

## RF Exposure Report

**Report No.:** SA190516E01

**FCC ID:** PY319200447

**Test Model:** CAX80

**Received Date:** May 16, 2019

**Test Date:** July 09, 2019

**Issued Date:** Aug. 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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## Table of Contents

|                                                           |          |
|-----------------------------------------------------------|----------|
| <b>Release Control Record .....</b>                       | <b>3</b> |
| <b>1     Certificate of Conformity.....</b>               | <b>4</b> |
| <b>2     RF Exposure.....</b>                             | <b>5</b> |
| 2.1   Limits For Maximum Permissible Exposure (MPE).....  | 5        |
| 2.2   MPE Calculation Formula .....                       | 5        |
| 2.3   Classification .....                                | 5        |
| 2.4   Antenna Gain .....                                  | 6        |
| 2.5   Calculation Result of Maximum Conducted Power ..... | 7        |

### Release Control Record

| Issue No.   | Description       | Date Issued   |
|-------------|-------------------|---------------|
| SA190516E01 | Original release. | Aug. 06, 2019 |

## 1 Certificate of Conformity

**Product:** Nighthawk CAX8 AX6000 WiFi Cable Router

**Brand:** NETGEAR

**Test Model:** CAX80

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** NETGEAR, Inc.

**Test Date:** July 09, 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:** Aug. 06, 2019  
Wendy Wu / Specialist

**Approved by :** May Chen , **Date:** Aug. 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 32cm 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                                                               | 5.97                           | PIFA         | i-pex(MHF)        |
| 5.15~5.25                                                                | 5.91                           |              |                   |
| 5.25~5.35                                                                | 6.34                           |              |                   |
| 5.47~5.725                                                               | 6.05                           |              |                   |
| 5.725~5.85                                                               | 6.13                           |              |                   |
| Note: More detailed information, please refer to opearating description. |                                |              |                   |

| Frequency Range (GHz) | Antenna Net Gain (dBi) | Antenna Type | Connector Type | Cable Length (mm) |
|-----------------------|------------------------|--------------|----------------|-------------------|
| 5.15~5.85             | 1.67<br>(RX only)      | PCB          | i-pex(MHF)     | 260               |

## 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    | 2437                       | 995.416        | 5.97               | 32            | 0.30584                             | 1                           |
| WLAN U-NII-1   | 5230                       | 980.958        | 5.91               | 32            | 0.29726                             | 1                           |
| WLAN U-NII-3   | 5825                       | 995.687        | 6.13               | 32            | 0.31740                             | 1                           |

NOTE:

2.4GHz: The directional gain = 5.97dBi

5GHz:

U-NII-1: The directional gain = 5.91dBi

U-NII-3: The directional gain = 6.13dBi

### 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

$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.30584 / 1 + 0.31740 / 1 = 0.62324$

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

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