

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.

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

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

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 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 ²)	Limit (mW/cm ²)
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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