

## RF Exposure Report

**Report No.:** SA170110E09

**FCC ID:** PY316400363

**Test Model:** R8000P

**Series Model:** R7900P

**Received Date:** Jan. 10, 2017

**Test Date:** Jan. 25, 2017

**Issued Date:** Feb. 17, 2017

**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

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### Release Control Record

Issue No.	Description	Date Issued
SA170110E09	Original release.	Feb. 17, 2017

## 1 Certificate of Conformity

**Product:** Nighthawk X6S AC4000 Tri-band WiFi Router

**Brand:** NETGEAR

**Test Model:** R8000P

**Series Model:** R7900P

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** NETGEAR, Inc.

**Test Date:** Jan. 25, 2017

**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 :**



**Date:**

Feb. 17, 2017

Wendy Wu / Specialist

**Approved by :**



**Date:**

Feb. 17, 2017

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				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 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

WLAN (Radio 1) Antenna				
Antenna No.	Ant. Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type
1	1.76	2.4~2.4835	PIFA	i-pex(MHF)
	3.12	5.15~5.25		
	3.11	5.25~5.35		
2	1.76	2.4~2.4835	PIFA	i-pex(MHF)
	3.12	5.15~5.25		
	3.11	5.25~5.35		
3	1.76	2.4~2.4835	PIFA	i-pex(MHF)
	3.12	5.15~5.25		
	3.11	5.25~5.35		
WLAN (Radio 2) Antenna				
Antenna No.	Ant. Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type
4	2.14	5.47~5.725	PIFA	i-pex(MHF)
	2.2	5.725~5.850		
5	2.14	5.47~5.725	PIFA	i-pex(MHF)
	2.2	5.725~5.850		
6	2.14	5.47~5.725	PIFA	i-pex(MHF)
	2.2	5.725~5.850		

## 2.5 Calculation Result of Maximum Conducted Power

### For Radio 1 (WLAN: Dual Band):

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	988.566	6.53	34	0.30608	1
5180-5240	641.289	7.89	34	0.27157	1

### For Radio 2 (WLAN: Single Band):

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
5745-5825	979.264	6.97	34	0.33553	1

NOTE:

Directional gain = 1.76dBi + 10log(3) = 6.53dBi

5GHz:

For UNII-1: Directional gain = 3.12dBi + 10log(3) = 7.89dBi

For UNII-3: Directional gain = 2.2dBi + 10log(3) = 6.97dBi

### 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 (UNII-1) + WLAN 5GHz (UNII-3) =  $0.30608 / 1 + 0.27157 / 1 + 0.33553 / 1 = 0.91318$

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

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