



## RF Exposure Report

**Report No.:** SA150708E07

**FCC ID:** PY315200307

**Test Model:** R7300

**Received Date:** July 08, 2015

**Test Date:** July 22 to 31, 2015

**Issued Date:** Aug. 11, 2015

**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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Chu Hsien 307, Taiwan R.O.C.

**Test Location (1):** No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.

**Test Location (2):** No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin  
Chu Hsien 307, Taiwan R.O.C.

**Test Location (3):** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City, Taiwan  
R.O.C.

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### Release Control Record

Issue No.	Description	Date Issued
SA150708E07	Original release.	Aug. 11, 2015



# 1 Certificate of Conformity

**Product:** Nighthawk AC1900 DST Router

**Brand:** NETGEAR

**Test Model:** R7300

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** NETGEAR, Inc.

**Test Date:** July 22 to 31, 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 :** Midoli Peng, **Date:** Aug. 11, 2015  
Midoli Peng / Specialist

**Approved by :** May Chen, **Date:** Aug. 11, 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 <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 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 15.247(2.4GHz)

<b>CDD Mode</b>					
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	983.43	5.27	30	0.29261	1
<b>Beamforming Mode</b>					
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	917.129	5.27	30	0.27288	1

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

##### For 15.247(5GHz)

<b>CDD Mode</b>					
Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
5745-5825	932.093	5.17	30	0.27102	1
<b>Beamforming Mode</b>					
Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
5745-5825	931.687	5.17	30	0.27090	1

NOTE: Directional gain = 0.4dBi + 10log(3) = 5.17dBi

**For 15.407(5GHz)**

<b>CDD Mode</b>					
Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
5180-5240	888.181	5.67	30	0.28977	1
<b>Beamforming Mode</b>					
Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
5180-5240	674.757	5.67	30	0.22014	1

NOTE: Directional gain = 0.9dBi + 10log(3) = 5.67dBi

**Conclusion:**

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + .....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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