

RF Exposure Report

Report No.: SA161017C17

FCC ID: PY315400332

Test Model: C6220

Received Date: Oct. 17, 2016

Test Date: Nov. 01, 2016

Issued Date: Nov. 23, 2016

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
SA161017C17	Original release.	Nov. 23, 2016

1 Certificate of Conformity

Product: Cable Gateway

Brand: Netgear

Test Model: C6220

Sample Status: ENGINEERING SAMPLE

Applicant: NETGEAR, INC.

Test Date: Nov. 01, 2016

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 : Nico Liu, **Date:** Nov. 23, 2016
Nico Liu / Specialist

Approved by : May Chen, **Date:** Nov. 23, 2016
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

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

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 20cm away from the body of the user.

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

Antenna No.	Brand	Model	Antenna Gain(dBi)	Frequency range	Antenna connector	Antenna Type
ant_1	NA	NA	1.67	2.4~2.4835GHz	R-SMA	Dipole
			2.26	5.15~5.25GHz		
			2.41	5.725~5.85GHz		
ant_2	NA	NA	2.46	2.4~2.4835GH	R-SMA	Dipole
			3.69	5.15~5.25GHz		
			3.73	5.725~5.85GHz		

2.4 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max. Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	355.656	5.08	20	0.22791	1
5180-5240	563.676	6.01	20	0.11214	1
5745-5825	709.626	6.11	20	0.57645	1

NOTE: This power include tune-up tolerance range that specified in C6220 Tune Up power table

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 5.08\text{dBi}$

5GHz:

UNII-1: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.01\text{dBi}$

UNII-3: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 6.11\text{dBi}$

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

$WLAN\ 2.4GHz + WLAN\ 5GHz = 0.22791 / 1 + 0.57645 / 1 = 0.80436$

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

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