RF Exposure Report

Report No.: SA120725E01F

FCC ID: PY312200203

Test Model: WNDAP660

Received Date: July 19, 2012

Test Date: July 31, 2012 and Aug. 31, 2015

Issued Date: Sep. 22, 2015

Applicant: Netgear Incorporated.

Address: 350 East Plumeria Drive San Jose California United States 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
SA120725E01F	Original release.	Sep. 22, 2015

1 Certificate of Conformity

Product: ProSafe 3x3 Dual Radio, Dual Band Wireless Access Point

Brand: Netgear

Test Model: WNDAP660

Sample Status: ENGINEERING SAMPLE

Applicant: Netgear Incorporated.

Test Date: July 31, 2012 and Aug. 31, 2015

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 : Phoenix Huang , **Date:** Sep. 22, 2015
Phoenix Huang / 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 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:

Internal Antenna (For 2.4GHz / 5GHz)					
Transmitter Circuit	Antenna Type	Peak Gain (dBi)			Connecter Type
		2.4GHz	5GHz Band 1	5GHz Band 4	
Chain (0)	Dipole	2.44	4.36	5.95	i-pex
Chain (1)	Dipole	2.44	5.31	5.02	i-pex
Chain (2)	Dipole	2.44	3.87	3.96	i-pex
External Antenna (For 2.4GHz)					
Model	Antenna Type	Gain (dBi) (Exclude cable loss)	Cable Loss (dB)	Net Gain (dBi) (Include cable loss)	Connecter Type
ANT-32405	Dipole	5	3.68	1.32	SMA Plug Reverse

3 Calculation Result of Maximum Conducted Power

For 15.247 (2.4GHz) data was copied from the original test report (Report No.: SA120725E01)

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462	575.666	7.21	23	0.45552	1
5180-5240	45.134	9.31	23	0.05792	1
5745-5825	266.159	9.79	23	0.38148	1

NOTE:
2.4GHz: Directional gain = 2.44dBi + 10log(3) = 7.21dBi
5GHz (5150-5250MHz): Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 3] = 9.31$dBi
5GHz (5725-5850MHz): Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 3] = 9.79$dBi

Conclusion:

Both of the 2.4GHz and 5GHz can transmit simultaneously, the formula of calculated the MPE is:

$CPD_1 / LPD_1 + CPD_2 / LPD_2 + \ldots\ldots$etc. < 1

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is 0.45552 / 1 + 0.38148 / 1 = 0.837, which is less than “1”. This confirmed that the device comply with FCC 1.1310 MPE limit.

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