



## RF Exposure Report

**Report No.:** SA141013E03E

**FCC ID:** PY314300285

**Test Model:** C7000

**Received Date:** Nov. 03, 2014

**Test Date:** Dec. 01, 2014

**Issued Date:** Sep. 22, 2015

**Applicant:** NETGEAR, Inc.

**Address:** 350 East Plumeria Drive San Jose, CA 95134

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
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**Test Location (1):** No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.

**Test Location (2):** No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.

**Test Location (3):** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
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### Release Control Record

Issue No.	Description	Date Issued
SA141013E03E	Original release.	Sep. 22, 2015



## 1 Certificate of Conformity

**Product:** AC1900 WiFi Cable Modem Router

**Brand:** NETGEAR

**Test Model:** C7000

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** NETGEAR, Inc.

**Test Date:** Dec. 01, 2014

**Standards:** FCC Part 2 (Section 2.1091)

KDB 447498 D03

IEEE C95.1

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 :**                     *Midoli Peng*                     **Date:**                     Sep. 22, 2015                      
Midoli Peng / Specialist

**Approved by :**                     *May Chen*                     , **Date:**                     Sep. 22, 2015                      
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 30cm away from the body of the user.

So, this device is classified as **Mobile Device**.

## 3 Antenna Gain

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

PCB Chain No.	Brand	Model	Antenna Gain(dBi) < including cable loss>	Frequency range (MHz ~ MHz)	Antenna Type	Connector Type
Chain 0	Netgear	NA	2.0 2.8	2400~2483.5 5150~5850	Dipole	i-Pex
Chain 1	Netgear	NA	2.0 2.8	2400~2483.5 5150~5850	Dipole	i-Pex
Chain 2	Netgear	NA	2.0 2.8	2400~2483.5 5150~5850	Dipole	i-Pex

#### 4 Calculation Result of Maximum Conducted Power

For 2.4GHz & 5GHz (5180-5240MHz, 5260-5320MHz & 5500-5700MHz) data was referenced from the original test report. (Report No.: SA141013E03-1)

##### For 2.4GHz

<b>CDD Mode</b>					
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	996.326	6.77	30	0.41874	1
<b>Beamforming Mode</b>					
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	786.891	6.77	30	0.33027	1

NOTE: Directional gain = 2dBi + 10log(3) = 6.77dBi

##### For 5GHz

<b>CDD Mode</b>					
Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
5180 ~ 5240	345.639	7.57	30	0.17465	1
5260 ~ 5320	243.585	7.57	30	0.12308	1
5500 ~ 5700	244.659	7.57	30	0.12363	1
5745 ~ 5825	930.141	7.57	30	0.47000	1
<b>Beamforming Mode</b>					
Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
5180-5240	345.639	7.57	30	0.17465	1
5260 ~ 5320	173.583	7.57	30	0.08771	1
5500 ~ 5700	174.189	7.57	30	0.08802	1
5745-5825	675.716	7.57	30	0.34144	1

NOTE: Directional gain = 2.8dBi + 10log(3) = 7.57dBi

**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 =  $0.41874 + 0.47000 = 0.889$

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

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