

RF Exposure Report

Report No.: SA150807E06A

FCC ID: PY313200233

Test Model: R7000

Received Date: Mar. 12, 2018

Test Date: Apr. 20, 2018

Issued Date: May 03, 2018

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
SA150807E06A	Original release.	May 03, 2018

1 Certificate of Conformity

Product: AC1900 Smart WiFi Router

Brand: NETGEAR

Test Model: R7000

Sample Status: ENGINEERING SAMPLE

Applicant: NETGEAR, Inc.

Test Date: Apr. 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:** May 03, 2018
Phoenix Huang / Specialist

Approved by : May Chen , **Date:** May 03, 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 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

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

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 23cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

The antennas provided to the EUT, please refer to the following table:

Antenna No.	Antenna Type	Antenna Gain (dBi)	Frequency range (GHz ~ GHz)	Connector Type
1	Dipole	0.6	2.4~2.4835	Re-SMA
		0.9	5.15~5.85	
2	Dipole	0.6	2.4~2.4835	Re-SMA
		0.9	5.15~5.85	
3	Dipole	0.6	2.4~2.4835	Re-SMA
		0.9	5.15~5.85	

2.5 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	771.988	5.37	23	0.39989	1
5180-5240	279.494	5.67	23	0.15513	1
5745-5825	952.215	5.67	23	0.52853	1

Note:

2.4GHz: The directional gain = $0.6\text{dBi} + 10\log(3) = 5.37\text{dBi}$

5GHz: The directional gain = $0.9\text{dBi} + 10\log(3) = 5.67\text{dBi}$

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

$\text{WLAN } 2.4\text{GHz} + \text{WLAN } 5\text{GHz} = 0.39989 / 1 + 0.52853 / 1 = 0.92842$

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

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