RF EXPOSURE REPORT

REPORT NO.: SA120524E01

MODEL NO.: WNDAP620

FCC ID: PY312200202

RECEIVED: May 24, 2012

TESTED: May 31 to June 01, 2012

ISSUED: June 20, 2012

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,
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R.O.C.

This report should not be used by the client to claim
product certification, approval, or endorsement by any
government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA120524E01	Original release	June 20, 2012

1. CERTIFICATION

PRODUCT: ProSafe 3x3 Single Radio, Dual Band Wireless-N Access Point

BRAND NAME: Netgear

MODEL NO.: WNDAP620

TEST SAMPLE: ENGINEERING SAMPLE

APPLICANT: Netgear Incorporated.

TESTED: May 31 to June 01, 2012

STANDARDS: FCC Part 2 (Section 2.1091)

FCC OET Bulletin 65, Supplement C (01-01)

IEEE C95.1

The above equipment (Model: WNDAP620) 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: _June 20, 2012_
(Lori Chung, Specialist)

APPROVED BY : _____ , DATE: _June 20, 2012_
(May Chen, Deputy Manager)

2. RF EXPOSURE LIMIT

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

3. MPE CALCULATION FORMULA

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in mW/cm2

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

4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

5. 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)		
		2.4GHz	5GHz Band 1	5GHz Band 4
Chain (0)	Dipole	2.3	5.9	5.3
Chain (1)	Dipole	2.3	5.9	4.9
Chain (2)	Dipole	2.3	5	5.2
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

6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

For 15.247(2.4GHz):

802.11b:

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2412-2462	163.681	7.07	20	0.16585	1.00

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)
Effective Legacy Gain (dBi) = 7.07
The effective legacy gain is 7.07 dBi, therefore the limit needs to reduce.

802.11g:

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2412-2462	587.684	7.07	20	0.59549	1.00

Directional gain = gain of antenna element + 10 log (# of TX antenna elements)
Effective Legacy Gain (dBi) = 7.07
The effective legacy gain is 7.07 dBi, therefore the limit needs to reduce.

802.11n(20MHz):

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2412-2462	450.335	2.3	20	0.15215	1.00

802.11n(40MHz):

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2422-2452	384.450	2.3	20	0.12989	1.00

For 15.247(5GHz):

802.11a:

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5745 ~ 5825	100.739	9.91	20	0.19630	1.00

Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 3]$
Effective Legacy Gain (dBi) = 9.91
The effective legacy gain is 9.91 dBi, therefore the limit needs to reduce.

802.11n(20MHz):

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5745 ~ 5825	102.721	5.30	20	0.06924	1.00

802.11n(40MHz):

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5755 ~ 5795	92.000	5.30	20	0.06202	1.00

For 15.407(5GHz):
802.11a:

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5180 ~ 5240	14.556	10.38	20	0.03161	1.00

Directional gain = 10 log[(10$^{G1/20}$ + 10$^{G2/20}$ + 10$^{G3/20}$)^2 / 3]
Effective Legacy Gain (dBi) = 10.38
The effective legacy gain is 10.38 dBi, therefore the limit needs to reduce.

802.11n(20MHz):

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5180 ~ 5240	37.716	5.90	20	0.02919	1.00

802.11n(40MHz):

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
5190 ~ 5230	45.508	5.90	20	0.03522	1.00

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