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 Hsin Chu Laboratory
Lab Address:	No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.
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, Taiwan R.O.C.

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

Midoli Peng / Specialist

Approved by : _____ , **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^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 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	Connecter 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

CDD Mode					
Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412 ~ 2462	996.326	6.77	30	0.41874	1
Beamforming Mode					
Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412 ~ 2462	786.891	6.77	30	0.33027	1

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

For 5GHz

CDD Mode					
Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
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
Beamforming Mode					
Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
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 + ……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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