

## 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

$$Pd = (Pout \cdot G) / (4 \cdot \pi \cdot r^2)$$

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 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 (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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