Description       | Date Issued   |
|-------------|-------------------|---------------|
| SA190108E06 | Original release. | June 06, 2019 |

## 1 Certificate of Conformity

**Product:** Nighthawk AX12 12-Stream Tri-Band AX WiFi Router

**Brand:** NETGEAR

**Test Model:** RAX200

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** NETGEAR, Inc.

**Test Date:** May 09 to 10, 2019

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

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

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 :** Wendy Wu , **Date:** June 06, 2019  
Wendy Wu / Specialist

**Approved by :** May Chen , **Date:** June 06, 2019  
May Chen / 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

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

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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 37cm away from the body of the user.  
So, this device is classified as **Mobile Device**.

## 2.4 Antenna Gain

| Frequency Range (GHz) | Directional Antenna Gain (dBi) | Antenna Type | Antenna Connector |
|-----------------------|--------------------------------|--------------|-------------------|
| 2.4~2.4835            | 7.01                           | Dipole       | i-pex(MHF)        |
| 5.15~5.25             | 7.15                           |              |                   |
| 5.25~5.35             | 7.37                           |              |                   |
| 5.47~5.725            | 7.62                           |              |                   |
| 5.725~5.85            | 7.53                           |              |                   |

Note: More detailed information, please refer to opearating description.

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| Frequency Range (GHz) | Antenna Net Gain (dBi) | Antenna Type | Connecter Type |
|-----------------------|------------------------|--------------|----------------|
| 5.15~5.85             | 2<br>(RX only)         | PCB          | i-pex(MHF)     |

## 2.1 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    | 2437                       | 964.63         | 7.01               | 37            | 0.28167                             | 1                           |
| WLAN U-NII-1   | 5230                       | 960.502        | 7.15               | 37            | 0.28966                             | 1                           |
| WLAN U-NII-2A  | 5310                       | 243.628        | 7.37               | 37            | 0.07729                             | 1                           |
| WLAN U-NII-2C  | 5550                       | 247.638        | 7.62               | 37            | 0.08322                             | 1                           |
| WLAN U-NII-3   | 5825                       | 998.049        | 7.53               | 37            | 0.32850                             | 1                           |

### NOTE:

2.4GHz: The directional gain = 7.01dBi

5.0GHz:

U-NII-1: The directional gain = 7.15dBi

U-NII-2A: The directional gain = 7.37dBi

U-NII-2C: The directional gain = 7.62dBi

U-NII-3: The directional gain = 7.53dBi

### 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 + WLAN 5GHz (low band) + WLAN 5GHz (high band)

$= 0.28167 / 1 + 0.28966 / 1 + 0.32850 / 1 = 0.89983$

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

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