

RF Exposure Report

Report No.: SA191118E09C

FCC ID: PY319400466

Test Model: RAX43

Series Model: RAX50

Received Date: May 28, 2020

Test Date: Aug. 03, 2020

Issued Date: Aug. 11, 2020

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
SA191118E09C	Original release.	Aug. 11, 2020

1 Certificate of Conformity

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

Brand: NETGEAR

Test Model: RAX43

Series Model: RAX50

Sample Status: ENGINEERING SAMPLE

Applicant: NETGEAR, Inc.

Test Date: Aug. 03, 2020

Standards: FCC Part 2 (Section 2.1091)
IEEE C95.3 -2002

References Test Guidance: KDB 447498 D01 General RF Exposure Guidance v06

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.

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Vivian Huang / Specialist

Approved by : Clark Lin , **Date:** Aug. 11, 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

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

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 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)	4TX Directional Antenna Gain (dBi)	3TX Directional Antenna Gain (dBi)	Antenna Type	Antenna Connector
2.4~2.4835	3.73	3.73	Dipole	R-SMA
5.15 ~ 5.25	6.61	6.14		
5.25 ~ 5.35	6.53	6.26		
5.47 ~ 5.725	6.64	6.33		
5.725 ~ 5.85	6.66	6.29		

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

Note: The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2.5 Calculation Result of Maximum Conducted Power

For 2.4GHz and 5GHz (4TX) data was copied from the original test report (Report No.: SA191118E09B R1)

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)	2412~2462	917.02	3.73	25	0.27561	1
WLAN (4TX U-NII-1)	5180~5250	935.58	6.61	25	0.54575	1
WLAN (4TX U-NII-2A)	5260~5320	236.098	6.53	25	0.13521	1
WLAN (4TX U-NII-2C)	5500~5720	240.035	6.64	25	0.14099	1
WLAN (4TX U-NII-3)	5745~5825	997.865	6.66	25	0.58882	1
WLAN (3TX U-NII-1)	5180~5250	675.929	6.14	25	0.35384	1
WLAN (3TX U-NII-2A)	5260~5320	166.76	6.26	25	0.08974	1
WLAN (3TX U-NII-2C)	5500~5720	171.97	6.33	25	0.09405	1
WLAN (3TX U-NII-3)	5745~5825	732.981	6.29	25	0.39719	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 (4TX):
 - U-NII-1: The directional gain = 6.61 dBi
 - U-NII-2A: The directional gain = 6.53 dBi
 - U-NII-2C: The directional gain = 6.64 dBi
 - U-NII-3: The directional gain = 6.66 dBi
- 5GHz (3TX):
 - U-NII-1: The directional gain = 6.14 dBi
 - U-NII-2A: The directional gain = 6.26 dBi
 - U-NII-2C: The directional gain = 6.33 dBi
 - U-NII-3: The directional gain = 6.29 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

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

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

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