



RF Exposure Report

Report No.: SA150708E07A

FCC ID: PY315200307

Test Model: R7300

Received Date: July 08, 2015

Test Date: Aug. 04, 2015

Issued Date: Oct. 06, 2015

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.	Description	Date Issued
SA150708E07A	Original release.	Oct. 06, 2015

1 Certificate of Conformity

Product: Nighthawk AC1900 DST Router

Brand: NETGEAR

Test Model: R7300

Sample Status: ENGINEERING SAMPLE

Applicant: NETGEAR, Inc.

Test Date: Aug. 04, 2015


Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D03

IEEE C95.1

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:** Oct. 06, 2015
Midoli Peng / Specialist

Approved by :  , **Date:** Oct. 06, 2015
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/cm²

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 30cm away from the body of the user.

So, this device is classified as **Mobile Device**.

3 Antenna Gain

The antennas provided to the EUT, please refer to the following table:

Antenna No.	Ant. Gain(dBi)	Frequency range (GHz to GHz)	Antenna Type	Connector Type
1	0.5	2.4~2.4835	Dipole	Re-SMA
	0.9	5.15~5.25	Dipole	Re-SMA
	0.4	5.725~5.85	Dipole	Re-SMA
2	0.5	2.4~2.4835	Dipole	Re-SMA
	0.9	5.15~5.25	Dipole	Re-SMA
	0.4	5.725~5.85	Dipole	Re-SMA
3	0.5	2.4~2.4835	Dipole	Re-SMA
	0.9	5.15~5.25	Dipole	Re-SMA
	0.4	5.725~5.85	Dipole	Re-SMA

4 Calculation Result of Maximum Conducted Power

For 2.4GHz & 5GHz (5180-5240MHz) data was referenced from the original test report (Report No.: SA150708E07).

For 2.4GHz

CDD Mode					
Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	983.43	5.27	30	0.29261	1

Beamforming Mode					
Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	917.129	5.27	30	0.27288	1

NOTE: Directional gain = 0.5dBi + 10log(3) = 5.27dBi

For 5GHz

CDD Mode					
Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
5180-5240	888.181	5.67	30	0.28977	1
5745-5825	932.093	5.17	30	0.27102	1

Beamforming Mode					
Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
5180-5240	674.757	5.67	30	0.22014	1
5745-5825	931.687	5.17	30	0.27090	1

NOTE:

- For 5180-5240MHz : Directional gain = 0.9dBi + 10log(3) = 5.67dBi
- For 5745-5825MHz : Directional gain = 0.4dBi + 10log(3) = 5.17dBi

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

$$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.29261 + 0.28977 = 0.58238$$

Therefore the maximum calculations of above situations are less than the "1" limit.

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