

## RF Exposure Report

**Report No.:** SA181015E02

**FCC ID:** PY318300420

**Test Model:** R7000

**Received Date:** Oct. 15 to Dec. 05, 2018

**Test Date:** Nov. 20, 2018

**Issued Date:** Dec. 12, 2018

**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
SA181015E02	Original release.	Dec. 12, 2018

## 1 Certificate of Conformity

**Product:** AC1900 Smart WiFi Router

**Brand:** NETGEAR

**Test Model:** R7000

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** NETGEAR, Inc.

**Test Date:** Nov. 20, 2018

**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 :** Phoenix Huang, **Date:** Dec. 12, 2018  
Phoenix Huang / Specialist

**Approved by :** May Chen, **Date:** Dec. 12, 2018  
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

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

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 34cm away from the body of the user. So, this device is classified as **Mobile Device**.

### 2.4 Antenna Gain

Antenna No.	Ant. Gain (dBi) (include cable loss)	Frequency range (GHz)	Antenna Type	Connector Type
1	3.52	2.4~2.4835	Dipole	i-pex
	3.89	5.15~5.85		
2	3.39	2.4~2.4835	Dipole	i-pex
	3.86	5.15~5.85		
3	3.16	2.4~2.4835	Dipole	i-pex
	3.86	5.15~5.85		

## 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	950.585	8.13	34	0.42542	1
WLAN 5GHz (U-NII-1)	5230	861.408	8.64	34	0.43355	1
WLAN 5GHz (U-NII-3)	5795	876.145	8.64	34	0.44097	1

Note:

2.4GHz: The directional gain is  $10 \log[(10^{\text{Chain1}/20} + 10^{\text{Chain2}/20} + 10^{\text{Chain3}/20})^2 / 3] = 8.13\text{dBi}$

5GHz: The directional gain is  $10 \log[(10^{\text{Chain1}/20} + 10^{\text{Chain2}/20} + 10^{\text{Chain3}/20})^2 / 3] = 8.64\text{dBi}$

### Conclusion:

The formula of calculated the MPE is:

$\text{CPD1} / \text{LPD1} + \text{CPD2} / \text{LPD2} + \dots\text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

$\text{WLAN 2.4GHz} + \text{WLAN 5GHz} = 0.42542 / 1 + 0.44097 / 1 = 0.86639$

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

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