

RF Exposure Report

Report No.: SA161202E10

FCC ID: PY316400356

Test Model: D7000v2

Received Date: Dec. 02, 2016

Test Date: Mar. 27, 2017

Issued Date: Apr. 11, 2017

Applicant: NETGEAR, Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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Release Control Record

Issue No.	Description	Date Issued
SA161202E10	Original release.	Apr. 11, 2017

1 Certificate of Conformity

Product: AC1900 WiFi VDSL/ADSL Modem Router

Brand: NETGEAR

Test Model: D7000v2

Sample Status: ENGINEERING SAMPLE

Applicant: NETGEAR, Inc.

Test Date: Mar. 27, 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:

Apr. 11, 2017

Wendy Wu / Specialist

Approved by :



Date:

Apr. 11, 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				
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

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 25cm away from the body of the user.
So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Antenna No.	Ant. Gain(dBi)	Frequency range (GHz)	Antenna Type	Connector Type	Cable Loss(dB)	Cable Length (mm)
1	0.82	2.4~2.4835	Dipole	Re-SMA	0.37	79
	2.76	5.15~5.85			0.57	
2	0.82	2.4~2.4835	Dipole	Re-SMA	0.37	88
	2.76	5.15~5.85			0.62	
3	0.82	2.4~2.4835	Dipole	Re-SMA	0.575	170
	2.76	5.15~5.85			0.62	

2.5 Calculation Result of Maximum Conducted Power

Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	991.898	5.15	25	0.41341	1
5180-5240	804.199	6.93	25	0.50498	1
5745-5825	818.141	6.93	25	0.51373	1

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 3] = 5.15\text{dBi}$

5GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 3] = 6.93\text{dBi}$

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 = $0.41341 / 1 + 0.51373 / 1 = 0.92714$

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

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