

## 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

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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 <sup>2</sup> )	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<sup>2</sup>

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	Connector 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		Connector Type	
Chain (0)	NA	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	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	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	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  $k$ th antenna is being fed by spatial stream  $j$ , or zero if it is not;

$G_k$  is the gain in dBi of the  $k$ th antenna.

## 2.6 Calculation Result Of Maximum Conducted Power

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
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:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

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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