RF Exposure Report

Report No.: SA140812C13E

FCC ID: PY314100252

Test Model: C7100V-100NAS

Received Date: Mar. 18, 2016

Test Date: May 13, 2016

Issued Date: June 20, 2016

Applicant: NETGEAR INC

Address: 350 East Plumeria Drive, San Jose CA 96134, USA

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
SA140812C13E	Original release.	June 20, 2016

1   Certificate of Conformity

Product:	Wireless Cable Data Gateway
Brand:	NETGEAR
Test Model:	C7100V-100NAS
Sample Status:	ENGINEERING SAMPLE
Applicant:	NETGEAR INC
Test Date:	May 13, 2016
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:** June 20, 2016

Wendy Wu / Specialist

Approved by : , **Date:** June 20, 2016

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 25cm 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:

2.4GHz antenna					
No.	Transmitter Circuit	Gain (dBi) (Include cable loss)	Frequency range (GHz to GHz)	Antenna Type	Connecter Type
1	0	2.07	2.4~2.4835	PIFA	i-pex(MHF)
2	1	2.07	2.4~2.4835	PIFA	i-pex(MHF)
3	2	2.07	2.4~2.4835	PIFA	i-pex(MHF)
5GHz antenna					
No.	Transmitter Circuit	Gain (dBi) (Include cable loss)	Frequency range (GHz to GHz)	Antenna Type	Connecter Type
4	0	3.33	5.15~5.25	PIFA	i-pex(MHF)
		3.32	5.25~5.35	PIFA	i-pex(MHF)
		3.29	5.47~5.725	PIFA	i-pex(MHF)
		3.28	5.725~5.850	PIFA	i-pex(MHF)
5	1	3.33	5.15~5.25	PIFA	i-pex(MHF)
		3.32	5.25~5.35	PIFA	i-pex(MHF)
		3.29	5.47~5.725	PIFA	i-pex(MHF)
		3.28	5.725~5.850	PIFA	i-pex(MHF)
6	2	3.33	5.15~5.25	PIFA	i-pex(MHF)
		3.32	5.25~5.35	PIFA	i-pex(MHF)
		3.29	5.47~5.725	PIFA	i-pex(MHF)
		3.28	5.725~5.850	PIFA	i-pex(MHF)

3   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	713.576	6.84	25	0.43888	1
5180-5240	607.881	8.10	25	0.49972	1
5260-5320	185.197	8.09	25	0.15189	1
5500-5720	242.814	8.06	25	0.19778	1
5745-5825	606.638	8.05	25	0.49299	1

NOTE:

2.4GHz: Directional gain = 2.07dBi + 10log(3) = 6.84dBi

5GHz:

UNII-1: Directional gain = 3.33dBi + 10log(3) = 8.10dBi

U-NII-2A: Directional gain = 3.32dBi + 10log(3) = 8.09dBi

U-NII-2C: Directional gain = 3.29dBi + 10log(3) = 8.06dBi

UNII-3: Directional gain = 3.28dBi + 10log(3) = 8.05dBi

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 = 0.43888 / 1 + 0.49972 / 1 = 0.939

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

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