



# RF EXPOSURE REPORT

**REPORT NO.:** SA120712C20A R1

**MODEL NO.:** WNDR4700, WNDR4720

**FCC ID:** PY311400179

**RECEIVED:** Jul. 26, 2012

**TESTED:** Aug. 06 ~ Aug. 10, 2012  
Jan. 04 ~ Jan. 05, 2013

**ISSUED:** Feb. 05, 2013

**APPLICANT:** NETGEAR, INC.

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

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA120712C20A	Original release	Aug. 20, 2012
SA120712C20A R1	Updated item 2.4	Feb. 05, 2013



## 1. CERTIFICATION

**PRODUCT:** N900 Wireless Dual Band Gigabit Router  
**MODEL NO.:** WNDR4700, WNDR4720  
**BRAND:** NETGEAR  
**APPLICANT:** NETGEAR, INC.  
**TESTED:** Aug. 06 ~ Aug. 10, 2012  
Jan. 04 ~ Jan. 05, 2013  
**TEST SAMPLE:** ENGINEERING SAMPLE  
**STANDARDS:** **FCC Part 2 (Section 2.1091)**  
**FCC OET Bulletin 65, Supplement C (01-01)**  
**IEEE C95.1**

The above equipment (model: WNDR4700) 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 :** Feb. 05, 2013  
Pettie Chen / Senior Specialist

**APPROVED BY :**  , **DATE :** Feb. 05, 2013  
Ken Liu / 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)
<b>LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE</b>				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

### 2.2 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

### 2.3 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 22cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

FREQUENCY BAND (MHz)	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
2412-2462	27.79	6.8	22	0.473	1
5260-5320	22.82	7.8	22	0.190	1
5500-5700	22.87	7.8	22	0.192	1

**NOTE:**

Directional gain = 3dBi + 10log(3) = 7.8dBi

**CONCLUSION:**

Only 2.4 and 5GHz can transmit simultaneously, 2.4 and 2.4GHz does not. The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

1. WLAN 2.4G + WLAN 5.0G = 0.473 + 0.192 = 0.665

Therefore, the maximum calculation of this situation is 0.665, which is less than the "1" limit.