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
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.

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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 : Wendy Wu , **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^2)	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^2

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	Connecter 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	Connecter 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^2)	Limit (mW/cm^2)
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^2)	Limit (mW/cm^2)
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 + ……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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