RF Exposure Report

Report No.: SA160419E08

FCC ID: PY326200345

Test Model: WAC740

Received Date: Apr. 19, 2016

Test Date: July 11, 2016

Issued Date: July 28, 2016

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: 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
SA160419E08	Original release.	July 28, 2016

1 Certificate of Conformity

Product: ProSAFE Dual Band Wireless AC Access Point

Brand: NETGEAR

Test Model: WAC740

Sample Status: ENGINEERING SAMPLE

Applicant: NETGEAR, Inc.

Test Date: July 11, 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 : _____ , **Date:** _____ July 28, 2016 _____

Wendy Wu / Specialist

Approved by : _____ , **Date:** _____ July 28, 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 37cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4   Antenna Gain

External Antenna									
Transmitter Circuit (For 2.4G)	Transmitter Circuit (For 5G)	Brand	Model	Antenna Gain(dBi) <including cable loss>	Frequency range (MHz ~ MHz)	Antenna Type	Connecter Type	Cable Loss(db)	Cable Length (mm)
Chain (0)	Chain (3)	Master Wave Tech	98364PRSX004	-0.2	2.4~2.4835	Dipole	R-SMA	1	172
				0	5.15~5.25			1.5	
				0.1	5.25~5.35			1.5	
				-0.8	5.47~5.725			1.5	
				-1	5.725~5.85			1.5	
Chain (1)	Chain (2)	Master Wave Tech	98364PRSX004	0	2.4~2.4835	Dipole	R-SMA	0.8	175
				0.1	5.15~5.25			1.4	
				0.2	5.25~5.35			1.4	
				-0.7	5.47~5.725			1.4	
				-0.9	5.725~5.85			1.4	
Chain (2)	Chain (1)	Master Wave Tech	98364PRSX004	0	2.4~2.4835	Dipole	R-SMA	0.8	145
				0.2	5.15~5.25			1.3	
				0.3	5.25~5.35			1.3	
				-0.6	5.47~5.725			1.3	
				-0.8	5.725~5.85			1.3	
Chain (3)	Chain (0)	Master Wave Tech	98364PRSX004	0	2.4~2.4835	Dipole	R-SMA	0.8	135
				0.1	5.15~5.25			1.4	
				0.2	5.25~5.35			1.4	
				-0.7	5.47~5.725			1.4	
				-0.9	5.725~5.85			1.4	

Internal Antenna						
Transmitter Circuit	Brand	Model	Antenna Gain(dBi)	Frequency range (MHz ~ MHz)	Antenna Type	Connecter Type
Chain (0)	NA	NA	5	2.4~2.4835	PIFA	i-pex(MHF)
			6	5.15~5.25		
			6	5.25~5.35		
			6	5.47~5.725		
			6	5.725~5.85		
Chain (1)	NA	NA	5	2.4~2.4835	PIFA	i-pex(MHF)
			6	5.15~5.25		
			6	5.25~5.35		
			6	5.47~5.725		
			6	5.725~5.85		
Chain (2)	NA	NA	5	2.4~2.4835	PIFA	i-pex(MHF)
			6	5.15~5.25		
			6	5.25~5.35		
			6	5.47~5.725		
			6	5.725~5.85		
Chain (3)	NA	NA	5	2.4~2.4835	PIFA	i-pex(MHF)
			6	5.15~5.25		
			6	5.25~5.35		
			6	5.47~5.725		
			6	5.725~5.85		

2.5 Directional Gain Table

Frequency	Max Gain (dBi)
5180-5240	6.04
5745-5825	5.67

Note:
 1. Non-TxBF mode & TxBF mode antenna gain refer to KDB 662911 F 2) f) (ii)

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where
 Each antenna is driven by no more than one spatial stream;
 N_{SS} = the number of independent spatial streams of data;
 N_{ANT} = the total number of antennas
 $g_{j,k} = 10^{G_k/20}$ if the kth antenna is being fed by spatial stream j, or zero if it is not;
 G_k is the gain in dBi of the kth antenna.

2.6 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	970.785	11.02	37	0.71369	1
5180-5240	819.499	6.04	37	0.19140	1
5745-5825	909.707	5.67	37	0.19511	1

NOTE:
2.4GHz: Directional gain = 5dBi + 10log(4) = 11.02dBi
5GHz:
UNII-1: Directional gain = 6.04dBi
UNII-3: Directional gain = 5.67dBi

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 = 0.71369 / 1 + 0.19511 / 1 = 0.90880
Therefore the maximum calculations of above situations are less than the "1" limit.

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