

RF Exposure Report

Report No.: SA180521E10

FCC ID: PY318200414

Test Model: Jaguar

Received Date: May 21, 2018

Test Date: July 16 to 17, 2018

Issued Date: July 25, 2018

Applicant: NETGEAR, Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 723255 / TW2022

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Release Control Record

Issue No.	Description	Date Issued
SA180521E10	Original release.	July 25, 2018

1 Certificate of Conformity

Product: Nighthawk X12 Smart WiFi Router

Brand: NETGEAR

Test Model: Jaguar

Sample Status: ENGINEERING SAMPLE

Applicant: NETGEAR, Inc.

Test Date: July 16 to 17, 2018

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

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:

July 25, 2018

Wendy Wu / Specialist

Approved by :



Date:

July 25, 2018

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				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	...	...	f/1500	30
1500-100,000	...	...	1.0	30

f = Frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Formula

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

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 24cm away from the body of the user.
So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Frequency Range (GHz)	Directional Antenna Gain (dBi)	Antenna Type	Antenna Connector
2.4~2.4835	4.28	Dipole	i-pex(MHF)
5.15~5.25	5.56		
5.25~5.35	5.56		
5.47~5.725	6.22		
5.725~5.85	6.22		
Note: More detailed information, please refer to opearating description.			

2.5 Calculation Result of Maximum Conducted Power

Operation Mode	Evaluation Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN 2.4GHz	2437	998.128	4.28	24	0.36945	1
WLAN UNII-1	5200	988.161	5.56	24	0.49113	1
WLAN UNII-2A	5320	248.698	5.56	24	0.12361	1
WLAN UNII-2C	5500	238.154	6.22	24	0.13779	1
WLAN UNII-3	5755	946.94	6.22	24	0.54788	1

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

$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.36945 / 1 + 0.54788 / 1 = 0.91733$

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

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