



RF EXPOSURE REPORT

REPORT NO.: SA120712C20
MODEL NO.: WNDR4700, WNDR4720
FCC ID: PY311400179
RECEIVED: Jul. 12, 2012
TESTED: Jul. 18 ~ Jul. 23, 2012
ISSUED: Jul. 26, 2012

APPLICANT: NETGEAR, INC.

ADDRESS: 350 East Plumeria Drive San Jose, CA 95134

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

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist.,
New Taipei City, Taiwan, R.O.C.

TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei
Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA120712C20	Original release	Jul. 26, 2012



1. CERTIFICATION

PRODUCT: N900 Wireless Dual Band Gigabit Router
MODEL NO.: WNDR4700, WNDR4720
BRAND: NETGEAR
APPLICANT: NETGEAR, INC.
TESTED: Jul. 18 ~ Jul. 23, 2012
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 : Andrea Hsia , **DATE** : Jul. 26, 2012
Andrea Hsia / Specialist

APPROVED BY : Gary Chang , **DATE** : Jul. 26, 2012
Gary Chang / Technical 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

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

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 ²)	LIMIT (mW/cm ²)
2412-2462	27.79	6.8	22	0.473	1
5180-5240	15.01	7.8	22	0.031	1
5745-5825	26.87	7.8	22	0.482	1

NOTE:

FOR 2.4GHz: Directional gain = 2dBi + 10log(3) = 6.8dBi

FOR 5.0GHz: 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

$$1. \text{ WLAN 2.4G} + \text{WLAN 5.0G} = 0.473 + 0.482 = 0.955$$

Therefore, the maximum calculation of this situation is 0.955, which is less than the "1" limit.