

RF Exposure Report

Report No.: SA200420C09

FCC ID: PY320100488

Test Model: Raccon

Received Date: Apr. 20, 2020

Test Date: Apr. 23 ~ May 22, 2020

Issued Date: May 22, 2020

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 / 788550 / TW0003
Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
SA200420C09	Original release	May 22, 2020

1 Certificate of Conformity

Product: Raccon

Brand: NETGEAR

Test Model: Raccon

Sample Status: Engineering sample

Applicant: NETGEAR, INC.

Test Date: Apr. 23 ~ May 22, 2020

Standards: FCC Part 2 (Section 2.1091)

IEEE C95.3 -2002

References Test KDB 447498 D01 General RF Exposure Guidance v06

Guidance:

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 RF characteristics under the conditions specified in this report.

Prepared by : Polly Chien , **Date:** May 22, 2020
Polly Chien / Specialist

Approved by : Bruce Chen , **Date:** May 22, 2020
Bruce Chen / Senior Project Engineer

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 23cm away from the body of the user. So, this device is classified as **Mobile Device**.

3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max AV Power (dBm)	Directional Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
CDD Mode					
2412-2462	29.75	5.40	23	0.492	1
5180-5240	29.27	6.01	23	0.507	1
5745-5825	29.59	5.69	23	0.507	1
Beamforming Mode					
2412-2462	29.73	5.40	23	0.490	1
5180-5240	29.27	6.01	23	0.507	1
5745-5825	29.59	5.69	23	0.507	1

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

Directional gain:

2412-2462MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 5.40\text{dBi}$

5180-5240MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 6.01\text{dBi}$

5745-5825MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 5.69\text{dBi}$

Conclusion:

Both of the WLAN 2.4G & WLAN 5G can transmit simultaneously, the formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

$WLAN\ 2.4G + 5G = 0.492 / 1 + 0.507 / 1 = 0.999$

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

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