



# RF EXPOSURE REPORT

**REPORT NO.:** SA140606E08

**MODEL NO.:** WND930

**FCC ID:** PY314200281

**RECEIVED:** June 06, 2014

**TESTED:** Aug. 07, 2014

**ISSUED:** Aug. 20, 2014

**APPLICANT:** Netgear Incorporated

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**ISSUED BY:** Bureau Veritas Consumer Products Services  
(H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

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## TABLE OF CONTENTS

RELEASE CONTROL RECORD.....	3
1. CERTIFICATION.....	4
2. RF EXPOSURE LIMIT .....	5
3. MPE CALCULATION FORMULA.....	5
4. CLASSIFICATION.....	5
5. ANTENNA GAIN .....	6
6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER .....	7



## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA140606E08	Original release	Aug. 20, 2014

## 1. CERTIFICATION

**PRODUCT:** Outdoor High Power Wireless N Access Point  
**BRAND NAME:** NETGEAR  
**MODEL NO.:** WND930  
**TEST SAMPLE:** ENGINEERING SAMPLE  
**APPLICANT:** Netgear Incorporated  
**TESTED DATE:** Aug. 07, 2014  
**STANDARDS:** FCC Part 2 (Section 2.1091)  
KDB 447498 D03  
IEEE C95.1

The above equipment (Model: WND930) 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:** Aug. 20, 2014  
( Lori Chung, Specialist )

**APPROVED BY :** , **DATE:** Aug. 20, 2014  
( May Chen, 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 <sup>2</sup> )	AVERAGE TIME (minutes)
<b>LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE</b>				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 3. MPE CALCULATION FORMULA

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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 26cm 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				
Transmitter Circuit	Antenna Gain(dBi) Including cable loss	Frequency range	Antenna Type	Connector Type
Chain (0)	5	2.4~2.4835GHz	Panel	i-pex(MHF)
Chain (1)	5		Panel	i-pex(MHF)
Chain (0)	5	5.150~5.850GHz	Panel	i-pex(MHF)
Chain (1)	5		Panel	i-pex(MHF)
External Antenna				
Transmitter Circuit	Antenna Gain(dBi) Including cable loss	Frequency range	Antenna Type	Connector Type
Chain (0)	5	2.4~2.4835GHz	Dipole	N type(M)
Chain (1)	5		Dipole	N type(M)
Chain (0)	7	5.150~5.850GHz	Dipole	N type(M)
Chain (1)	7		Dipole	N type(M)

## 6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

### 15.247(2.4GHz):

FREQUENCY (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412 ~ 2462	474.558	8.01	26	0.35329	1

Note: Directional gain = 5dBi + 10log(2) = 8.01dBi.

### 15.247(5GHz):

FREQUENCY (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5745 ~ 5825	507.064	10.01	26	0.59828	1

Note: Directional gain = 7dBi + 10log(2) = 10.01dBi.

### 15.407(5GHz):

FREQUENCY (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
5180 ~ 5240	35.591	10.01	26	0.04199	1

Note: Directional gain = 7dBi + 10log(2) = 10.01dBi.

## CONCLUSION:

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

$$CPD_1 / LPD_1 + CPD_2 / LPD_2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is  $0.35329 / 1 + 0.59828 / 1 = 0.952$ , which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.

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